

# TOD GROWTH PLAN FOR THE TOWN OF RIVERHEAD PECONIC RIVER/ NYS ROUTE 25 CORRIDOR - BOA STEP II NOMINATION

TRAFFIC IMPACT STUDY

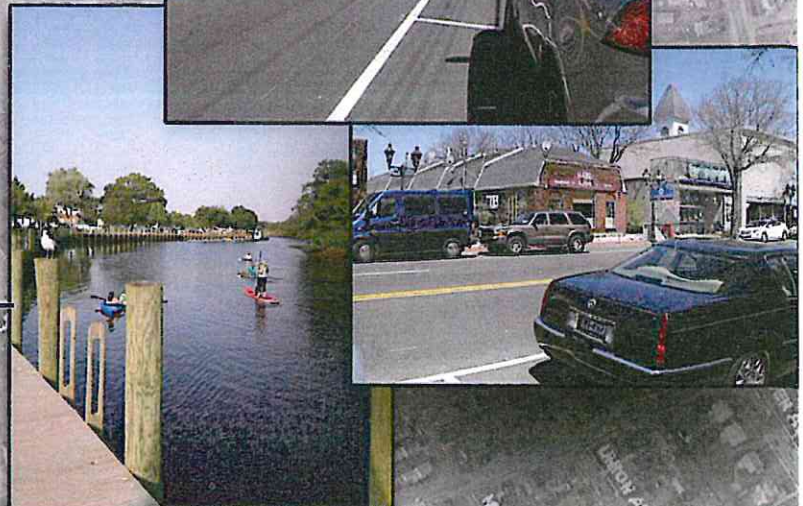
JANUARY 2014



SUBMITTED TO:  
TOWN OF RIVERHEAD  
COMMUNITY DEVELOPEMENT  
AGENCY



NELSON & POPE  
ENGINEERS & SURVEYORS  
572 Walt Whitman Road  
Melville, NY 11747





## TABLE OF CONTENTS

|                                                              |           |
|--------------------------------------------------------------|-----------|
| <b>EXECUTIVE SUMMARY .....</b>                               | <b>1</b>  |
| <b>PURPOSE OF REPORT.....</b>                                | <b>12</b> |
| <b>STUDY METHODOLOGY.....</b>                                | <b>17</b> |
| <b>EXISTING CONDITIONS .....</b>                             | <b>20</b> |
| Land Use .....                                               | 20        |
| Roadway Conditions .....                                     | 20        |
| Traffic Volume Data .....                                    | 20        |
| <b>BASE CONDITION SCENARIO .....</b>                         | <b>22</b> |
| Traffic Growth .....                                         | 22        |
| Trip Generation.....                                         | 22        |
| Trip Distribution and Assignment.....                        | 24        |
| Traffic Analyses.....                                        | 25        |
| <b>PROPOSED MITIGATION FOR BASE CONDITION SCENARIO .....</b> | <b>37</b> |
| <b>CONCLUSION .....</b>                                      | <b>63</b> |

## FIGURES

|                                                                                                |    |
|------------------------------------------------------------------------------------------------|----|
| Figure 1: Study Area Map and Study Intersections (Western) .....                               | 15 |
| Figure 2: Study Area Map and Study Intersections (Downtown) .....                              | 16 |
| Figure 3: Overall Levels of Service for Base Scenario Condition (Saturday Peak Hour) .....     | 36 |
| Figure 4: Peconic Avenue one-way northbound and modification of the intersections of .....     | 40 |
| Figure 5: West Main Street at Court Street/Nugent Drive improvements (Mitigations 1 &2).....   | 41 |
| Figure 6: Roundabout Improvements (Mitigations 1 &2) .....                                     | 41 |
| Figure 7: Traffic Signals at E Main St at Riverside Drive and E Main St at Fishel Avenue ..... | 41 |
| Figure 8: Prohibit Southbound Left turns (E Main St at Riverside Drive (Mitigations 2)) .....  | 41 |
| Figure 9: Traffic Signal at East Main St at Ostrander Avenue (Mitigations 2) .....             | 45 |
| Figure 10: Overall Levels of Service for Mitigation 1 (Saturday Peak Hour) .....               | 61 |
| Figure 11: Overall Levels of Service for Mitigation 2 (Saturday Peak Hour) .....               | 62 |

## TABLES

|                                                                                               |    |
|-----------------------------------------------------------------------------------------------|----|
| Table 1: Seasonal Adjustment factors.....                                                     | 21 |
| Table 2: Trip Generation Projections.....                                                     | 23 |
| Table 3: Level of Service Summary – Base Condition Scenario (signalized Intersections) .....  | 27 |
| Table 4: Level of Service Summary – Base Condition Scenario (unsignalized Intersections)..... | 28 |
| Table 5: Mitigation Level of Service Summary –PM Peak Hour .....                              | 47 |
| Table 6: Mitigation Level of Service Summary –PM Peak Hour .....                              | 49 |
| Table 7: Mitigation Level of Service Summary –Saturday Peak Hour .....                        | 50 |
| Table 8: Mitigation Level of Service Summary –Saturday Peak Hour .....                        | 52 |

## APPENDIX

Appendix A: Traffic Data

Appendix B: Trip Generation

Appendix C: Level of Service Definitions

Appendix D: Capacity Analysis/Level of Service Worksheets & Summary Table

## EXECUTIVE SUMMARY

As part of its on-going TOD Growth Plan for the Town of Riverhead Peconic River/NYS Route 25 Corridor –BOA Step II Nomination “The Project”, The Town of Riverhead requested Nelson & Pope to conduct a Cumulative Traffic Impact Study for downtown Riverhead to identify any traffic impacts that will be created by the Base Condition Scenario and a preferred Build Out Scenario. This traffic report is based on the Base Condition Scenario described below:

The Base Condition Scenario represents traffic conditions expected at the study intersections in the future year 2016. This scenario provides the base assumptions that will be used for the alternative Redevelopment scenario. The Base Condition Scenario traffic volumes are based upon the following factors:

- Assumed 80% of current vacant uses within the downtown area are occupied by 2016.
- Increase in traffic due to general population growth and assumed other planned projects within and outside the study area are constructed and in operation by 2016.

Mitigation measures were developed based on a detailed assessment of the deficiencies associated with geometry, traffic control, signal operations, existing and future capacity limitations in this study area.

In executing the scope of work, Nelson & Pope undertook the following steps:

- Conducted a detailed field inventory of the study area.
- Collected turning movement counts at the study intersections during the weekday AM, Midday, PM and Saturday midday peak periods. From the review of the traffic data, it was determined that the weekday PM and Saturday midday peak hour volumes are higher than the weekday AM and weekday midday peak hours. Therefore, detailed analyses were only conducted for the weekday PM and Saturday midday peak hours.
- Additional hourly volume counts were collected on the study area roadway segments for a period of one week to supplement the turning movement counts.
- During the traffic data collection period, there were several vacant stores on West/East Main Street. In order to account for traffic that could be generated by these vacant stores,



the Institute of Transportation Engineering (ITE) Trip Generation Manual was utilized to estimate the number of trips based on the square footage and the use of the stores.

- Projections of the existing traffic volumes to obtain the 2016 traffic volumes (Base Condition Scenario) were made utilizing the following assumptions:
  - Assumed 80% of current vacant uses within the downtown area are occupied by 2016. The trips generated by 80% of the vacant uses were added to traffic data collected.
  - Increase in traffic due to general population growth (a 1.88% annual growth factor obtained from the New York State Department of Transportation (NYSDOT) Long Island Transportation Plan 2000 Study (LITP2000)) and other planned projects within and outside the study area are constructed and in operation by 2016.
- Conducted capacity analyses at the study intersections for the 2016 Base Condition Scenario. The analyses were conducted using the SYNCHRO version 8 software.
- Reviewed capacity analyses to identify intersection deficiencies.
- Developed realistically executable plans to improve the anticipated future geometric and/or traffic deficiencies in the project area.
- The developed plans were analyzed. The results of the analyses with and without the improvements were compared.

The following mitigation measures were identified and analyzed. Details of improvements at the impacted intersections can be found within the body of the report.

Mitigation 1 consists of the following proposed improvements:

1. Make Peconic Avenue a one-way roadway northbound with the provision for a southbound emergency lane.
2. Restripe the intersection of West Main Street at Peconic Avenue to provide two eastbound through lanes and two westbound through lanes. One of the westbound through lanes will drop just west of Griffing Avenue. The section of Main Street between

- Peconic Avenue and Roanoke Avenue will be restriped to provide two westbound through lanes and one eastbound through lane and one eastbound left turn lane.
3. Re-stripe the southbound approach at the intersection of West Main Street and Court Street to provide an additional lane.
  4. Install traffic signals at the intersections of East Main Street and Riverside Drive and East Main Street Fishel Avenue operating under one controller.
  5. Signal timing/phasing adjustments at the following intersections:
    - Main Street at Peconic Avenue/Roanoke Avenue
    - West Main Street at Court Street/Nugent Drive
    - East Main Street at McDermott Avenue
    - West Main Street at Griffing Avenue
  6. As part of the Suffolk County Roundabout project, redesign the one lane five-leg roundabout to a two lane five- leg roundabout with one –way northbound on Peconic Avenue.

With the aforementioned improvements proposed under Mitigation 1, the following assumptions were made:

- The current westbound left turn traffic volumes at the intersection of West Main Street and Peconic Avenue is a combination of some southbound Roanoke Avenue right turn traffic volume and some westbound through traffic volume at the intersection of West Main Street and Roanoke Avenue. To prohibit the westbound East Main Street left turn traffic and the eastbound West Main Street right turn traffic at Peconic Avenue and making Peconic Avenue one-way northbound the following was assumed:
  - 60% of the Roanoke Avenue right turn traffic will reroute to the intersection of Court Street and West Main Street via Railroad Avenue, Griffing Avenue and Court Street.
  - 20% of the West Main Street traffic originally heading east on NYS 24 via Peconic Avenue was rerouted to Riverside Drive. The rest of the West Main Street westbound traffic originally heading south via Peconic Avenue was rerouted to continue straight on West Main Street and will either make a



westbound left turn or continue straight at the intersection of West Main Street and Court Street/Nugent Drive.

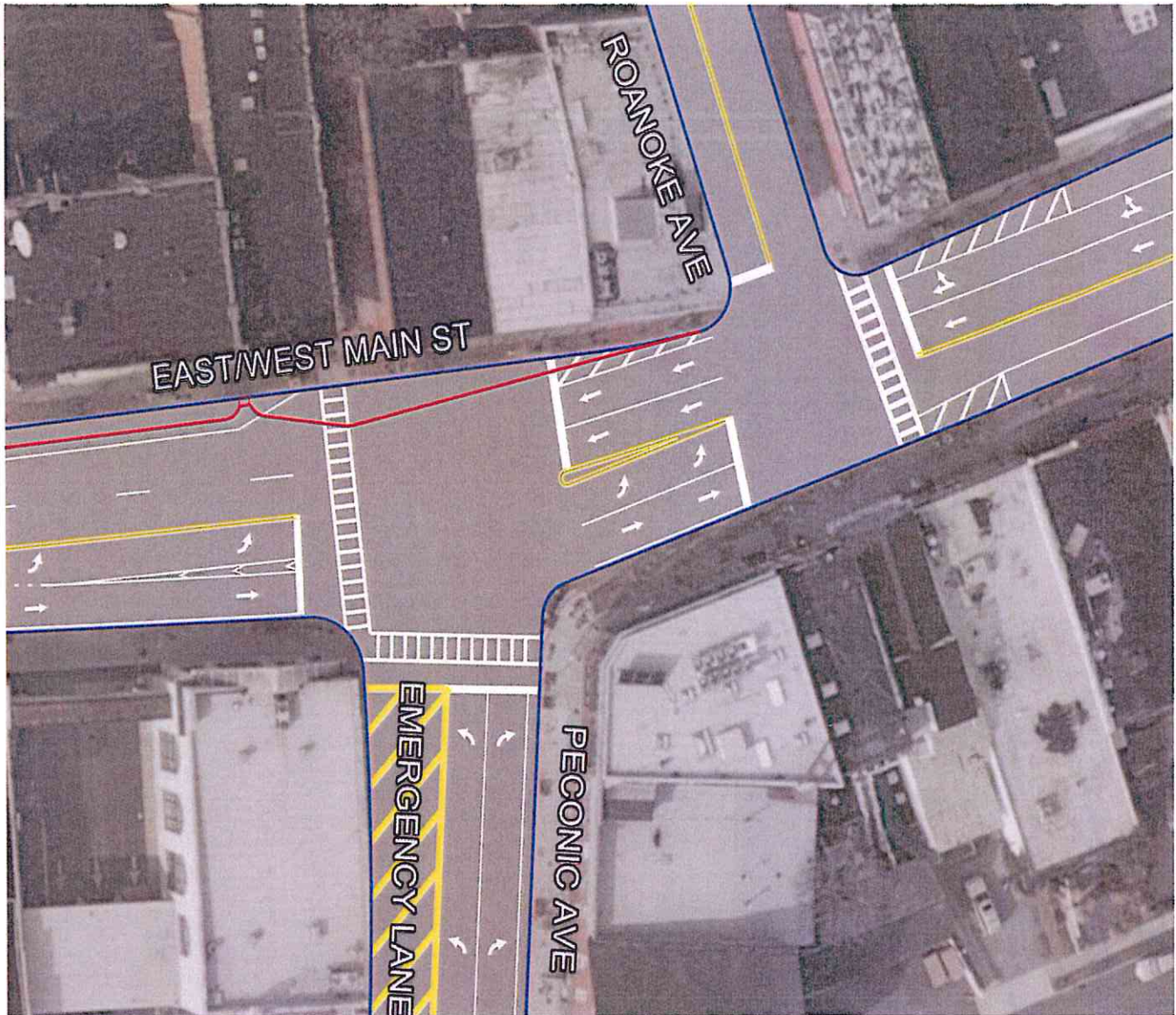
- The eastbound West Main Street right turn traffic at Peconic Avenue was rerouted to the intersection of West Main Street and Court Street/Nugent Drive.

Mitigation 2 consists of the following proposed improvements:

1. All the improvements under Mitigation 1 except item 4 (signalization of East Main Street at Riverside Drive and East Main St at Fishel Avenue).
2. Prohibit southbound left turns from East Main Street onto Riverside Drive. The left turn prohibition is to discourage some of the vehicles from using Riverside Drive whose original destination is eastbound NYS 24 via Peconic Avenue to travel west or south.
3. Some of the vehicles from Fishel Avenue whose destination is currently Riverside Drive will be rerouted to Ostrander Avenue, East Main Street and then to Riverside Avenue via a northbound right turn.
4. Install a traffic signal at the intersection of East Main Street at Ostrander Avenue.

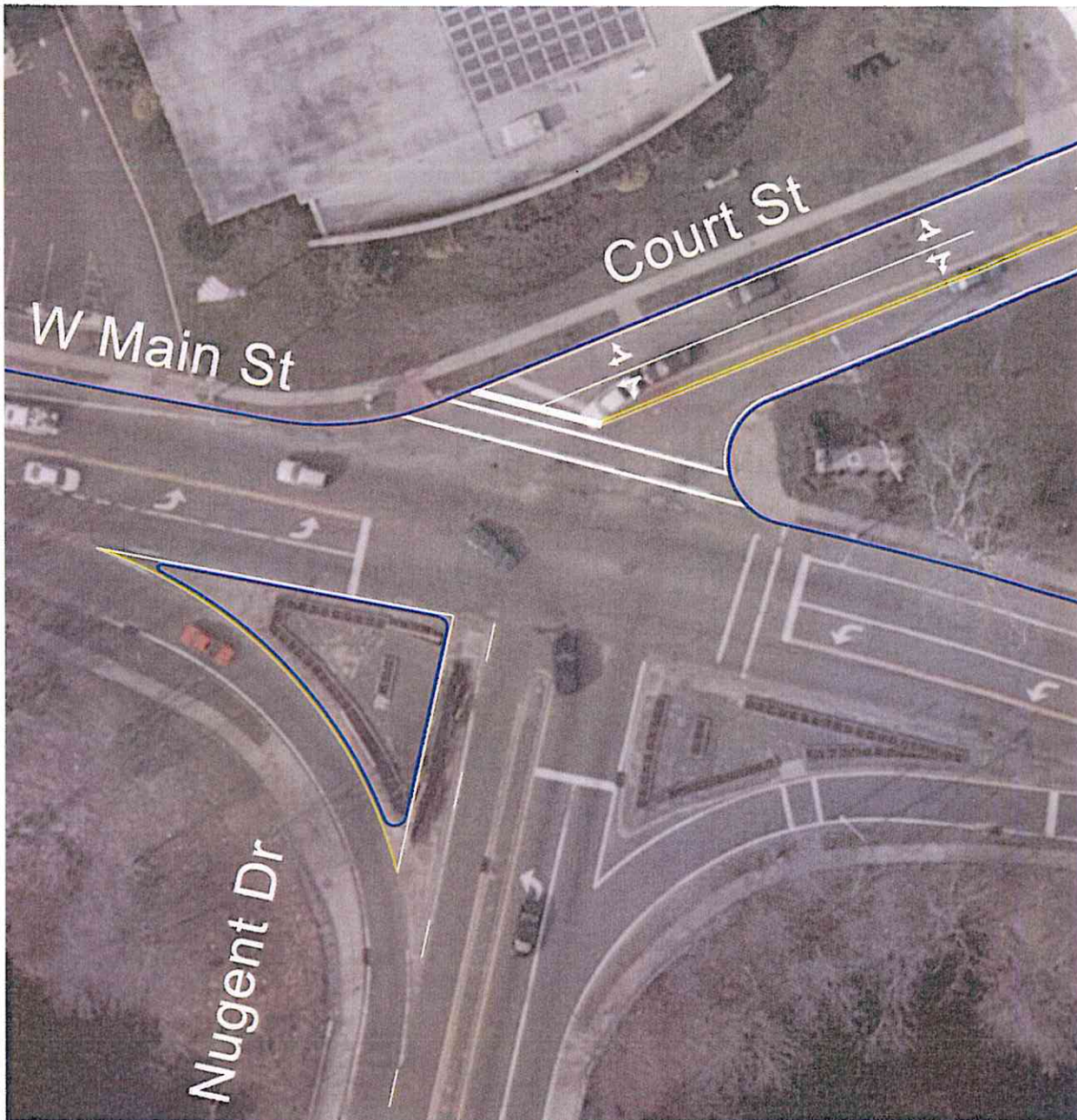
The following figures show the proposed improvements under Mitigation 1 and Mitigation 2.

**Peconic Avenue one-way northbound and modification of the intersections of  
West/East Main Street at Peconic Avenue/Roanoke Avenue (Mitigation 1 &2)**



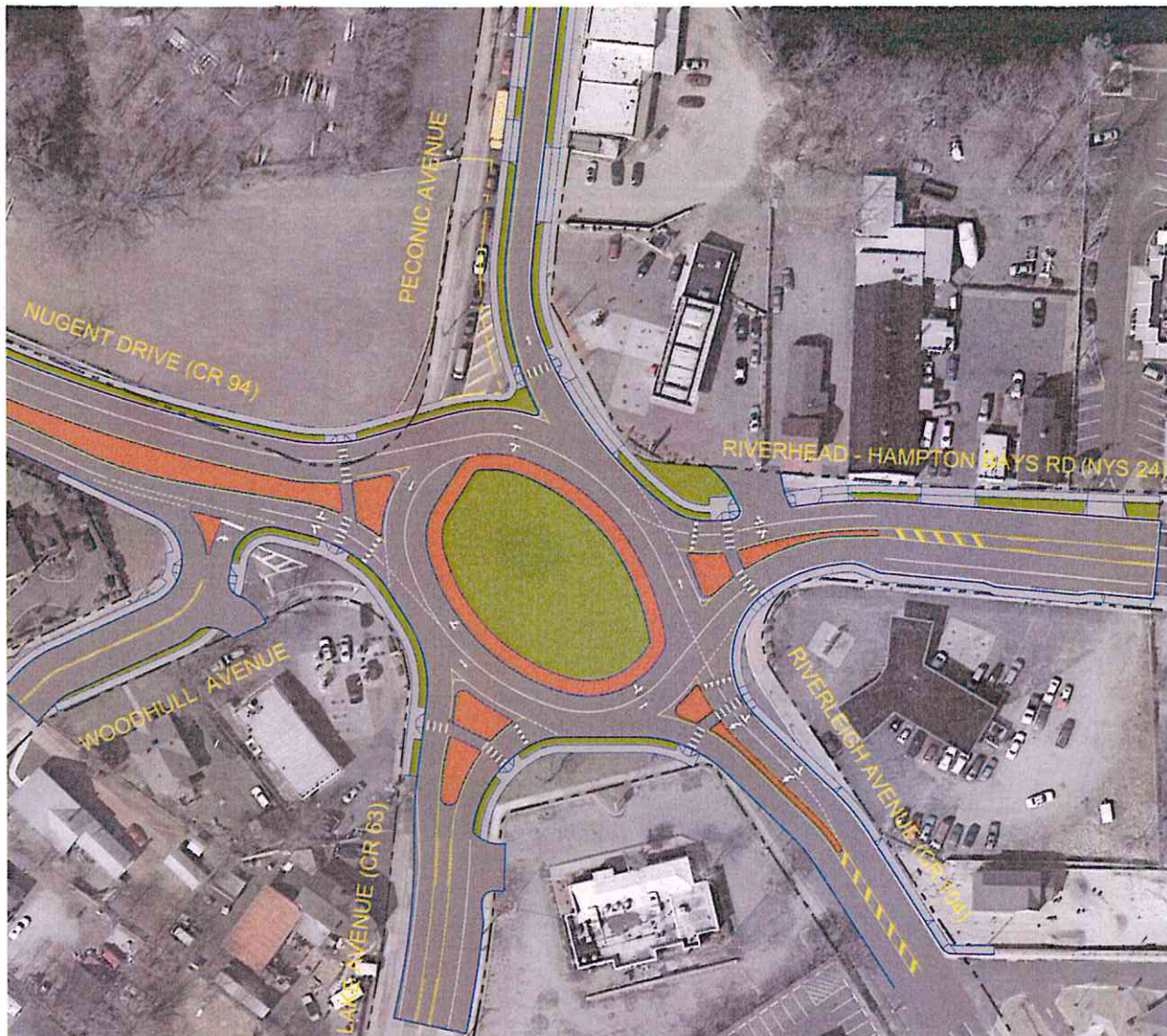


**West Main Street at Court Street/Nugent Drive improvements (Mitigations 1 &2)**





**Roundabout improvements (Mitigations 1 &2)**





**Traffic Signals at East Main St at Riverside Drive and East Main Street at Fishel Avenue  
operating under one controller (Mitigation 1)**

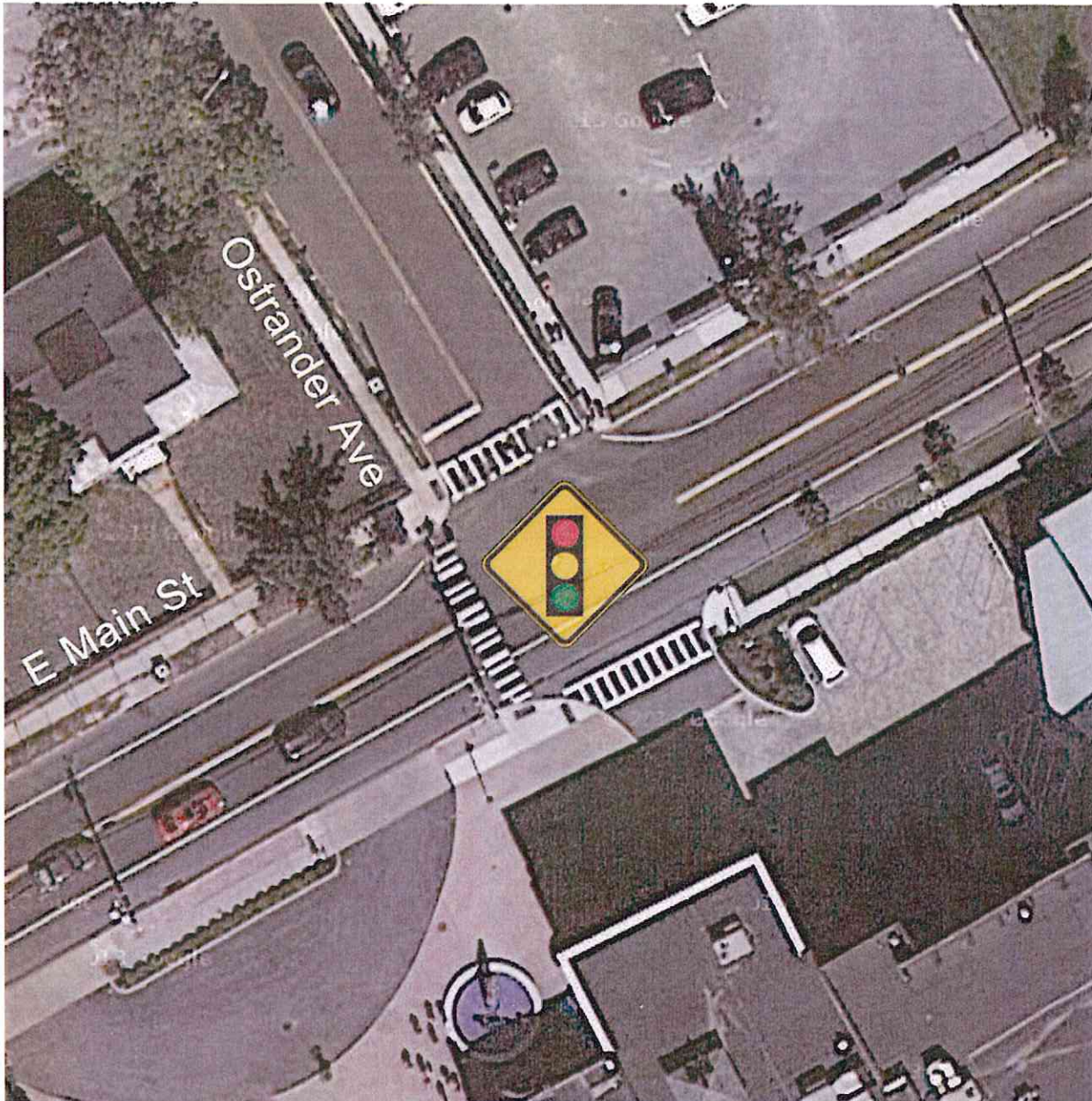


**Prohibit Southbound Left turns (East Main St at Riverside Drive (Mitigation 2))**





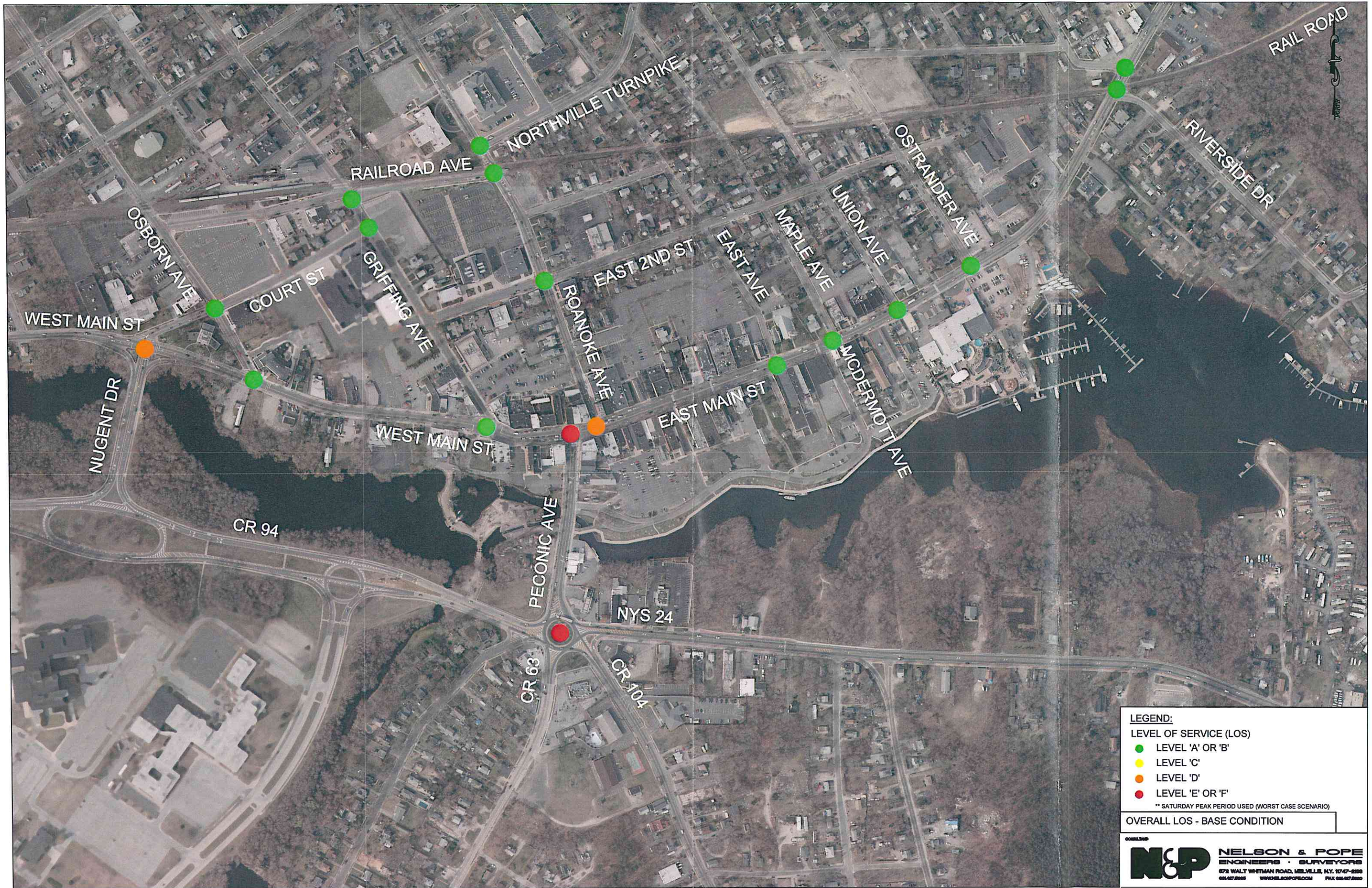
**Traffic Signal at East Main St at Ostrander Avenue (Mitigations 2)**



Based upon the results of the analyses, traffic and pedestrian flow can be improved with the implementation of the identified mitigation measures. The following figures show the overall LOS at the study intersection with and without the mitigations for the worst peak period (Saturday midday peak hour).

DRAFT



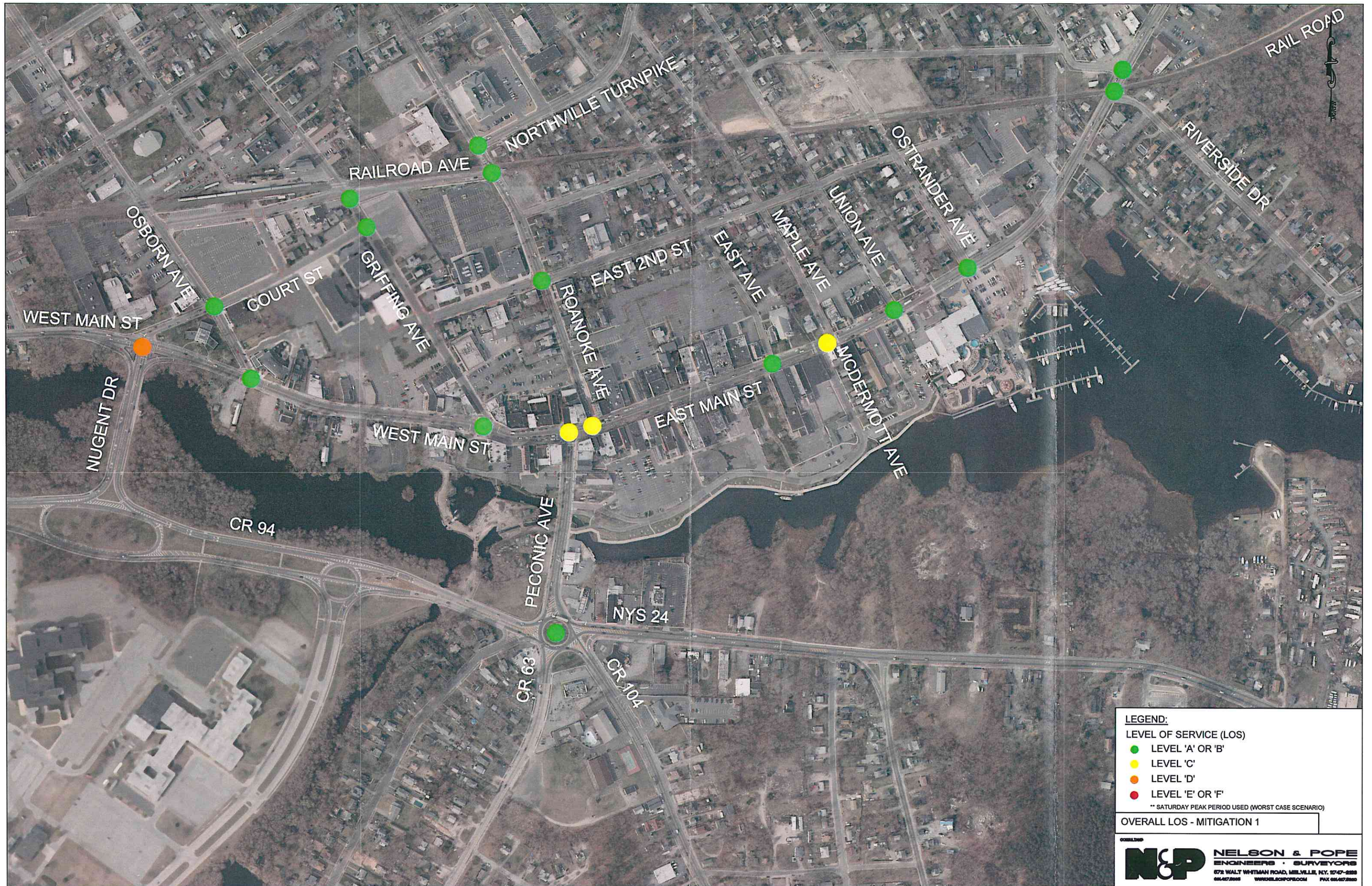


**LEGEND:**  
LEVEL OF SERVICE (LOS)  
● LEVEL 'A' OR 'B'  
● LEVEL 'C'  
● LEVEL 'D'  
● LEVEL 'E' OR 'F'  
\*\* SATURDAY PEAK PERIOD USED (WORST CASE SCENARIO)

OVERALL LOS - BASE CONDITION

**N&P** **NELSON & POPE**  
ENGINEERS • SURVEYORS  
678 WALT WHITMAN ROAD, MILLVILLE, NY, 10747-2388  
608.457.2888 WWW.NELSONPOPE.COM FAX 608.457.2880





**LEGEND:**  
LEVEL OF SERVICE (LOS)  
● LEVEL 'A' OR 'B'  
● LEVEL 'C'  
● LEVEL 'D'  
● LEVEL 'E' OR 'F'  
\*\* SATURDAY PEAK PERIOD USED (WORST CASE SCENARIO)

OVERALL LOS - MITIGATION 1

**N&P**  
NELSON & POPE  
ENGINEERS • SURVEYORS  
672 WALT WHITMAN ROAD, MELVILLE, N.Y. 11747-2888  
631.427.2888 WWW.NELSONPOPE.COM FAX 631.427.2880





**LEGEND:**  
LEVEL OF SERVICE (LOS)  
● LEVEL 'A' OR 'B'  
● LEVEL 'C'  
● LEVEL 'D'  
● LEVEL 'E' OR 'F'  
\*\* SATURDAY PEAK PERIOD USED (WORST CASE SCENARIO)

OVERALL LOS - MITIGATION 2

**N&P** NELSON & POPE  
ENGINEERS • SURVEYORS  
872 WALT WHITMAN ROAD, MELVILLE, N.Y. 11747-2188  
631.427.2800 WWW.NELSONPOPE.COM FAX 631.427.2800



## PURPOSE OF REPORT

As part of it's on-going TOD Growth Plan for the Town of Riverhead Peconic River/NYS Route 25 Corridor –BOA Step II Nomination “The Project”, The Town of Riverhead requested Nelson & Pope to conduct a Cumulative Traffic Impact Study for downtown Riverhead to identify any traffic impacts that will be created by the Base Condition Scenario and a preferred Build Out Scenario. This traffic report is based on the Base Condition Scenario described below:

The Base Condition Scenario represents traffic conditions expected at the study intersections in the future year 2016. This scenario provides the base assumptions that will be used for the alternative Redevelopment scenario. The Base Condition Scenario traffic volumes are estimated based on the following factors:

- Assumed 80% of current vacant uses within the downtown area are occupied by 2016.
- Increase in traffic due to general population growth and assumed other planned projects within and outside the study area are constructed and in operation by 2016.

The Town of Riverhead is located about 80 miles east of Manhattan, New York City, within Suffolk County on the east end of Long Island, generally at the split between the north and south forks of the island. Eastern Long Island, with its proximity to parks, beaches, vineyards, recreation and shopping is a popular tourist destination as well as a place of many second homes and/or vacation homes (most prevalent on the north and south forks). In spite of several attractions including a Tanger Outlet Mall, an aquarium, and many unique restaurants, the downtown area has been experiencing vacancies and lack of pedestrian activity on it's main streets.

The study area follows NYS Route 25 generally from the eastern end of the Long Island Expressway and the Peconic River into the historic downtown. The downtown is the historic County Seat but like many downtowns across the United States, Riverhead experienced a loss of residents and retail shops as well as many of the problems associated with a larger city. Since the 1970s, there have been many efforts to revitalize the area and planning studies prepared



(including the preparation of a blight study, and Urban Renewal Plan and updated Comprehensive Plan) which has resulted in new zoning districts to encourage development).

Due in part to these efforts, in more recent years the downtown area has been experiencing a renewal. The downtown now has several attractions including the Atlantis Aquarium, the Long Island Science Museum, a recently reopened performing arts theatre (which originally opened in the 1940s), and a new apartment building. The Town has created a riverwalk along a portion of the Peconic River, a new park on the waterfront with a community garden, and has made improvements to the infrastructure to enhance the setting along the river. In addition, the downtown has many historic buildings, is home to the Suffolk County NY State Supreme Courthouse, the Town Hall and Public Library, an abundance of unique restaurants (of varying cuisines and price levels), small independent shops, and professional office space. The Town has recently created a historic district (recognized by the National Register), attracted a Hyatt Hotel, and there are several new projects on Main Street being implemented.

However, there are still obstacles to overcome, including poor traffic circulation, a need to understand the market potential for economically sustainable uses, and the need to rebrand to overcome a negative image. However, this report is specific to a Transportation Growth Plan which identifies traffic circulation solutions, parking management strategies, transit and pedestrian enhancements.

This study evaluates the traffic impact associated with the Base Condition Scenario previously described. This Base Condition Scenario will result in the following changes over the next 3 years:

- an increase in residential, retail and restaurant uses
- an increase in open/green space and other public/institutional uses
- an increase in the Town of Riverhead population

These changes in land use and population will result in an increase in traffic on the roadways in the downtown area of the Town, and hence the need to conduct this traffic study to identify any



potential impacts by the increase in traffic and to develop executable measures to mitigate those impacts. Typical potential impacts include congestion, delay and traffic safety concerns.

This report summarizes the results of a detailed investigation of the traffic impacts associated with the Base Condition Scenario by reviewing the area's existing roadway characteristics and traffic conditions, estimating the vehicular volume and pattern that the this scenario will generate during peak hours, and analyzing the effect of the additional volume on the surrounding roadway network. The report also summarizes mitigation or improvements identified to accommodate future traffic.

The following figures show the study area map and study intersections investigated in this study.





**LEGEND:**



STUDY INTERSECTIONS

**FIGURE No. 1**



**NELSON & POPE**  
ENGINEERS • SURVEYORS  
678 WALT WHITMAN ROAD, MELVILLE, N.Y. 11767-2525  
631.424.1100 FAX 631.424.1101





**LEGEND:**

○ STUDY INTERSECTIONS

**FIGURE No. 2**

**N&P** **NELSON & POPE**  
ENGINEERS • SURVEYORS  
672 WALT WHITMAN ROAD, MELVILLE, N.Y. 11747-2288  
631.427.8000 WWW.NELSONPOPE.COM FAX 631.427.8000



## STUDY METHODOLOGY

This study assesses the traffic impacts associated with the Base Condition Scenario as previously described and identifies appropriate mitigation, where necessary. The following steps were undertaken in executing the scope of this study:

- A detailed field inspection was conducted to obtain an inventory of existing roadway geometry, location/geometry of existing intersections along with signing, signal timings and phasing, pedestrian accommodations, bike routes and existing transit facilities. Also documented were other traffic control devices including yield and stop signs, speed limits and crosswalks.
- Turning movement traffic counts were conducted on Thursday May 16, 2013 during the weekday morning (7AM to 9AM), weekday midday (12PM-2PM) and weekday evening (4PM to 6PM) peak periods and on Saturday May 18, 2013 from 11AM-2PM. The counts were conducted at the following intersections (study intersections – see Figures 1 and 2):
  - West Main Street (NYS 25) at River Road
  - West Main Street (NYS 25) at Tanger Mall Drive
  - West Main Street (NYS 25) at Kroemer Avenue/Forge Road
  - West Main Street (NTS 25) at Mill Road
  - West Main Street (NYS 25) at Nugent Drive/Court Street
  - West Main Street (NYS 25) at Osborne Avenue
  - West Main Street (NYS 25) at Griffing Avenue
  - West Main Street (NYS 25) at Peconic Avenue
  - East Main Street (NYS 25) at Roanoke Avenue (CR 73)
  - East Main Street (NYS 25) at Ostrander Avenue
  - East Main Street (NYS 25) at Riverside Drive
  - East Main Street (NYS 25) at Hubbard Avenue
  - Griffing Avenue at W 2<sup>nd</sup> Street
  - Griffing Avenue at Court Street



- Griffing Avenue at Railroad Avenue
- Roanoke Avenue at E 2<sup>nd</sup> Street
- Roanoke Avenue at Railroad Avenue/Northville Turnpike
- Turning movement count data within the files of Nelson & Pope and traffic studies recently conducted in the study area was obtained for the following locations:
  - CR94/CR104/CR 63/NYS 24/Peconic Avenue Traffic Circle
  - Court Street at Osborne Street
  - East Main Street (NYS 25) at East Avenue
  - East Main Street (NYS 25) at McDermott Avenue/Maple Avenue
  - East Main Street (NYS 25) at Union Avenue
- Automatic Traffic Recorder (ATR) machines were installed on the following roadways for a period of one (1) week (May 16<sup>th</sup> thru May 22<sup>nd</sup>, 2013) to obtain hourly volumes to supplement the turning movement counts:
  - West Main Street (NYS 25) west of Tanger Mall Driveway
  - West Main Street (NYS 25) just east of Kroemer Street
  - West Main Street (NYS 25) west of Nugent Drive
  - East Main Street (NYS 25) between Peconic Avenue and Roanoke Avenue
  - East Main Street (NYS 25) just east of Howell Street
- The turning movement counts were tabulated and peak hour factors computed. Adjustments for seasonal variations were evaluated. From the review of the traffic volumes, the PM and Saturday peak hour volumes were higher than the AM and Midday peak hours. Therefore traffic analyses were only conducted for the PM and Saturday peak periods.
- During the traffic data collection period, there were several vacant land uses within the study area. In order to account for traffic that could be generated by 80% of the vacant land uses, the Institute of Transportation Engineering (ITE) Trip Generation manual was utilized to estimate the number of trips based on the square footage and land use. These trips were added to traffic data collected to determine the existing traffic volumes if these vacant parcels were occupied.



- Information on other planned projects within the study area that may influence the operation of the study intersections were obtained from the various local and county departments and agencies. Traffic generated from these planned developments was obtained from traffic studies where available and data contained in the ITE Trip Generation Manual.
- The traffic volumes for the Base Condition Scenario ‘No Build Condition’ were estimated under the following assumptions:
  - Assumed a base year of 2016 (3 years). The 2013 existing traffic volumes as counted were adjusted to 2016 traffic conditions by applying a 1.88% annual growth factor obtained from the LITP 2000 Study for a period of 3 years.
  - Estimated traffic volumes for the vacant land uses were included (assuming 80% of the vacant parcels will be occupied by 2016).
  - Traffic volumes from other planned projects were included.
- Capacity analyses were performed at the study intersections identified above for the 2016 Base Condition Scenario for the weekday PM and Saturday midday peak hours since they represent the worst traffic conditions.
- The results of the analyses for the 2016 Base Condition Scenario were reviewed to identify locations with traffic issues.
- Recommendations to mitigate traffic impacts at the identified locations were developed and analyzed.



## EXISTING CONDITIONS

### Land Use

The existing land uses in the Downtown area of Riverhead are comprised of commercial (small local retail shops, specialty retail stores and restaurants), residential, recreational and institutional uses.

### Roadway Conditions

Since the traffic generated by the Base Conditions Scenario will be distributed throughout the roadway network, the following description outlines the existing roadway network. The general descriptions provided here refer only to the sections of the roadways that exist near the study area. It is noted that roadway cross-sections may vary further away from the study area but those are not a part of the study. The Average Annual Daily Traffic (AADT) is listed for each roadway where available.

The following is a list of major roadways within the study area:

**Main Street (NYS 25)** is an east/west NYSDOT roadway within the study area and runs through the downtown area of the Town of Riverhead. Within the Study area, Main Street provides one lane per travel direction. The posted speed limit on Main Street is 30 MPH within the Riverhead downtown area. The section of Main Street in the Downtown area has an average annual daily traffic (AADT) volume of approximately 12,500 vehicles per day (source: ATR Data collected by Nelson & Pope - 2013).

Sidewalks equipped with planters and decorative street lighting are provided on both sides of Main Street in the Downtown area. Pedestrian crossings are painted across Main Street and supplemented with pedestrian crossing signs. Midblock crossings are located in front of the Suffolk Theater south of East Avenue and in front of Town Hall north of Howell Avenue.

### Traffic Volume Data

Weekday turning movement counts were collected at the study intersections on Thursday May 16, 2013 during the weekday morning (7AM to 9AM), weekday midday (12PM-2PM) and weekday evening (4PM to 6PM) peak periods and on Saturday May 18, 2013 from 11AM-2PM.



Weekday and weekend seasonal adjustment factors for May (month of the counts) and for the peak month of the year (June) were obtained from data contained in the 2012 NYSDOT Traffic Data Report and compared. The following table summarizes the seasonal adjustment factor comparison:

**Table 1: Seasonal Adjustment factors**

| Month                | Seasonal Adjustment factor |         |
|----------------------|----------------------------|---------|
|                      | Weekday                    | Weekend |
| May (Month of Count) | 1.086                      | 0.935   |
| June (highest month) | 1.113                      | 0.992   |
| Percent change       | 2.5%                       | 6.1%    |

From the review of Table 1 above, it can be seen that the traffic from the peak month of the year (June) is approximately 2.5% and 6.1% higher than in May during weekdays and weekends respectively. Hence, the May traffic data was adjusted by these percentages to reflect traffic from the peak month of the year. The adjusted traffic volumes were utilized in the analyses and are contained in Appendix A.



## BASE CONDITION SCENARIO

The Base Condition Scenario as previously described represents traffic conditions expected at the study intersections in the future year 2016. The Base Condition Scenario traffic volumes are estimated based on the following factors:

- Assumed 80% of current vacant uses within the downtown area are occupied by 2016.
- Increase in traffic due to general population growth and assume other planned projects within and outside the study area are constructed and in operation by 2016.

### Traffic Growth

Based on the New York State Department of Transportation (NYSDOT) Long Island Transportation Plan 2000 Study (LITP2000), the Town of Riverhead was envisioned to experience an annual traffic growth of 1.88%. Based on this NYSDOT annual growth factor of 1.88%, the traffic volumes in the Town of Riverhead will increase by 5.64% over a 3 year period (2016).

### Trip Generation

In order to identify the impacts of the Base Condition Scenario on the adjacent street system in the Town of Riverhead, it is necessary to estimate the magnitude of the traffic volume generated during the peak hours and to estimate the directional distribution of the estimated traffic from the other planned projects within and outside the study area and the vacant uses within the study area. The trip generation estimates for the Base Condition Scenario were prepared utilizing data found under Land Use Codes within the Institute of Transportation Engineers' (ITE) publication, *Trip Generation, 9th Edition* that will closely match the uses proposed and data contained in any traffic studies conducted for these projects. Generally, Land Use Codes contained in the ITE trip generation manual for restaurants, retail uses, office and residential uses were utilized. For some retail and restaurant sites, average rates were calculated from a combination of retail and restaurant rates in ITE to develop a more representative rate for what could be constructed on the site. A table containing the ITE Land Use Codes utilized in the study is contained in Appendix B.

It should be noted that the trip generation data contained in the ITE Trip Generation Handbook is collected at single use/freestanding sites and does not take into account interaction between



different uses in close proximity to each other. However a very high percentage of trips made to retail, restaurants and residential uses in close proximity to each other are linked. That is to say not all trips to retail and restaurant uses are new trips, some of the trips utilizing the new retail uses may have originated from the new restaurant or residential uses and vice-versa. For example a significant percentage of trips that are made by shoppers also result in secondary trips to nearby restaurants for lunch, dinner, coffee, etc. Therefore, this overlap needs to be factored into the trip generation estimation. Internal credits for these types of uses in accordance with ITE guidelines could be higher than 30%. However, to perform a conservative analysis a 20% internal credit was utilized.

It should also be noted that, according to studies conducted by the ITE, traffic associated with commercial uses is not 100% newly generated; a significant portion of these trips will be “pass-by” traffic. Therefore, we have applied passby credits for the retail uses in accordance with ITE guidelines.

The following Table summarizes the trip generation estimated from ITE for the Base Condition Scenario after taking credit for internal trips and passby trips.

**Table 2: Trip Generation Projections**

| Time Period                | Distribution | Base Condition scenario |
|----------------------------|--------------|-------------------------|
| Weekday PM Peak Hour       | Enter        | 377                     |
|                            | Exit         | 313                     |
|                            | Total        | <b>690</b>              |
| Weekday Saturday Peak Hour | Enter        | 415                     |
|                            | Exit         | 390                     |
|                            | Total        | <b>805</b>              |

*Source: Trip Generation, 9<sup>th</sup> Edition, published by ITE*

As can be seen from Table 2 above, the Base Condition Scenario is projected to generate approximately 690 trips (377 entering and 313 exiting the downtown area) during the weekday PM peak hour and approximately 805 trips (415 entering and 390 exiting the downtown area) during the Saturday midday peak hour.



### **Trip Distribution and Assignment**

The traffic expected to be generated by the Base Condition Scenario during the peak hours was distributed and assigned to each intersection movement based on existing roadway volumes and travel patterns. The nature of the land uses and their associated travel patterns were considered as well. The estimated trips generated by the Base Condition Scenario were then added to the weekday PM and Saturday 2016 volumes (2013 volumes adjusted for a three year period using growth factor) to generate the 2016 Base Condition Scenario volumes. The Base Condition volumes are contained in Appendix A.

DRAFT



## Traffic Analyses

In order to identify the operational characteristics of the study intersections, level of service, and capacity analyses were performed using the *SYNCHRO Version 8* Software. *SYNCHRO*, in conjunction with *SimTraffic*, is a software package that allows for an interactive analysis of a single intersection or a network of intersections and can also be used for modeling and optimizing traffic signal timings. The *SimTraffic* component provides simulations of operations with animation features. *SYNCHRO* implements the Intersection Capacity Utilization (ICU) 2003 method for determining intersection capacity. This method compares the current volume to the intersections ultimate capacity. *SYNCHRO* also implements the methods of the *2010 Highway Capacity Manual (HCM)* for urban streets, signalized intersections, and unsignalized intersections for determining intersection capacity analyses. The *HCM* contains procedures and methodologies for estimating capacity and determining level of service for many transportation facilities and modes including signalized and unsignalized intersections.

An intersection's level of service (LOS) describes its' quality of traffic flow. It ranges in grade from LOS "A" (relatively congestion-free) to LOS "F" (very congested). The level of service definitions and threshold values for each level vary according to the type of control utilized at that intersection. A brief description is given here and a more detailed definition can be found in Appendix C.

The capacity of a signalized intersection is evaluated in terms of the ratio of demand flow rate to capacity (V/C ratio). The capacity for each approach represents the maximum rate of flow (for the subject approach) which may pass through the intersection under prevailing traffic, roadway and signal conditions. The level of service of a signalized intersection is evaluated on the basis of average control-delay measured in seconds per vehicle (sec/veh). The control-delay is calculated using an equation that combines the stopped-delay with the vehicle acceleration/deceleration delay that is caused by the signalized intersection. At the signalized intersections, factors that affect the various approach capacities include width of approach, number of lanes, signal "green time", turning percentages, truck volumes, etc. However, delay cannot be related to capacity in a simple one-to-one fashion. For example, it is possible to have delays in the LOS "F" range without exceeding roadway capacity. Substantial delays can exist



without exceeding capacity if one or more of the following conditions exist: long signal cycle length; a particular traffic movement experiences a long red time; or progressive movements for a particular lane are poor.

The flow at a two-way stop-controlled (TWSC) intersection is gauged in terms of LOS and capacity. The capacity of a stop-controlled leg is based on the distribution of gaps in the major street traffic, driver judgment in selecting a gap, and the follow-up time required by each driver in a queue. The LOS for a TWSC intersection is determined by the control-delay, and is defined for each movement rather than for the overall intersection. As with signalized intersections, HCS quantifies only the average control-delay, which is a function of the approach and the degree of saturation for any particular minor movement.

The six classes of LOS, ranging from LOS A (best) to F (worst), are defined in Appendix D.

The following tables summarized the results of the capacity analyses for the Base Condition Scenario.



**Table 3: Level of Service Summary – Base Condition Scenario (signalized Intersections)**

| Signalized Intersection                                 | Approach       | Movement | PM Peak Hour |              | Saturday Midday Peak Hour |              |
|---------------------------------------------------------|----------------|----------|--------------|--------------|---------------------------|--------------|
|                                                         |                |          | LOS          | Delay (sec.) | LOS                       | Delay (sec.) |
| Nugent St/Court St & West Main St                       | EB             | L        | B            | 18.1         | C                         | 21.4         |
|                                                         |                | T        | B            | 20.0         | C                         | 27.2         |
|                                                         |                | R        | A            | 4.0          | A                         | 4.8          |
|                                                         | WB             | L        | D            | 41.6         | C                         | 29.3         |
|                                                         |                | TR       | C            | 22.4         | C                         | 28.0         |
|                                                         | NB             | L        | E            | 64.2         | F                         | 114.2        |
|                                                         |                | T        | B            | 11.7         | B                         | 11.1         |
|                                                         |                | R        | A            | 0.1          | A                         | 0.1          |
|                                                         | SB             | LTR      | F            | 149.9        | C                         | 31.4         |
|                                                         | <b>Overall</b> |          | <b>D</b>     | <b>46.8</b>  | <b>D</b>                  | <b>39.5</b>  |
| Osborn Ave & West Main St                               | EB             | LT       | A            | 6.1          | A                         | 8.8          |
|                                                         | WB             | TR       | A            | 8.0          | A                         | 8.7          |
|                                                         | SB             | LR       | D            | 37.1         | D                         | 38.9         |
|                                                         | <b>Overall</b> |          | <b>B</b>     | <b>10.2</b>  | <b>B</b>                  | <b>12.5</b>  |
| Griffing Ave & West Main St                             | EB             | LT       | B            | 13.4         | B                         | 18.0         |
|                                                         | WB             | TR       | B            | 15.3         | B                         | 14.9         |
|                                                         | SB             | LR       | B            | 10.9         | B                         | 11.4         |
|                                                         | <b>Overall</b> |          | <b>B</b>     | <b>13.9</b>  | <b>B</b>                  | <b>15.8</b>  |
| Peconic Ave & West Main St                              | EB             | T        | F            | 118.7        | F                         | 134.7        |
|                                                         |                | R        | C            | 30.1         | D                         | 37.4         |
|                                                         | WB             | L        | E            | 73.9         | F                         | 121.8        |
|                                                         |                | T        | A            | 4.1          | A                         | 4.3          |
|                                                         | NB             | L        | F            | 96.5         | F                         | 103.4        |
|                                                         |                | R        | C            | 28.9         | C                         | 29.4         |
|                                                         | <b>Overall</b> |          | <b>D</b>     | <b>54.4</b>  | <b>E</b>                  | <b>71.2</b>  |
| Roanoke Ave & East Main St                              | EB             | L        | A            | 8.1          | C                         | 20.9         |
|                                                         |                | T        | A            | 3.8          | A                         | 8.1          |
|                                                         | WB             | TR       | E            | 65.8         | F                         | 114.5        |
|                                                         | SB             | R        | D            | 43.3         | D                         | 43.4         |
|                                                         | <b>Overall</b> |          | <b>C</b>     | <b>32.2</b>  | <b>D</b>                  | <b>51.8</b>  |
| McDermott Ave/Maple Ave & East Main St                  | EB             | LTR      | A            | 6.1          | A                         | 9.4          |
|                                                         | WB             | LTR      | A            | 5.9          | A                         | 7.7          |
|                                                         | NB             | LTR      | C            | 26.5         | D                         | 41.7         |
|                                                         | SB             | LTR      | D            | 41.0         | D                         | 38.8         |
|                                                         | <b>Overall</b> |          | <b>A</b>     | <b>10.0</b>  | <b>B</b>                  | <b>14.5</b>  |
| Roanoke Ave & W 2 <sup>nd</sup> St/E 2 <sup>nd</sup> St | EB             | LTR      | B            | 18.0         | B                         | 16.8         |
|                                                         | WB             | LTR      | B            | 18.5         | B                         | 14.8         |
|                                                         | NB             | LTR      | A            | 6.2          | A                         | 5.5          |
|                                                         | SB             | LTR      | A            | 6.8          | A                         | 5.5          |
|                                                         | <b>Overall</b> |          | <b>B</b>     | <b>10.0</b>  | <b>A</b>                  | <b>7.9</b>   |
| Roanoke Ave & Railroad St                               | WB             | LR       | D            | 36.5         | C                         | 33.3         |
|                                                         | NB             | TR       | C            | 24.2         | C                         | 25.2         |
|                                                         | SB             | LT       | A            | 1.3          | A                         | 1.0          |
|                                                         | <b>Overall</b> |          | <b>B</b>     | <b>14.8</b>  | <b>B</b>                  | <b>14.1</b>  |
| Roanoke Ave & Northville Tpke                           | WB             | LR       | C            | 26.0         | C                         | 23.6         |
|                                                         | NB             | T        | A            | 1.8          | A                         | 0.9          |
|                                                         |                | R        | A            | 0.1          | A                         | 0.1          |
|                                                         | SB             | LT       | C            | 22.6         | C                         | 22.0         |
|                                                         | <b>Overall</b> |          | <b>B</b>     | <b>13.8</b>  | <b>B</b>                  | <b>12.3</b>  |
| Osborn Ave & Court St                                   | EB             | LTR      | A            | 7.3          | A                         | 7.2          |
|                                                         | WB             | LTR      | A            | 6.5          | A                         | 5.9          |
|                                                         | NB             | LTR      | B            | 14.9         | B                         | 14.8         |
|                                                         | SB             | LTR      | B            | 15.7         | B                         | 19.3         |
|                                                         | <b>Overall</b> |          | <b>B</b>     | <b>10.8</b>  | <b>B</b>                  | <b>13.1</b>  |

**Table 4: Level of Service Summary – Base Condition Scenario (unsignalized Intersections)**

| Unsignalized Intersection                       | Approach    | Movement | PM Peak Hour |              | Saturday Midday Peak Hour |              |
|-------------------------------------------------|-------------|----------|--------------|--------------|---------------------------|--------------|
|                                                 |             |          | LOS          | Delay (sec.) | LOS                       | Delay (sec.) |
| East Ave & East Main St                         | EB          | LT       | A            | 2.6          | A                         | 2.6          |
|                                                 | SB          | LR       | D            | 27.1         | E                         | 42.4         |
| Union Ave/Parking Lot & East Main St            | EB          | LTR      | A            | 0.7          | A                         | 0.7          |
|                                                 | WB          | LTR      | A            | 0.8          | A                         | 0.8          |
|                                                 | NB          | LTR      | D            | 29.9         | D                         | 25.3         |
|                                                 | SB          | LTR      | E            | 47.5         | E                         | 45.7         |
| Ostrander Ave & East Main St                    | EB          | LTR      | A            | 1.5          | A                         | 2.4          |
|                                                 | WB          | LTR      | A            | 0.2          | A                         | 0.2          |
|                                                 | NB          | LTR      | A            | 0.0          | A                         | 0.0          |
|                                                 | SB          | LTR      | F            | 114.0        | F                         | 115.0        |
| Riverside Dr & East Main St                     | WB          | LR       | F            | 279.2        | F                         | 70.0         |
|                                                 | SB          | LT       | A            | 4.8          | A                         | 4.0          |
| Fishel Ave & East Main St                       | WB          | LR       | E            | 47.6         | D                         | 27.3         |
|                                                 | NB          | LT       | A            | 4.3          | A                         | 2.3          |
| Hubbard Ave & East Main St                      | EB          | LR       | F            | 58.3         | F                         | 125.5        |
|                                                 | SB          | LT       | A            | 1.6          | A                         | 1.9          |
| Griffing Ave & Parking Lot/W 2 <sup>nd</sup> St | EB          | LTR      | B            | 14.0         | B                         | 11.8         |
|                                                 | WB          | LTR      | B            | 12.8         | B                         | 10.4         |
|                                                 | NB          | LTR      | A            | 0.0          | A                         | 0.0          |
|                                                 | SB          | LTR      | A            | 2.6          | A                         | 1.7          |
| Griffing Ave & Court St                         | EB          | LR       | C            | 15.9         | B                         | 11.6         |
|                                                 | NB          | LT       | A            | 3.5          | A                         | 1.7          |
| Griffing Ave & Railroad St                      | EB          | LTR      | B            | 10.1         | A                         | 8.5          |
|                                                 | WB          | LTR      | B            | 10.2         | A                         | 8.7          |
|                                                 | NB          | LTR      | B            | 11.5         | A                         | 9.2          |
|                                                 | SB          | LTR      | B            | 11.0         | A                         | 8.8          |
| Peconic Ave & Parking Lot                       | WB          | L        | D            | 31.0         | E                         | 35.4         |
|                                                 |             | R        | B            | 12.2         | B                         | 13.3         |
|                                                 | SB          | LT       | A            | 1.6          | A                         | 0.5          |
| Roundabout                                      | Peconic Ave |          | F            | 454.5        | F                         | 292.5        |
|                                                 | CR 94       |          | E            | 36.3         | F                         | 505.2        |
|                                                 | CR 63       |          | E            | 40.7         | B                         | 12.1         |
|                                                 | CR 104      |          | F            | 167.9        | C                         | 16.0         |
|                                                 | NYS 24      |          | F            | 326.7        | F                         | 446.9        |
|                                                 | Overall     |          | F            | 235.8        | F                         | 319.2        |

*West Main Street at Nugent Drive/Court Street*

The intersection of West Main Street at Nugent Drive/Court Street is a four leg intersection controlled by a traffic signal. The eastbound and northbound approaches provide one left turn lane, one through lane and one right turn lane. The westbound approach provides one left turn lane and one shared through/right turn lane and the southbound approach provides one lane for left turns, through and right turn movements.



Under the Base Condition Scenario, the eastbound and westbound West Main Street approaches operate at LOS D or better during both the weekday PM and Saturday midday peak hours. The northbound Nugent Drive left turn movement operates at LOS E and F during the weekday PM and Saturday midday peak hours respectively. The northbound through and right turn movements operate at LOS B or better. The southbound Court Street approach operates at LOS F during the weekday PM peak hour and at LOS C during the Saturday midday peak hour. Overall, the intersection of West Main Street at Nugent Drive/Court Street operates at LOS D during the weekday PM and Saturday midday peak hours.

#### West Main Street at Osborn Avenue

The intersection of West Main Street at Osborn Avenue is a three leg intersection controlled by a traffic signal. All the approaches to the intersection provide one lane for all traffic movements.

Under the Base Condition Scenario, the eastbound and westbound West Main Street approaches operate at LOS A during both the weekday PM and Saturday midday peak hours. The southbound Osborn Avenue approach operates at LOS D during both the weekday PM and Saturday midday peak hours. Overall, the intersection of West Main Street at Osborn Avenue operates at LOS B during the weekday PM and Saturday midday peak hours.

#### West Main Street at Griffing Avenue

The intersection of West Main Street at Griffing Avenue is a three leg intersection controlled by a traffic signal. All the approaches to the intersection provide one lane for all traffic movements.

Under the Base Condition Scenario, all the approach movements to this intersection operate at LOS B during both the weekday PM and Saturday midday peak hours. Overall, the intersection of West Main Street at Griffing Avenue operates at LOS B during the weekday PM and Saturday midday peak hours.

#### Main Street at Peconic Avenue/Roanoke Avenue

The intersections of West Main Street at Peconic Avenue and East Main Street at Roanoke Avenue are approximately 55 feet apart as measured between stop lines. The distance between the two intersections provides one westbound through lane, one westbound left turn lane and a

22-foot wide eastbound lane that currently operates as a separate eastbound left turn lane and an eastbound through lane. These two left turn lanes provide storage for two cars each. These two intersections are controlled by two traffic signals operating under the same controller.

Under the Base Condition Scenario, the eastbound West Main Street through movement at Peconic Avenue and the northbound Peconic Avenue left turn movement operate at LOS F during both the weekday PM and Saturday midday peak hours. The Westbound East Main Street left turn movement at Peconic Avenue operates at LOS E and F during the weekday PM and Saturday midday peak hours respectively. The westbound West Main Street approach at Roanoke Avenue operates at LOS E and F during the weekday PM and Saturday midday peak hours, the rest of the traffic movements operate at LOS D or better during the weekday PM and Saturday midday peak hours. Overall, the intersection of West Main Street at Peconic Avenue operates at LOS D and E during the weekday PM and Saturday midday peak hours and the intersection of East Main Street at Roanoke Avenue operates at overall LOS C and D during the weekday PM and Saturday midday peak hours.

#### East Main Street at East Avenue

East Avenue intersects East Main Street to form the Stop controlled leg of a T-intersection. Each approach to this intersection provides one lane for all turning movements.

Under the Base Condition Scenario, the eastbound East Main Street approach operates at LOS A and the southbound East Avenue approach operates at LOS D and E during the weekday PM and Saturday midday peak hours respectively.

#### East Main Street at McDermott Avenue/Maple Avenue

The northbound McDermott Avenue leg and southbound Maple Avenue leg at this intersection are slightly offset from each other (approximately 20 feet) with each approach providing one lane for all traffic movements. The intersection is controlled by a two phase traffic signal.

Under the Base Condition Scenario, all the approach movements to this intersection operate at LOS D or better during both the weekday PM and Saturday midday peak hours. Overall, the



intersection of East Main Street at McDermott Ave/Maple Avenue operates at LOS B during the weekday PM peak hour and at LOS A during the Saturday midday peak hours.

*East Main Street at Union Avenue/Parking Lot access*

Union Avenue/Parking Lot access intersects East Main Street to form a four leg intersection with the Union Avenue and Parking Lot access approaches under Stop Control. Each approach to this intersection provides one lane for all turning movements.

Under the Base Condition Scenario, the eastbound and westbound East Main Street approaches operate at LOS A. The northbound parking lot approach operates at LOS D and the southbound Union Avenue approach operates at LOS E during both the weekday PM and Saturday midday peak hours. It is not unexpected to see results of LOS D, E or F for traffic at the stop-controlled approach of an unsignalized intersection with a major roadway. The availability of gaps in the traffic on the major roadway determines the level of delay that is assigned to the stop-controlled traffic. Higher volumes along major roadways result in fewer available gaps.

*East Main Street at Ostrander Avenue/Hotel Access*

Ostrander Avenue/Hotel Access intersects East Main Street to form a four leg intersection with the Ostrander Avenue approach under Stop Control. Each approach to this intersection provides one lane for all turning movements.

Under the Base Condition Scenario, the eastbound and westbound East Main Street approaches operate at LOS A. The southbound Ostrander Avenue approach operates at LOS F during both the weekday PM and Saturday midday peak hours. It is not unexpected to see results of LOS D, E or F for traffic at the stop-controlled approach of an unsignalized intersection with a major roadway. The availability of gaps in the traffic on the major roadway determines the level of delay that is assigned to the stop-controlled traffic. Higher volumes along major roadways result in fewer available gaps.

*East Main Street at Riverside Drive*

Riverside Drive intersects East Main Street to form the Stop controlled leg of a T-intersection. Each approach to this intersection provides one lane for all turning movements.

Under the Base Condition Scenario, the southbound East Main Street approach operates at LOS A and the westbound Riverside Drive approach operates at LOS F during the weekday PM and Saturday midday peak hours.

*East Main Street at Fishel Avenue*

Fishel Avenue intersects East Main Street just north of the LIRR tracks to form the Stop Controlled leg of a T-intersection. Each approach to this intersection provides one lane for all turning movements.

Under the Base Condition Scenario, the northbound East Main Street approach operates at LOS A and the eastbound Fishel Avenue approach operates at LOS E and D during the weekday PM and Saturday midday peak hours respectively.

*East Main Street at Hubbard Avenue*

Hubbard Avenue intersects East Main Street to form the Stop Controlled leg of a T-intersection. Each approach to this intersection provides one lane for all turning movements.

Under the Base Condition Scenario, the southbound East Main Street approach operates at LOS A and the westbound Hubbard Avenue approach operates at LOS F during the weekday PM and Saturday midday peak hours.

*Peconic Avenue at Parking Lot Access*

The parking lot access intersects Peconic Avenue to form the Stop Controlled leg of a T-intersection. Peconic Avenue provides one lane per travel direction with a two-way left turn lane. The westbound parking lot access provides one left turn lane and one right turn lane.

Under the Base Condition Scenario, the southbound Peconic Avenue approach operates at LOS A. The westbound Parking lot access left turn movement operates at LOS D and E during the weekday PM and Saturday midday peak hours respectively. The westbound right turn movement operates at LOS B during the weekday PM and Saturday midday peak hours.



Griffing Avenue at W 2<sup>nd</sup> Street/Parking Lot

W 2<sup>nd</sup> Street/Parking Lot intersects Griffing Avenue to form a four leg intersection with the W 2<sup>nd</sup> Street and Parking Lot access approaches under Stop control. Each approach to this intersection provides one lane for all turning movements.

Under the Base Condition Scenario, all the approach movements to this intersection operate at LOS B or better during both the PM and Saturday midday peak hours.

Griffing Avenue at Court Street

Court Street intersects Griffing Avenue to form the Stop controlled leg of a T-intersection. Each approach to this intersection provides one lane for all turning movements.

Under the Base Condition Scenario, all the approach movements to this intersection operate at LOS C or better during both the PM and Saturday midday peak hours.

Griffing Avenue at Railroad Avenue

Railroad Avenue intersects Griffing Avenue to form a four leg all-way stop controlled intersection. Each approach to this intersection provides one lane for all turning movements.

Under the Base Condition Scenario, all the approach movements to this intersection operate at LOS B or better during both the PM and Saturday midday peak hours.

Roanoke Avenue at E 2<sup>nd</sup> Street

The intersection of Roanoke Avenue at E 2<sup>nd</sup> Street is a four leg intersection controlled by a traffic signal. Each approach to this intersection provides one lane for all turning movements.

Under the Base Condition Scenario, all the approach movements to this intersection operate at LOS B or better during both the PM and Saturday midday peak hours. Overall, the intersection of Roanoke Avenue at E 2<sup>nd</sup> Street operates at LOS B and A during the weekday PM and Saturday midday peak hours respectively.

Roanoke Avenue at Railroad Avenue/Northville Turnpike

The intersections of Roanoke Avenue at Railroad Avenue and Roanoke Avenue at Northville Turnpike are approximately 50 feet apart as measured between stop lines. The distance between

the two intersections provides one northbound lane and one southbound lane. These two intersections are controlled by two traffic signals operating under the same controller.

Under the Base Condition Scenario, all the approach movements to this intersection operate at LOS D or better during both the weekday PM and Saturday midday peak hours. Overall both intersections operate at LOS B during both the weekday PM and Saturday midday peak hours.

#### Osborn Street at Court Street

The intersection of Osborn Street and Court Street is a four leg intersection controlled by a traffic signal. Each approach to this intersection provides one lane for all turning movements.

Under the Base Condition Scenario, all the approach movements to this intersection operate at LOS B or better during both the PM and Saturday midday peak hours. Overall, the intersection of Osborn Street and Court Street operate at LOS B during both the weekday PM and Saturday midday peak hours.

#### Roundabout – Peconic Avenue/CR 94/CR 63/CR104/NYS 24)

Peconic Ave, CR 94, CR 63, CR 104 and NYS 24 intersect to form a five leg one lane roundabout. Nelson and Pope have conducted an extensive study of this roundabout for Suffolk County Department of Public Works. The roundabout was analyzed using the Rodel Software. The analysis for this roundabout was included in this Riverhead BOA study. Under the Base Condition Scenario, the Peconic Avenue, CR 94 and NYS Route 24 operate at LOS F during the PM and Saturday midday peak hours. CR 63 operates at LOS B and E during the weekday PM and Saturday midday peak hours respectively. CR 104 operates at LOS B and F during the weekday and PM Peak hours respectively. From the review of the roundabout capacity analyses, it can be seen that the roundabout has exceeded it's capacity and requires mitigation. Nelson and Pope have developed several improvement measures for this roundabout and have provided Suffolk County with the most viable and preferred improvement measures. The analyses of the preferred mitigation measures have been incorporated in the mitigation measures developed for downtown Riverhead.

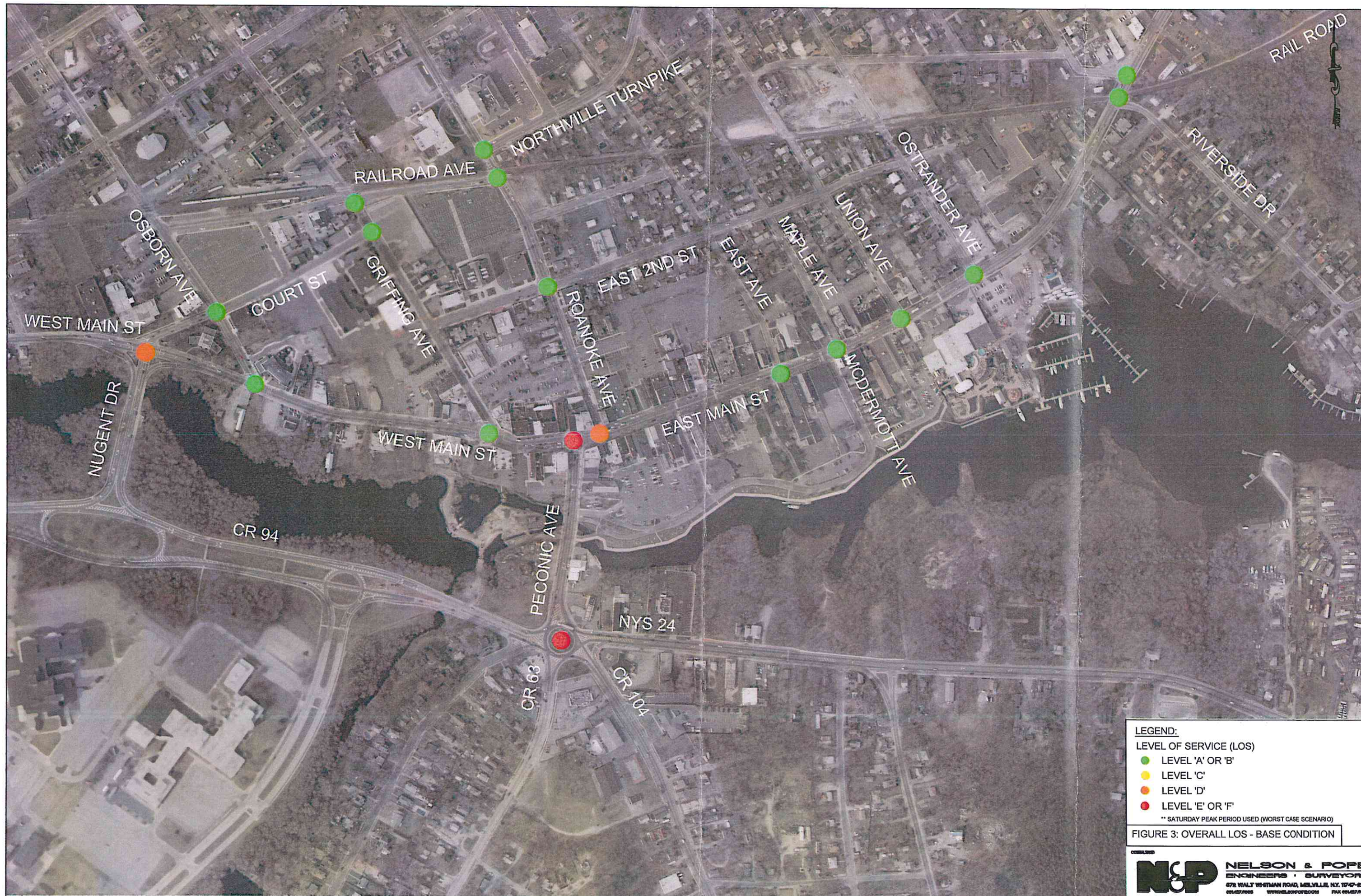


Unsignalized intersection analyses

The analyses results for the unsignalized intersections may not be representative of the actual field conditions. It should also be noted that the critical gap acceptance calculated by the Synchro Software (Software utilized to conduct capacity analyses) is higher than the available gaps on the major roadways (East Main Street and West Main Street). This may be the reason why the capacity analyses are showing high delays on the side street approaches of the unsignalized intersections. However, motorists were observed in the field exiting side streets during short gaps. Therefore, the side street approaches are actually operating at better levels of service as compared to the calculated levels of service by the Synchro Software.

The following figure shows the overall LOS for the Base Scenario at the signalized intersections studied during the Saturday peak period (worst peak period).





**LEGEND:**  
 LEVEL OF SERVICE (LOS)  
 ● LEVEL 'A' OR 'B'  
 ● LEVEL 'C'  
 ● LEVEL 'D'  
 ● LEVEL 'E' OR 'F'  
 \*\* SATURDAY PEAK PERIOD USED (WORST CASE SCENARIO)

FIGURE 3: OVERALL LOS - BASE CONDITION



## PROPOSED MITIGATION FOR BASE CONDITION SCENARIO

From the review of the capacity analyses results of the Base Condition Scenario, it can be seen that the following intersections are the locations with major traffic issues.

- West Main Street at Peconic Avenue
- East Main Street at Roanoke Avenue
- The Roundabout at Peconic Avenue/CR 94/CR63/CR104/NYS 24

Mitigation of the traffic issues at these intersections will improve traffic flow within downtown Riverhead. In order to improve the traffic flow in downtown Riverhead during the 2016 Base year, the following mitigation measures were developed and analyzed.

### Mitigation 1

Mitigation 1 consists of the following proposed improvements:

1. Make Peconic Avenue a one-way roadway northbound with provision for a southbound emergency lane.
2. Restripe the intersection of West Main Street at Peconic Avenue to provide two eastbound through lanes and two westbound through lanes. One of the westbound through lanes will drop just west of Griffing Avenue. The section of Main Street between Peconic Avenue and Roanoke Avenue will be restriped to provide two westbound through lanes and one eastbound through lane and one eastbound left turn lane.
3. Re-stripe the southbound approach at the intersection of West Main Street and Court Street to provide an additional lane.
4. Install traffic signals at the intersections of East Main Street and Riverside Drive and at East Main Street at Fishel Avenue operating under one controller.
5. Signal timing/phasing adjustments at the following intersections:
  - Main Street at Peconic Avenue/Roanoke Avenue
  - West Main Street at Court Street/Nugent Drive
  - East Main Street at McDermott Avenue
  - West Main Street at Griffing Avenue

6. As part of the Suffolk County Roundabout project, redesign the one lane five- leg roundabout to a two lane five- leg roundabout with one –way northbound on Peconic Avenue

With the aforementioned improvements proposed under Mitigation 1, the following assumptions were made:

- The current westbound left turn traffic volumes at the intersection of West Main Street and Peconic Avenue is a combination of some southbound Roanoke Avenue right turn traffic volume and some westbound through traffic volume at the intersection of West Main Street and Roanoke Avenue. To prohibit the westbound East Main Street left turn traffic and the eastbound West Main Street right turn traffic at Peconic Avenue and making Peconic Avenue one-way northbound the following was assumed:
  - 60% of the Roanoke Avenue right turn traffic will reroute to the intersection of Court Street and West Main Street via Railroad Avenue, Griffing Avenue and Court Street.
  - 20% of the West Main Street traffic originally heading east on NYS 24 via Peconic Avenue was rerouted to Riverside Drive. The rest of the West Main Street westbound traffic originally heading south via Peconic Avenue was rerouted to continue straight on West Main Street and will either make a westbound left turn or continue straight at the intersection of West Main Street and Court Street/Nugent Drive.
  - The eastbound West Main Street right turn traffic at Peconic Avenue was rerouted to the intersection of West Main Street and Court Street/Nugent Drive.

**Mitigation 2** – In order to address comments from Riverside Drive residents on the use of Riverside Drive as a cut-through route Mitigation 2 was developed.

Mitigation 2 consists of the following proposed improvements:

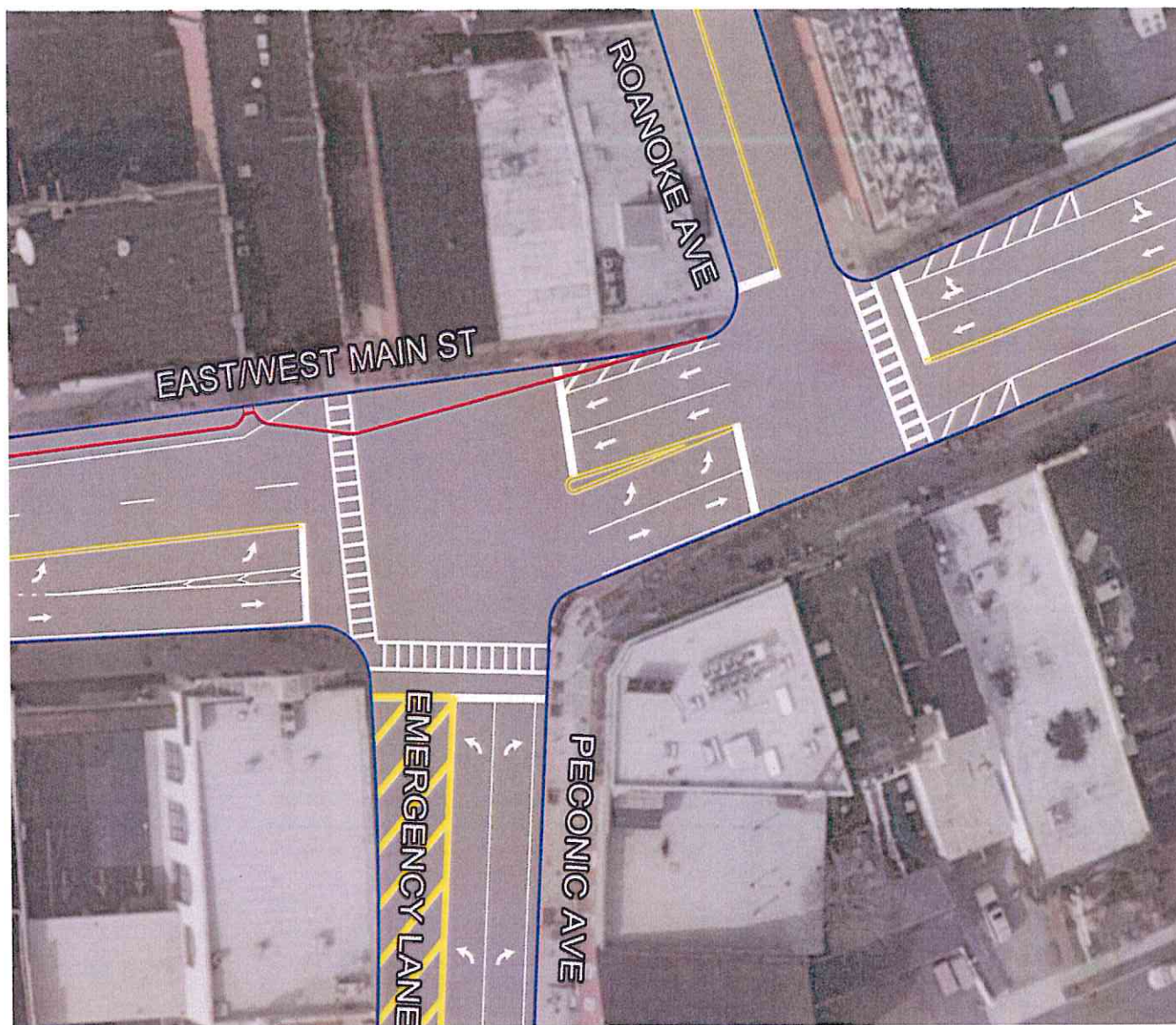
1. All the improvements under Mitigation 1 except item 4 (signalization of East Main Street at Riverside Drive /Fishel Avenue).



2. Prohibit southbound left turns from East Main Street to Riverside Drive. The left turn prohibition is to discourage some of the vehicles from using Riverside Drive whose original destination is eastbound NYS 24 via Peconic Avenue to travel west or south.
3. Some of the vehicles from Fishel Avenue whose destination is currently Riverside Drive will be rerouted to Ostrander Avenue, East Main Street and then to Riverside Avenue via a northbound right turn.
4. Install a traffic signal at the intersection of East Main Street at Ostrander Avenue.

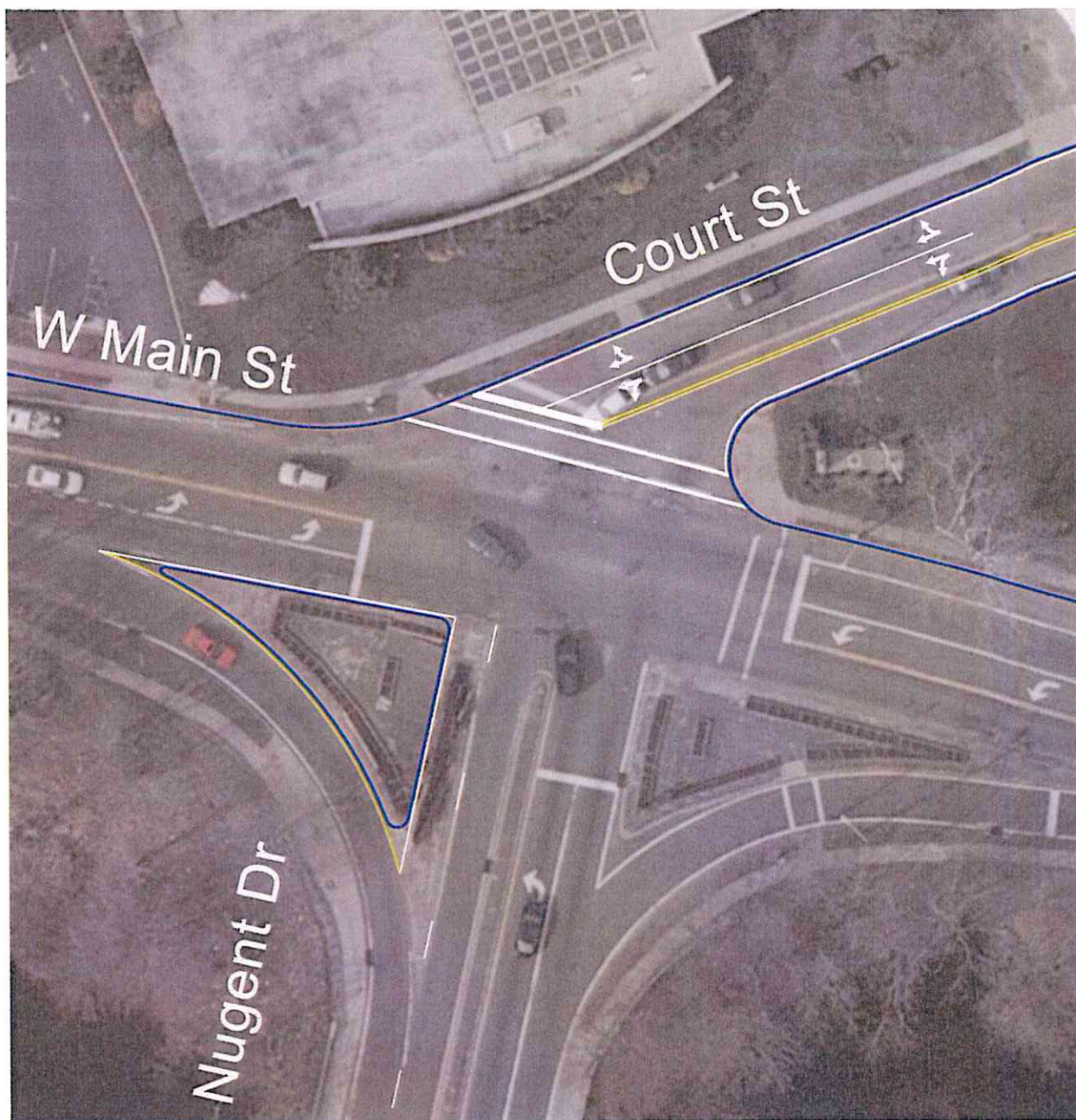
The proposed mitigation measures are shown on the following figures.

**Figure 4: Peconic Avenue one-way northbound and modification of the intersections of West/East Main Street at Peconic Avenue/Roanoke Avenue (Mitigation 1 &2)**



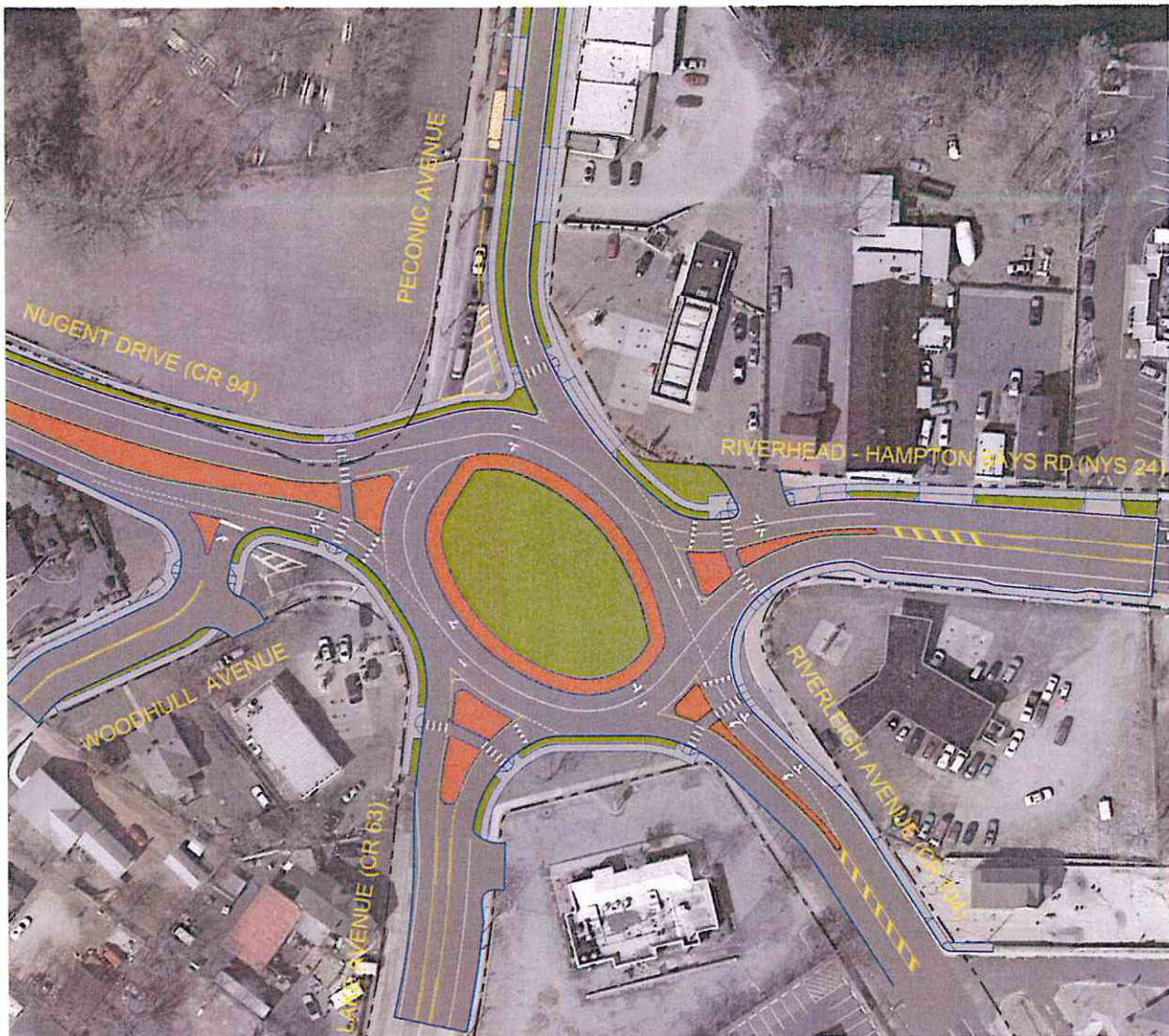


**Figure 5: West Main Street at Court Street/Nugent Drive improvements (Mitigations 1 &2)**





**Figure 6: Roundabout improvements (Mitigations 1 &2)**





**Figure 7: Traffic Signals at East Main St at Riverside Drive and East Main Street at Fishel Avenue operating under one controller (Mitigation 1)**

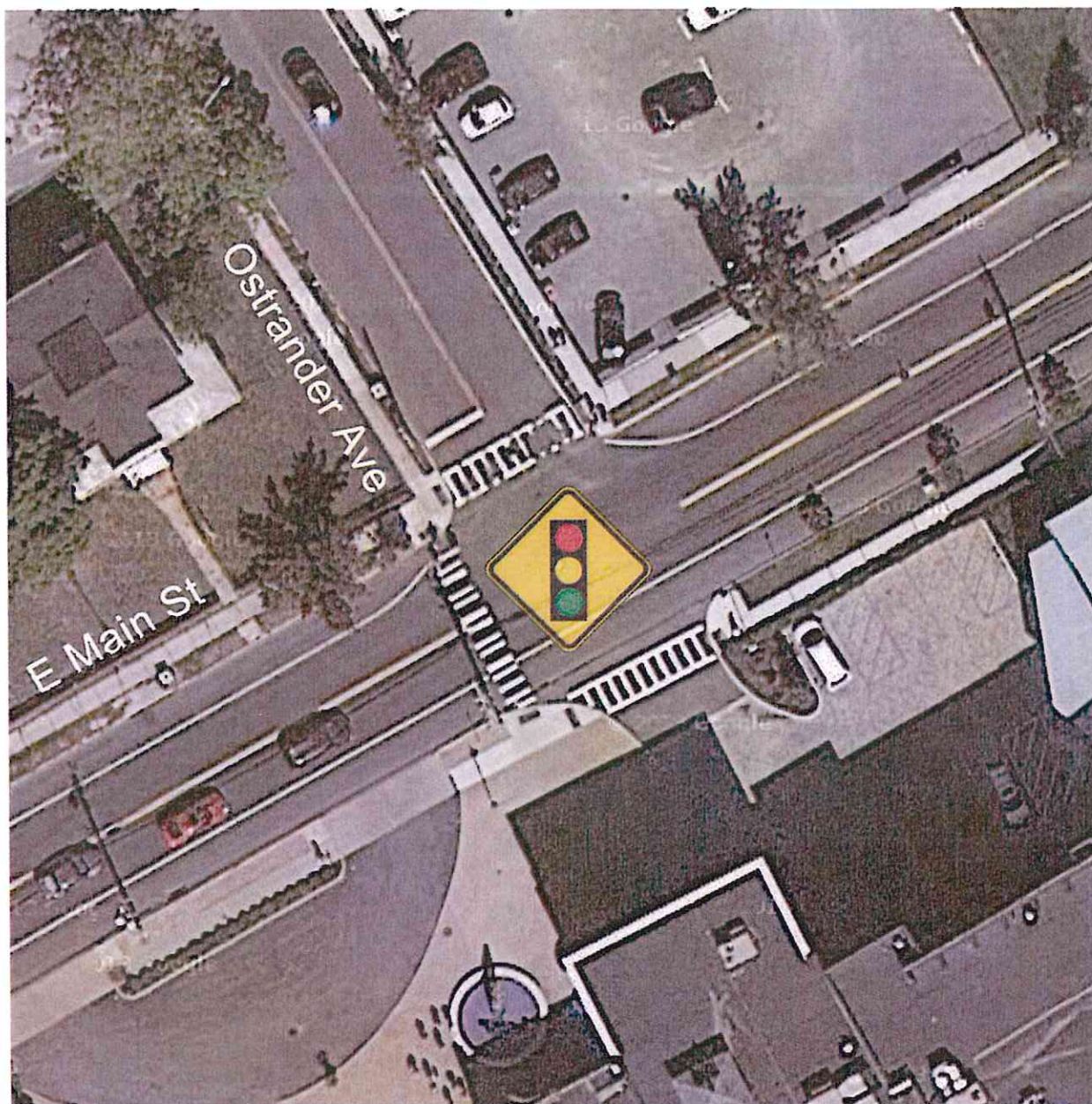


**Figure 8: Prohibit Southbound Left turns (East Main St at Riverside Drive (Mitigation 2))**





Figure 9: Traffic Signal at East Main St at Ostrander Avenue (Mitigations 2)



The following is summary of the results of the capacity analyses at the study intersections under each of the proposed mitigations.

DRAFT



**Table 5: Mitigation Level of Service Summary –PM Peak Hour**

| Signalized Intersection                                 | Approach | Movement | Base Condition |              | Base Condition Mitigation 1 |              | Base Condition Mitigation 2 |              |
|---------------------------------------------------------|----------|----------|----------------|--------------|-----------------------------|--------------|-----------------------------|--------------|
|                                                         |          |          | LOS            | Delay (sec.) | LOS                         | Delay (sec.) | LOS                         | Delay (sec.) |
| Nugent St/Court St & West Main St                       | EB       | L        | B              | 18.1         | D                           | 40.4         | D                           | 40.4         |
|                                                         |          | T        | B              | 20.0         | D                           | 46.6         | D                           | 46.6         |
|                                                         |          | R        | A              | 4.0          | B                           | 17.9         | B                           | 19.0         |
|                                                         | WB       | L        | D              | 41.6         | E                           | 68.7         | F                           | 135.4        |
|                                                         |          | TR       | C              | 22.4         | D                           | 35.1         | D                           | 35.1         |
|                                                         | NB       | L        | E              | 64.2         | F                           | 97.0         | F                           | 97.0         |
|                                                         |          | T        | B              | 11.7         | B                           | 14.5         | B                           | 14.5         |
|                                                         |          | R        | A              | 0.1          | A                           | 0.1          | A                           | 0.1          |
|                                                         | SB       | LTR      | F              | 149.9        | D                           | 50.5         | D                           | 50.5         |
|                                                         | Overall  |          | D              | 46.8         | D                           | 47.0         | E                           | 56.5         |
| Osborn Ave & West Main St                               | EB       | LT       | A              | 6.1          | A                           | 4.4          | A                           | 4.6          |
|                                                         | WB       | TR       | A              | 8.0          | B                           | 16.7         | C                           | 22.2         |
|                                                         | SB       | LR       | D              | 37.1         | C                           | 33.2         | C                           | 33.2         |
|                                                         | Overall  |          | B              | 10.2         | B                           | 14.7         | B                           | 18.8         |
| Griffing Ave & West Main St                             | EB       | LT       | B              | 13.4         | A                           | 3.7          | A                           | 4.1          |
|                                                         | WB       | TR       | B              | 15.3         | A                           | 9.9          | B                           | 12.8         |
|                                                         | SB       | LR       | B              | 10.9         | B                           | 17.7         | B                           | 17.7         |
|                                                         | Overall  |          | B              | 13.9         | A                           | 8.6          | B                           | 10.7         |
| Peconic Ave & West Main St                              | EB       | T        | F              | 118.7        | D                           | 51.6         | D                           | 51.5         |
|                                                         |          | R        | C              | 30.1         | -                           | -            | -                           | -            |
|                                                         | WB       | L        | E              | 73.9         | -                           | -            | -                           | -            |
|                                                         |          | T        | A              | 4.1          | A                           | 2.4          | A                           | 2.6          |
|                                                         | NB       | L        | F              | 96.5         | F                           | 98.7         | F                           | 98.0         |
|                                                         |          | R        | C              | 28.9         | C                           | 28.5         | C                           | 28.9         |
|                                                         | Overall  |          | D              | 54.4         | C                           | 30.7         | C                           | 29.9         |
| Roanoke Ave & East Main St                              | EB       | L        | A              | 8.1          | A                           | 8.2          | A                           | 9.2          |
|                                                         |          | T        | A              | 3.8          | A                           | 6.4          | A                           | 6.3          |
|                                                         | WB       | TR       | E              | 65.8         | E                           | 56.4         | E                           | 58.2         |
|                                                         | SB       | R        | D              | 43.3         | C                           | 33.1         | C                           | 33.5         |
|                                                         | Overall  |          | C              | 32.2         | C                           | 27.0         | C                           | 29.1         |
| McDermott Ave/Maple Ave & East Main St                  | EB       | LTR      | A              | 6.1          | B                           | 10.5         | B                           | 10.5         |
|                                                         | WB       | LTR      | A              | 5.9          | A                           | 9.2          | B                           | 10.2         |
|                                                         | NB       | LTR      | C              | 26.5         | D                           | 44.7         | D                           | 44.7         |
|                                                         | SB       | LTR      | D              | 41.0         | C                           | 28.2         | C                           | 28.2         |
|                                                         | Overall  |          | A              | 10.0         | B                           | 16.0         | B                           | 16.1         |
| Ostrander Ave & East Main St                            | EB       | LTR      | -              | -            | -                           | -            | B                           | 13.1         |
|                                                         | WB       | LTR      | -              | -            | -                           | -            | B                           | 14.8         |
|                                                         | SB       | LTR      | -              | -            | -                           | -            | C                           | 23.6         |
|                                                         | Overall  |          | -              | -            | -                           | -            | B                           | 15.0         |
| Roanoke Ave & W 2 <sup>nd</sup> St/E 2 <sup>nd</sup> St | EB       | LTR      | B              | 18.0         | B                           | 18.0         | B                           | 18.0         |
|                                                         | WB       | LTR      | B              | 18.5         | B                           | 18.5         | B                           | 18.5         |
|                                                         | NB       | LTR      | A              | 6.2          | A                           | 6.2          | A                           | 6.2          |
|                                                         | SB       | LTR      | A              | 6.8          | A                           | 5.4          | A                           | 5.4          |
|                                                         | Overall  |          | B              | 10.0         | B                           | 10.4         | B                           | 10.4         |
| Roanoke Ave & Railroad St                               | WB       | LR       | D              | 36.5         | D                           | 36.5         | D                           | 36.5         |
|                                                         | NB       | TR       | C              | 24.2         | C                           | 24.2         | C                           | 24.2         |
|                                                         | SB       | LT       | A              | 1.3          | A                           | 1.1          | A                           | 1.1          |
|                                                         | Overall  |          | B              | 14.8         | B                           | 14.7         | B                           | 14.7         |
| Roanoke Ave & Northville Tpke                           | WB       | LR       | C              | 26.0         | C                           | 26.0         | C                           | 26.0         |
|                                                         | NB       | T        | A              | 1.8          | A                           | 1.8          | A                           | 1.8          |
|                                                         |          | R        | A              | 0.1          | A                           | 0.1          | A                           | 0.1          |
|                                                         | SB       | LT       | C              | 22.6         | C                           | 22.6         | C                           | 22.6         |
|                                                         | Overall  |          | B              | 13.8         | B                           | 13.8         | B                           | 13.8         |

|                             | Approach | Movement | Base Condition |              | Base Condition Mitigation 1 |              | Base Condition Mitigation 2 |              |
|-----------------------------|----------|----------|----------------|--------------|-----------------------------|--------------|-----------------------------|--------------|
|                             |          |          | LOS            | Delay (sec.) | LOS                         | Delay (sec.) | LOS                         | Delay (sec.) |
| Signalized Intersection     |          |          |                |              |                             |              |                             |              |
| Osborn Ave & Court St       | EB       | LTR      | A              | 7.3          | A                           | 7.1          | A                           | 7.1          |
|                             | WB       | LTR      | A              | 6.5          | A                           | 8.3          | A                           | 8.3          |
|                             | NB       | LTR      | B              | 14.9         | B                           | 16.4         | B                           | 16.4         |
|                             | SB       | LTR      | B              | 15.7         | B                           | 11.5         | B                           | 11.5         |
|                             | Overall  |          | B              | 10.8         | C                           | 9.4          | A                           | 9.4          |
| Riverside Dr & East Main St | WB       | L        | -              | -            | D                           | 50.0         | -                           | -            |
|                             |          | R        | -              | -            | B                           | 16.3         | -                           | -            |
|                             | NB       | TR       | -              | -            | A                           | 8.8          | -                           | -            |
|                             | SB       | LT       | -              | -            | D                           | 53.1         | -                           | -            |
|                             | Overall  |          | -              | -            | C                           | 32.8         | -                           | -            |
| Fishel Ave & East Main St   | EB       | L        | -              | -            | C                           | 35.0         | -                           | -            |
|                             | NB       | LT       | -              | -            | A                           | 6.7          | -                           | -            |
|                             | SB       | TR       | -              | -            | B                           | 13.7         | -                           | -            |
|                             | Overall  |          | -              | -            | B                           | 12.2         | -                           | -            |



**Table 6: Mitigation Level of Service Summary –PM Peak Hour**

|                                                 | Approach    | Movement | Base Condition |              | Base Condition Mitigation 1 |      | Base Condition Mitigation 2 |              |
|-------------------------------------------------|-------------|----------|----------------|--------------|-----------------------------|------|-----------------------------|--------------|
|                                                 |             |          | LOS            | Delay (sec.) | LOS                         |      | LOS                         | Delay (sec.) |
| Unsignalized Intersection                       |             |          |                |              |                             |      |                             |              |
| East Ave & East Main St                         | EB          | LT       | A              | 2.6          | A                           | 2.7  | A                           | 3.0          |
|                                                 | SB          | LR       | D              | 27.1         | D                           | 28.9 | E                           | 36.7         |
| Union Ave/Parking Lot & East Main St            | EB          | LTR      | A              | 0.7          | A                           | 0.6  | A                           | 0.7          |
|                                                 | WB          | LTR      | A              | 0.8          | A                           | 0.8  | A                           | 0.8          |
|                                                 | NB          | LTR      | D              | 29.9         | D                           | 28.2 | C                           | 18.8         |
|                                                 | SB          | LTR      | E              | 47.5         | E                           | 43.5 | C                           | 23.3         |
| Ostrander Ave & East Main St                    | EB          | LTR      | A              | 1.5          | A                           | 1.4  | -                           | -            |
|                                                 | WB          | LTR      | A              | 0.2          | A                           | 0.2  | -                           | -            |
|                                                 | NB          | LTR      | A              | 0.0          | A                           | 0.0  | -                           | -            |
|                                                 | SB          | LTR      | F              | 114.0        | F                           | 61.2 | -                           | -            |
| Riverside Dr & East Main St                     | WB          | LR       | F              | 279.2        | -                           | -    | E                           | 47.3         |
|                                                 | SB          | LT       | A              | 4.8          | -                           | -    | -                           | -            |
| Fishel Ave & East Main St                       | EB          | LR       | E              | 47.6         | -                           | -    | E                           | 47.8         |
|                                                 | NB          | LT       | A              | 4.3          | -                           | -    | A                           | 3.8          |
| Hubbard Ave & East Main St                      | EB          | LR       | F              | 58.3         | F                           | 58.3 | F                           | 63.6         |
|                                                 | SB          | LT       | A              | 1.6          | A                           | 1.6  | A                           | 3.0          |
| Griffing Ave & Parking Lot/W 2 <sup>nd</sup> St | EB          | LTR      | B              | 14.0         | B                           | 12.3 | B                           | 12.3         |
|                                                 | WB          | LTR      | B              | 12.8         | B                           | 11.7 | B                           | 11.7         |
|                                                 | NB          | LTR      | A              | 0.0          | A                           | 0.0  | A                           | 0.0          |
|                                                 | SB          | LTR      | A              | 2.6          | A                           | 6.7  | A                           | 6.7          |
| Griffing Ave & Court St                         | EB          | LR       | C              | 15.9         | C                           | 17.1 | C                           | 17.1         |
|                                                 | NB          | LT       | A              | 3.5          | A                           | 3.9  | A                           | 3.9          |
| Griffing Ave & Railroad St                      | EB          | LTR      | B              | 10.1         | B                           | 11.5 | B                           | 11.5         |
|                                                 | WB          | LTR      | B              | 10.2         | C                           | 17.5 | C                           | 17.5         |
|                                                 | NB          | LTR      | B              | 11.5         | B                           | 14.1 | B                           | 14.1         |
|                                                 | SB          | LTR      | B              | 11.0         | B                           | 13.4 | B                           | 13.4         |
| Peconic Ave & Parking Lot                       | WB          | L        | D              | 31.0         | -                           | -    | -                           | -            |
|                                                 |             | R        | B              | 12.2         | B                           | 12.2 | B                           | 12.2         |
|                                                 | SB          | LT       | A              | 1.6          | -                           | -    | -                           | -            |
| Roundabout                                      | Peconic Ave |          | F              | 454.5        | -                           | -    | -                           | -            |
|                                                 | CR 94       |          | E              | 36.3         | B                           | 12.5 | B                           | 13.4         |
|                                                 | CR 63       |          | E              | 40.7         | B                           | 10.4 | B                           | 10.7         |
|                                                 | CR 104      |          | F              | 167.9        | B                           | 13.5 | B                           | 14.1         |
|                                                 | NYS 24      |          | F              | 326.7        | B                           | 12.5 | B                           | 12.5         |
|                                                 | Overall     |          | F              | 235.8        | B                           | 12.3 | B                           | 12.8         |

**Table 7: Mitigation Level of Service Summary –Saturday Peak Hour**

| Signalized Intersection                                 | Approach | Movement | Base Condition |              | Base Condition Mitigation 1 |              | Base Condition Mitigation 2 |              |
|---------------------------------------------------------|----------|----------|----------------|--------------|-----------------------------|--------------|-----------------------------|--------------|
|                                                         |          |          | LOS            | Delay (sec.) | LOS                         | Delay (sec.) | LOS                         | Delay (sec.) |
| Nugent St/Court St & West Main St                       | EB       | L        | C              | 21.4         | D                           | 54.2         | D                           | 54.2         |
|                                                         |          | T        | C              | 27.2         | C                           | 34.3         | C                           | 34.3         |
|                                                         |          | R        | A              | 4.8          | B                           | 11.6         | B                           | 11.6         |
|                                                         | WB       | L        | C              | 29.3         | D                           | 38.4         | E                           | 58.2         |
|                                                         |          | TR       | C              | 28.0         | D                           | 45.9         | D                           | 45.9         |
|                                                         | NB       | L        | F              | 114.2        | F                           | 129.4        | F                           | 129.1        |
|                                                         |          | T        | B              | 11.1         | B                           | 15.6         | B                           | 15.6         |
|                                                         |          | R        | A              | 0.1          | A                           | 0.1          | A                           | 0.1          |
|                                                         | SB       | LTR      | C              | 31.4         | D                           | 54.8         | D                           | 54.8         |
|                                                         | Overall  |          | D              | 39.5         | D                           | 50.1         | D                           | 51.7         |
| Osborn Ave & West Main St                               | EB       | LT       | A              | 8.8          | A                           | 5.5          | A                           | 5.5          |
|                                                         | WB       | TR       | A              | 8.7          | B                           | 12.5         | B                           | 13.9         |
|                                                         | SB       | LR       | D              | 38.9         | D                           | 35.2         | D                           | 35.2         |
|                                                         | Overall  |          | B              | 12.5         | B                           | 12.1         | B                           | 13.0         |
| Griffing Ave & West Main St                             | EB       | LT       | B              | 18.0         | A                           | 4.3          | A                           | 4.4          |
|                                                         | WB       | TR       | B              | 14.9         | A                           | 3.7          | A                           | 3.8          |
|                                                         | SB       | LR       | B              | 11.4         | B                           | 14.4         | B                           | 14.4         |
|                                                         | Overall  |          | B              | 15.8         | A                           | 4.5          | A                           | 4.5          |
| Peconic Ave & West Main St                              | EB       | T        | F              | 134.7        | E                           | 57.5         | E                           | 57.2         |
|                                                         |          | R        | D              | 37.4         | -                           | -            | -                           | -            |
|                                                         | WB       | L        | F              | 121.8        | -                           | -            | -                           | -            |
|                                                         |          | T        | A              | 4.3          | A                           | 2.5          | A                           | 3.1          |
|                                                         | NB       | L        | F              | 103.4        | F                           | 101.7        | F                           | 101.7        |
|                                                         |          | R        | C              | 29.4         | C                           | 28.7         | C                           | 29.1         |
|                                                         | Overall  |          | E              | 71.2         | C                           | 34.9         | C                           | 34.6         |
| Roanoke Ave & East Main St                              | EB       | L        | C              | 20.9         | C                           | 20.4         | C                           | 27.5         |
|                                                         |          | T        | A              | 8.1          | A                           | 5.9          | A                           | 5.9          |
|                                                         | WB       | TR       | F              | 114.5        | E                           | 61.7         | E                           | 63.9         |
|                                                         | SB       | R        | D              | 43.4         | C                           | 34.7         | C                           | 34.8         |
|                                                         | Overall  |          | D              | 51.8         | C                           | 30.9         | C                           | 33.6         |
| McDermott Ave/Maple Ave & East Main St                  | EB       | LTR      | A              | 9.4          | B                           | 18.0         | B                           | 18.1         |
|                                                         | WB       | LTR      | A              | 7.7          | B                           | 13.5         | B                           | 14.6         |
|                                                         | NB       | LTR      | D              | 41.7         | D                           | 48.1         | D                           | 48.1         |
|                                                         | SB       | LTR      | D              | 38.8         | C                           | 21.0         | C                           | 21.0         |
|                                                         | Overall  |          | B              | 14.5         | C                           | 21.8         | C                           | 22.0         |
| Ostrander Ave & East Main St                            | EB       | LTR      | -              | -            | -                           | -            | B                           | 13.6         |
|                                                         | WB       | LTR      | -              | -            | -                           | -            | A                           | 9.9          |
|                                                         | SB       | LTR      | -              | -            | -                           | -            | C                           | 34.6         |
|                                                         | Overall  |          | -              | -            | -                           | -            | B                           | 15.0         |
| Roanoke Ave & W 2 <sup>nd</sup> St/E 2 <sup>nd</sup> St | EB       | LTR      | B              | 16.8         | B                           | 16.8         | B                           | 16.8         |
|                                                         | WB       | LTR      | B              | 14.8         | B                           | 14.8         | B                           | 14.8         |
|                                                         | NB       | LTR      | A              | 5.5          | A                           | 5.5          | A                           | 5.5          |
|                                                         | SB       | LTR      | A              | 5.5          | A                           | 4.4          | A                           | 4.4          |
|                                                         | Overall  |          | A              | 7.9          | A                           | 8.2          | A                           | 8.2          |
| Roanoke Ave & Railroad St                               | WB       | LR       | C              | 33.3         | C                           | 33.3         | C                           | 33.3         |
|                                                         | NB       | TR       | C              | 25.2         | C                           | 25.2         | C                           | 25.2         |
|                                                         | SB       | LT       | A              | 1.0          | A                           | 0.8          | A                           | 0.8          |
|                                                         | Overall  |          | B              | 14.1         | B                           | 14.0         | B                           | 14.0         |
| Roanoke Ave & Northville Tpke                           | WB       | LR       | C              | 23.6         | C                           | 23.6         | C                           | 23.6         |
|                                                         | NB       | T        | A              | 0.9          | A                           | 0.9          | A                           | 0.9          |
|                                                         |          | R        | A              | 0.1          | A                           | 0.1          | A                           | 0.1          |
|                                                         | SB       | LT       | C              | 22.0         | C                           | 22.0         | C                           | 22.0         |
|                                                         | Overall  |          | B              | 12.3         | B                           | 12.3         | B                           | 12.3         |



|                             | Approach | Movement | Base Condition |              | Base Condition Mitigation 1 |              | Base Condition Mitigation 2 |              |
|-----------------------------|----------|----------|----------------|--------------|-----------------------------|--------------|-----------------------------|--------------|
|                             |          |          | LOS            | Delay (sec.) | LOS                         | Delay (sec.) | LOS                         | Delay (sec.) |
| Signalized Intersection     |          |          |                |              |                             |              |                             |              |
| Osborn Ave & Court St       | EB       | LTR      | A              | 7.2          | A                           | 6.4          | A                           | 6.4          |
|                             | WB       | LTR      | A              | 5.9          | A                           | 6.5          | A                           | 6.5          |
|                             | NB       | LTR      | B              | 14.8         | B                           | 16.4         | B                           | 16.4         |
|                             | SB       | LTR      | B              | 19.3         | B                           | 12.9         | B                           | 12.9         |
|                             | Overall  |          | B              | 13.1         | A                           | 9.1          | A                           | 9.1          |
| Riverside Dr & East Main St | WB       | L        | -              | -            | E                           | 63.7         | -                           | -            |
|                             |          | R        | -              | -            | C                           | 23.8         | -                           | -            |
|                             | NB       | TR       | -              | -            | A                           | 7.7          | -                           | -            |
|                             | SB       | LT       | -              | -            | B                           | 15.2         | -                           | -            |
|                             | Overall  |          | -              | -            | B                           | 13.9         | -                           | -            |
| Fishel Ave & East Main St   | EB       | L        | -              | -            | D                           | 35.9         | -                           | -            |
|                             | NB       | LT       | -              | -            | A                           | 3.0          | -                           | -            |
|                             | SB       | TR       | -              | -            | A                           | 7.8          | -                           | -            |
|                             | Overall  |          | -              | -            | A                           | 7.7          | -                           | -            |

**Table 8: Mitigation Level of Service Summary –Saturday Peak Hour**

|                                                 |             |     | Base Condition |              | Base Condition Mitigation 1 |              | Base Condition Mitigation 2 |              |
|-------------------------------------------------|-------------|-----|----------------|--------------|-----------------------------|--------------|-----------------------------|--------------|
|                                                 |             |     | LOS            | Delay (sec.) | LOS                         | Delay (sec.) | LOS                         | Delay (sec.) |
| Unsignalized Intersection                       |             |     |                |              |                             |              |                             |              |
| East Ave & East Main St                         | EB          | LT  | A              | 2.6          | A                           | 2.8          | A                           | 3.0          |
|                                                 | SB          | LR  | E              | 42.4         | E                           | 47.6         | F                           | 58.6         |
| Union Ave/Parking Lot & East Main St            | EB          | LTR | A              | 0.7          | A                           | 0.7          | A                           | 0.8          |
|                                                 | WB          | LTR | A              | 0.8          | A                           | 0.9          | A                           | 0.9          |
|                                                 | NB          | LTR | D              | 25.3         | D                           | 26.0         | C                           | 18.9         |
|                                                 | SB          | LTR | E              | 45.7         | E                           | 48.4         | C                           | 22.7         |
| Ostrander Ave & East Main St                    | EB          | LTR | A              | 2.4          | A                           | 2.4          | -                           | -            |
|                                                 | WB          | LTR | A              | 0.2          | A                           | 0.2          | -                           | -            |
|                                                 | NB          | LTR | A              | 0.0          | A                           | 0.0          | -                           | -            |
|                                                 | SB          | LTR | F              | 115.0        | F                           | 96.2         | -                           | -            |
| Riverside Dr & East Main St                     | WB          | LR  | F              | 70.0         | -                           | -            | E                           | 43.2         |
|                                                 | SB          | LT  | A              | 4.0          | -                           | -            | -                           | -            |
| Fishel Ave & East Main St                       | EB          | LR  | D              | 27.3         | -                           | -            | E                           | 36.8         |
|                                                 | NB          | LT  | A              | 2.3          | -                           | -            | A                           | 2.3          |
| Hubbard Ave & East Main St                      | EB          | LR  | F              | 125.5        | F                           | 125.5        | F                           | 139.6        |
|                                                 | SB          | LT  | A              | 1.9          | A                           | 1.9          | A                           | 2.7          |
| Griffing Ave & Parking Lot/W 2 <sup>nd</sup> St | EB          | LTR | B              | 11.8         | B                           | 10.8         | B                           | 10.8         |
|                                                 | WB          | LTR | B              | 10.4         | A                           | 10.0         | A                           | 10.0         |
|                                                 | NB          | LTR | A              | 0.0          | A                           | 0.0          | A                           | 0.0          |
|                                                 | SB          | LTR | A              | 1.7          | A                           | 4.2          | A                           | 4.2          |
| Griffing Ave & Court St                         | EB          | LR  | B              | 11.6         | B                           | 12.3         | B                           | 12.3         |
|                                                 | NB          | LT  | A              | 1.7          | A                           | 2.0          | A                           | 2.0          |
| Griffing Ave & Railroad St                      | EB          | LTR | A              | 8.5          | A                           | 9.1          | A                           | 9.1          |
|                                                 | WB          | LTR | A              | 8.7          | B                           | 12.2         | B                           | 12.2         |
|                                                 | NB          | LTR | A              | 9.2          | B                           | 10.4         | B                           | 10.4         |
|                                                 | SB          | LTR | A              | 8.8          | A                           | 9.8          | A                           | 9.8          |
| Peconic Ave & Parking Lot                       | WB          | L   | F              | 630.2        | -                           | -            | -                           | -            |
|                                                 |             | R   | B              | 13.3         | B                           | 13.3         | B                           | 13.3         |
|                                                 | SB          | LT  | A              | 0.5          | -                           | -            | -                           | -            |
| Roundabout                                      | Peconic Ave |     | F              | 292.5        | -                           | -            | -                           | -            |
|                                                 | CR 94       |     | F              | 505.2        | C                           | 19.3         | C                           | 22.0         |
|                                                 | CR 63       |     | B              | 12.1         | A                           | 7.1          | A                           | 7.3          |
|                                                 | CR 104      |     | C              | 16.0         | A                           | 8.2          | A                           | 8.5          |
|                                                 | NYS 24      |     | F              | 446.9        | B                           | 14.8         | B                           | 14.8         |
|                                                 | Overall     |     | F              | 319.2        | B                           | 14.8         | C                           | 16.1         |

*West Main Street at Nugent Drive/Court Street*

Under the Base Condition Scenario, the eastbound and westbound West Main Street approaches operate at LOS D or better during both the weekday PM and Saturday midday peak hours. The northbound Nugent Drive left turn movement operates at LOS E and F during the weekday PM and Saturday midday peak hours respectively. The northbound through and right turn movements operate at LOS B or better. The southbound Court Street approach operates at LOS F during the weekday PM peak hour and at LOS C during the Saturday midday peak hour. Overall, the



intersection of West Main Street at Nugent Drive/Court Street operates at LOS D during the weekday PM and Saturday midday peak hours.

The improvements proposed under Mitigation 1 and Mitigation 2 will require the rerouting of significant amount of traffic volumes to the southbound Court Street approach and the westbound West Main Street through and left turn movements. However, improvements proposed at this intersection under these mitigation scenarios attempted to reduce the impacts. The following is a summary of the LOS results at this intersection with the proposed mitigation.

**Mitigation 1-** Under this mitigation, the overall intersection will continue to operate at LOS D during the PM and Saturday midday peak hours with a slight increase in delay. With the proposed mitigations, some movements will improve and some movements will experience an increase in delay. However, the overall LOS at the intersections will be maintained.

**Mitigation 2-** Under this mitigation, the overall intersection LOS will change from D to E with a 9.5 seconds increase in delay during the PM peak hour. The overall LOS D during the Saturday midday peak hour will be maintained. With the proposed mitigations, some movements will improve and some movements will experience an increase in delay.

#### West Main Street at Osborne Avenue

Under the Base Condition Scenario, the eastbound and westbound West Main Street approaches operate at LOS A during both the weekday PM and Saturday midday peak hours. The southbound Osborn Avenue approach operates at LOS D during both the weekday PM and Saturday midday peak hours. Overall, the intersection of West Main Street at Osborn Avenue operates at LOS B during the weekday PM and Saturday midday peak hours.

With the improvements proposed under Mitigation 1 and Mitigation 2, the intersection will continue to operate at LOS B during the weekday PM and Saturday midday peak hours with all traffic movements continuing to operate at LOS D or better.

*West Main Street at Griffing Avenue*

Under the Base Condition Scenario, all the approach movements to this intersection operate at LOS B during both the weekday PM and Saturday midday peak hours. Overall, the intersection of West Main Street at Griffing Avenue operates at LOS B during the weekday PM and Saturday midday peak hours.

With the improvements proposed under Mitigation 1 and Mitigation 2, the intersection will continue to operate at LOS B or better during the weekday PM peak hour and will improve for LOS B to LOS A during the Saturday midday peak hours with all traffic movements continuing to operate at LOS B or better during the PM peak hour and at LOS A during the Saturday midday peak hour.

*Main Street at Peconic Avenue/Roanoke Avenue*

Under the Base Condition Scenario, the eastbound West Main Street through movement at Peconic Avenue and the northbound Peconic Avenue left turn movement operate at LOS F during both the weekday PM and Saturday midday peak hours. The Westbound East Main Street left turn movement at Peconic Avenue operates at LOS E and F during the weekday PM and Saturday midday peak hours respectively. The westbound West Main Street approach at Roanoke Avenue operates at LOS E and F during the weekday PM and Saturday midday peak hours. The rest of the traffic movements operate at LOS D or better during the weekday PM and Saturday midday peak hours. Overall, the intersection of West Main Street at Peconic Avenue operates at LOS D and E during the weekday PM and Saturday midday peak hours and the intersection of East Main Street at Roanoke Avenue operates at overall LOS C and D during the weekday PM and Saturday midday peak hours.

The improvements proposed under Mitigation 1 and Mitigation 2 will require making Peconic Avenue a one-way roadway northbound and hence prohibiting westbound left turns and eastbound right turns from East Main Street to Peconic Avenue. The following is a summary of the LOS results at this intersection with the proposed mitigation.

**Mitigation 1-** Under this scenario, the overall LOS at the intersection of West Main Street and Peconic Avenue will improve from LOS D to LOS C during the weekday PM peak hour and



from LOS E to LOS C during the Saturday midday peak hour. This mitigation will eliminate the LOS F at the westbound left turn movement and improves the eastbound LOS F to LOS D and LOS E during the weekday PM and Saturday midday peak hours respectively. Under this scenario, the overall LOS at the intersection of East Main Street and Roanoke Avenue will continue to operate at LOS C with slightly reduces delays during the weekday PM peak hour and will improve from LOS D to LOS C during the Saturday midday peak hour. The results of the capacity analyses under Mitigation 1 and Scenario 2 are similar.

#### East Main Street at East Avenue

Under the Base Condition Scenario, the eastbound East Main Street approach operates at LOS A and the southbound East Avenue approach operates at LOS D and E during the weekday PM and Saturday midday peak hours respectively.

With the improvements proposed under Mitigation 1, the southbound East Avenue approach will continue to operate at LOS D and LOS E during the weekday PM and Saturday midday peak hours respectively and the eastbound approach will continue to operate at LOS A. Under Mitigation 2, the eastbound approach will continue to operate at LOS A and the southbound approach will change from LOS D to LOS E during the weekday PM peak hour and from LOS E to LOS F during the Saturday midday peak hour.

#### East Main Street at McDermott Avenue/Maple Avenue

Under the Base Condition Scenario, all the approach movements to this intersection operate at LOS D during both the weekday PM and Saturday midday peak hours. Overall, the intersection of East Main Street at McDermott Ave/Maple Avenue operates at LOS B or better during the weekday PM and Saturday midday peak.

With the improvements proposed under Mitigation 1 and Mitigation 2, the levels service at this intersection will change from LOS A to LOS B during the weekday PM peak hour and from LOS B to LOS C during the Saturday midday peak hours with a minimal increase in delay.

*East Main Street at Union Avenue/Parking Lot*

Under the Base Condition Scenario, the eastbound and westbound East Main Street approaches operate at LOS A. The northbound parking lot approach operates at LOS D and the southbound Union Avenue approach operates at LOS E during both the weekday PM and Saturday midday peak hours.

With the improvements proposed under Mitigation 1, the intersection will continue to operate at the Base Condition Scenario LOS and the northbound and southbound approaches will improve from LOS D and E to LOS C under Mitigation 2.

*East Main Street at Ostrander Avenue/Hotel Access*

Under the Base Condition Scenario, the eastbound and westbound East Main Street approaches operate at LOS A. The southbound Ostrander Avenue approach operates at LOS F during both the weekday PM and Saturday midday peak hours.

With the improvements proposed under Mitigation 1, the intersection will continue to operate at the Base Condition Scenario LOS with significantly lower delays. Under Mitigation 2, it is proposed to install a traffic signal at this location and the intersection will operate at LOS B or better during the weekday PM and Saturday midday peak hours.

*East Main Street at Riverside Drive*

Under the Base Condition Scenario, the southbound East Main Street approach operates at LOS A and the westbound Riverside Drive approach operates at LOS F during the weekday PM and Saturday midday peak hours.

Under Mitigation 1, it is proposed to install traffic signals at the intersections of East Main Street at Riverside Drive and East Main Street at Fishel Avenue. Both signals will operate under the same controller. With the proposed traffic signals, the intersection of East Main Street at Riverside Drive will operate at an overall LOS C during the weekday PM and Saturday midday peak hours with all approach movements operating at LOS D or better.



Under Mitigation 2, it is proposed to prohibit southbound left turns from East Main Street to Riverside Drive. Under Scenario 2, the westbound Riverside Drive approach will improve from LOS F to LOS E during both the weekday PM and Saturday midday peak hours.

*East Main Street at Fishel Avenue*

Under the Base Condition Scenario, the northbound East Main Street approach operates at LOS A and the eastbound Fishel Avenue approach operates at LOS E and D during the weekday PM and Saturday midday peak hours respectively.

With the proposed signal at this location under Mitigation 1, the intersection will operate at overall LOS B and LOS A during the weekday PM and Saturday midday peak hours respectively. All the approach movements to the intersection will operate at LOS D or better.

Under Mitigation 2, the eastbound Fishel Avenue approach will operate at LOS E during the weekday PM and Saturday midday peak hours.

*East Main Street at Hubbard Avenue*

Under the Base Condition Scenario, the southbound East Main Street approach operates at LOS A and the westbound Hubbard Avenue approach operates at LOS F during the weekday PM and Saturday midday peak hours.

Under Mitigations 1 and 2, the intersection will continue to operate at Base Condition Scenario LOS.

*Peconic Avenue at Parking Lot Access*

Under the Base Condition Scenario, the southbound Peconic Avenue approach operates at LOS A. The westbound Parking lot access left turn movement operates at LOS D and E during the weekday PM and Saturday midday peak hours respectively. The westbound right turn movement operates at LOS B during the weekday PM and Saturday midday peak hours.

With the elimination of the westbound left turn movement at this intersection under Mitigations 1 and 2, the intersection will operate at LOS B during the weekday PM and Saturday midday peak hours.

Griffing Avenue at W 2<sup>nd</sup> Street/Parking Lot

Under the Base Condition Scenario, all the approach movements to this intersection operate at LOS B or better during both the PM and Saturday midday peak hours.

Under Mitigations 1 and 2, the intersection will continue to operate at Base Condition Scenario LOS.

Griffing Avenue at Court Street

Court Street intersects Griffing Avenue to form the Stop Controlled leg of a T-intersection. Each approach to this intersection provides one lane for all turning movements.

Under the Base Condition Scenario, all the approach movements to this intersection operate at LOS C or better during both the PM and Saturday midday peak hours.

Under Mitigations 1 and 2, the intersection will continue to operate at Base Condition Scenario LOS.

Griffing Avenue at Railroad Avenue

Under the Base Condition Scenario, all the approach movements to this intersection operate at LOS B or better during both the PM and Saturday midday peak hours.

Under Mitigations 1 and 2, the intersection will continue to operate at Base Condition Scenario LOS.

Roanoke Avenue at E 2<sup>nd</sup> Street

Under the Base Condition Scenario all the approach movements to this intersection operate at LOS B or better during both the PM and Saturday midday peak hours. Overall, the intersection of Roanoke Avenue at E 2<sup>nd</sup> Street operates at LOS B and A during the weekday PM and Saturday midday peak hours respectively.

Under Mitigations 1 and 2, the intersection will continue to operate at Base Condition Scenario LOS.



*Roanoke Avenue at Railroad Avenue/Northville Turnpike*

Under the Base Condition Scenario all the approach movements to this intersection operate at LOS D or better during both the weekday PM and Saturday midday peak hours. Overall both intersections operate at LOS B during both the weekday PM and Saturday midday peak hours.

Under Mitigations 1 and 2, the intersection will continue to operate at Base Condition Scenario LOS.

*Osborn Street at Court Street*

Under the Base Condition Scenario, all the approach movements to this intersection operate at LOS B or better during both the PM and Saturday midday peak hours. Overall, the intersection of Osborn Street and Court Street operates at LOS B during both the weekday PM and Saturday midday peak hours.

Under Mitigations 1 and 2, the intersection will operate at LOS better than the Base Condition Scenario LOS.

*Roundabout – Peconic Avenue/CR 94/CR 63/CR104/NYS 24)*

Peconic Ave, CR 94, CR 63, CR 104 and NYS 24 intersect to form a five leg one lane roundabout. Nelson and Pope conducted an extensive study of this roundabout for Suffolk County Department of Public Works. The analysis for this roundabout was included in this Riverhead Downtown Redevelopment Study. Under the Base Condition Scenario, the Peconic Avenue, CR 94 and NYS Route 24 operate at LOS F during the PM and Saturday midday peak hours. CR 63 operates at LOS B and E during the weekday PM and Saturday midday peak hours. CR 104 operates at LOS B and F during the weekday and PM Peak hours respectively. From the review of the roundabout capacity analyses, it can be seen that the roundabout has exceeded it's capacity and requires mitigations. Nelson and Pope has developed several improvement measures for this roundabout and provided Suffolk County with the most viable and preferred improvement measures. The analyses of the preferred mitigation measures have been incorporated in the mitigation measures developed for downtown Riverhead.

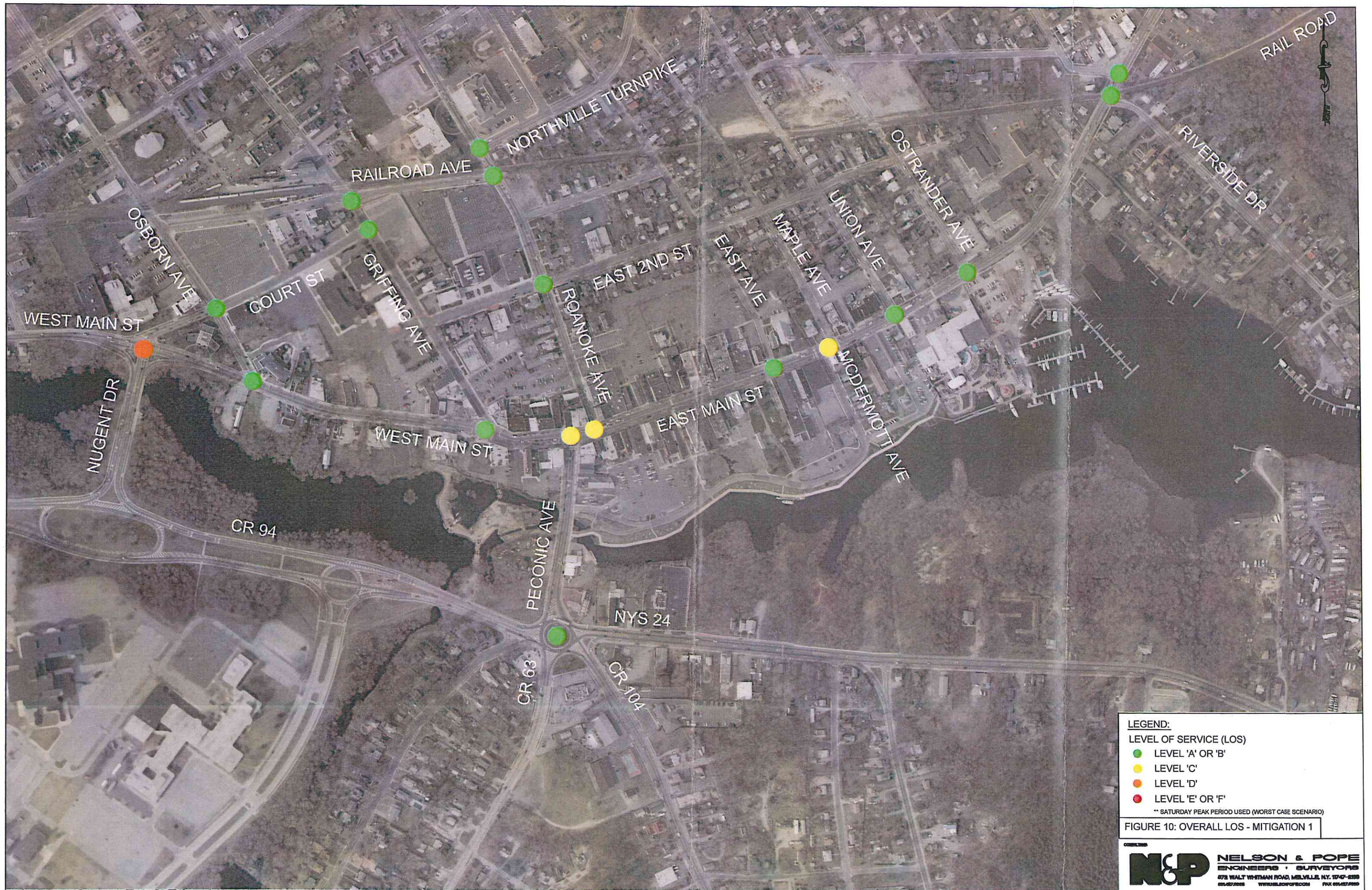
In addition to the proposed mitigation for the roundabout, the improvements proposed under Mitigations 1 and 2 will require making Peconic Avenue a one-way roadway northbound and hence prohibiting westbound left turns and eastbound right turns from East Main Street to Peconic Avenue. The following is a summary of the LOS results at the five-leg roundabout with the proposed mitigation.

**Mitigation 1-** Under this Mitigation, the overall LOS at Roundabout will change from LOS F with a 235.8 seconds delay to LOS D with 30.3 seconds of delay. On Saturday, the overall LOS at the Roundabout will continue to operate at LOS F but the delay will be reduced from 319.2 Seconds to 60.0 seconds. With the proposed mitigations all the approaches the roundabout will operate at LOS C or better during the weekday PM and Saturday midday peak hours.

**Mitigation 2-** Under this Mitigation, the overall LOS at Roundabout will change from LOS F with a 235.8 seconds delay to LOS D with 33.4 seconds of delay. On Saturday the overall LOS at the Roundabout will continue to operate at LOS F but the delay will be reduced from 319.2 seconds to 74.3 seconds. With the proposed mitigations all the approaches the roundabout will operate at LOS C or better during the weekday PM and Saturday midday peak hours.

The following figures show the overall LOS for Mitigations 1 and 2 at the signalized intersections studied during the Saturday peak period (worst peak period).

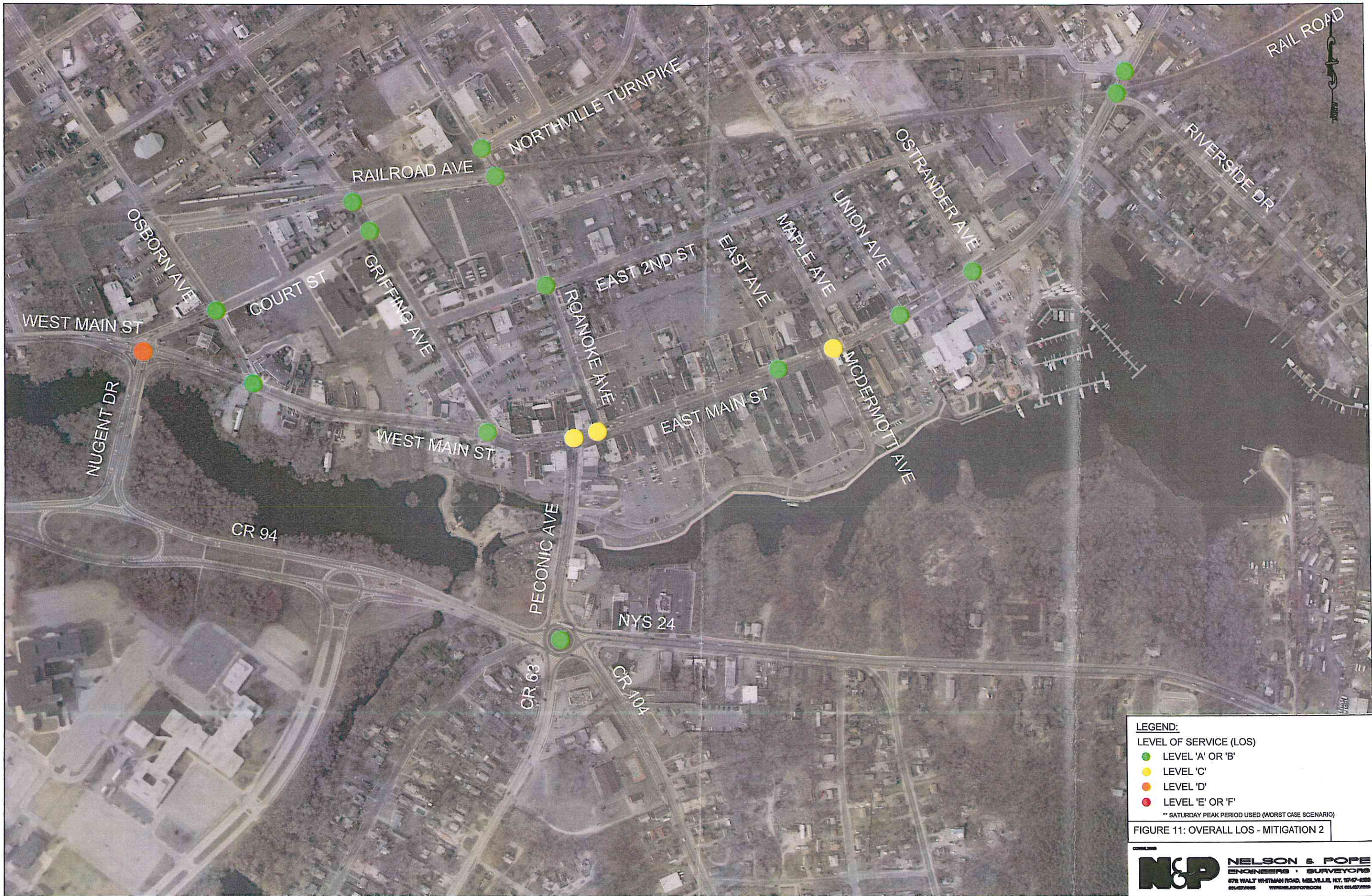




**LEGEND:**  
 LEVEL OF SERVICE (LOS)  
 ● LEVEL 'A' OR 'B'  
 ● LEVEL 'C'  
 ● LEVEL 'D'  
 ● LEVEL 'E' OR 'F'  
 \*\* SATURDAY PEAK PERIOD USED (WORST CASE SCENARIO)

FIGURE 10: OVERALL LOS - MITIGATION 1





**LEGEND:**  
LEVEL OF SERVICE (LOS)  
● LEVEL 'A' OR 'B'  
● LEVEL 'C'  
● LEVEL 'D'  
● LEVEL 'E' OR 'F'  
\*\* SATURDAY PEAK PERIOD USED (WORST CASE SCENARIO)

FIGURE 11: OVERALL LOS - MITIGATION 2



## CONCLUSION

Nelson & Pope conducted a Traffic Impact Study for downtown Riverhead to identify traffic impacts associated with the Base Condition Scenario outlined below and evaluated how these traffic impacts can be mitigated to improve overall traffic flow within and around the downtown area.

The Base Condition Scenario represents traffic conditions expected at study intersections in the future year 2016. The Base Condition Scenario traffic volumes are estimated based on the following factors:

- Assumed 80% of current vacant uses within the downtown area are occupied by 2016.
- Increase in traffic due to general population growth and assume other planned projects within and outside the study area are constructed and in operation by 2016.

The traffic impacts associated with the Base Condition Scenario were identified by reviewing the area's existing roadway characteristics and traffic conditions, estimating the vehicular volume and pattern that the Base Condition Scenario will generate during peak hours, and analyzing the effect of the additional volume on the surrounding roadway network. The following is a summary of this investigation and the findings thereof:

- Conducted a detailed field inventory of the study area.
- Collected turning movement counts at the study intersections during the weekday AM, Midday, PM and Saturday midday peak periods. From the review of the traffic data, it was determined that the weekday PM and Saturday midday peak hour volumes are higher than the weekday AM and weekday midday peak hours. Therefore, detailed analyses were only conducted for the weekday PM and Saturday midday peak hours.
- Additional hourly volume counts were collected on the study area roadway segments for a period of one week to supplement the turning movement counts.
- During the traffic data collection period, there were several vacant stores on West/East Main Street. In order to account for traffic that could be generated by these vacant stores, the Institute of Transportation Engineering (ITE) Trip Generation Manual was utilized to estimate the number of trips based on the square footage and the use of the stores.

- Projections of the existing traffic volumes to obtain the 2016 traffic volumes (Base Condition Scenario) were made utilizing the following assumptions:
  - Assumed 80% of current vacant uses within the downtown area are occupied by 2016. The trips generated by 80% of the vacant uses were added to traffic data collected.
  - Increase in traffic due to general population growth (a 1.88% annual growth factor obtained from the New York State Department of Transportation (NYSDOT) Long Island Transportation Plan 2000 Study (LITP2000)) and other planned projects within and outside the study area are constructed and in operation by 2016.
- Conducted capacity analyses at the study intersections for the 2016 Base Condition Scenario. The analyses were conducted using the SYNCHRO version 8 software.
- Reviewed capacity analyses to identify intersection deficiencies.
- Developed realistically executable plans to improve the anticipated future geometric and/or traffic deficiencies in the project area.
- The developed plans were analyzed. The results of the analyses with and without the improvements were compared.

Based on the capacity analyses results of the Base Condition Scenario, the following intersections were identified as the locations with major traffic issues.

- West Main Street at Peconic Avenue
- East Main Street at Roanoke Avenue
- The Roundabout at Peconic Avenue/CR 94/CR63/CR104/NYS 24

Mitigation of the traffic issues at these intersections will improve traffic flow within downtown Riverhead. In order to improve the traffic flow in downtown Riverhead during the 2016 Base year, the following mitigation measures were developed and analyzed.



## Mitigation 1

Mitigation 1 consists of the following proposed improvements:

1. Make Peconic Avenue a one-way roadway northbound with provision for a southbound emergency lane.
2. Restripe the intersection of West Main Street at Peconic Avenue to provide two eastbound through lanes and two westbound through lanes. One of the westbound through lanes will drop just west of Griffing Avenue. The section of Main Street between Peconic Avenue and Roanoke Avenue will be restriped to provide two westbound through lanes and one eastbound through lane and one eastbound left turn lane.
3. Re-stripe the southbound approach at the intersection of West Main Street and Court Street to provide an additional lane.
4. Install traffic signals at the intersections of East Main Street and Riverside Drive and at East Main Street at Fishel Avenue operating under one controller.
5. Signal timing/phasing adjustments at the following intersections:
  - Main Street at Peconic Avenue/Roanoke Avenue
  - West Main Street at Court Street/Nugent Drive
  - East Main Street at McDermott Avenue
  - West Main Street at Griffing Avenue
6. As part of the Suffolk County Roundabout project, redesign the one lane five- leg roundabout to a two lane five- leg roundabout with one –way northbound on Peconic Avenue

With the aforementioned improvements proposed under Mitigation 1, the following assumptions were made:

- The current westbound left turn traffic volumes at the intersection of West Main Street and Peconic Avenue is a combination of some southbound Roanoke Avenue right turn traffic volume and some westbound through traffic volume at the intersection of West Main Street and Roanoke Avenue. To prohibit the westbound East Main Street left turn traffic and the eastbound West Main Street right turn traffic at Peconic Avenue and making Peconic Avenue one-way northbound the following was assumed:

- 60% of the Roanoke Avenue right turn traffic will reroute to the intersection of Court Street and West Main Street via Railroad Avenue, Griffing Avenue and Court Street.
- 20% of the West Main Street traffic originally heading east on NYS 24 via Peconic Avenue was rerouted to Riverside Drive. The rest of the West Main Street westbound traffic originally heading south via Peconic Avenue was rerouted to continue straight on West Main Street and will either make a westbound left turn or continue straight at the intersection of West Main Street and Court Street/Nugent Drive.
- The eastbound West Main Street right turn traffic at Peconic Avenue was rerouted to the intersection of West Main Street and Court Street/Nugent Drive.

**Mitigation 2** – In order to address comments from Riverside Drive residents on the use of Riverside Drive as a cut-through route Mitigation 2 was developed.

Mitigation 2 consists of the following proposed improvements:

1. All the improvements under Mitigation 1 except item 4 (signalization of East Main Street at Riverside Drive /Fishel Avenue).
2. Prohibit southbound left turns from East Main Street to Riverside Drive. The left turn prohibition is to discourage some of the vehicles from using Riverside Drive whose original destination is eastbound NYS 24 via Peconic Avenue to travel west or south.
3. Some of the vehicles from Fishel Avenue whose destination is currently Riverside Drive will be rerouted to Ostrander Avenue, East Main Street and then to Riverside Avenue via a northbound right turn.
4. Install a traffic signal at the intersection of East Main Street at Ostrander Avenue.

Based upon the above, the Town can proceed with the implementation Base Condition Scenario and traffic and pedestrian flow can be improved with the implementation of the identified mitigation measures.



**TRAFFIC STUDY**  
**TOD GROWTH PLAN**

*TOWN OF RIVERHEAD*

**APPENDIX**

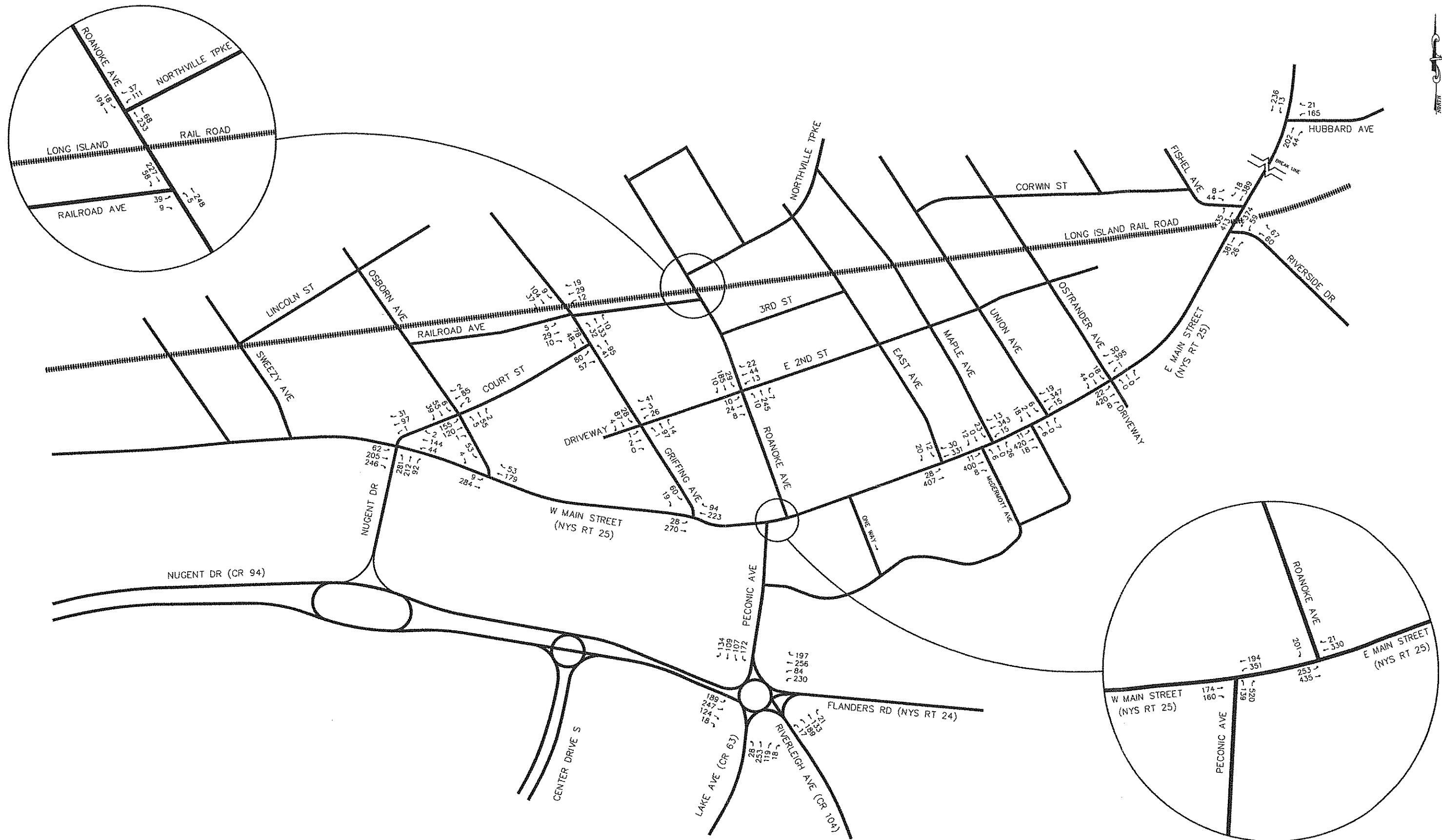
**January 2014**

**N & P JOB NO. 12207**

---

## **Appendix A: Traffic Data**





CONSULTANT



**NELSON & POPE**  
ENGINEERS • SURVEYORS  
572 WALT WHITMAN ROAD, MELVILLE, N.Y. 11747-2188  
631.427.5665 WWW.NELSONPOPE.COM FAX 631.427.5620

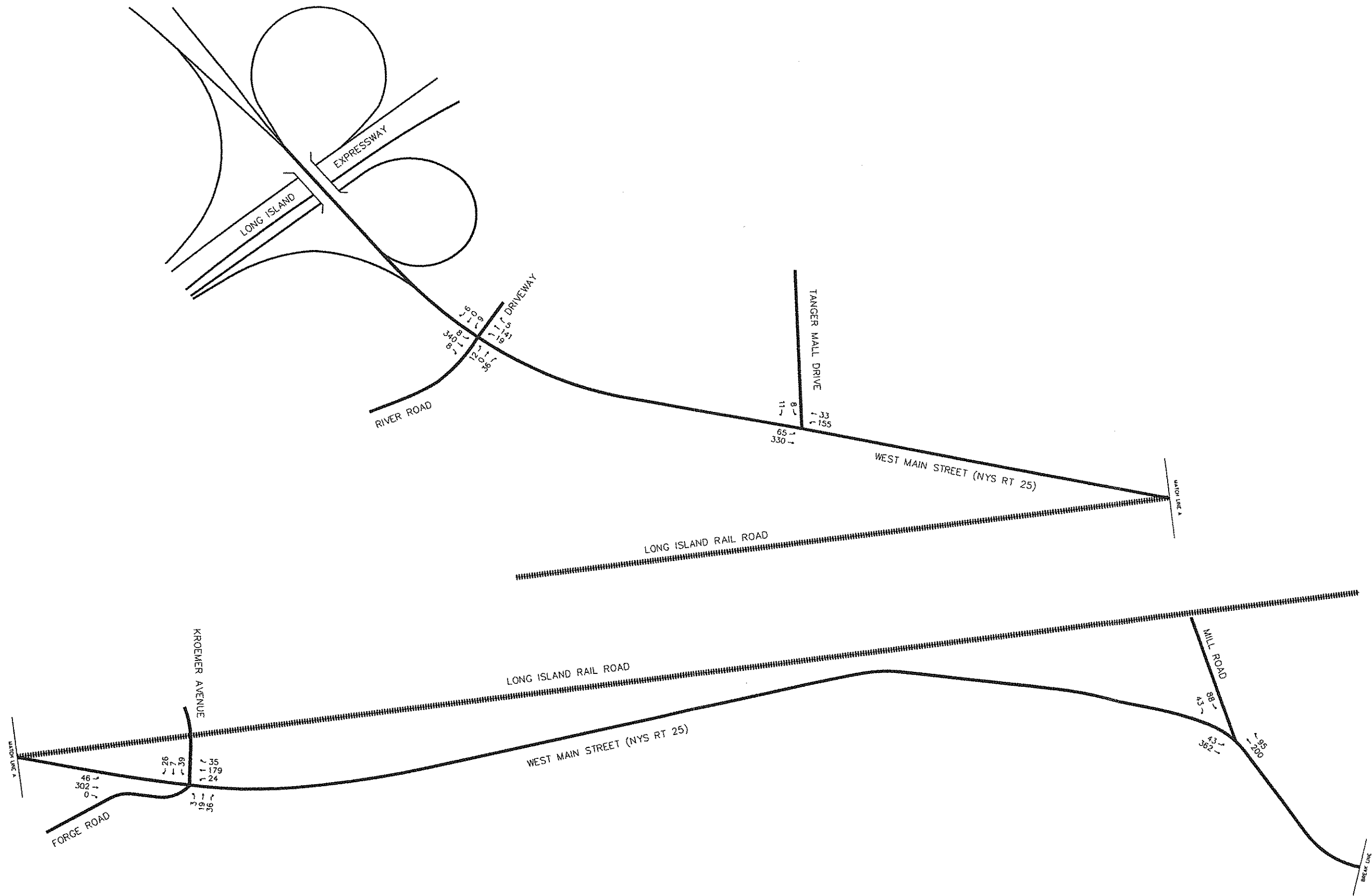
|           |       |
|-----------|-------|
| OWN BY:   | MCM   |
| CHK'D BY: | -     |
| DATE:     | -     |
| JOB No:   | 12207 |
| CADD:     | -     |
| SCALE:    | NTS   |

DRAWING TITLE:

AM EXISTING

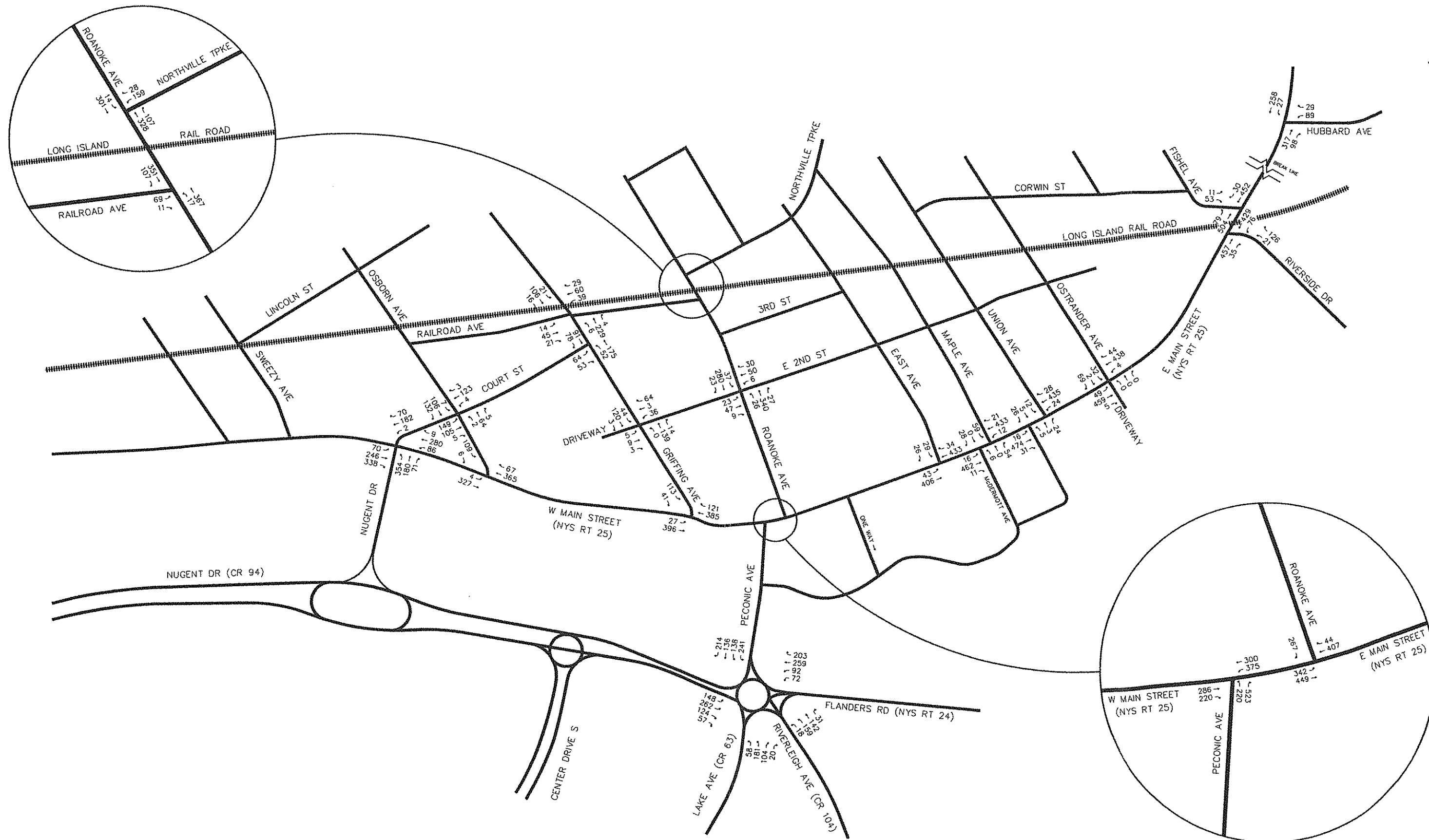
DRAWING NUMBER

FIG-A1



|                                                                                                                                                                                                                                                 |  |                |         |                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------|---------|-----------------|
| CONSULTANT:                                                                                                                                                                                                                                     |  | DRAWING TITLE: |         | DRAWING NUMBER: |
|  <b>NELSON &amp; POPE</b><br>ENGINEERS • SURVEYORS<br>572 WALT WHITMAN ROAD, MELVILLE, N.Y. 11747-2188<br>631.427.5665 WWW.NELSONPOPE.COM FAX 631.427.5620 |  | DRAWN BY:      | MCM     |                 |
|                                                                                                                                                                                                                                                 |  | CHECKED BY:    | -       |                 |
|                                                                                                                                                                                                                                                 |  | DATE:          | -       |                 |
|                                                                                                                                                                                                                                                 |  | JOB No:        | 12207   |                 |
|                                                                                                                                                                                                                                                 |  | CADD:          | -       | AM EXISTING     |
|                                                                                                                                                                                                                                                 |  | SCALE:         | 1"=100' |                 |
|                                                                                                                                                                                                                                                 |  |                |         | FIG-A2          |





CONSULTANT



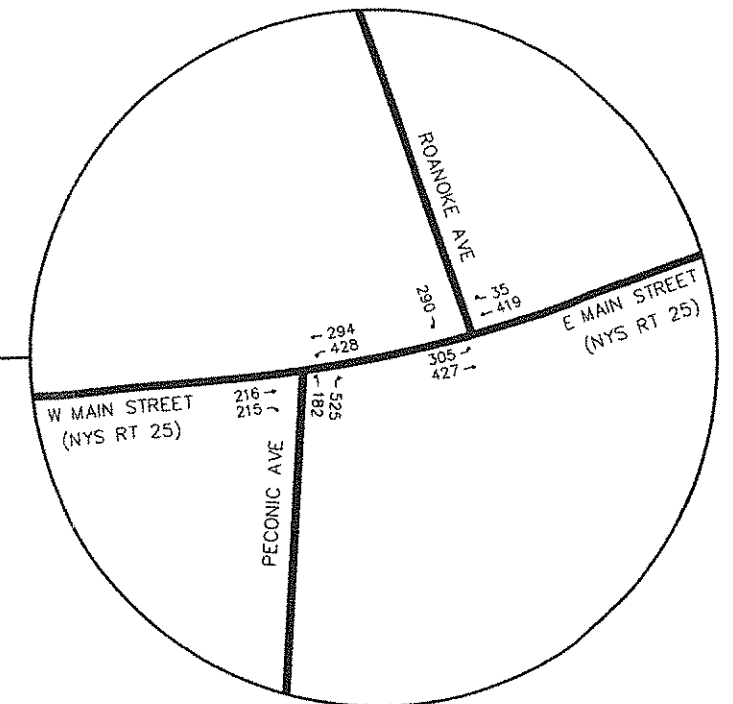
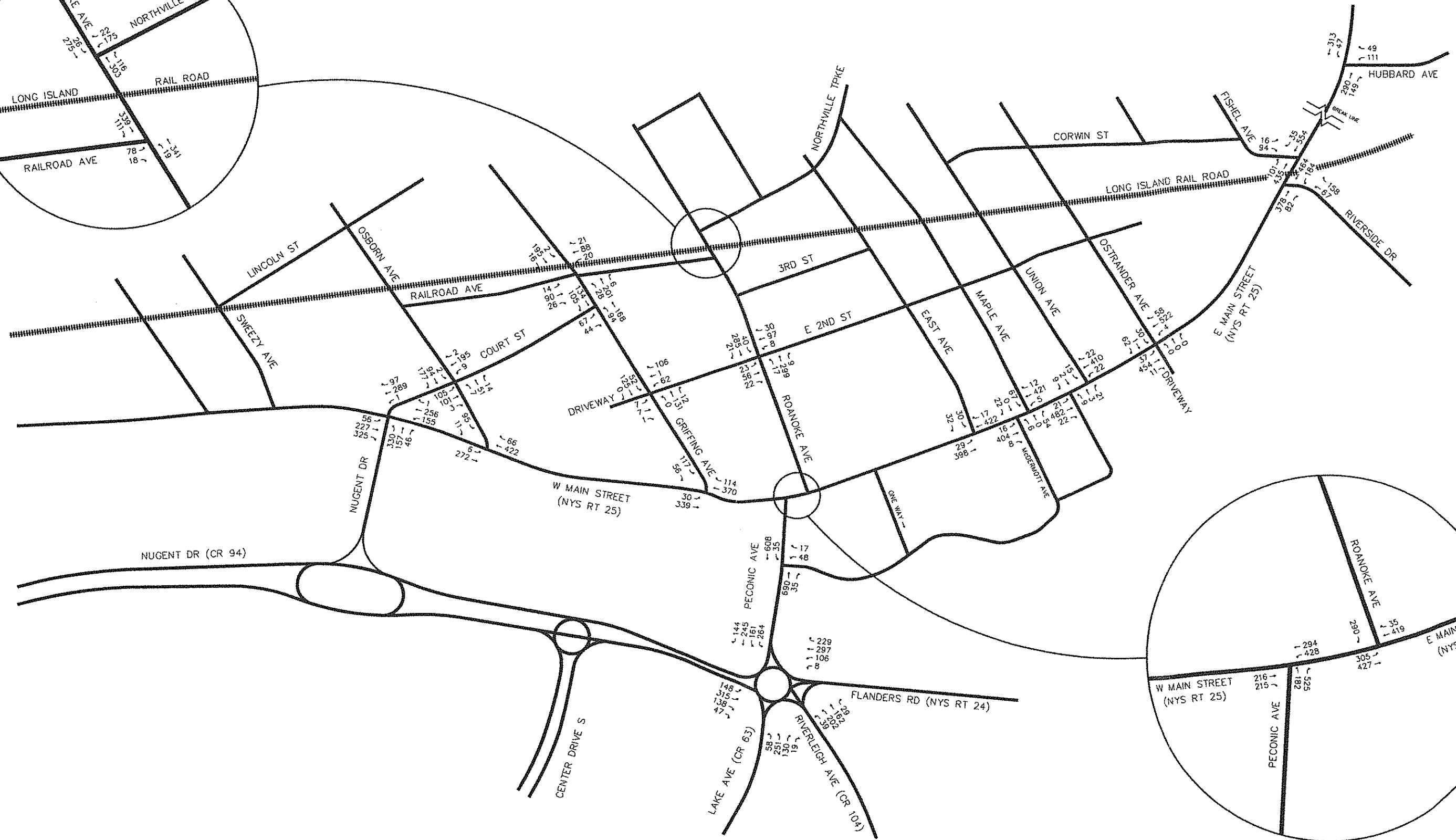
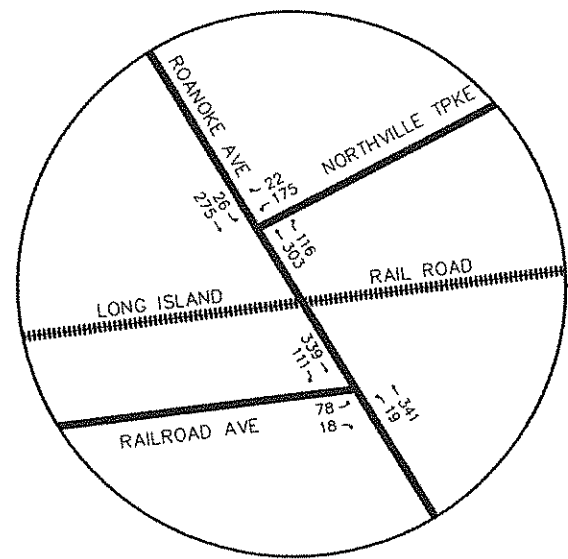
**NELSON & POPE**  
ENGINEERS • SURVEYORS  
572 WALT WHITMAN ROAD, MELVILLE, N.Y. 11747-2188  
631.427.5665 WWW.NELSONPOPE.COM FAX 631.427.5620

|           |       |
|-----------|-------|
| DWN BY:   | MCM   |
| CHCKD BY: | -     |
| DATE:     | -     |
| JOB No:   | 12207 |
| CADD:     | -     |
| SCALE:    | NTS   |

|                 |                 |
|-----------------|-----------------|
| DRAWING TITLE:  | MIDDAY EXISTING |
| DRAWING NUMBER: | FIG-B1          |







CONSULTANT:



**NELSON & POPE**  
ENGINEERS • SURVEYORS

572 WALT WHITMAN ROAD, MELVILLE, N.Y. 11747-2188  
631.427.5865 WWW.NELSONPOPE.COM FAX 631.427.5820

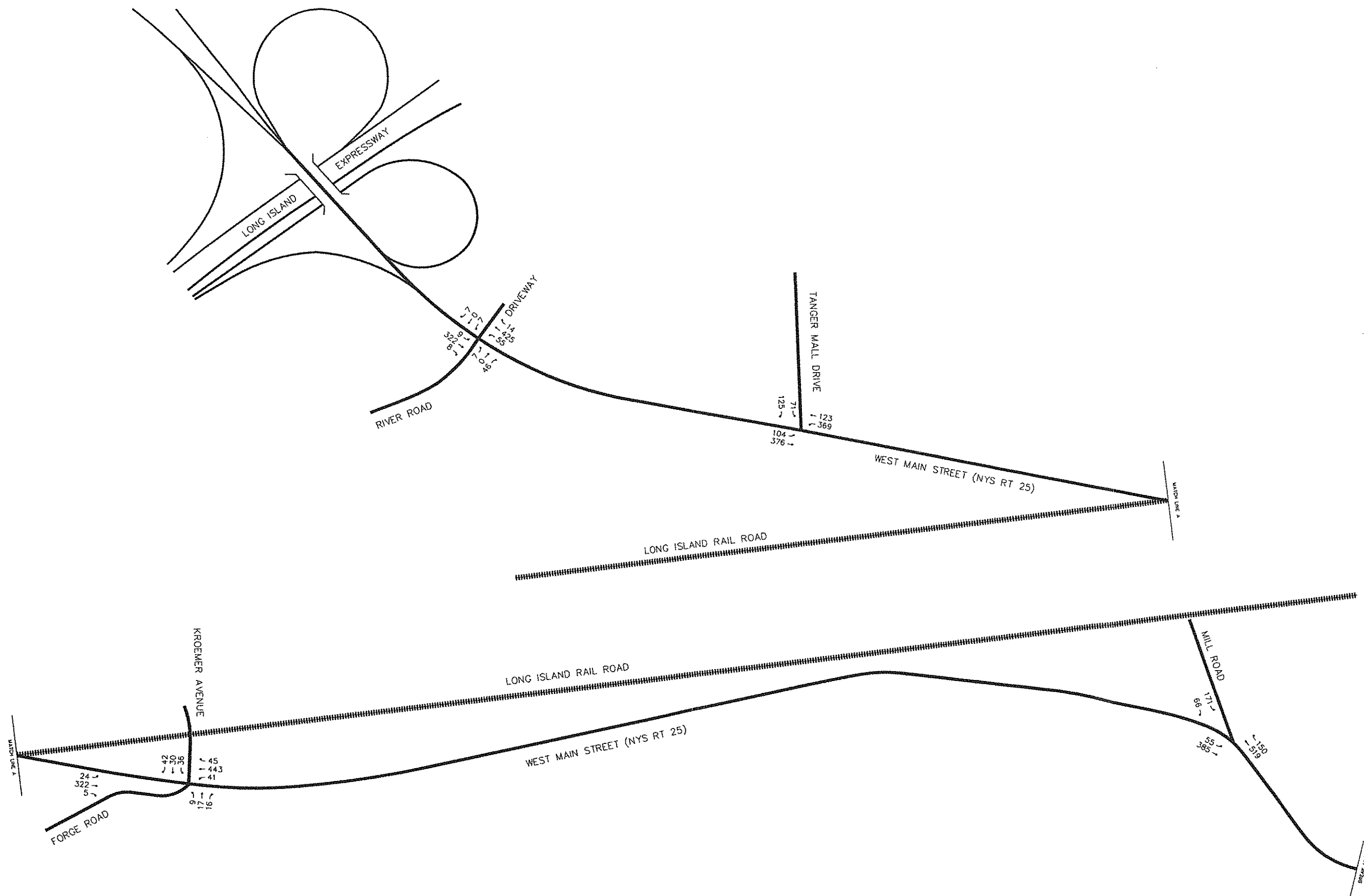
DRAWN BY: MCM  
CHECKED BY: -  
DATE: -  
JOB NO: 12207  
CADD: -  
SCALE: NTS

DRAWING TITLE:

PM EXISTING

DRAWING NUMBER:

FIG-C1



CONSULTANT:



**NELSON & POPE**  
ENGINEERS • SURVEYORS  
572 WALT WHITMAN ROAD, MELVILLE, N.Y. 11747-2188  
631.427.5665 WWW.NELSONPOPE.COM FAX 631.427.5620

|          |       |
|----------|-------|
| DWN BY:  | UCM   |
| CHKD BY: | -     |
| DATE:    | -     |
| JOB No:  | 12207 |
| CADD:    | -     |

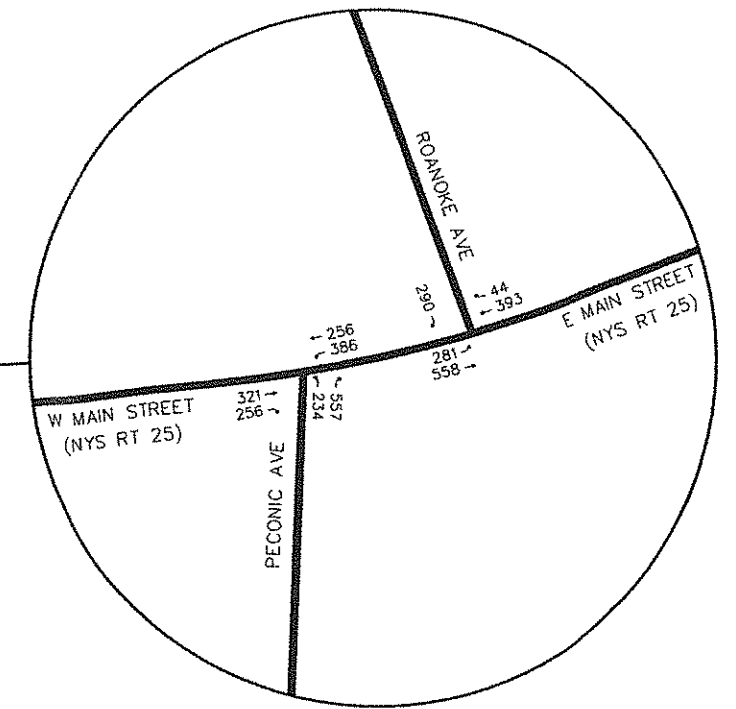
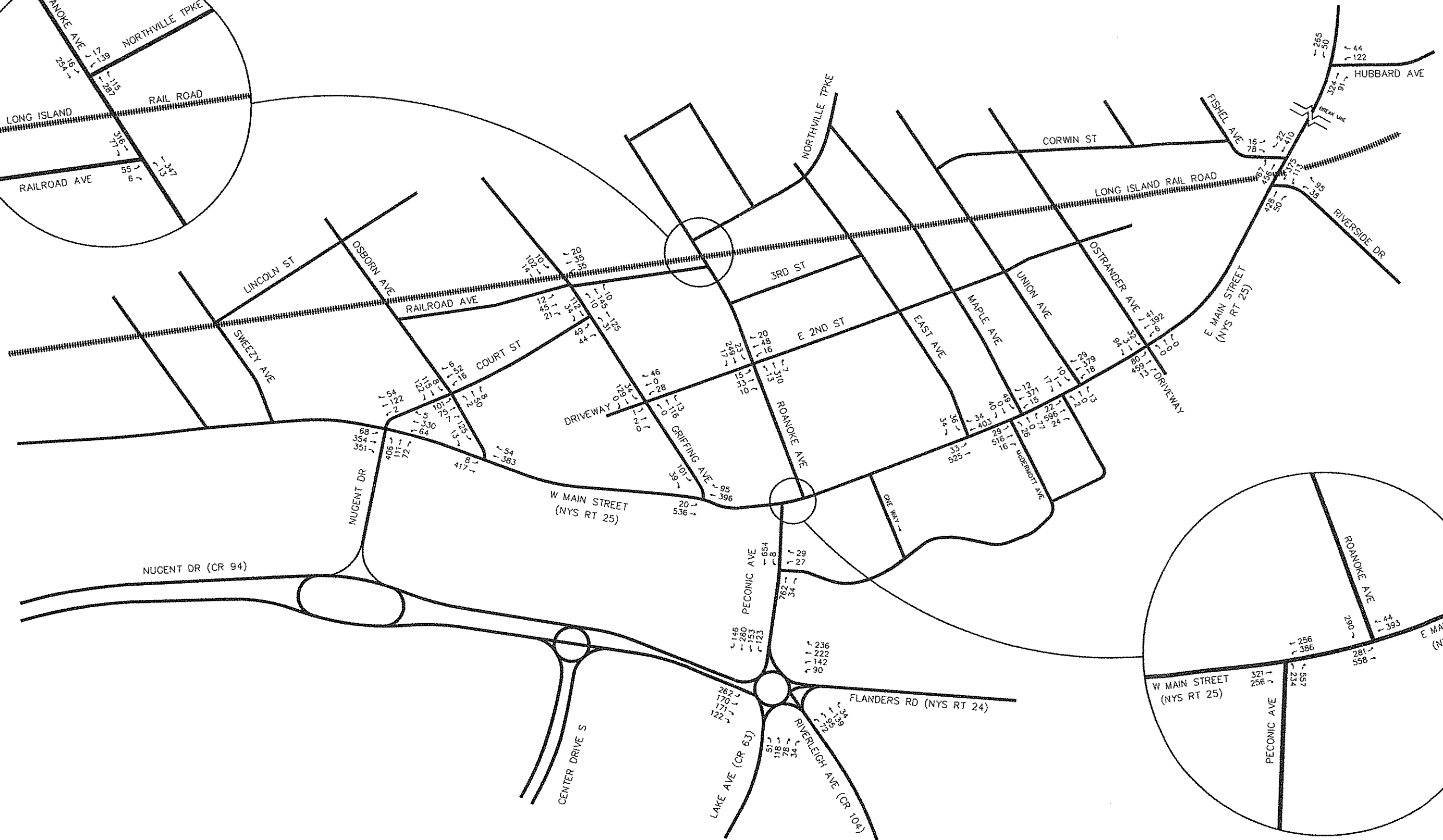
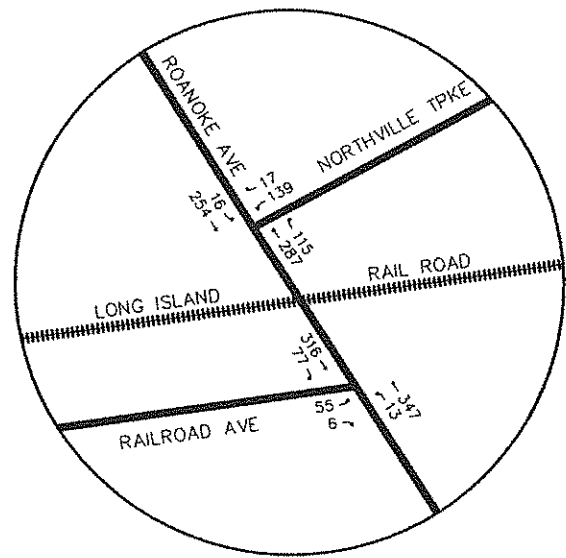
DRAWING TITLE:

PM EXISTING

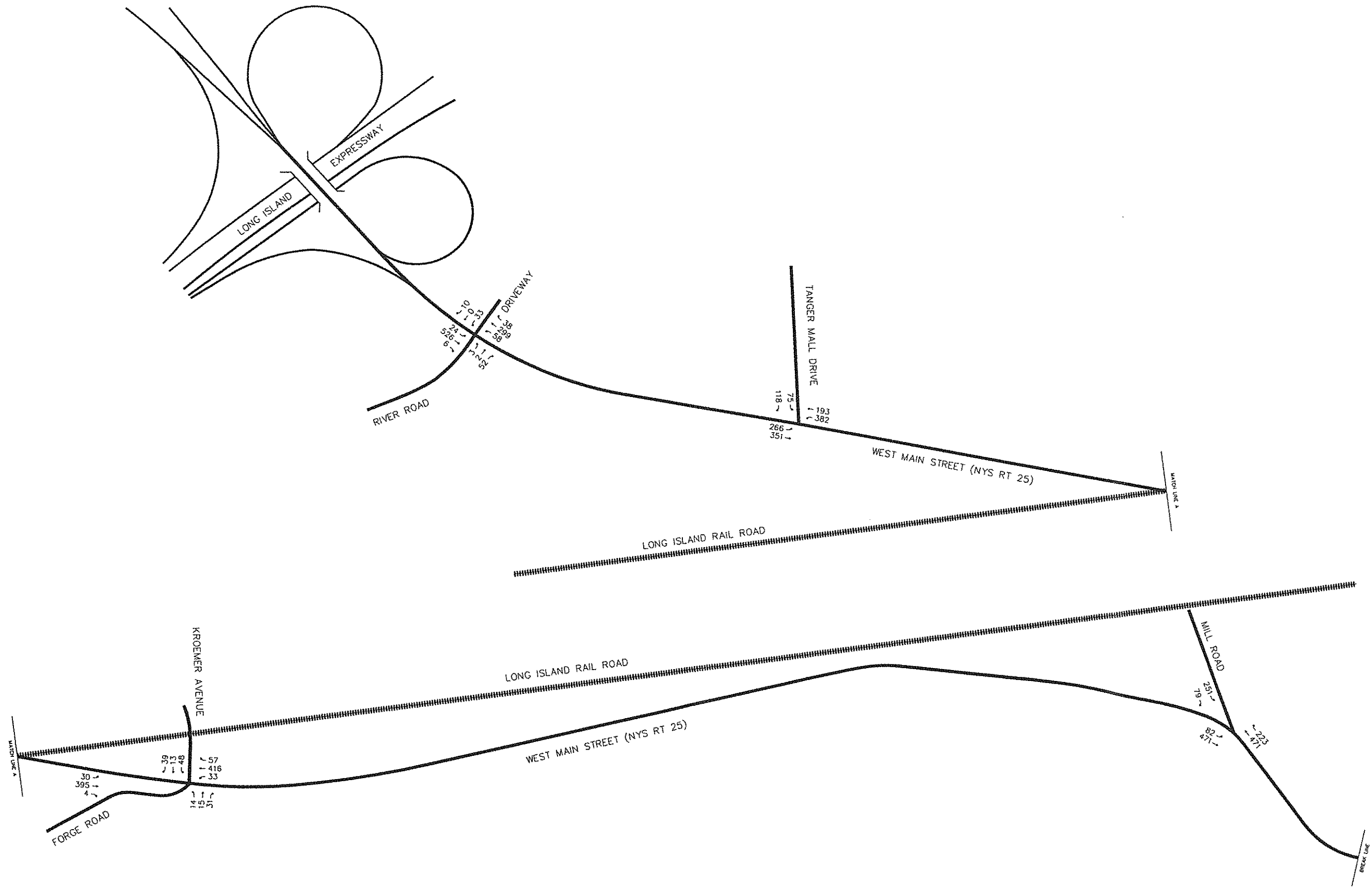
DRAWING NUMBER:

FIG-C2

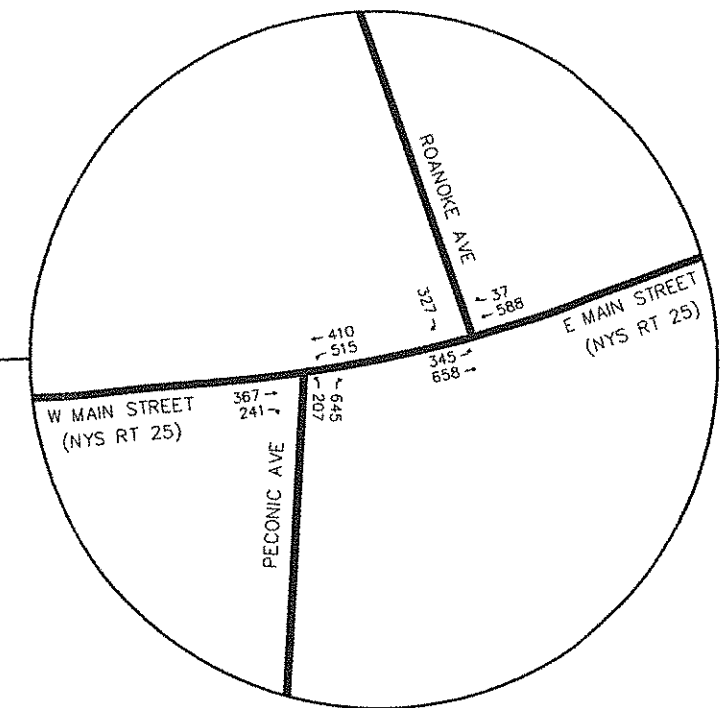
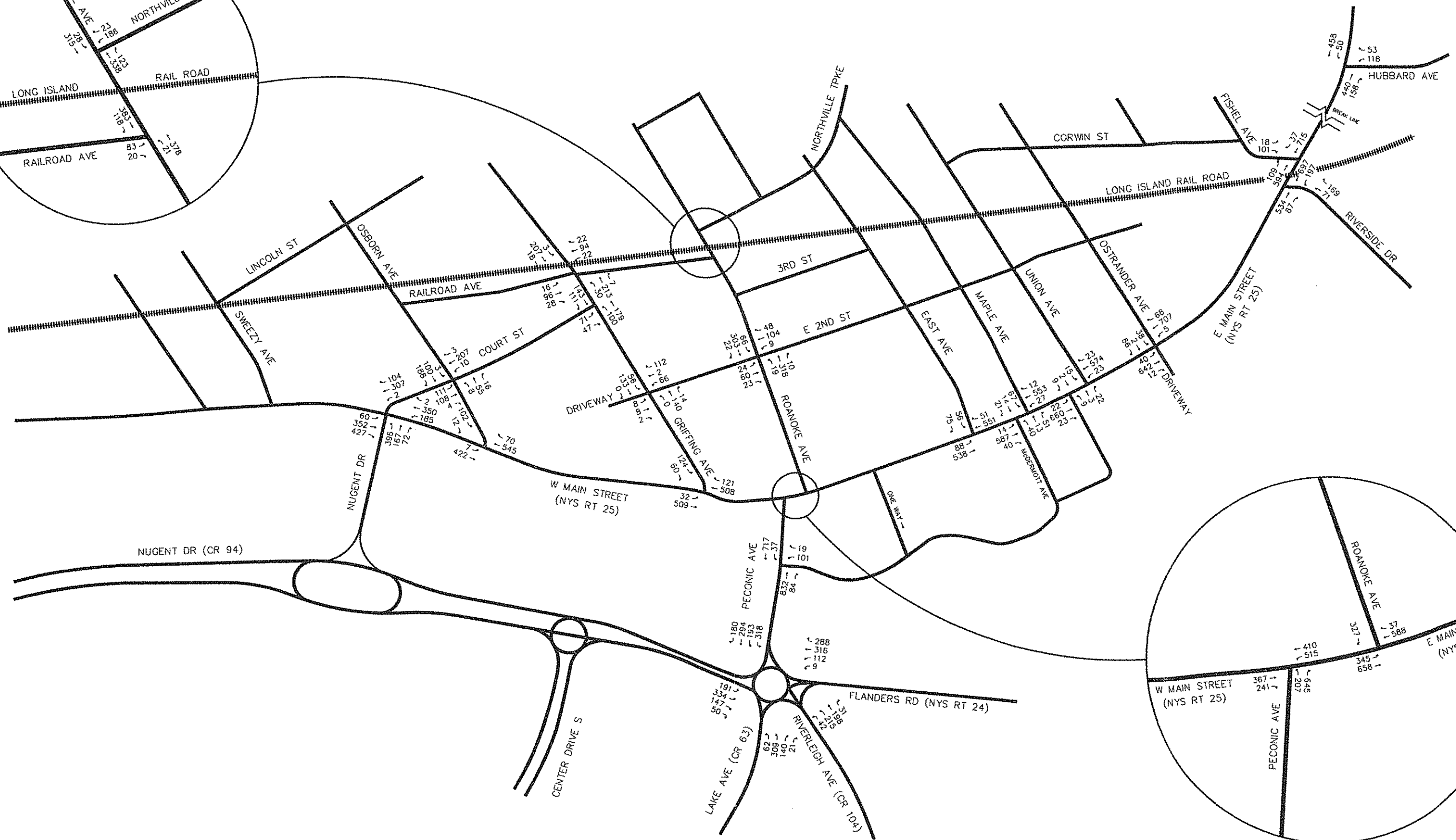
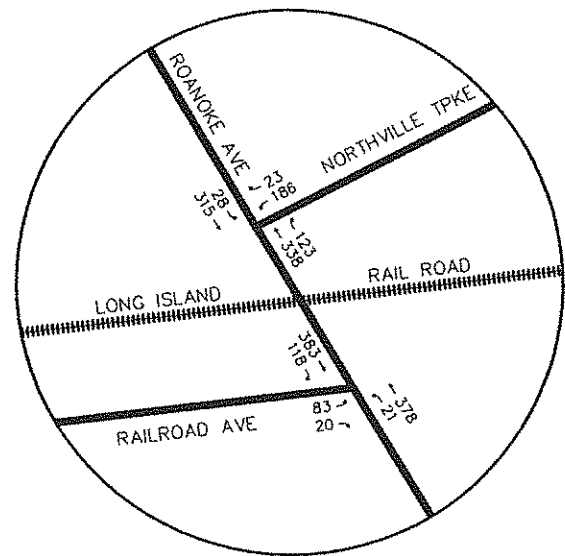




|                                                                                                                                                                                                                                                 |  |               |                   |                |  |                 |        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------|-------------------|----------------|--|-----------------|--------|
| CONSULTANT                                                                                                                                                                                                                                      |  | DRAWN BY: MCM |                   | DRAWING TITLE: |  | DRAWING NUMBER: |        |
|  <b>NELSON &amp; POPE</b><br>ENGINEERS • SURVEYORS<br>572 WALT WHITMAN ROAD, MELVILLE, N.Y. 11747-2188<br>631.427.5805 WWW.NELSONPOPE.COM FAX 631.427.5820 |  | CHKD BY: -    | SATURDAY EXISTING |                |  |                 | FIG-D1 |
|                                                                                                                                                                                                                                                 |  | DATE: -       |                   |                |  |                 |        |
|                                                                                                                                                                                                                                                 |  | JOB No: 0207  |                   |                |  |                 |        |
|                                                                                                                                                                                                                                                 |  | CADD: -       |                   |                |  |                 |        |
| SCALE: NTS                                                                                                                                                                                                                                      |  |               |                   |                |  |                 |        |







CONSULTANT



**NELSON & POPE**  
ENGINEERS • SURVEYORS  
572 WALT WHITMAN ROAD, MELVILLE, N.Y. 11747-2188  
631.427.5665 WWW.NELSONPOPE.COM FAX 631.427.5620

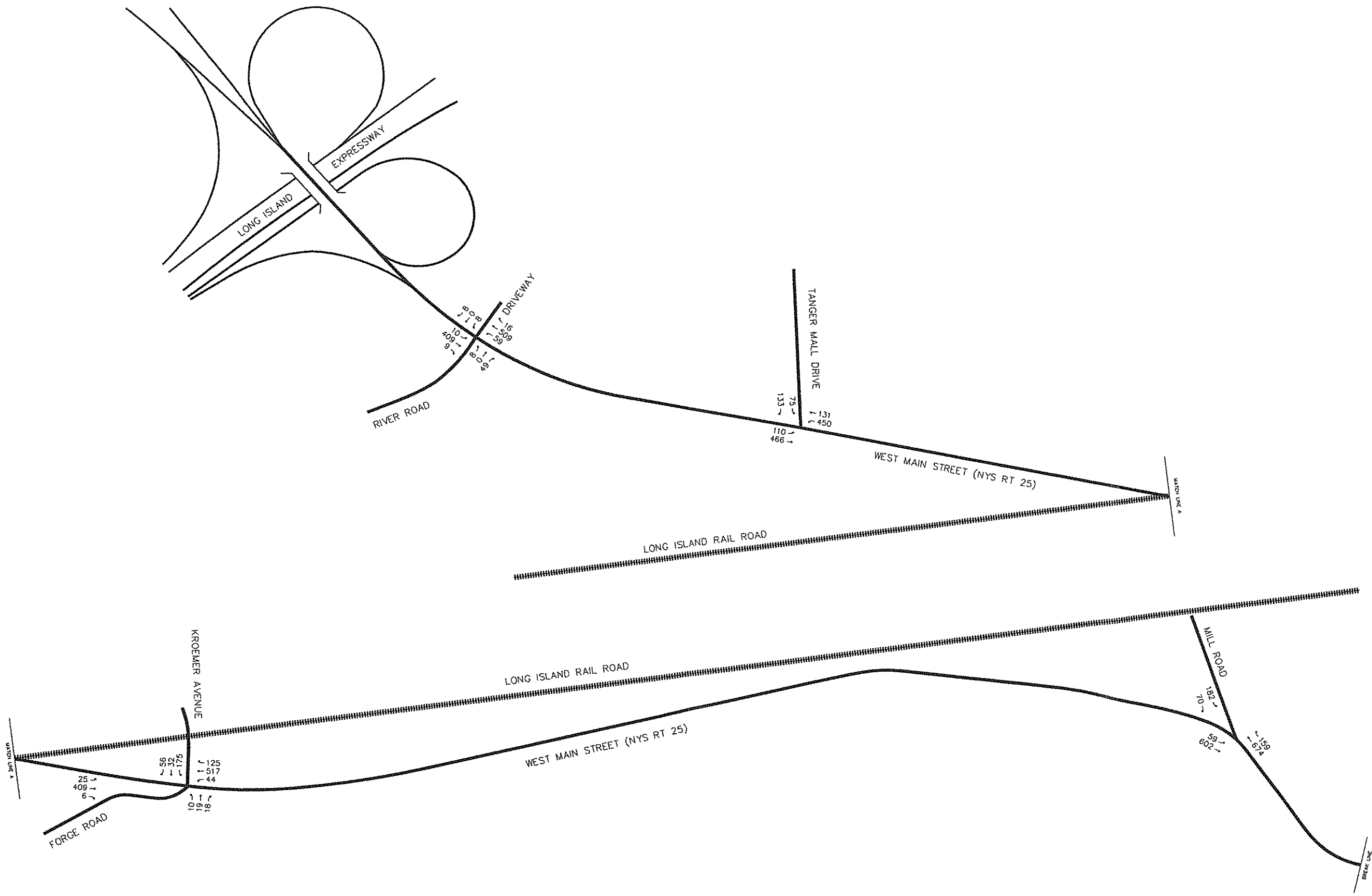
|             |       |
|-------------|-------|
| DRAWN BY:   | MCM   |
| CHECKED BY: | -     |
| DATE:       | -     |
| JOB No:     | 12207 |
| CADD:       | -     |

DRAWING TITLE:

PM BASE

DRAWING NUMBER:

FIG-E1



CONSULTANT:



**NELSON & POPE**  
 ENGINEERS • SURVEYORS  
 572 WALT WHITMAN ROAD, MELVILLE, N.Y. 11747-2188  
 631.427.5865 WWW.NELSONPOPE.COM FAX 631.427.5820

|           |       |
|-----------|-------|
| DWN BY:   | MCM   |
| CHK'D BY: | -     |
| DATE:     | -     |
| JOB No:   | 12207 |
| CADD:     | -     |
| SCALE:    | NTB   |

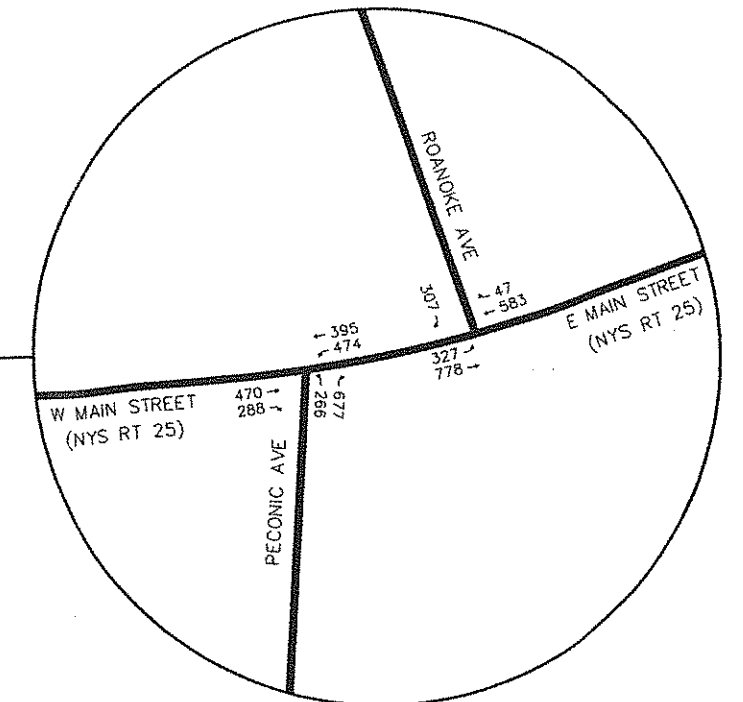
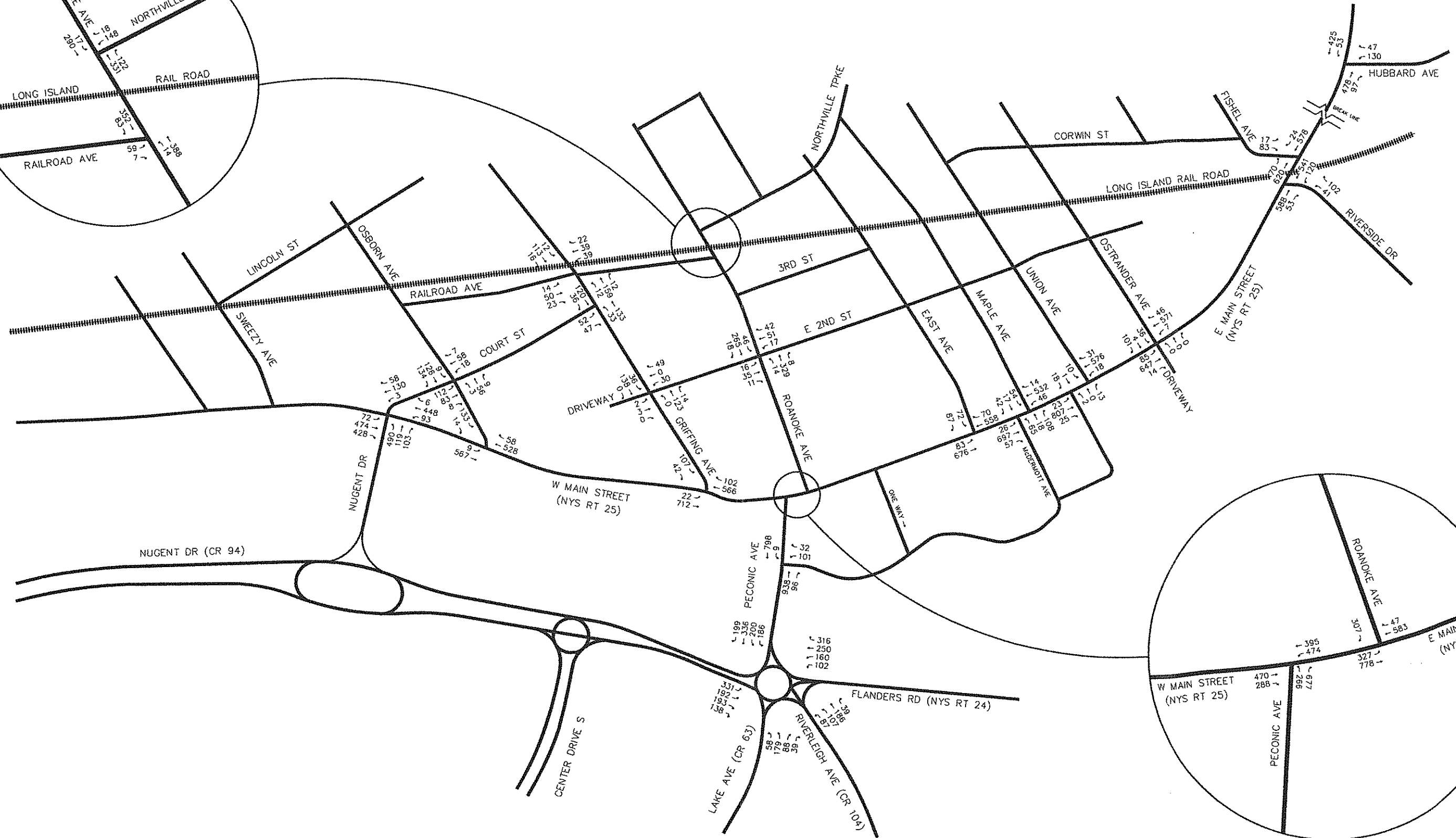
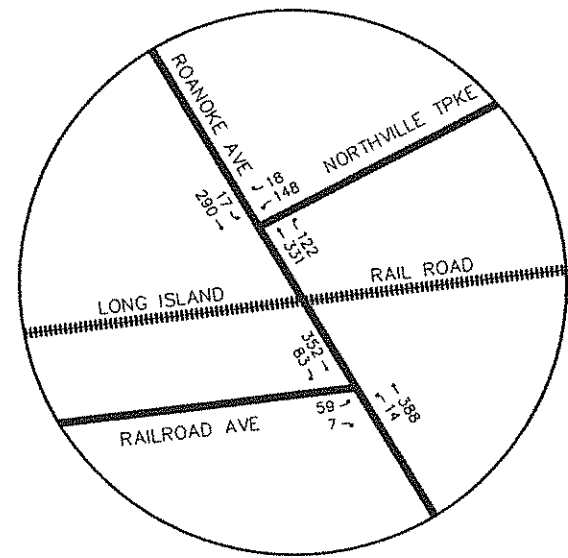
DRAWING TITLE:

PM BASE

DRAWING NUMBER:

FIG-E2





CONSULTANT



**NELSON & POPE**  
ENGINEERS • SURVEYORS  
572 WALT WHITMAN ROAD, MELVILLE, N.Y. 11747-2188  
631.427.5885 WWW.NELSONPOPE.COM FAX 631.427.5820

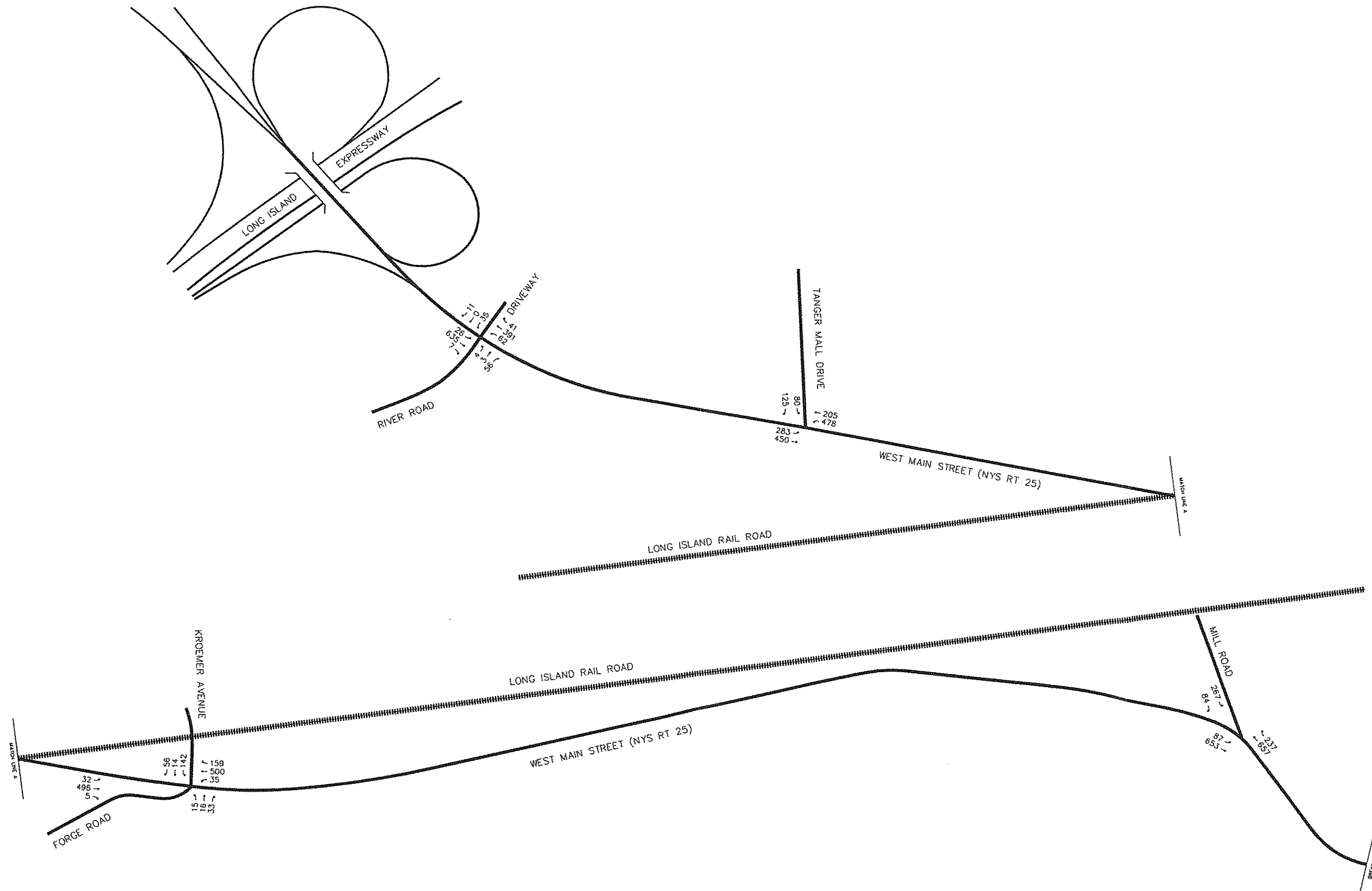
|             |       |
|-------------|-------|
| DRAWN BY:   | MCM   |
| CHECKED BY: | -     |
| DATE:       | -     |
| JOB No:     | 12207 |
| CADD:       | -     |

DRAWING TITLE:

SATURDAY BASE

DRAWING NUMBER

FIG-F1



CONSULTANT:



**NELSON & POPE**  
ENGINEERS • SURVEYORS  
572 WALT WHITMAN ROAD, MELVILLE, N.Y. 11747-2188  
631.427.5665 WWW.NELSONPOPE.COM FAX 631.427.5620

|             |          |
|-------------|----------|
| DRAWN BY:   | MCJ      |
| CHECKED BY: | -        |
| DATE:       | -        |
| JOB No:     | 2207     |
| CADD:       | -        |
| SCALE:      | AS SHOWN |

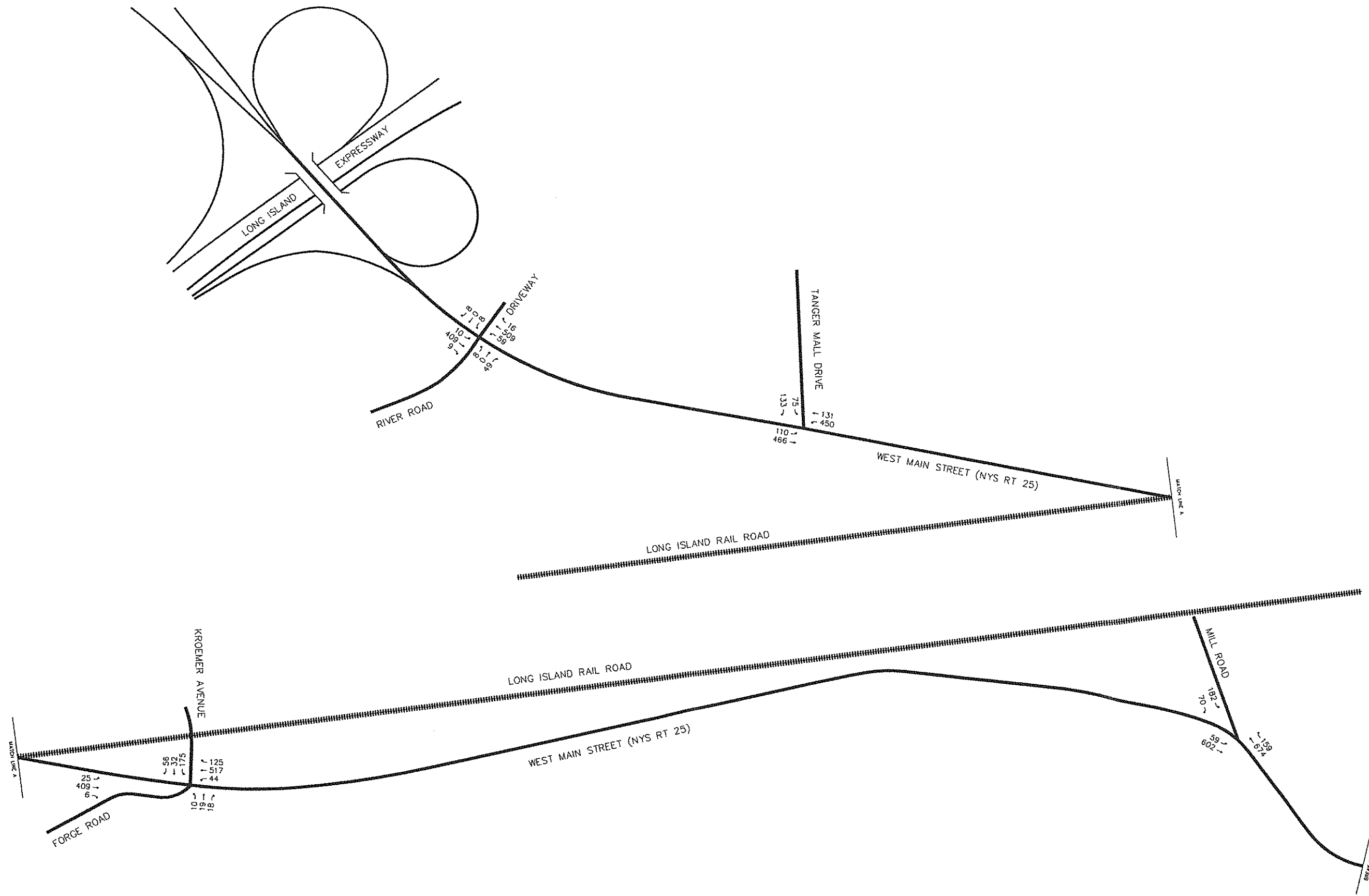
DRAWING TITLE:

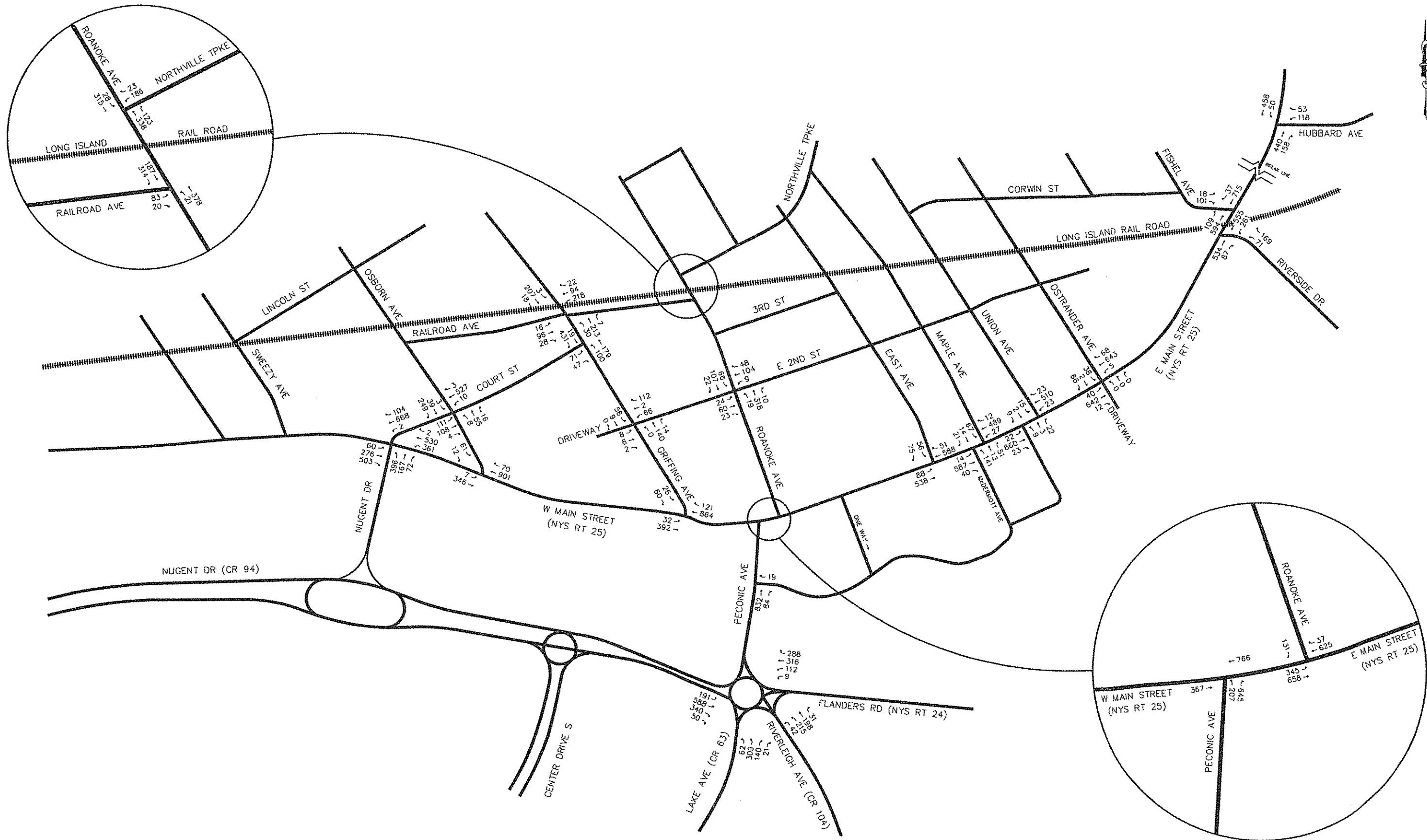
SATURDAY BASE

DRAWING NUMBER:

FIG-F2







CONSULTANT:



**NELSON & POPE**  
ENGINEERS • SURVEYORS  
572 WALT WHITMAN ROAD, MELVILLE, N.Y. 11747-2188  
631.427.5665 WWW.NELSONPOPE.COM FAX 631.427.5820

DRAWN BY: MCM  
CHECKED BY: -  
DATE: -  
JOB No.: 12207  
CADD: -

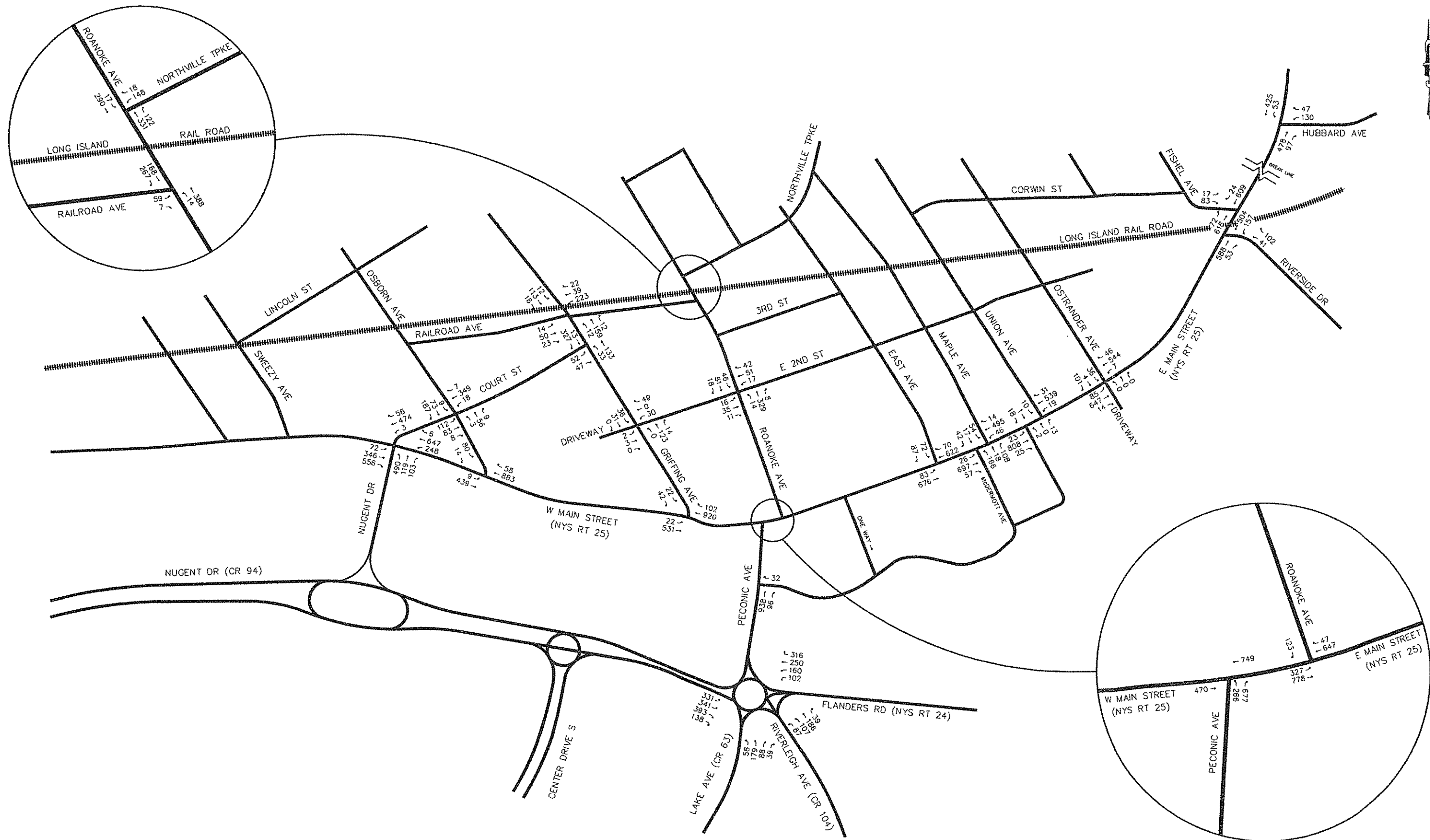
DRAWING TITLE:

PM SCENARIO 1

DRAWING NUMBER:

FIG-G1





CONSULTANT:



**NELSON & POPE**  
ENGINEERS • SURVEYORS  
572 WALT WHITMAN ROAD, MELVILLE, N.Y. 11747-2188  
631.427.5665 WWW.NELSONPOPE.COM FAX 631.427.5620

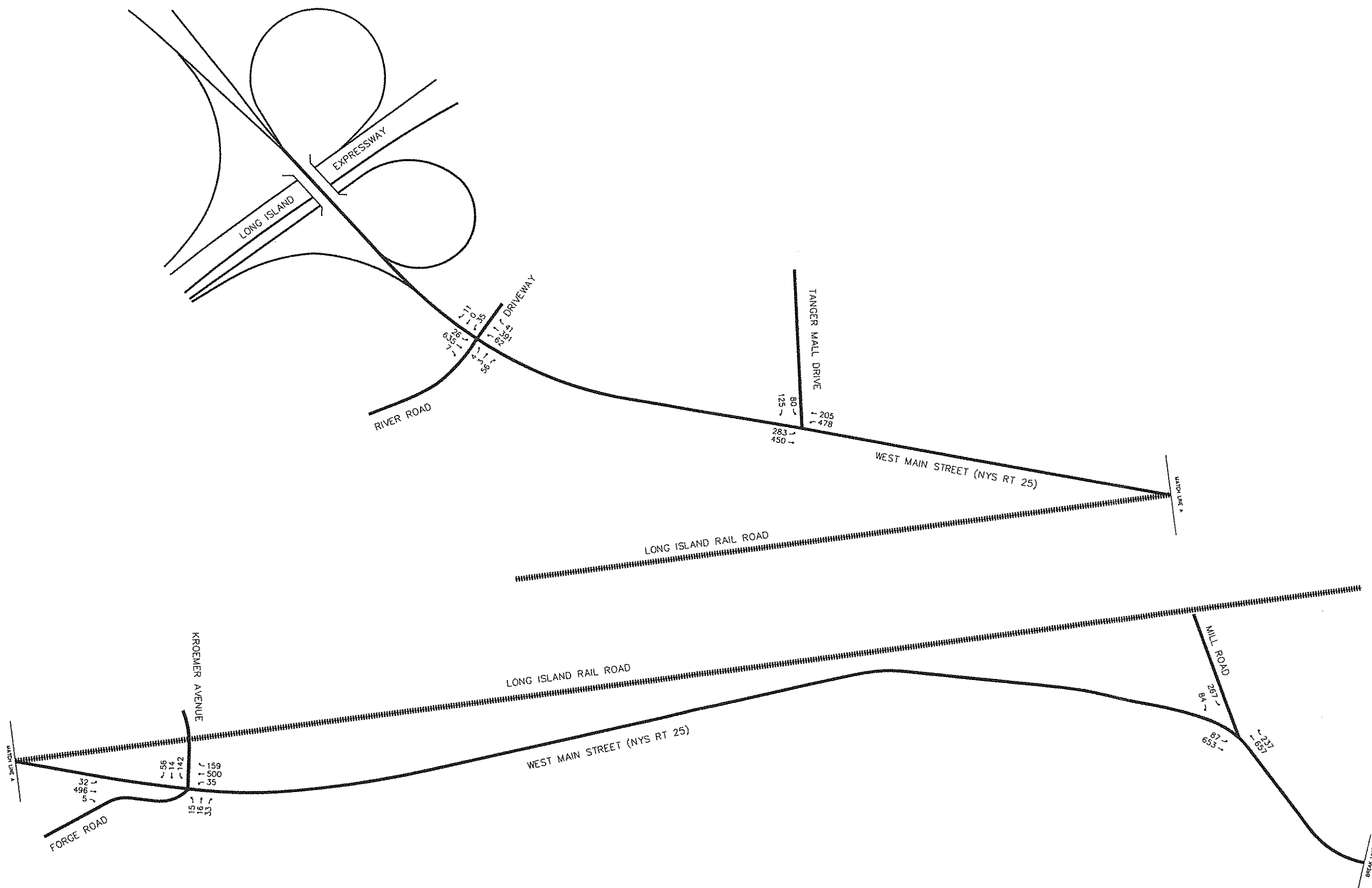
|             |       |
|-------------|-------|
| DRAWN BY:   | UCM   |
| CHECKED BY: | -     |
| DATE:       | -     |
| JOB No:     | 12207 |
| CADD:       | -     |

DRAWING TITLE:

SATURDAY SCENARIO 1

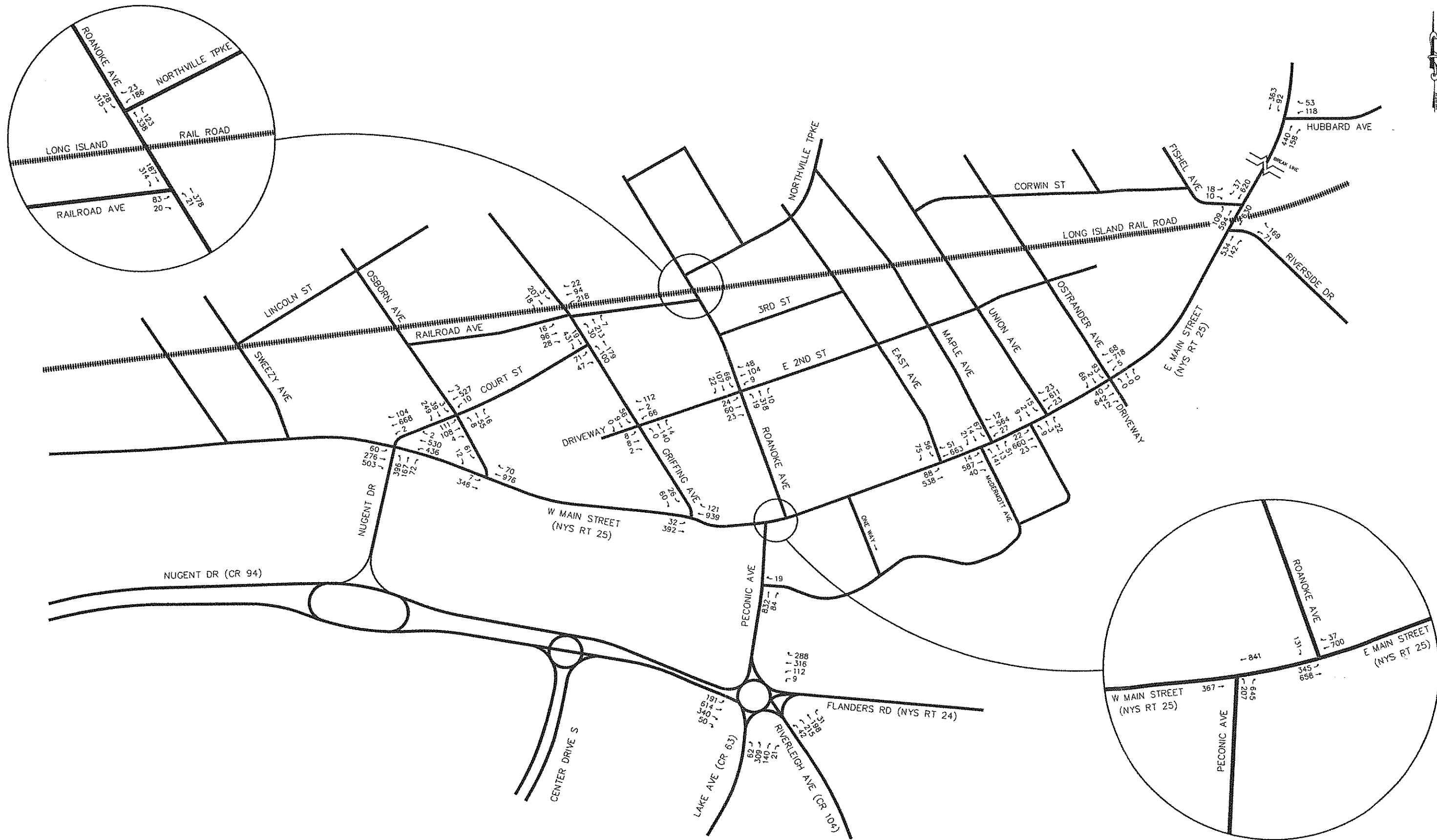
DRAWING NUMBER:

FIG-H1



|                                                                                                                                                                                                                                                 |  |               |       |                     |  |                 |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------|-------|---------------------|--|-----------------|--|
| CONSULTANT:                                                                                                                                                                                                                                     |  | DRAWN BY: MCM |       | DRAWING TITLE:      |  | DRAWING NUMBER: |  |
|  <b>NELSON &amp; POPE</b><br>ENGINEERS • SURVEYORS<br>572 WALT WHITMAN ROAD, MELVILLE, N.Y. 11747-2188<br>631.427.5605 WWW.NELSONPOPE.COM FAX 631.427.5620 |  | CHKD BY:      | -     | SATURDAY SCENARIO 1 |  | FIG-H2          |  |
|                                                                                                                                                                                                                                                 |  | DATE:         | -     |                     |  |                 |  |
|                                                                                                                                                                                                                                                 |  | JOB No:       | 12207 |                     |  |                 |  |
|                                                                                                                                                                                                                                                 |  | CADD:         | -     |                     |  |                 |  |
|                                                                                                                                                                                                                                                 |  | SCALE:        | NTS   |                     |  |                 |  |





CONSULTANT:



**NELSON & POPE**  
ENGINEERS • SURVEYORS  
572 WALT WHITMAN ROAD, MELVILLE, N.Y. 11747-2188  
631.427.5665 WWW.NELSONPOPE.COM FAX 631.427.5620

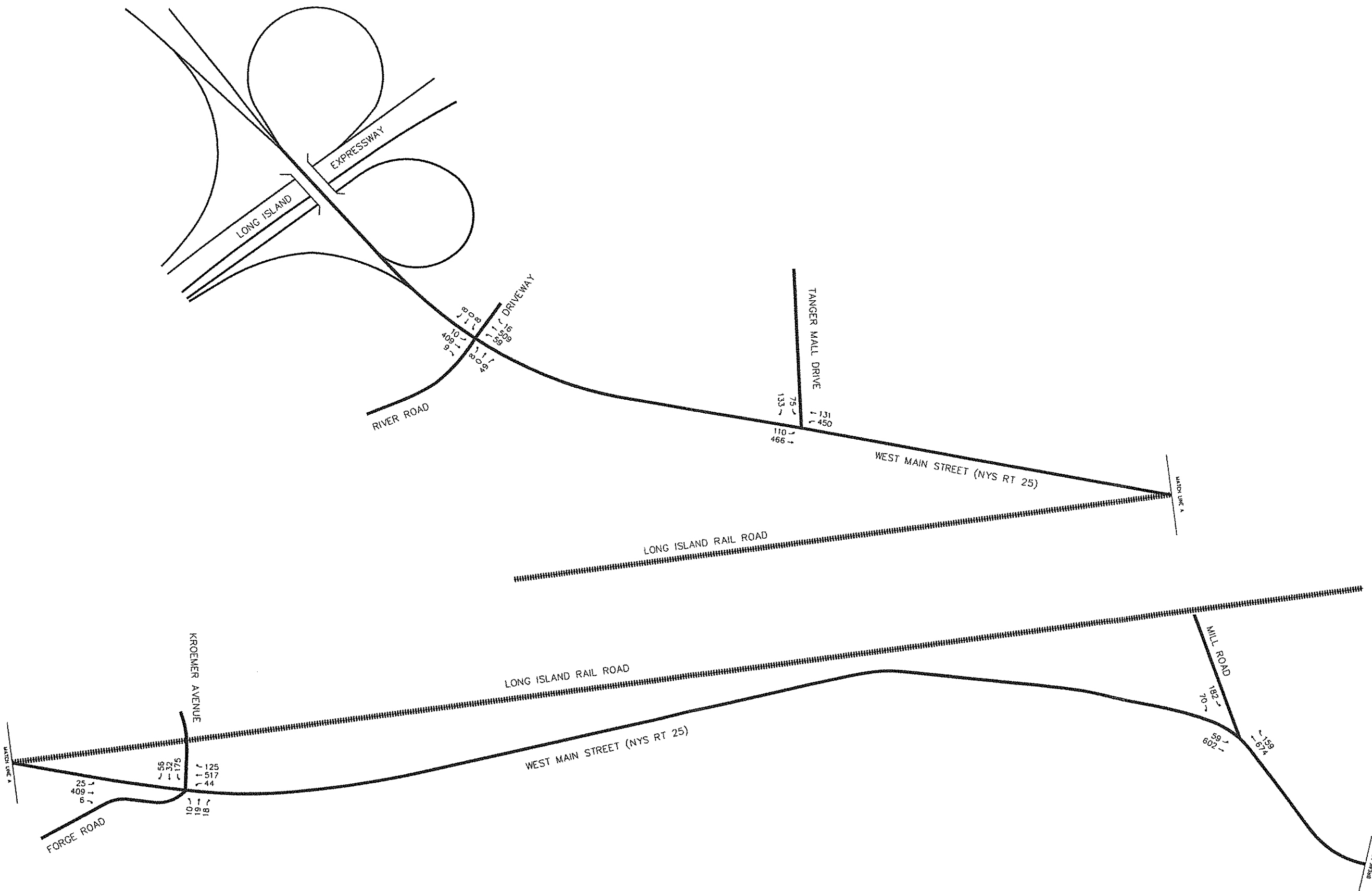
|             |       |
|-------------|-------|
| DRAWN BY:   | MCM   |
| CHECKED BY: | -     |
| DATE:       | -     |
| JOB No:     | 12207 |
| CADD:       | -     |

DRAWING TITLE:

PM SCENARIO 2

DRAWING NUMBER:

FIG-11



CONSULTANT:



**NELSON & POPE**  
ENGINEERS • SURVEYORS

572 WALT WHITMAN ROAD, MELVILLE, N.Y. 11747-2188  
631.427.5665 WWW.NELSONPOPE.COM FAX 631.427.5620

|             |       |
|-------------|-------|
| DRAWN BY:   | MCM   |
| CHECKED BY: | -     |
| DATE:       | -     |
| JOB No.:    | 12207 |
| CADD:       | -     |
| SCALE:      | NTS   |

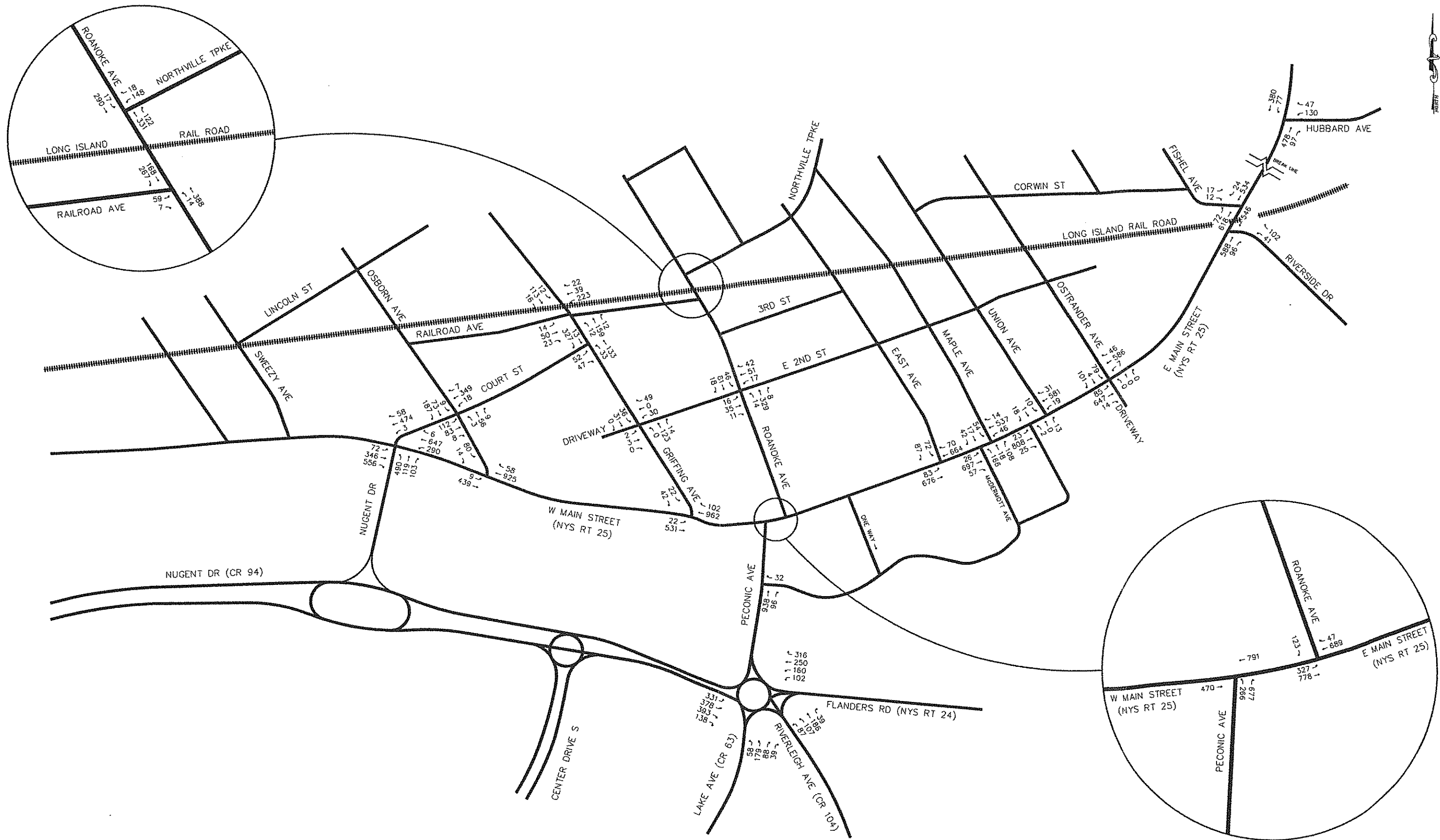
DRAWING TITLE:

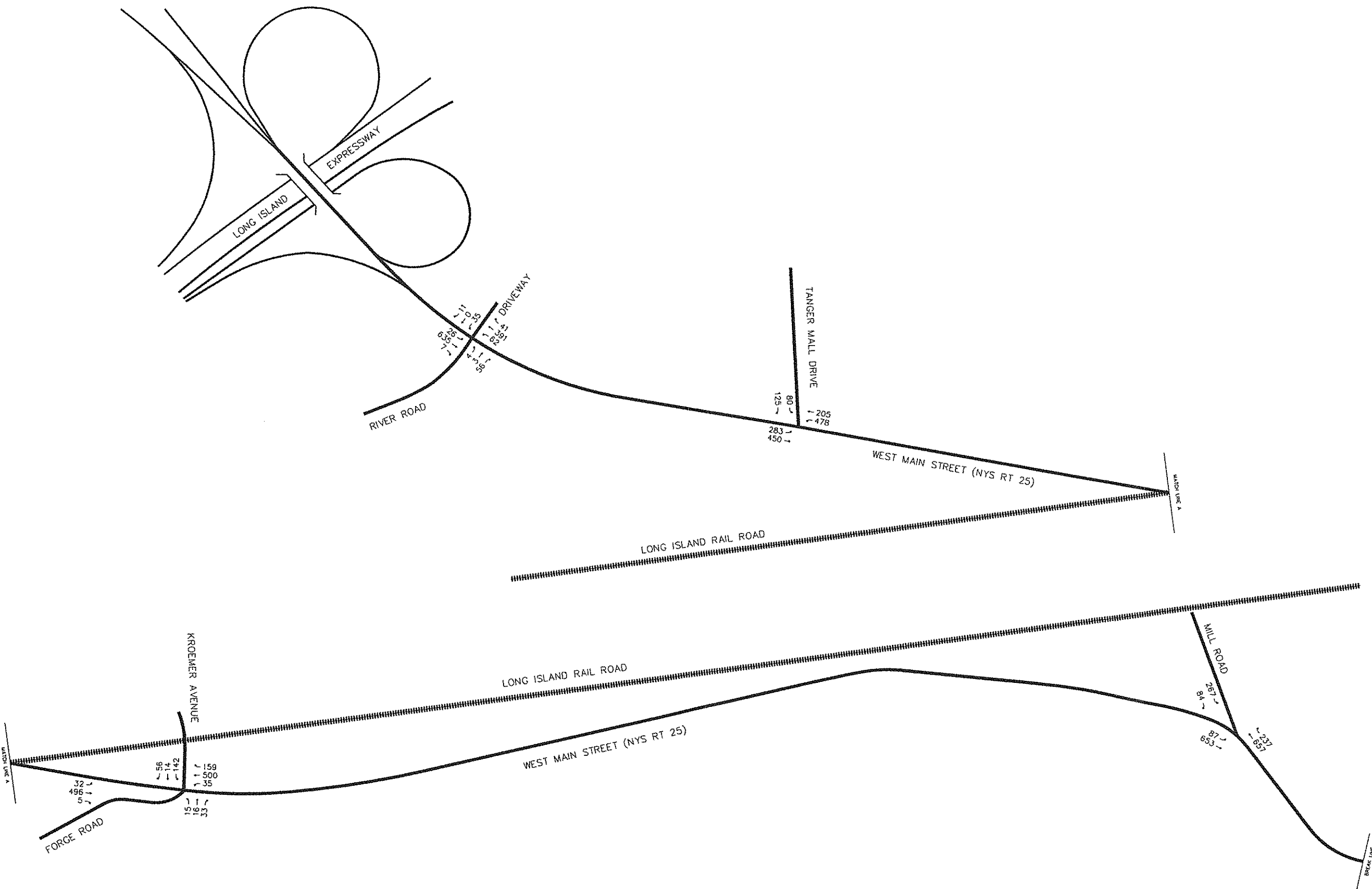
PM SCENARIO 2

DRAWING NUMBER

FIG-12







CONSULTANT:



**NELSON & POPE**  
ENGINEERS • SURVEYORS

572 WALT WHITMAN ROAD, MELVILLE, N.Y. 11747-2188  
631.427.5665 WWW.NELSONPOPE.COM FAX 631.427.5620

|             |       |
|-------------|-------|
| DRAWN BY:   | MCM   |
| CHECKED BY: | -     |
| DATE:       | -     |
| JOB No:     | 12207 |
| CADD:       | -     |
| SCALE:      | NTS   |

DRAWING TITLE:

SATURDAY SCENARIO 2

DRAWING NUMBER:

FIG-J2



Vacant Parcels

| Land Use         | Specific Land Use                      | Full Address                                             | Num<br>ber | Street       | Town      | State    | Zip<br>Code | Number<br>of Stories | On Site Parking? | Num<br>ber<br>of | Notes                              | Total Vacant<br>Area (SF) | Vacant Area -<br>First Floor<br>(SF) | Vacant Area -<br>Second Floor<br>(SF) |
|------------------|----------------------------------------|----------------------------------------------------------|------------|--------------|-----------|----------|-------------|----------------------|------------------|------------------|------------------------------------|---------------------------|--------------------------------------|---------------------------------------|
| Land Use, Vacant | Retail                                 | 8 E Main St, Riverhead, Suffolk, New York 11901, US      | 8          | E Main St    | Riverhead | New York | 11901       | 2                    | No               |                  |                                    | 2192.79                   | 2192.79                              | 0                                     |
| Land Use, Vacant | Offices                                | 518 E Main St, Riverhead, Suffolk, New York 11901, US    | 518        | E Main St    | Riverhead | New York | 11901       | 1                    | Yes              | 25               |                                    | 5210.38                   | 5210.38                              | 0                                     |
| Land Use, Vacant | Office retail                          | 420 E Main St, Riverhead, Suffolk, New York 11901, US    | 420        | E Main St    | Riverhead | New York | 11901       | 2                    | No               |                  |                                    | 4486.6                    | 2361.37                              | 2125.23                               |
| Land Use, Vacant | Unknown potential office               | 428 E Main St, Riverhead, Suffolk, New York 11901, US    | 428        | E Main St    | Riverhead | New York | 11901       | 2                    | No               |                  |                                    | 3694.45                   | 1944.45                              | 1750                                  |
| Land Use, Vacant | Unknown                                | 220 E Main St, Riverhead, Suffolk, New York 11901, US    | 220        | E Main St    | Riverhead | New York | 11901       | 2                    | No               |                  |                                    | 3803.7                    | 2535.8                               | 1267.9                                |
| Land Use, Vacant | Commercial formerly just kids day care | 556 E Main St, Riverhead, Suffolk, New York 11901, US    | 556        | E Main St    | Riverhead | New York | 11901       | 1                    | Yes              | 50+ shared       |                                    | 4912.27                   | 4912.27                              | 0                                     |
| Land Use, Vacant | Former restaurant                      | 37 E Main St, Riverhead, Suffolk, New York 11901, US     | 37         | E Main St    | Riverhead | New York | 11901       | 1                    | No               |                  |                                    | 3627.59                   | 3627.59                              | 0                                     |
| Land Use, Vacant | Commercial                             | 101 E Main St, Riverhead, Suffolk, New York 11901, US    | 101        | E Main St    | Riverhead | New York | 11901       | 1                    | No               |                  |                                    | 10734.61                  | 10734.61                             | 0                                     |
| Land Use, Vacant | Commercial                             | 111 E Main St, Riverhead, Suffolk, New York 11901, US    | 111        | E Main St    | Riverhead | New York | 11901       | 1                    | No               |                  |                                    | 11792.62                  | 11792.62                             | 0                                     |
| Land Use, Vacant | Commercial                             | 118 E Main St, Riverhead, Suffolk, New York 11901, US    | 118        | E Main St    | Riverhead | New York | 11901       | 2                    | No               |                  | Two story structure unoccupied     | 19650                     | 9825                                 | 9825                                  |
| Land Use, Vacant | Commercial                             | 203 E Main St, Riverhead, Suffolk, New York 11901, US    | 203        | E Main St    | Riverhead | New York | 11901       | 1                    | No               |                  |                                    | 16752.67                  | 16752.67                             | 0                                     |
| Land Use, Vacant | Commercial                             | 213 E Main St, Riverhead, Suffolk, New York 11901, US    | 213        | E Main St    | Riverhead | New York | 11901       | 1                    | No               |                  |                                    | 5294.07                   | 5294.07                              | 0                                     |
| Land Use, Vacant | Commercial                             | 221 E Main St, Riverhead, Suffolk, New York 11901, US    | 221        | E Main St    | Riverhead | New York | 11901       | 1                    | No               |                  | Possibly more than One store front | 9666.81                   | 9666.81                              | 0                                     |
| Land Use, Vacant | Former restaurant                      | 35 East Main, Riverhead , Suffolk, New York 11971        | 35         | East Main    | Riverhead | New York | 11971       | 1                    | No               |                  |                                    | 4004.9                    | 4004.9                               | 0                                     |
| Land Use, Vacant | Commercial                             | 307 Griffing Ave, Riverhead, Suffolk, New York 11901, US | 307        | Griffing Ave | Riverhead | New York | 11901       | 2                    | Yes              | 8                |                                    | 6731.88                   | 3365.94                              | 3365.94                               |
| Land Use, Vacant | Commercial                             | 155 Griffing Ave, Riverhead, Suffolk, New York 11901, US | 155        | Griffing Ave | Riverhead | New York | 11901       | 1                    | No               |                  |                                    | 649.77                    | 649.77                               | 0                                     |
| Land Use, Vacant | Commercial/ Medical office             | 205 Osborn Ave, Riverhead, Suffolk, New York 11901, US   | 205        | Osborn Ave   | Riverhead | New York | 11901       | 1                    | Yes              | 15+              |                                    | 4935.23                   | 4935.23                              | 0                                     |
| Land Use, Vacant | Commercial                             | 313 W Main St, Riverhead, Suffolk, New York 11901, US    | 313        | W Main St    | Riverhead | New York | 11901       | 2                    | Yes              | 6                |                                    | 3646.79                   | 2170.79                              | 1476                                  |
| Land Use, Vacant | Commercial                             | 305 W Main St, Riverhead, Suffolk, New York 11901, US    | 305        | W Main St    | Riverhead | New York | 11901       | 1                    | Yes              | 10               |                                    | 2354.44                   | 2354.44                              | 0                                     |
| Land Use, Vacant | Commercial                             | 227 W Main St, Riverhead, Suffolk, New York 11901, US    | 227        | W Main St    | Riverhead | New York | 11901       | 2                    | No               |                  |                                    | 6177.33                   | 3552.55                              | 2624.78                               |
| Land Use, Vacant | Commercial                             | 53 W Main St, Riverhead, Suffolk, New York 11901, US     | 53         | W Main St    | Riverhead | New York | 11901       | 2                    | No               |                  |                                    | 1580.04                   | 1580.04                              | 0                                     |
| Land Use, Vacant | Commercial                             | 48 W Main St, Riverhead, Suffolk, New York 11901, US     | 48         | W Main St    | Riverhead | New York | 11901       | 3                    | No               |                  |                                    | 1738.76                   | 1738.76                              | 0                                     |
| Land Use, Vacant | Retail                                 | 114 W Main St, Riverhead, Suffolk, New York 11901, US    | 114        | W Main St    | Riverhead | New York | 11901       | 1                    | No               |                  |                                    | 1915.66                   | 1915.66                              | 0                                     |
|                  |                                        |                                                          |            |              |           |          |             |                      |                  |                  |                                    | <b>135553.36</b>          | <b>113118.51</b>                     | <b>22434.85</b>                       |

572 Walt Whitman Road  
Melville, New York 11747

Page No : 1

|            |      | Parking Lot Southbound |       |      |            |      | NYS 25 Westbound |       |      |            |      | River Rd Northbound |       |      |            |      | NYS 25 Eastbound |       |      |            |            |  |
|------------|------|------------------------|-------|------|------------|------|------------------|-------|------|------------|------|---------------------|-------|------|------------|------|------------------|-------|------|------------|------------|--|
| Start Time | Left | Thru                   | Right | Peds | App. Total | Left | Thru             | Right | Peds | App. Total | Left | Thru                | Right | Peds | App. Total | Left | Thru             | Right | Peds | App. Total | Int. Total |  |
| 07:00 AM   | 1    | 0                      | 1     | 0    | 2          | 5    | 29               | 0     | 0    | 34         | 0    | 0                   | 7     | 0    | 7          | 2    | 42               | 1     | 0    | 45         | 88         |  |
| 07:15 AM   | 1    | 0                      | 2     | 0    | 3          | 5    | 44               | 0     | 0    | 49         | 1    | 0                   | 4     | 0    | 5          | 2    | 52               | 1     | 0    | 55         | 112        |  |
| 07:30 AM   | 1    | 0                      | 1     | 0    | 2          | 7    | 44               | 1     | 0    | 52         | 2    | 0                   | 8     | 0    | 10         | 0    | 74               | 0     | 0    | 74         | 138        |  |
| 07:45 AM   | 2    | 0                      | 2     | 0    | 4          | 7    | 40               | 1     | 0    | 48         | 1    | 0                   | 8     | 0    | 9          | 3    | 84               | 2     | 0    | 89         | 150        |  |
| Total      | 5    | 0                      | 6     | 0    | 11         | 24   | 157              | 2     | 0    | 183        | 4    | 0                   | 27    | 0    | 31         | 7    | 252              | 4     | 0    | 263        | 488        |  |
| 08:00 AM   | 3    | 0                      | 0     | 0    | 3          | 4    | 51               | 2     | 0    | 57         | 2    | 0                   | 9     | 0    | 11         | 1    | 71               | 0     | 0    | 72         | 143        |  |
| 08:15 AM   | 3    | 0                      | 1     | 0    | 4          | 6    | 30               | 1     | 0    | 37         | 1    | 0                   | 9     | 0    | 10         | 3    | 82               | 3     | 0    | 88         | 139        |  |
| 08:30 AM   | 1    | 0                      | 3     | 0    | 4          | 3    | 23               | 2     | 0    | 28         | 6    | 0                   | 7     | 0    | 13         | 2    | 87               | 3     | 0    | 92         | 137        |  |
| 08:45 AM   | 2    | 0                      | 2     | 0    | 4          | 6    | 34               | 0     | 0    | 40         | 3    | 0                   | 10    | 0    | 13         | 2    | 92               | 2     | 0    | 96         | 153        |  |
| Total      | 9    | 0                      | 6     | 0    | 15         | 19   | 138              | 5     | 0    | 162        | 12   | 0                   | 35    | 0    | 47         | 8    | 332              | 8     | 0    | 348        | 572        |  |
| 12:00 PM   | 2    | 0                      | 1     | 3    | 6          | 5    | 61               | 1     | 0    | 67         | 0    | 0                   | 16    | 0    | 16         | 2    | 66               | 3     | 0    | 71         | 160        |  |
| 12:15 PM   | 2    | 0                      | 1     | 6    | 9          | 14   | 55               | 2     | 1    | 72         | 0    | 1                   | 5     | 0    | 6          | 1    | 96               | 4     | 0    | 101        | 188        |  |
| 12:30 PM   | 4    | 0                      | 0     | 1    | 5          | 11   | 53               | 1     | 0    | 65         | 5    | 0                   | 12    | 0    | 17         | 1    | 79               | 3     | 0    | 83         | 170        |  |
| 12:45 PM   | 1    | 0                      | 0     | 2    | 3          | 6    | 50               | 1     | 0    | 57         | 2    | 0                   | 11    | 0    | 13         | 1    | 92               | 2     | 0    | 95         | 168        |  |
| Total      | 9    | 0                      | 2     | 12   | 23         | 36   | 219              | 5     | 1    | 261        | 7    | 1                   | 44    | 0    | 52         | 5    | 333              | 12    | 0    | 350        | 686        |  |
| 01:00 PM   | 4    | 0                      | 1     | 0    | 5          | 16   | 62               | 0     | 0    | 78         | 3    | 0                   | 10    | 0    | 13         | 2    | 70               | 1     | 0    | 73         | 169        |  |
| 01:15 PM   | 1    | 0                      | 1     | 0    | 2          | 8    | 59               | 1     | 0    | 68         | 3    | 0                   | 12    | 0    | 15         | 1    | 83               | 3     | 0    | 87         | 172        |  |
| 01:30 PM   | 1    | 0                      | 0     | 0    | 1          | 9    | 77               | 2     | 0    | 88         | 2    | 0                   | 6     | 0    | 8          | 2    | 90               | 2     | 0    | 94         | 191        |  |
| 01:45 PM   | 5    | 0                      | 1     | 0    | 6          | 11   | 60               | 8     | 0    | 79         | 1    | 1                   | 12    | 0    | 14         | 0    | 65               | 2     | 0    | 67         | 166        |  |
| Total      | 11   | 0                      | 3     | 0    | 14         | 44   | 258              | 11    | 0    | 313        | 9    | 1                   | 40    | 0    | 50         | 5    | 308              | 8     | 0    | 321        | 698        |  |
| 04:00 PM   | 3    | 0                      | 2     | 0    | 5          | 10   | 88               | 5     | 0    | 103        | 1    | 0                   | 8     | 0    | 9          | 0    | 71               | 1     | 0    | 72         | 189        |  |
| 04:15 PM   | 0    | 0                      | 0     | 0    | 0          | 10   | 96               | 2     | 0    | 108        | 1    | 0                   | 13    | 0    | 14         | 1    | 64               | 1     | 0    | 66         | 188        |  |
| 04:30 PM   | 2    | 0                      | 5     | 0    | 7          | 11   | 114              | 3     | 0    | 128        | 2    | 0                   | 10    | 0    | 12         | 2    | 89               | 1     | 0    | 92         | 239        |  |
| 04:45 PM   | 1    | 0                      | 0     | 0    | 1          | 18   | 88               | 1     | 0    | 107        | 2    | 0                   | 13    | 0    | 15         | 1    | 70               | 2     | 0    | 73         | 196        |  |
| Total      | 6    | 0                      | 7     | 0    | 13         | 49   | 386              | 11    | 0    | 446        | 6    | 0                   | 44    | 0    | 50         | 4    | 294              | 5     | 0    | 303        | 812        |  |

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_ -\_NYS\_25\_at Tanger Mall Dr Wkday

Site Code :

Start Date : 5/16/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

| Groups Printed: Car - Truck - Bus - Ped |                              |       |      |            |                     |       |      |            |                     |      |      |            |            |  |
|-----------------------------------------|------------------------------|-------|------|------------|---------------------|-------|------|------------|---------------------|------|------|------------|------------|--|
|                                         | Tanger Mall Dr<br>Southbound |       |      |            | NYS 25<br>Westbound |       |      |            | NYS 25<br>Eastbound |      |      |            |            |  |
| Start Time                              | Left                         | Right | Peds | App. Total | Thru                | Right | Peds | App. Total | Left                | Thru | Peds | App. Total | Int. Total |  |
| 07:00 AM                                | 0                            | 1     | 0    | 1          | 33                  | 2     | 0    | 35         | 2                   | 48   | 0    | 50         | 86         |  |
| 07:15 AM                                | 0                            | 1     | 0    | 1          | 44                  | 1     | 0    | 45         | 4                   | 52   | 0    | 56         | 102        |  |
| 07:30 AM                                | 0                            | 0     | 0    | 0          | 52                  | 5     | 0    | 57         | 5                   | 74   | 0    | 79         | 136        |  |
| 07:45 AM                                | 1                            | 0     | 0    | 1          | 46                  | 9     | 0    | 55         | 11                  | 85   | 0    | 96         | 152        |  |
| Total                                   | 1                            | 2     | 0    | 3          | 175                 | 17    | 0    | 192        | 22                  | 259  | 0    | 281        | 476        |  |
| 08:00 AM                                | 1                            | 2     | 0    | 3          | 56                  | 1     | 0    | 57         | 17                  | 73   | 0    | 90         | 150        |  |
| 08:15 AM                                | 2                            | 3     | 0    | 5          | 33                  | 10    | 0    | 43         | 20                  | 69   | 0    | 89         | 137        |  |
| 08:30 AM                                | 2                            | 0     | 0    | 2          | 27                  | 6     | 0    | 33         | 15                  | 83   | 0    | 98         | 133        |  |
| 08:45 AM                                | 3                            | 6     | 0    | 9          | 35                  | 15    | 0    | 50         | 11                  | 97   | 0    | 108        | 167        |  |
| Total                                   | 8                            | 11    | 0    | 19         | 151                 | 32    | 0    | 183        | 63                  | 322  | 0    | 385        | 587        |  |
| 12:00 PM                                | 16                           | 18    | 0    | 34         | 50                  | 35    | 0    | 85         | 25                  | 65   | 0    | 90         | 209        |  |
| 12:15 PM                                | 16                           | 17    | 0    | 33         | 53                  | 18    | 0    | 71         | 34                  | 70   | 0    | 104        | 208        |  |
| 12:30 PM                                | 12                           | 18    | 0    | 30         | 48                  | 28    | 0    | 76         | 25                  | 70   | 0    | 95         | 201        |  |
| 12:45 PM                                | 17                           | 12    | 0    | 29         | 45                  | 41    | 0    | 86         | 38                  | 68   | 0    | 106        | 221        |  |
| Total                                   | 61                           | 65    | 0    | 126        | 196                 | 122   | 0    | 318        | 122                 | 273  | 0    | 395        | 839        |  |
| 01:00 PM                                | 13                           | 16    | 1    | 30         | 60                  | 31    | 0    | 91         | 31                  | 58   | 0    | 89         | 210        |  |
| 01:15 PM                                | 25                           | 17    | 0    | 42         | 51                  | 24    | 0    | 75         | 27                  | 69   | 0    | 96         | 213        |  |
| 01:30 PM                                | 29                           | 19    | 0    | 48         | 67                  | 40    | 0    | 107        | 32                  | 61   | 0    | 93         | 248        |  |
| 01:45 PM                                | 17                           | 13    | 0    | 30         | 69                  | 29    | 0    | 98         | 24                  | 62   | 0    | 86         | 214        |  |
| Total                                   | 84                           | 65    | 1    | 150        | 247                 | 124   | 0    | 371        | 114                 | 250  | 0    | 364        | 885        |  |
| 04:00 PM                                | 19                           | 25    | 0    | 44         | 79                  | 34    | 0    | 113        | 21                  | 63   | 0    | 84         | 241        |  |
| 04:15 PM                                | 17                           | 20    | 0    | 37         | 85                  | 16    | 0    | 101        | 20                  | 60   | 0    | 80         | 218        |  |
| 04:30 PM                                | 15                           | 32    | 0    | 47         | 93                  | 28    | 0    | 121        | 34                  | 68   | 0    | 102        | 270        |  |
| 04:45 PM                                | 14                           | 25    | 0    | 39         | 86                  | 42    | 0    | 128        | 23                  | 58   | 0    | 81         | 248        |  |
| Total                                   | 65                           | 102   | 0    | 167        | 343                 | 120   | 0    | 463        | 98                  | 249  | 0    | 347        | 977        |  |
| 05:00 PM                                | 23                           | 36    | 0    | 59         | 103                 | 32    | 0    | 135        | 23                  | 77   | 0    | 100        | 294        |  |
| 05:15 PM                                | 17                           | 29    | 0    | 46         | 78                  | 18    | 0    | 96         | 21                  | 64   | 0    | 85         | 227        |  |
| 05:30 PM                                | 9                            | 25    | 0    | 34         | 76                  | 23    | 0    | 99         | 17                  | 67   | 0    | 84         | 217        |  |
| 05:45 PM                                | 23                           | 23    | 0    | 46         | 60                  | 24    | 0    | 84         | 21                  | 71   | 0    | 92         | 222        |  |
| Total                                   | 72                           | 113   | 0    | 185        | 317                 | 97    | 0    | 414        | 82                  | 279  | 0    | 361        | 960        |  |
| Grand Total                             | 291                          | 358   | 1    | 650        | 1429                | 512   | 0    | 1941       | 501                 | 1632 | 0    | 2133       | 4724       |  |
| Apprch %                                | 44.8                         | 55.1  | 0.2  |            | 73.6                | 26.4  | 0    |            | 23.5                | 76.5 | 0    |            |            |  |
| Total %                                 | 6.2                          | 7.6   | 0    | 13.8       | 30.2                | 10.8  | 0    | 41.1       | 10.6                | 34.5 | 0    | 45.2       |            |  |
| Car                                     | 287                          | 349   | 0    | 636        | 1312                | 509   | 0    | 1821       | 492                 | 1499 | 0    | 1991       | 4448       |  |
| % Car                                   | 98.6                         | 97.5  | 0    | 97.8       | 91.8                | 99.4  | 0    | 93.8       | 98.2                | 91.9 | 0    | 93.3       | 94.2       |  |
| Truck                                   | 4                            | 8     | 0    | 12         | 107                 | 2     | 0    | 109        | 9                   | 107  | 0    | 116        | 237        |  |
| % Truck                                 | 1.4                          | 2.2   | 0    | 1.8        | 7.5                 | 0.4   | 0    | 5.6        | 1.8                 | 6.6  | 0    | 5.4        | 5          |  |
| Bus                                     | 0                            | 1     | 0    | 1          | 10                  | 1     | 0    | 11         | 0                   | 26   | 0    | 26         | 38         |  |
| % Bus                                   | 0                            | 0.3   | 0    | 0.2        | 0.7                 | 0.2   | 0    | 0.6        | 0                   | 1.6  | 0    | 1.2        | 0.8        |  |
| Ped                                     | 0                            | 0     | 1    | 1          | 0                   | 0     | 0    | 0          | 0                   | 0    | 0    | 0          | 1          |  |
| % Ped                                   | 0                            | 0     | 100  | 0.2        | 0                   | 0     | 0    | 0          | 0                   | 0    | 0    | 0          | 0          |  |



# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_-\_NYS\_25\_at Kroemer Rd wkday

Site Code :

Start Date : 5/16/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

| Start Time  | Kroemer Rd Southbound |      |       |      |            | NYS 25 Westbound |      |       |      |            | Forge Rd Northbound |      |       |      |            | NYS 25 Eastbound |      |       |      |            | Int. Total |
|-------------|-----------------------|------|-------|------|------------|------------------|------|-------|------|------------|---------------------|------|-------|------|------------|------------------|------|-------|------|------------|------------|
|             | Left                  | Thru | Right | Peds | App. Total | Left             | Thru | Right | Peds | App. Total | Left                | Thru | Right | Peds | App. Total | Left             | Thru | Right | Peds | App. Total |            |
| 07:00 AM    | 5                     | 2    | 4     | 0    | 11         | 1                | 39   | 5     | 0    | 45         | 0                   | 3    | 5     | 0    | 8          | 4                | 46   | 0     | 0    | 50         | 114        |
| 07:15 AM    | 6                     | 3    | 4     | 0    | 13         | 3                | 42   | 11    | 0    | 56         | 1                   | 1    | 11    | 0    | 13         | 12               | 41   | 0     | 0    | 53         | 135        |
| 07:30 AM    | 10                    | 1    | 3     | 0    | 14         | 1                | 51   | 10    | 0    | 62         | 1                   | 8    | 9     | 0    | 18         | 13               | 82   | 0     | 0    | 95         | 189        |
| 07:45 AM    | 10                    | 2    | 7     | 0    | 19         | 7                | 49   | 9     | 0    | 65         | 0                   | 6    | 14    | 0    | 20         | 9                | 82   | 0     | 0    | 91         | 195        |
| Total       | 31                    | 8    | 18    | 0    | 57         | 12               | 181  | 35    | 0    | 228        | 2                   | 18   | 39    | 0    | 59         | 38               | 251  | 0     | 0    | 289        | 633        |
| 08:00 AM    | 5                     | 2    | 8     | 0    | 15         | 9                | 43   | 4     | 0    | 56         | 0                   | 2    | 6     | 0    | 8          | 12               | 63   | 0     | 0    | 75         | 154        |
| 08:15 AM    | 13                    | 2    | 7     | 0    | 22         | 6                | 32   | 11    | 0    | 49         | 2                   | 3    | 6     | 1    | 12         | 11               | 68   | 0     | 0    | 79         | 162        |
| 08:30 AM    | 9                     | 4    | 4     | 0    | 17         | 5                | 37   | 8     | 0    | 50         | 2                   | 2    | 8     | 0    | 12         | 11               | 78   | 1     | 0    | 90         | 169        |
| 08:45 AM    | 8                     | 2    | 4     | 0    | 14         | 4                | 48   | 15    | 0    | 67         | 1                   | 8    | 12    | 0    | 21         | 4                | 95   | 0     | 0    | 99         | 201        |
| Total       | 35                    | 10   | 23    | 0    | 68         | 24               | 160  | 38    | 0    | 222        | 5                   | 15   | 32    | 1    | 53         | 38               | 304  | 1     | 0    | 343        | 686        |
| 12:00 PM    | 12                    | 0    | 3     | 0    | 15         | 10               | 76   | 15    | 0    | 101        | 0                   | 5    | 9     | 0    | 14         | 6                | 74   | 1     | 0    | 81         | 211        |
| 12:15 PM    | 14                    | 3    | 11    | 0    | 28         | 6                | 58   | 11    | 0    | 75         | 2                   | 1    | 4     | 0    | 7          | 11               | 79   | 1     | 0    | 91         | 201        |
| 12:30 PM    | 11                    | 4    | 3     | 0    | 18         | 6                | 80   | 14    | 0    | 100        | 1                   | 2    | 9     | 0    | 12         | 7                | 76   | 0     | 0    | 83         | 213        |
| 12:45 PM    | 9                     | 0    | 4     | 0    | 13         | 8                | 75   | 11    | 0    | 94         | 1                   | 4    | 8     | 0    | 13         | 11               | 73   | 0     | 0    | 84         | 204        |
| Total       | 46                    | 7    | 21    | 0    | 74         | 30               | 289  | 51    | 0    | 370        | 4                   | 12   | 30    | 0    | 46         | 35               | 302  | 2     | 0    | 339        | 829        |
| 01:00 PM    | 8                     | 5    | 5     | 0    | 18         | 7                | 89   | 14    | 0    | 110        | 4                   | 3    | 6     | 0    | 13         | 8                | 67   | 2     | 0    | 77         | 218        |
| 01:15 PM    | 17                    | 2    | 13    | 0    | 32         | 3                | 72   | 11    | 0    | 86         | 0                   | 0    | 10    | 0    | 10         | 3                | 81   | 4     | 0    | 88         | 216        |
| 01:30 PM    | 12                    | 8    | 8     | 0    | 28         | 5                | 96   | 9     | 0    | 110        | 3                   | 2    | 9     | 0    | 14         | 9                | 84   | 0     | 0    | 93         | 245        |
| 01:45 PM    | 17                    | 8    | 10    | 0    | 35         | 7                | 81   | 10    | 0    | 98         | 0                   | 5    | 8     | 0    | 13         | 9                | 70   | 2     | 0    | 81         | 227        |
| Total       | 54                    | 23   | 36    | 0    | 113        | 22               | 338  | 44    | 0    | 404        | 7                   | 10   | 33    | 0    | 50         | 29               | 302  | 8     | 0    | 339        | 906        |
| 04:00 PM    | 9                     | 6    | 11    | 0    | 26         | 11               | 98   | 17    | 0    | 126        | 2                   | 2    | 10    | 0    | 14         | 6                | 79   | 0     | 0    | 85         | 251        |
| 04:15 PM    | 9                     | 3    | 14    | 0    | 26         | 5                | 96   | 16    | 0    | 117        | 1                   | 5    | 3     | 0    | 9          | 11               | 59   | 0     | 0    | 70         | 222        |
| 04:30 PM    | 15                    | 4    | 15    | 0    | 34         | 9                | 104  | 9     | 0    | 122        | 3                   | 2    | 5     | 0    | 10         | 6                | 71   | 1     | 0    | 78         | 244        |
| 04:45 PM    | 3                     | 8    | 8     | 0    | 19         | 11               | 123  | 16    | 0    | 150        | 1                   | 4    | 3     | 0    | 8          | 6                | 71   | 1     | 0    | 78         | 255        |
| Total       | 36                    | 21   | 48    | 0    | 105        | 36               | 421  | 58    | 0    | 515        | 7                   | 13   | 21    | 0    | 41         | 29               | 280  | 2     | 0    | 311        | 972        |
| 05:00 PM    | 7                     | 12   | 10    | 0    | 29         | 5                | 119  | 12    | 0    | 136        | 4                   | 8    | 3     | 0    | 15         | 11               | 87   | 1     | 0    | 99         | 279        |
| 05:15 PM    | 10                    | 5    | 8     | 0    | 23         | 15               | 86   | 7     | 0    | 108        | 1                   | 3    | 5     | 0    | 9          | 0                | 85   | 2     | 0    | 87         | 227        |
| 05:30 PM    | 21                    | 6    | 9     | 0    | 36         | 8                | 101  | 2     | 0    | 111        | 3                   | 2    | 7     | 0    | 12         | 8                | 56   | 2     | 0    | 66         | 225        |
| 05:45 PM    | 5                     | 9    | 9     | 0    | 23         | 4                | 73   | 9     | 0    | 86         | 2                   | 1    | 8     | 0    | 11         | 11               | 88   | 2     | 0    | 101        | 221        |
| Total       | 43                    | 32   | 36    | 0    | 111        | 32               | 379  | 30    | 0    | 441        | 10                  | 14   | 23    | 0    | 47         | 30               | 316  | 7     | 0    | 353        | 952        |
| Grand Total | 245                   | 101  | 182   | 0    | 528        | 156              | 1768 | 256   | 0    | 2180       | 35                  | 82   | 178   | 1    | 296        | 199              | 1755 | 20    | 0    | 1974       | 4978       |
| Apprch %    | 46.4                  | 19.1 | 34.5  | 0    |            | 7.2              | 81.1 | 11.7  | 0    |            | 11.8                | 27.7 | 60.1  | 0.3  |            | 10.1             | 88.9 | 1     | 0    |            |            |
| Total %     | 4.9                   | 2    | 3.7   | 0    | 10.6       | 3.1              | 35.5 | 5.1   | 0    | 43.8       | 0.7                 | 1.6  | 3.6   | 0    | 5.9        | 4                | 35.3 | 0.4   | 0    | 39.7       |            |
| Car         | 212                   | 99   | 160   | 0    | 471        | 143              | 1667 | 231   | 0    | 2041       | 34                  | 80   | 166   | 0    | 280        | 182              | 1638 | 19    | 0    | 1839       | 4631       |
| % Car       | 86.5                  | 98   | 87.9  | 0    | 89.2       | 91.7             | 94.3 | 90.2  | 0    | 93.6       | 97.1                | 97.6 | 93.3  | 0    | 94.6       | 91.5             | 93.3 | 95    | 0    | 93.2       | 93         |
| Truck       | 30                    | 2    | 19    | 0    | 51         | 7                | 88   | 25    | 0    | 120        | 1                   | 1    | 3     | 0    | 5          | 12               | 90   | 1     | 0    | 103        | 279        |
| % Truck     | 12.2                  | 2    | 10.4  | 0    | 9.7        | 4.5              | 5    | 9.8   | 0    | 5.5        | 2.9                 | 1.2  | 1.7   | 0    | 1.7        | 6                | 5.1  | 5     | 0    | 5.2        | 5.6        |
| Bus         | 3                     | 0    | 3     | 0    | 6          | 6                | 13   | 0     | 0    | 19         | 0                   | 1    | 9     | 0    | 10         | 5                | 27   | 0     | 0    | 32         | 67         |
| % Bus       | 1.2                   | 0    | 1.6   | 0    | 1.1        | 3.8              | 0.7  | 0     | 0    | 0.9        | 0                   | 1.2  | 5.1   | 0    | 3.4        | 2.5              | 1.5  | 0     | 0    | 1.6        | 1.3        |
| Ped         | 0                     | 0    | 0     | 0    | 0          | 0                | 0    | 0     | 0    | 0          | 0                   | 0    | 0     | 1    | 1          | 0                | 0    | 0     | 0    | 0          | 1          |
| % Ped       | 0                     | 0    | 0     | 0    | 0          | 0                | 0    | 0     | 0    | 0          | 0                   | 0    | 0     | 100  | 0.3        | 0                | 0    | 0     | 0    | 0          | 0          |

# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_-\_NYS\_25\_at Mill Rd Wkday

Site Code :

Start Date : 5/16/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

| Start Time  | Mill Road Southbound |       |      |            | NYS 25 Westbound |      |       |      |            | NYS 25 Eastbound |      |      |            | Int. Total |
|-------------|----------------------|-------|------|------------|------------------|------|-------|------|------------|------------------|------|------|------------|------------|
|             | Left                 | Right | Peds | App. Total | Left             | Thru | Right | Peds | App. Total | Left             | Thru | Peds | App. Total |            |
| 07:00 AM    | 24                   | 9     | 0    | 33         | 0                | 45   | 18    | 0    | 63         | 8                | 48   | 0    | 56         | 152        |
| 07:15 AM    | 27                   | 13    | 0    | 40         | 0                | 51   | 16    | 0    | 67         | 6                | 56   | 0    | 62         | 169        |
| 07:30 AM    | 19                   | 9     | 0    | 28         | 0                | 56   | 24    | 0    | 80         | 9                | 76   | 0    | 85         | 193        |
| 07:45 AM    | 19                   | 11    | 0    | 30         | 0                | 59   | 34    | 0    | 93         | 17               | 99   | 0    | 116        | 239        |
| Total       | 89                   | 42    | 0    | 131        | 0                | 211  | 92    | 0    | 303        | 40               | 279  | 0    | 319        | 753        |
| 08:00 AM    | 20                   | 13    | 0    | 33         | 0                | 47   | 12    | 1    | 60         | 8                | 76   | 0    | 84         | 177        |
| 08:15 AM    | 14                   | 10    | 0    | 24         | 0                | 44   | 19    | 0    | 63         | 10               | 77   | 0    | 87         | 174        |
| 08:30 AM    | 23                   | 7     | 0    | 30         | 0                | 47   | 32    | 1    | 80         | 12               | 93   | 0    | 105        | 215        |
| 08:45 AM    | 29                   | 12    | 1    | 42         | 0                | 57   | 30    | 0    | 87         | 12               | 107  | 0    | 119        | 248        |
| Total       | 86                   | 42    | 1    | 129        | 0                | 195  | 93    | 2    | 290        | 42               | 353  | 0    | 395        | 814        |
| 12:00 PM    | 35                   | 13    | 0    | 48         | 0                | 90   | 52    | 0    | 142        | 14               | 94   | 0    | 108        | 298        |
| 12:15 PM    | 51                   | 12    | 0    | 63         | 0                | 77   | 46    | 0    | 123        | 21               | 93   | 0    | 114        | 300        |
| 12:30 PM    | 53                   | 12    | 0    | 65         | 0                | 95   | 37    | 0    | 132        | 17               | 90   | 0    | 107        | 304        |
| 12:45 PM    | 37                   | 19    | 0    | 56         | 0                | 104  | 45    | 0    | 149        | 22               | 90   | 0    | 112        | 317        |
| Total       | 176                  | 56    | 0    | 232        | 0                | 366  | 180   | 0    | 546        | 74               | 367  | 0    | 441        | 1219       |
| 01:00 PM    | 47                   | 15    | 0    | 62         | 0                | 111  | 57    | 0    | 168        | 11               | 86   | 0    | 97         | 327        |
| 01:15 PM    | 50                   | 16    | 0    | 66         | 0                | 97   | 36    | 0    | 133        | 20               | 104  | 0    | 124        | 323        |
| 01:30 PM    | 44                   | 17    | 0    | 61         | 1                | 105  | 42    | 0    | 148        | 18               | 93   | 0    | 111        | 320        |
| 01:45 PM    | 52                   | 18    | 0    | 70         | 0                | 103  | 49    | 0    | 152        | 18               | 107  | 0    | 125        | 347        |
| Total       | 193                  | 66    | 0    | 259        | 1                | 416  | 184   | 0    | 601        | 67               | 390  | 0    | 457        | 1317       |
| 04:00 PM    | 40                   | 26    | 0    | 66         | 0                | 118  | 48    | 0    | 166        | 17               | 100  | 0    | 117        | 349        |
| 04:15 PM    | 32                   | 12    | 0    | 44         | 0                | 118  | 33    | 0    | 151        | 13               | 71   | 0    | 84         | 279        |
| 04:30 PM    | 36                   | 13    | 0    | 49         | 0                | 127  | 34    | 0    | 161        | 20               | 98   | 0    | 118        | 328        |
| 04:45 PM    | 41                   | 21    | 0    | 62         | 0                | 136  | 34    | 0    | 170        | 12               | 88   | 0    | 100        | 332        |
| Total       | 149                  | 72    | 0    | 221        | 0                | 499  | 149   | 0    | 648        | 62               | 357  | 0    | 419        | 1288       |
| 05:00 PM    | 50                   | 10    | 0    | 60         | 0                | 139  | 33    | 0    | 172        | 15               | 87   | 0    | 102        | 334        |
| 05:15 PM    | 40                   | 20    | 0    | 60         | 0                | 104  | 45    | 0    | 149        | 7                | 103  | 0    | 110        | 319        |
| 05:30 PM    | 36                   | 23    | 0    | 59         | 0                | 100  | 29    | 0    | 129        | 17               | 89   | 0    | 106        | 294        |
| 05:45 PM    | 39                   | 19    | 0    | 58         | 0                | 80   | 37    | 0    | 117        | 20               | 89   | 0    | 109        | 284        |
| Total       | 165                  | 72    | 0    | 237        | 0                | 423  | 144   | 0    | 567        | 59               | 368  | 0    | 427        | 1231       |
| Grand Total | 858                  | 350   | 1    | 1209       | 1                | 2110 | 842   | 2    | 2955       | 344              | 2114 | 0    | 2458       | 6622       |
| Apprch %    | 71                   | 28.9  | 0.1  |            | 0                | 71.4 | 28.5  | 0.1  |            | 14               | 86   | 0    |            |            |
| Total %     | 13                   | 5.3   | 0    | 18.3       | 0                | 31.9 | 12.7  | 0    | 44.6       | 5.2              | 31.9 | 0    | 37.1       |            |
| Car         | 807                  | 317   | 0    | 1124       | 1                | 1998 | 793   | 0    | 2792       | 315              | 1984 | 0    | 2299       | 6215       |
| % Car       | 94.1                 | 90.6  | 0    | 93         | 100              | 94.7 | 94.2  | 0    | 94.5       | 91.6             | 93.9 | 0    | 93.5       | 93.9       |
| Truck       | 38                   | 25    | 0    | 63         | 0                | 97   | 40    | 0    | 137        | 21               | 102  | 0    | 123        | 323        |
| % Truck     | 4.4                  | 7.1   | 0    | 5.2        | 0                | 4.6  | 4.8   | 0    | 4.6        | 6.1              | 4.8  | 0    | 5          | 4.9        |
| Bus         | 13                   | 8     | 0    | 21         | 0                | 15   | 9     | 0    | 24         | 8                | 28   | 0    | 36         | 81         |
| % Bus       | 1.5                  | 2.3   | 0    | 1.7        | 0                | 0.7  | 1.1   | 0    | 0.8        | 2.3              | 1.3  | 0    | 1.5        | 1.2        |
| Ped         | 0                    | 0     | 1    | 1          | 0                | 0    | 0     | 2    | 2          | 0                | 0    | 0    | 0          | 3          |
| % Ped       | 0                    | 0     | 100  | 0.1        | 0                | 0    | 0     | 100  | 0.1        | 0                | 0    | 0    | 0          | 0          |

# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_-NYS\_25\_at Center St-Nugent St Wkday

Site Code :

Start Date : 5/16/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

| Start Time  | Court St Southbound |      |       |      |            | NYS 25 Westbound |      |       |      |            | Nugent St Northbound |      |       |      |            | NYS 25 Eastbound |      |       |      |            | Int. Total |
|-------------|---------------------|------|-------|------|------------|------------------|------|-------|------|------------|----------------------|------|-------|------|------------|------------------|------|-------|------|------------|------------|
|             | Left                | Thru | Right | Peds | App. Total | Left             | Thru | Right | Peds | App. Total | Left                 | Thru | Right | Peds | App. Total | Left             | Thru | Right | Peds | App. Total |            |
| 07:00 AM    | 0                   | 27   | 7     | 0    | 34         | 8                | 36   | 0     | 0    | 44         | 37                   | 28   | 7     | 0    | 72         | 4                | 26   | 74    | 0    | 104        | 254        |
| 07:15 AM    | 0                   | 24   | 8     | 0    | 32         | 8                | 26   | 0     | 0    | 34         | 56                   | 29   | 5     | 0    | 90         | 6                | 25   | 67    | 0    | 98         | 254        |
| 07:30 AM    | 0                   | 12   | 7     | 2    | 21         | 11               | 32   | 1     | 1    | 45         | 56                   | 39   | 10    | 2    | 107        | 12               | 33   | 64    | 0    | 109        | 282        |
| 07:45 AM    | 0                   | 37   | 9     | 0    | 46         | 11               | 40   | 0     | 0    | 51         | 74                   | 52   | 27    | 0    | 153        | 19               | 43   | 61    | 0    | 123        | 373        |
| Total       | 0                   | 100  | 31    | 2    | 133        | 38               | 134  | 1     | 1    | 174        | 223                  | 148  | 49    | 2    | 422        | 41               | 127  | 266   | 0    | 434        | 1163       |
| 08:00 AM    | 0                   | 24   | 8     | 0    | 32         | 14               | 28   | 0     | 0    | 42         | 39                   | 39   | 17    | 0    | 95         | 10               | 51   | 46    | 0    | 107        | 276        |
| 08:15 AM    | 1                   | 31   | 6     | 0    | 38         | 7                | 33   | 2     | 0    | 42         | 67                   | 42   | 22    | 0    | 131        | 8                | 41   | 63    | 0    | 112        | 323        |
| 08:30 AM    | 0                   | 15   | 5     | 0    | 20         | 12               | 39   | 0     | 0    | 51         | 74                   | 52   | 19    | 0    | 145        | 17               | 53   | 61    | 0    | 131        | 347        |
| 08:45 AM    | 0                   | 25   | 11    | 0    | 36         | 10               | 40   | 0     | 1    | 51         | 94                   | 74   | 32    | 1    | 201        | 25               | 55   | 70    | 0    | 150        | 438        |
| Total       | 1                   | 95   | 30    | 0    | 126        | 43               | 140  | 2     | 1    | 186        | 274                  | 207  | 90    | 1    | 572        | 60               | 200  | 240   | 0    | 500        | 1384       |
| 12:00 PM    | 0                   | 32   | 20    | 0    | 52         | 11               | 53   | 0     | 6    | 70         | 72                   | 44   | 11    | 0    | 127        | 10               | 68   | 59    | 0    | 137        | 386        |
| 12:15 PM    | 2                   | 44   | 23    | 2    | 71         | 13               | 61   | 1     | 0    | 75         | 56                   | 35   | 6     | 0    | 97         | 24               | 84   | 33    | 0    | 141        | 384        |
| 12:30 PM    | 6                   | 41   | 23    | 0    | 70         | 13               | 55   | 5     | 0    | 73         | 60                   | 35   | 17    | 0    | 112        | 15               | 64   | 35    | 0    | 114        | 369        |
| 12:45 PM    | 0                   | 52   | 28    | 0    | 80         | 14               | 68   | 2     | 0    | 84         | 94                   | 46   | 12    | 0    | 152        | 16               | 65   | 26    | 0    | 107        | 423        |
| Total       | 8                   | 169  | 94    | 2    | 273        | 51               | 237  | 8     | 6    | 302        | 282                  | 160  | 46    | 0    | 488        | 65               | 281  | 153   | 0    | 499        | 1562       |
| 01:00 PM    | 1                   | 38   | 17    | 1    | 57         | 19               | 67   | 1     | 1    | 88         | 103                  | 46   | 15    | 0    | 164        | 15               | 68   | 78    | 0    | 161        | 470        |
| 01:15 PM    | 0                   | 35   | 13    | 0    | 48         | 20               | 64   | 1     | 0    | 85         | 78                   | 35   | 16    | 1    | 130        | 17               | 62   | 79    | 0    | 158        | 421        |
| 01:30 PM    | 1                   | 53   | 16    | 0    | 70         | 20               | 84   | 3     | 0    | 107        | 78                   | 50   | 21    | 0    | 149        | 28               | 56   | 81    | 0    | 165        | 491        |
| 01:45 PM    | 0                   | 52   | 22    | 0    | 74         | 25               | 58   | 4     | 0    | 87         | 86                   | 45   | 17    | 0    | 148        | 8                | 54   | 92    | 0    | 154        | 463        |
| Total       | 2                   | 178  | 68    | 1    | 249        | 84               | 273  | 9     | 1    | 367        | 345                  | 176  | 69    | 1    | 591        | 68               | 240  | 330   | 0    | 638        | 1845       |
| 04:00 PM    | 0                   | 77   | 23    | 0    | 100        | 33               | 79   | 0     | 1    | 113        | 78                   | 43   | 10    | 0    | 131        | 16               | 54   | 83    | 0    | 153        | 497        |
| 04:15 PM    | 0                   | 63   | 16    | 1    | 80         | 32               | 63   | 0     | 0    | 95         | 67                   | 28   | 6     | 0    | 101        | 16               | 63   | 71    | 0    | 150        | 426        |
| 04:30 PM    | 1                   | 72   | 26    | 0    | 99         | 30               | 63   | 1     | 0    | 94         | 83                   | 30   | 5     | 2    | 120        | 16               | 50   | 76    | 0    | 142        | 455        |
| 04:45 PM    | 0                   | 69   | 28    | 0    | 97         | 47               | 82   | 0     | 0    | 129        | 84                   | 49   | 11    | 0    | 144        | 9                | 60   | 73    | 0    | 142        | 512        |
| Total       | 1                   | 281  | 93    | 1    | 376        | 142              | 287  | 1     | 1    | 431        | 312                  | 150  | 32    | 2    | 496        | 57               | 227  | 303   | 0    | 587        | 1890       |
| 05:00 PM    | 0                   | 79   | 24    | 0    | 103        | 40               | 49   | 0     | 3    | 92         | 69                   | 34   | 21    | 0    | 124        | 13               | 48   | 88    | 1    | 150        | 469        |
| 05:15 PM    | 0                   | 62   | 17    | 0    | 79         | 34               | 56   | 0     | 0    | 90         | 86                   | 40   | 8     | 0    | 134        | 17               | 63   | 80    | 0    | 160        | 463        |
| 05:30 PM    | 0                   | 50   | 20    | 1    | 71         | 17               | 62   | 1     | 0    | 80         | 75                   | 30   | 14    | 0    | 119        | 11               | 55   | 91    | 0    | 157        | 427        |
| 05:45 PM    | 0                   | 38   | 17    | 0    | 55         | 10               | 46   | 3     | 0    | 59         | 51                   | 37   | 5     | 0    | 93         | 9                | 58   | 69    | 0    | 136        | 343        |
| Total       | 0                   | 229  | 78    | 1    | 308        | 101              | 213  | 4     | 3    | 321        | 281                  | 141  | 48    | 0    | 470        | 50               | 224  | 328   | 1    | 603        | 1702       |
| Grand Total | 12                  | 1052 | 394   | 7    | 1465       | 459              | 1284 | 25    | 13   | 1781       | 1717                 | 982  | 334   | 6    | 3039       | 341              | 1299 | 1620  | 1    | 3261       | 9546       |
| Apprch %    | 0.8                 | 71.8 | 26.9  | 0.5  |            | 25.8             | 72.1 | 1.4   | 0.7  |            | 56.5                 | 32.3 | 11    | 0.2  |            | 10.5             | 39.8 | 49.7  | 0    |            |            |
| Total %     | 0.1                 | 11   | 4.1   | 0.1  | 15.3       | 4.8              | 13.5 | 0.3   | 0.1  | 18.7       | 18                   | 10.3 | 3.5   | 0.1  | 31.8       | 3.6              | 13.6 | 17    | 0    | 34.2       |            |
| Car         | 9                   | 1004 | 377   | 0    | 1390       | 446              | 1220 | 25    | 0    | 1691       | 1641                 | 934  | 325   | 0    | 2900       | 329              | 1232 | 1519  | 0    | 3080       | 9061       |
| % Car       | 75                  | 95.4 | 95.7  | 0    | 94.9       | 97.2             | 95   | 100   | 0    | 94.9       | 95.6                 | 95.1 | 97.3  | 0    | 95.4       | 96.5             | 94.8 | 93.8  | 0    | 94.4       | 94.9       |
| Truck       | 3                   | 16   | 6     | 0    | 25         | 10               | 57   | 0     | 0    | 67         | 62                   | 8    | 8     | 0    | 78         | 7                | 56   | 85    | 0    | 148        | 318        |
| % Truck     | 25                  | 1.5  | 1.5   | 0    | 1.7        | 2.2              | 4.4  | 0     | 0    | 3.8        | 3.6                  | 0.8  | 2.4   | 0    | 2.6        | 2.1              | 4.3  | 5.2   | 0    | 4.5        | 3.3        |
| Bus         | 0                   | 32   | 11    | 0    | 43         | 3                | 7    | 0     | 0    | 10         | 14                   | 40   | 1     | 0    | 55         | 5                | 11   | 16    | 0    | 32         | 140        |
| % Bus       | 0                   | 3    | 2.8   | 0    | 2.9        | 0.7              | 0.5  | 0     | 0    | 0.6        | 0.8                  | 4.1  | 0.3   | 0    | 1.8        | 1.5              | 0.8  | 1     | 0    | 1          | 1.5        |
| Ped         | 0                   | 0    | 0     | 7    | 7          | 0                | 0    | 0     | 13   | 13         | 0                    | 0    | 0     | 6    | 6          | 0                | 0    | 0     | 1    | 1          | 27         |
| % Ped       | 0                   | 0    | 0     | 100  | 0.5        | 0                | 0    | 0     | 100  | 0.7        | 0                    | 0    | 0     | 100  | 0.2        | 0                | 0    | 0     | 100  | 0          | 0.3        |



# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_-\_NYS\_25\_at Osborn Ave Wkday

Site Code :

Start Date : 5/16/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

| Start Time  | Osborn Ave Southbound |       |      |            | NYS 25 Westbound |      |       |      |            | Eastbound St. Eastbound |      |      |            | Int. Total |
|-------------|-----------------------|-------|------|------------|------------------|------|-------|------|------------|-------------------------|------|------|------------|------------|
|             | Left                  | Right | Peds | App. Total | Left             | Thru | Right | Peds | App. Total | Left                    | Thru | Peds | App. Total |            |
| 07:00 AM    | 6                     | 0     | 0    | 6          | 0                | 42   | 4     | 0    | 46         | 0                       | 36   | 0    | 36         | 88         |
| 07:15 AM    | 15                    | 0     | 0    | 15         | 0                | 34   | 3     | 0    | 37         | 0                       | 31   | 0    | 31         | 83         |
| 07:30 AM    | 12                    | 1     | 2    | 15         | 0                | 43   | 10    | 1    | 54         | 2                       | 41   | 0    | 43         | 112        |
| 07:45 AM    | 8                     | 0     | 0    | 8          | 1                | 50   | 11    | 0    | 62         | 2                       | 65   | 0    | 67         | 137        |
| Total       | 41                    | 1     | 2    | 44         | 1                | 169  | 28    | 1    | 199        | 4                       | 173  | 0    | 177        | 420        |
| 08:00 AM    | 14                    | 1     | 1    | 16         | 0                | 43   | 11    | 0    | 54         | 2                       | 69   | 0    | 71         | 141        |
| 08:15 AM    | 6                     | 1     | 0    | 7          | 0                | 38   | 14    | 0    | 52         | 3                       | 58   | 0    | 61         | 120        |
| 08:30 AM    | 10                    | 0     | 0    | 10         | 0                | 48   | 16    | 0    | 64         | 3                       | 72   | 0    | 75         | 149        |
| 08:45 AM    | 22                    | 2     | 1    | 25         | 0                | 46   | 11    | 0    | 57         | 1                       | 78   | 0    | 79         | 161        |
| Total       | 52                    | 4     | 2    | 58         | 0                | 175  | 52    | 0    | 227        | 9                       | 277  | 0    | 286        | 571        |
| 12:00 PM    | 33                    | 0     | 1    | 34         | 0                | 62   | 20    | 0    | 82         | 3                       | 75   | 0    | 78         | 194        |
| 12:15 PM    | 29                    | 0     | 0    | 29         | 0                | 78   | 19    | 0    | 97         | 2                       | 83   | 0    | 85         | 211        |
| 12:30 PM    | 22                    | 0     | 0    | 22         | 0                | 74   | 9     | 0    | 83         | 3                       | 88   | 0    | 91         | 196        |
| 12:45 PM    | 34                    | 0     | 0    | 34         | 0                | 87   | 11    | 0    | 98         | 2                       | 77   | 0    | 79         | 211        |
| Total       | 118                   | 0     | 1    | 119        | 0                | 301  | 59    | 0    | 360        | 10                      | 323  | 0    | 333        | 812        |
| 01:00 PM    | 22                    | 4     | 1    | 27         | 0                | 79   | 16    | 0    | 95         | 0                       | 85   | 0    | 85         | 207        |
| 01:15 PM    | 23                    | 1     | 2    | 26         | 0                | 84   | 22    | 0    | 106        | 1                       | 75   | 0    | 76         | 208        |
| 01:30 PM    | 27                    | 1     | 1    | 29         | 0                | 106  | 16    | 0    | 122        | 1                       | 82   | 0    | 83         | 234        |
| 01:45 PM    | 15                    | 4     | 0    | 19         | 0                | 79   | 23    | 0    | 102        | 3                       | 59   | 0    | 62         | 183        |
| Total       | 87                    | 10    | 4    | 101        | 0                | 348  | 77    | 0    | 425        | 5                       | 301  | 0    | 306        | 832        |
| 04:00 PM    | 18                    | 2     | 1    | 21         | 0                | 118  | 17    | 0    | 135        | 1                       | 74   | 0    | 75         | 231        |
| 04:15 PM    | 28                    | 2     | 1    | 31         | 0                | 76   | 20    | 0    | 96         | 3                       | 63   | 0    | 66         | 193        |
| 04:30 PM    | 22                    | 4     | 1    | 27         | 0                | 96   | 7     | 0    | 103        | 2                       | 55   | 0    | 57         | 187        |
| 04:45 PM    | 25                    | 3     | 0    | 28         | 0                | 122  | 20    | 1    | 143        | 0                       | 73   | 0    | 73         | 244        |
| Total       | 93                    | 11    | 3    | 107        | 0                | 412  | 64    | 1    | 477        | 6                       | 265  | 0    | 271        | 855        |
| 05:00 PM    | 25                    | 0     | 0    | 25         | 0                | 87   | 14    | 0    | 101        | 1                       | 66   | 0    | 67         | 193        |
| 05:15 PM    | 25                    | 2     | 0    | 27         | 0                | 87   | 12    | 0    | 99         | 1                       | 71   | 0    | 72         | 198        |
| 05:30 PM    | 17                    | 0     | 2    | 19         | 0                | 80   | 17    | 1    | 98         | 1                       | 73   | 0    | 74         | 191        |
| 05:45 PM    | 11                    | 1     | 2    | 14         | 0                | 56   | 17    | 0    | 73         | 0                       | 63   | 0    | 63         | 150        |
| Total       | 78                    | 3     | 4    | 85         | 0                | 310  | 60    | 1    | 371        | 3                       | 273  | 0    | 276        | 732        |
| Grand Total | 469                   | 29    | 16   | 514        | 1                | 1715 | 340   | 3    | 2059       | 37                      | 1612 | 0    | 1649       | 4222       |
| Apprch %    | 91.2                  | 5.6   | 3.1  |            | 0                | 83.3 | 16.5  | 0.1  |            | 2.2                     | 97.8 | 0    |            |            |
| Total %     | 11.1                  | 0.7   | 0.4  | 12.2       | 0                | 40.6 | 8.1   | 0.1  | 48.8       | 0.9                     | 38.2 | 0    | 39.1       |            |
| Car         | 427                   | 28    | 0    | 455        | 1                | 1633 | 314   | 0    | 1948       | 33                      | 1526 | 0    | 1559       | 3962       |
| % Car       | 91                    | 96.6  | 0    | 88.5       | 100              | 95.2 | 92.4  | 0    | 94.6       | 89.2                    | 94.7 | 0    | 94.5       | 93.8       |
| Truck       | 25                    | 1     | 0    | 26         | 0                | 70   | 23    | 0    | 93         | 2                       | 75   | 0    | 77         | 196        |
| % Truck     | 5.3                   | 3.4   | 0    | 5.1        | 0                | 4.1  | 6.8   | 0    | 4.5        | 5.4                     | 4.7  | 0    | 4.7        | 4.6        |
| Bus         | 17                    | 0     | 0    | 17         | 0                | 12   | 3     | 0    | 15         | 2                       | 11   | 0    | 13         | 45         |
| % Bus       | 3.6                   | 0     | 0    | 3.3        | 0                | 0.7  | 0.9   | 0    | 0.7        | 5.4                     | 0.7  | 0    | 0.8        | 1.1        |
| Ped         | 0                     | 0     | 16   | 16         | 0                | 0    | 0     | 3    | 3          | 0                       | 0    | 0    | 0          | 19         |
| % Ped       | 0                     | 0     | 100  | 3.1        | 0                | 0    | 0     | 100  | 0.1        | 0                       | 0    | 0    | 0          | 0.5        |

# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_-\_NYS\_25\_at Griffing Ave Wkday

Site Code :

Start Date : 5/16/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

|             | Griffing Ave<br>Southbound |       |      |            | NYS 25<br>Westbound |      |       |      |            | NYS 25<br>Eastbound |      |      |            |            |
|-------------|----------------------------|-------|------|------------|---------------------|------|-------|------|------------|---------------------|------|------|------------|------------|
| Start Time  | Left                       | Right | Peds | App. Total | Left                | Thru | Right | Peds | App. Total | Left                | Thru | Peds | App. Total | Int. Total |
| 07:00 AM    | 29                         | 4     | 0    | 33         | 0                   | 38   | 29    | 0    | 67         | 5                   | 34   | 2    | 41         | 141        |
| 07:15 AM    | 27                         | 0     | 0    | 27         | 0                   | 40   | 24    | 0    | 64         | 2                   | 45   | 1    | 48         | 139        |
| 07:30 AM    | 15                         | 3     | 1    | 19         | 0                   | 57   | 17    | 2    | 76         | 0                   | 47   | 0    | 47         | 142        |
| 07:45 AM    | 22                         | 2     | 0    | 24         | 0                   | 64   | 32    | 1    | 97         | 4                   | 57   | 2    | 63         | 184        |
| Total       | 93                         | 9     | 1    | 103        | 0                   | 199  | 102   | 3    | 304        | 11                  | 183  | 5    | 199        | 606        |
| 08:00 AM    | 17                         | 2     | 0    | 19         | 0                   | 54   | 10    | 0    | 64         | 4                   | 69   | 1    | 74         | 157        |
| 08:15 AM    | 13                         | 5     | 0    | 18         | 0                   | 52   | 22    | 0    | 74         | 8                   | 48   | 0    | 56         | 148        |
| 08:30 AM    | 12                         | 6     | 2    | 20         | 0                   | 61   | 28    | 1    | 90         | 6                   | 76   | 0    | 82         | 192        |
| 08:45 AM    | 17                         | 6     | 3    | 26         | 0                   | 51   | 32    | 2    | 85         | 9                   | 70   | 2    | 81         | 192        |
| Total       | 59                         | 19    | 5    | 83         | 0                   | 218  | 92    | 3    | 313        | 27                  | 263  | 3    | 293        | 689        |
| 12:00 PM    | 19                         | 11    | 3    | 33         | 0                   | 70   | 18    | 9    | 97         | 8                   | 99   | 5    | 112        | 242        |
| 12:15 PM    | 29                         | 13    | 12   | 54         | 0                   | 80   | 26    | 2    | 108        | 8                   | 98   | 1    | 107        | 269        |
| 12:30 PM    | 23                         | 12    | 5    | 40         | 0                   | 74   | 15    | 3    | 92         | 6                   | 107  | 4    | 117        | 249        |
| 12:45 PM    | 30                         | 11    | 2    | 43         | 0                   | 80   | 30    | 2    | 112        | 4                   | 105  | 3    | 112        | 267        |
| Total       | 101                        | 47    | 22   | 170        | 0                   | 304  | 89    | 16   | 409        | 26                  | 409  | 13   | 448        | 1027       |
| 01:00 PM    | 27                         | 3     | 2    | 32         | 0                   | 92   | 29    | 4    | 125        | 7                   | 95   | 5    | 107        | 264        |
| 01:15 PM    | 31                         | 9     | 6    | 46         | 0                   | 94   | 32    | 4    | 130        | 4                   | 84   | 7    | 95         | 271        |
| 01:30 PM    | 22                         | 17    | 8    | 47         | 0                   | 110  | 27    | 0    | 137        | 11                  | 102  | 4    | 117        | 301        |
| 01:45 PM    | 21                         | 6     | 8    | 35         | 0                   | 92   | 28    | 3    | 123        | 9                   | 75   | 6    | 90         | 248        |
| Total       | 101                        | 35    | 24   | 160        | 0                   | 388  | 116   | 11   | 515        | 31                  | 356  | 22   | 409        | 1084       |
| 04:00 PM    | 35                         | 14    | 3    | 52         | 0                   | 97   | 34    | 3    | 134        | 10                  | 85   | 6    | 101        | 287        |
| 04:15 PM    | 26                         | 13    | 3    | 42         | 0                   | 79   | 21    | 4    | 104        | 7                   | 80   | 1    | 88         | 234        |
| 04:30 PM    | 29                         | 12    | 1    | 42         | 0                   | 88   | 30    | 2    | 120        | 2                   | 75   | 5    | 82         | 244        |
| 04:45 PM    | 24                         | 16    | 3    | 43         | 0                   | 97   | 26    | 4    | 127        | 10                  | 91   | 2    | 103        | 273        |
| Total       | 114                        | 55    | 10   | 179        | 0                   | 361  | 111   | 13   | 485        | 29                  | 331  | 14   | 374        | 1038       |
| 05:00 PM    | 31                         | 17    | 0    | 48         | 1                   | 88   | 20    | 4    | 113        | 9                   | 81   | 0    | 90         | 251        |
| 05:15 PM    | 20                         | 10    | 3    | 33         | 0                   | 86   | 28    | 8    | 122        | 9                   | 87   | 1    | 97         | 252        |
| 05:30 PM    | 27                         | 9     | 4    | 40         | 0                   | 81   | 20    | 1    | 102        | 10                  | 82   | 3    | 95         | 237        |
| 05:45 PM    | 10                         | 3     | 2    | 15         | 0                   | 68   | 34    | 1    | 103        | 8                   | 68   | 4    | 80         | 198        |
| Total       | 88                         | 39    | 9    | 136        | 1                   | 323  | 102   | 14   | 440        | 36                  | 318  | 8    | 362        | 938        |
| Grand Total | 556                        | 204   | 71   | 831        | 1                   | 1793 | 612   | 60   | 2466       | 160                 | 1860 | 65   | 2085       | 5382       |
| Apprch %    | 66.9                       | 24.5  | 8.5  |            | 0                   | 72.7 | 24.8  | 2.4  |            | 7.7                 | 89.2 | 3.1  |            |            |
| Total %     | 10.3                       | 3.8   | 1.3  | 15.4       | 0                   | 33.3 | 11.4  | 1.1  | 45.8       | 3                   | 34.6 | 1.2  | 38.7       |            |
| Car         | 516                        | 197   | 0    | 713        | 1                   | 1696 | 557   | 0    | 2254       | 155                 | 1746 | 0    | 1901       | 4868       |
| % Car       | 92.8                       | 96.6  | 0    | 85.8       | 100                 | 94.6 | 91    | 0    | 91.4       | 96.9                | 93.9 | 0    | 91.2       | 90.4       |
| Truck       | 11                         | 7     | 0    | 18         | 0                   | 85   | 12    | 0    | 97         | 3                   | 84   | 0    | 87         | 202        |
| % Truck     | 2                          | 3.4   | 0    | 2.2        | 0                   | 4.7  | 2     | 0    | 3.9        | 1.9                 | 4.5  | 0    | 4.2        | 3.8        |
| Bus         | 29                         | 0     | 0    | 29         | 0                   | 12   | 43    | 0    | 55         | 2                   | 30   | 0    | 32         | 116        |
| % Bus       | 5.2                        | 0     | 0    | 3.5        | 0                   | 0.7  | 7     | 0    | 2.2        | 1.2                 | 1.6  | 0    | 1.5        | 2.2        |
| Ped         | 0                          | 0     | 71   | 71         | 0                   | 0    | 0     | 60   | 60         | 0                   | 0    | 65   | 65         | 196        |
| % Ped       | 0                          | 0     | 100  | 8.5        | 0                   | 0    | 0     | 100  | 2.4        | 0                   | 0    | 100  | 3.1        | 3.6        |

# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_-\_NYS\_25\_at Peconic Ave Wkday

Site Code :

Start Date : 5/16/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

| Start Time  | NYS 25<br>Westbound |      |      |            | Peconic Ave<br>Northbound |       |      |            | NYS 25<br>Eastbound |       |      |            | Int. Total |
|-------------|---------------------|------|------|------------|---------------------------|-------|------|------------|---------------------|-------|------|------------|------------|
|             | Left                | Thru | Peds | App. Total | Left                      | Right | Peds | App. Total | Thru                | Right | Peds | App. Total |            |
| 07:00 AM    | 90                  | 31   | 0    | 121        | 38                        | 72    | 1    | 111        | 27                  | 30    | 0    | 57         | 289        |
| 07:15 AM    | 72                  | 42   | 0    | 114        | 25                        | 103   | 1    | 129        | 23                  | 51    | 0    | 74         | 317        |
| 07:30 AM    | 100                 | 41   | 0    | 141        | 30                        | 116   | 0    | 146        | 28                  | 32    | 0    | 60         | 347        |
| 07:45 AM    | 77                  | 46   | 0    | 123        | 47                        | 155   | 1    | 203        | 35                  | 29    | 1    | 65         | 391        |
| Total       | 339                 | 160  | 0    | 499        | 140                       | 446   | 3    | 589        | 113                 | 142   | 1    | 256        | 1344       |
| 08:00 AM    | 64                  | 43   | 0    | 107        | 27                        | 121   | 0    | 148        | 42                  | 46    | 1    | 89         | 344        |
| 08:15 AM    | 80                  | 39   | 0    | 119        | 32                        | 140   | 0    | 172        | 37                  | 27    | 0    | 64         | 355        |
| 08:30 AM    | 85                  | 56   | 0    | 141        | 39                        | 121   | 2    | 162        | 43                  | 43    | 1    | 87         | 390        |
| 08:45 AM    | 113                 | 51   | 0    | 164        | 38                        | 125   | 1    | 164        | 48                  | 40    | 1    | 89         | 417        |
| Total       | 342                 | 189  | 0    | 531        | 136                       | 507   | 3    | 646        | 170                 | 156   | 3    | 329        | 1506       |
| 12:00 PM    | 98                  | 66   | 0    | 164        | 29                        | 111   | 4    | 144        | 68                  | 53    | 5    | 126        | 434        |
| 12:15 PM    | 87                  | 61   | 0    | 148        | 43                        | 116   | 6    | 165        | 59                  | 59    | 2    | 120        | 433        |
| 12:30 PM    | 86                  | 56   | 0    | 142        | 33                        | 112   | 1    | 146        | 72                  | 63    | 1    | 136        | 424        |
| 12:45 PM    | 97                  | 64   | 0    | 161        | 49                        | 133   | 3    | 185        | 67                  | 50    | 2    | 119        | 465        |
| Total       | 368                 | 247  | 0    | 615        | 154                       | 472   | 14   | 640        | 266                 | 225   | 10   | 501        | 1756       |
| 01:00 PM    | 100                 | 82   | 0    | 182        | 43                        | 128   | 5    | 176        | 81                  | 58    | 3    | 142        | 500        |
| 01:15 PM    | 85                  | 78   | 0    | 163        | 45                        | 121   | 6    | 172        | 65                  | 52    | 6    | 123        | 458        |
| 01:30 PM    | 84                  | 69   | 0    | 153        | 78                        | 128   | 6    | 212        | 66                  | 55    | 1    | 122        | 487        |
| 01:45 PM    | 102                 | 62   | 2    | 166        | 47                        | 121   | 9    | 177        | 60                  | 39    | 9    | 108        | 451        |
| Total       | 371                 | 291  | 2    | 664        | 213                       | 498   | 26   | 737        | 272                 | 204   | 19   | 495        | 1896       |
| 04:00 PM    | 98                  | 71   | 0    | 169        | 53                        | 100   | 6    | 159        | 55                  | 60    | 3    | 118        | 446        |
| 04:15 PM    | 115                 | 51   | 0    | 166        | 50                        | 112   | 2    | 164        | 52                  | 51    | 5    | 108        | 438        |
| 04:30 PM    | 102                 | 73   | 0    | 175        | 46                        | 144   | 3    | 193        | 50                  | 52    | 0    | 102        | 470        |
| 04:45 PM    | 101                 | 75   | 1    | 177        | 49                        | 122   | 6    | 177        | 50                  | 57    | 4    | 111        | 465        |
| Total       | 416                 | 270  | 1    | 687        | 198                       | 478   | 17   | 693        | 207                 | 220   | 12   | 439        | 1819       |
| 05:00 PM    | 105                 | 69   | 0    | 174        | 39                        | 124   | 1    | 164        | 64                  | 52    | 0    | 116        | 454        |
| 05:15 PM    | 110                 | 70   | 0    | 180        | 44                        | 122   | 2    | 168        | 47                  | 49    | 0    | 96         | 444        |
| 05:30 PM    | 76                  | 57   | 0    | 133        | 49                        | 92    | 2    | 143        | 56                  | 57    | 0    | 113        | 389        |
| 05:45 PM    | 89                  | 49   | 2    | 140        | 48                        | 114   | 7    | 169        | 47                  | 33    | 0    | 80         | 389        |
| Total       | 380                 | 245  | 2    | 627        | 180                       | 452   | 12   | 644        | 214                 | 191   | 0    | 405        | 1676       |
| Grand Total | 2216                | 1402 | 5    | 3623       | 1021                      | 2853  | 75   | 3949       | 1242                | 1138  | 45   | 2425       | 9997       |
| Apprch %    | 61.2                | 38.7 | 0.1  |            | 25.9                      | 72.2  | 1.9  |            | 51.2                | 46.9  | 1.9  |            |            |
| Total %     | 22.2                | 14   | 0.1  | 36.2       | 10.2                      | 28.5  | 0.8  | 39.5       | 12.4                | 11.4  | 0.5  | 24.3       |            |
| Car         | 2135                | 1323 | 0    | 3458       | 933                       | 2774  | 0    | 3707       | 1185                | 1035  | 0    | 2220       | 9385       |
| % Car       | 96.3                | 94.4 | 0    | 95.4       | 91.4                      | 97.2  | 0    | 93.9       | 95.4                | 90.9  | 0    | 91.5       | 93.9       |
| Truck       | 48                  | 55   | 0    | 103        | 53                        | 45    | 0    | 98         | 42                  | 54    | 0    | 96         | 297        |
| % Truck     | 2.2                 | 3.9  | 0    | 2.8        | 5.2                       | 1.6   | 0    | 2.5        | 3.4                 | 4.7   | 0    | 4          | 3          |
| Bus         | 33                  | 24   | 0    | 57         | 35                        | 34    | 0    | 69         | 15                  | 49    | 0    | 64         | 190        |
| % Bus       | 1.5                 | 1.7  | 0    | 1.6        | 3.4                       | 1.2   | 0    | 1.7        | 1.2                 | 4.3   | 0    | 2.6        | 1.9        |
| Ped         | 0                   | 0    | 5    | 5          | 0                         | 0     | 75   | 75         | 0                   | 0     | 45   | 45         | 125        |
| % Ped       | 0                   | 0    | 100  | 0.1        | 0                         | 0     | 100  | 1.9        | 0                   | 0     | 100  | 1.9        | 1.3        |



# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_-\_NYS\_25\_at Roanoke Ave Wkday

Site Code :

Start Date : 5/16/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

| Start Time  | Roanoke Ave Southbound |       |      |            | NYS 25 Westbound |       |      |            | NYS 25 Eastbound |      |      |            | Int. Total |
|-------------|------------------------|-------|------|------------|------------------|-------|------|------------|------------------|------|------|------------|------------|
|             | Left                   | Right | Peds | App. Total | Thru             | Right | Peds | App. Total | Left             | Thru | Peds | App. Total |            |
| 07:00 AM    | 0                      | 40    | 0    | 40         | 94               | 2     | 0    | 96         | 43               | 55   | 0    | 98         | 234        |
| 07:15 AM    | 0                      | 30    | 2    | 32         | 91               | 1     | 0    | 92         | 55               | 72   | 0    | 127        | 251        |
| 07:30 AM    | 0                      | 40    | 0    | 40         | 94               | 2     | 0    | 96         | 65               | 77   | 0    | 142        | 278        |
| 07:45 AM    | 0                      | 28    | 0    | 28         | 89               | 6     | 0    | 95         | 82               | 122  | 0    | 204        | 327        |
| Total       | 0                      | 138   | 2    | 140        | 368              | 11    | 0    | 379        | 245              | 326  | 0    | 571        | 1090       |
| 08:00 AM    | 0                      | 45    | 2    | 47         | 68               | 5     | 1    | 74         | 46               | 105  | 0    | 151        | 272        |
| 08:15 AM    | 0                      | 57    | 0    | 57         | 64               | 1     | 0    | 65         | 73               | 105  | 0    | 178        | 300        |
| 08:30 AM    | 0                      | 44    | 0    | 44         | 97               | 5     | 1    | 103        | 60               | 105  | 0    | 165        | 312        |
| 08:45 AM    | 0                      | 50    | 1    | 51         | 93               | 9     | 2    | 104        | 68               | 109  | 1    | 178        | 333        |
| Total       | 0                      | 196   | 3    | 199        | 322              | 20    | 4    | 346        | 247              | 424  | 1    | 672        | 1217       |
| 12:00 PM    | 0                      | 74    | 14   | 88         | 99               | 10    | 10   | 119        | 57               | 123  | 1    | 181        | 388        |
| 12:15 PM    | 0                      | 46    | 4    | 50         | 87               | 9     | 4    | 100        | 55               | 120  | 0    | 175        | 325        |
| 12:30 PM    | 0                      | 70    | 15   | 85         | 88               | 4     | 11   | 103        | 55               | 123  | 0    | 178        | 366        |
| 12:45 PM    | 0                      | 48    | 24   | 72         | 95               | 12    | 17   | 124        | 83               | 129  | 0    | 212        | 408        |
| Total       | 0                      | 238   | 57   | 295        | 369              | 35    | 42   | 446        | 250              | 495  | 1    | 746        | 1487       |
| 01:00 PM    | 0                      | 85    | 3    | 88         | 96               | 6     | 7    | 109        | 85               | 111  | 0    | 196        | 393        |
| 01:15 PM    | 0                      | 59    | 4    | 63         | 104              | 11    | 4    | 119        | 80               | 100  | 0    | 180        | 362        |
| 01:30 PM    | 0                      | 68    | 16   | 84         | 102              | 14    | 8    | 124        | 86               | 98   | 0    | 184        | 392        |
| 01:45 PM    | 0                      | 74    | 20   | 94         | 85               | 11    | 17   | 113        | 79               | 113  | 0    | 192        | 399        |
| Total       | 0                      | 286   | 43   | 329        | 387              | 42    | 36   | 465        | 330              | 422  | 0    | 752        | 1546       |
| 04:00 PM    | 0                      | 80    | 7    | 87         | 92               | 8     | 3    | 103        | 61               | 98   | 1    | 160        | 350        |
| 04:15 PM    | 0                      | 78    | 6    | 84         | 90               | 7     | 4    | 101        | 77               | 101  | 0    | 178        | 363        |
| 04:30 PM    | 0                      | 63    | 11   | 74         | 117              | 12    | 1    | 130        | 80               | 97   | 0    | 177        | 381        |
| 04:45 PM    | 0                      | 71    | 2    | 73         | 95               | 9     | 5    | 109        | 78               | 100  | 2    | 180        | 362        |
| Total       | 0                      | 292   | 26   | 318        | 394              | 36    | 13   | 443        | 296              | 396  | 3    | 695        | 1456       |
| 05:00 PM    | 0                      | 78    | 7    | 85         | 93               | 7     | 5    | 105        | 77               | 108  | 0    | 185        | 375        |
| 05:15 PM    | 0                      | 71    | 7    | 78         | 104              | 6     | 2    | 112        | 63               | 112  | 3    | 178        | 368        |
| 05:30 PM    | 0                      | 52    | 9    | 61         | 89               | 5     | 2    | 96         | 53               | 91   | 0    | 144        | 301        |
| 05:45 PM    | 0                      | 65    | 3    | 68         | 63               | 15    | 6    | 84         | 75               | 91   | 0    | 166        | 318        |
| Total       | 0                      | 266   | 26   | 292        | 349              | 33    | 15   | 397        | 268              | 402  | 3    | 673        | 1362       |
| Grand Total | 0                      | 1416  | 157  | 1573       | 2189             | 177   | 110  | 2476       | 1636             | 2465 | 8    | 4109       | 8158       |
| Apprch %    | 0                      | 90    | 10   |            | 88.4             | 7.1   | 4.4  |            | 39.8             | 60   | 0.2  |            |            |
| Total %     | 0                      | 17.4  | 1.9  | 19.3       | 26.8             | 2.2   | 1.3  | 30.4       | 20.1             | 30.2 | 0.1  | 50.4       |            |
| Car         | 0                      | 1370  | 0    | 1370       | 2077             | 171   | 0    | 2248       | 1595             | 2359 | 0    | 3954       | 7572       |
| % Car       | 0                      | 96.8  | 0    | 87.1       | 94.9             | 96.6  | 0    | 90.8       | 97.5             | 95.7 | 0    | 96.2       | 92.8       |
| Truck       | 0                      | 24    | 0    | 24         | 79               | 5     | 0    | 84         | 22               | 77   | 0    | 99         | 207        |
| % Truck     | 0                      | 1.7   | 0    | 1.5        | 3.6              | 2.8   | 0    | 3.4        | 1.3              | 3.1  | 0    | 2.4        | 2.5        |
| Bus         | 0                      | 22    | 0    | 22         | 33               | 1     | 0    | 34         | 19               | 29   | 0    | 48         | 104        |
| % Bus       | 0                      | 1.6   | 0    | 1.4        | 1.5              | 0.6   | 0    | 1.4        | 1.2              | 1.2  | 0    | 1.2        | 1.3        |
| Ped         | 0                      | 0     | 157  | 157        | 0                | 0     | 110  | 110        | 0                | 0    | 8    | 8          | 275        |
| % Ped       | 0                      | 0     | 100  | 10         | 0                | 0     | 100  | 4.4        | 0                | 0    | 100  | 0.2        | 3.4        |

# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_-\_NYS\_25\_at Ostrander Ave wkday

Site Code :

Start Date : 5/16/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

|             | Southbound St.<br>Southbound |      |       |      |            | Westbound St.<br>Westbound |      |       |      |            | Northbound St.<br>Northbound |      |       |      |            | Eastbound St.<br>Eastbound |      |       |      |            |            |
|-------------|------------------------------|------|-------|------|------------|----------------------------|------|-------|------|------------|------------------------------|------|-------|------|------------|----------------------------|------|-------|------|------------|------------|
| Start Time  | Left                         | Thru | Right | Peds | App. Total | Left                       | Thru | Right | Peds | App. Total | Left                         | Thru | Right | Peds | App. Total | Left                       | Thru | Right | Peds | App. Total | Int. Total |
| 07:00 AM    | 5                            | 0    | 6     | 2    | 13         | 0                          | 82   | 1     | 0    | 83         | 0                            | 0    | 0     | 0    | 0          | 1                          | 58   | 0     | 2    | 61         | 157        |
| 07:15 AM    | 4                            | 0    | 6     | 2    | 12         | 0                          | 85   | 0     | 0    | 85         | 0                            | 0    | 0     | 0    | 0          | 3                          | 67   | 0     | 1    | 71         | 168        |
| 07:30 AM    | 6                            | 0    | 10    | 0    | 16         | 0                          | 99   | 5     | 0    | 104        | 0                            | 0    | 0     | 0    | 0          | 4                          | 69   | 2     | 1    | 76         | 196        |
| 07:45 AM    | 7                            | 0    | 7     | 1    | 15         | 0                          | 95   | 8     | 0    | 103        | 0                            | 0    | 0     | 0    | 0          | 9                          | 111  | 0     | 1    | 121        | 239        |
| Total       | 22                           | 0    | 29    | 5    | 56         | 0                          | 361  | 14    | 0    | 375        | 0                            | 0    | 0     | 0    | 0          | 17                         | 305  | 2     | 5    | 329        | 760        |
| 08:00 AM    | 6                            | 0    | 7     | 0    | 13         | 0                          | 72   | 3     | 0    | 75         | 0                            | 0    | 0     | 3    | 3          | 5                          | 95   | 3     | 2    | 105        | 196        |
| 08:15 AM    | 5                            | 0    | 6     | 1    | 12         | 0                          | 84   | 6     | 1    | 91         | 0                            | 0    | 0     | 3    | 3          | 6                          | 117  | 3     | 2    | 128        | 234        |
| 08:30 AM    | 4                            | 0    | 11    | 0    | 15         | 0                          | 110  | 9     | 5    | 124        | 0                            | 0    | 1     | 1    | 2          | 4                          | 102  | 0     | 0    | 106        | 247        |
| 08:45 AM    | 3                            | 0    | 19    | 2    | 24         | 1                          | 119  | 11    | 0    | 131        | 0                            | 0    | 0     | 5    | 5          | 6                          | 96   | 2     | 2    | 106        | 266        |
| Total       | 18                           | 0    | 43    | 3    | 64         | 1                          | 385  | 29    | 6    | 421        | 0                            | 0    | 1     | 12   | 13         | 21                         | 410  | 8     | 6    | 445        | 943        |
| 12:00 PM    | 6                            | 0    | 13    | 25   | 44         | 0                          | 130  | 6     | 0    | 136        | 0                            | 0    | 1     | 7    | 8          | 8                          | 111  | 1     | 27   | 147        | 335        |
| 12:15 PM    | 9                            | 0    | 13    | 11   | 33         | 1                          | 95   | 14    | 0    | 110        | 0                            | 0    | 0     | 6    | 6          | 11                         | 108  | 1     | 21   | 141        | 290        |
| 12:30 PM    | 6                            | 1    | 15    | 25   | 47         | 0                          | 102  | 4     | 2    | 108        | 0                            | 0    | 0     | 6    | 6          | 8                          | 99   | 3     | 45   | 155        | 316        |
| 12:45 PM    | 12                           | 1    | 24    | 16   | 53         | 1                          | 108  | 9     | 0    | 118        | 0                            | 0    | 0     | 13   | 13         | 19                         | 123  | 1     | 22   | 165        | 349        |
| Total       | 33                           | 2    | 65    | 77   | 177        | 2                          | 435  | 33    | 2    | 472        | 0                            | 0    | 1     | 32   | 33         | 46                         | 441  | 6     | 115  | 608        | 1290       |
| 01:00 PM    | 4                            | 0    | 15    | 13   | 32         | 2                          | 122  | 16    | 2    | 142        | 0                            | 0    | 0     | 12   | 12         | 10                         | 116  | 0     | 28   | 154        | 340        |
| 01:15 PM    | 2                            | 3    | 15    | 13   | 33         | 0                          | 91   | 9     | 0    | 100        | 0                            | 0    | 0     | 6    | 6          | 6                          | 93   | 0     | 23   | 122        | 261        |
| 01:30 PM    | 7                            | 0    | 15    | 13   | 35         | 3                          | 100  | 7     | 0    | 110        | 0                            | 0    | 0     | 9    | 9          | 12                         | 93   | 4     | 16   | 125        | 279        |
| 01:45 PM    | 6                            | 0    | 11    | 13   | 30         | 1                          | 77   | 8     | 0    | 86         | 0                            | 0    | 0     | 8    | 8          | 8                          | 104  | 1     | 23   | 136        | 260        |
| Total       | 19                           | 3    | 56    | 52   | 130        | 6                          | 390  | 40    | 2    | 438        | 0                            | 0    | 0     | 35   | 35         | 36                         | 406  | 5     | 90   | 537        | 1140       |
| 04:00 PM    | 4                            | 0    | 12    | 6    | 22         | 0                          | 150  | 12    | 0    | 162        | 0                            | 0    | 0     | 1    | 1          | 6                          | 111  | 1     | 19   | 137        | 322        |
| 04:15 PM    | 13                           | 0    | 12    | 9    | 34         | 0                          | 105  | 16    | 1    | 122        | 0                            | 0    | 0     | 4    | 4          | 11                         | 110  | 4     | 13   | 138        | 298        |
| 04:30 PM    | 7                            | 0    | 15    | 7    | 29         | 0                          | 148  | 12    | 0    | 160        | 0                            | 0    | 0     | 4    | 4          | 5                          | 115  | 3     | 20   | 143        | 336        |
| 04:45 PM    | 5                            | 0    | 16    | 5    | 26         | 3                          | 129  | 13    | 0    | 145        | 0                            | 0    | 0     | 2    | 2          | 7                          | 93   | 3     | 9    | 112        | 285        |
| Total       | 29                           | 0    | 55    | 27   | 111        | 3                          | 532  | 53    | 1    | 589        | 0                            | 0    | 0     | 11   | 11         | 29                         | 429  | 11    | 61   | 530        | 1241       |
| 05:00 PM    | 4                            | 1    | 17    | 6    | 28         | 1                          | 127  | 16    | 2    | 146        | 0                            | 0    | 0     | 12   | 12         | 13                         | 125  | 1     | 9    | 148        | 334        |
| 05:15 PM    | 8                            | 0    | 9     | 3    | 20         | 1                          | 113  | 6     | 2    | 122        | 0                            | 0    | 0     | 4    | 4          | 8                          | 109  | 6     | 0    | 123        | 269        |
| 05:30 PM    | 5                            | 0    | 13    | 6    | 24         | 1                          | 106  | 10    | 0    | 117        | 0                            | 0    | 0     | 2    | 2          | 7                          | 101  | 3     | 3    | 114        | 257        |
| 05:45 PM    | 5                            | 1    | 8     | 3    | 17         | 2                          | 100  | 4     | 0    | 106        | 0                            | 0    | 0     | 3    | 3          | 6                          | 96   | 1     | 0    | 103        | 229        |
| Total       | 22                           | 2    | 47    | 18   | 89         | 5                          | 446  | 36    | 4    | 491        | 0                            | 0    | 0     | 21   | 21         | 34                         | 431  | 11    | 12   | 488        | 1089       |
| Grand Total | 143                          | 7    | 295   | 182  | 627        | 17                         | 2549 | 205   | 15   | 2786       | 0                            | 0    | 2     | 111  | 113        | 183                        | 2422 | 43    | 289  | 2937       | 6463       |
| Apprch %    | 22.8                         | 1.1  | 47    | 29   |            | 0.6                        | 91.5 | 7.4   | 0.5  |            | 0                            | 0    | 1.8   | 98.2 |            | 6.2                        | 82.5 | 1.5   | 9.8  |            |            |
| Total %     | 2.2                          | 0.1  | 4.6   | 2.8  | 9.7        | 0.3                        | 39.4 | 3.2   | 0.2  | 43.1       | 0                            | 0    | 0     | 1.7  | 1.7        | 2.8                        | 37.5 | 0.7   | 4.5  | 45.4       |            |
| Car         | 137                          | 7    | 279   | 0    | 423        | 17                         | 2432 | 195   | 0    | 2644       | 0                            | 0    | 2     | 0    | 2          | 181                        | 2324 | 42    | 0    | 2547       | 5616       |
| % Car       | 95.8                         | 100  | 94.6  | 0    | 67.5       | 100                        | 95.4 | 95.1  | 0    | 94.9       | 0                            | 0    | 100   | 0    | 1.8        | 98.9                       | 96   | 97.7  | 0    | 86.7       | 86.9       |
| Truck       | 2                            | 0    | 3     | 0    | 5          | 0                          | 90   | 5     | 0    | 95         | 0                            | 0    | 0     | 0    | 0          | 1                          | 72   | 1     | 0    | 74         | 174        |
| % Truck     | 1.4                          | 0    | 1     | 0    | 0.8        | 0                          | 3.5  | 2.4   | 0    | 3.4        | 0                            | 0    | 0     | 0    | 0          | 0.5                        | 3    | 2.3   | 0    | 2.5        | 2.7        |
| Bus         | 4                            | 0    | 13    | 0    | 17         | 0                          | 27   | 5     | 0    | 32         | 0                            | 0    | 0     | 0    | 0          | 1                          | 26   | 0     | 0    | 27         | 76         |
| % Bus       | 2.8                          | 0    | 4.4   | 0    | 2.7        | 0                          | 1.1  | 2.4   | 0    | 1.1        | 0                            | 0    | 0     | 0    | 0          | 0.5                        | 1.1  | 0     | 0    | 0.9        | 1.2        |
| Ped         | 0                            | 0    | 0     | 182  | 182        | 0                          | 0    | 0     | 15   | 15         | 0                            | 0    | 0     | 111  | 111        | 0                          | 0    | 0     | 289  | 289        | 597        |
| % Ped       | 0                            | 0    | 0     | 100  | 29         | 0                          | 0    | 0     | 100  | 0.5        | 0                            | 0    | 0     | 100  | 98.2       | 0                          | 0    | 0     | 100  | 9.8        | 9.2        |

# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_-\_NYS\_25\_at Riverside Dr Wkday

Site Code :

Start Date : 5/16/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

| Start Time  | NYS 25 Southbound |      |       |      |            | Riverside Dr Westbound |      |       |      |            | NYS 25 Northbound |      |       |      |            | Fishel Ln Eastbound |      |       |      |            | Int. Total |
|-------------|-------------------|------|-------|------|------------|------------------------|------|-------|------|------------|-------------------|------|-------|------|------------|---------------------|------|-------|------|------------|------------|
|             | Left              | Thru | Right | Peds | App. Total | Left                   | Thru | Right | Peds | App. Total | Left              | Thru | Right | Peds | App. Total | Left                | Thru | Right | Peds | App. Total |            |
| 07:00 AM    | 10                | 79   | 1     | 0    | 90         | 4                      | 8    | 4     | 2    | 18         | 2                 | 44   | 11    | 0    | 57         | 2                   | 8    | 1     | 3    | 14         | 179        |
| 07:15 AM    | 10                | 74   | 1     | 0    | 85         | 7                      | 7    | 1     | 3    | 18         | 0                 | 60   | 10    | 0    | 70         | 1                   | 10   | 1     | 1    | 13         | 186        |
| 07:30 AM    | 7                 | 91   | 9     | 0    | 107        | 8                      | 9    | 10    | 0    | 27         | 0                 | 69   | 5     | 0    | 74         | 0                   | 12   | 1     | 0    | 13         | 221        |
| 07:45 AM    | 3                 | 92   | 7     | 0    | 102        | 13                     | 12   | 13    | 2    | 40         | 0                 | 100  | 6     | 0    | 106        | 3                   | 11   | 4     | 0    | 18         | 266        |
| Total       | 30                | 336  | 18    | 0    | 384        | 32                     | 36   | 28    | 7    | 103        | 2                 | 273  | 32    | 0    | 307        | 6                   | 41   | 7     | 4    | 58         | 852        |
| 08:00 AM    | 7                 | 64   | 1     | 0    | 72         | 9                      | 5    | 9     | 0    | 23         | 0                 | 83   | 7     | 0    | 90         | 3                   | 7    | 1     | 0    | 11         | 196        |
| 08:15 AM    | 7                 | 79   | 4     | 0    | 90         | 18                     | 8    | 8     | 1    | 35         | 0                 | 103  | 6     | 0    | 109        | 2                   | 0    | 4     | 0    | 6          | 240        |
| 08:30 AM    | 7                 | 97   | 8     | 0    | 112        | 14                     | 9    | 7     | 0    | 30         | 0                 | 96   | 9     | 0    | 105        | 3                   | 13   | 5     | 0    | 21         | 268        |
| 08:45 AM    | 7                 | 111  | 5     | 0    | 123        | 18                     | 12   | 7     | 4    | 41         | 0                 | 90   | 3     | 0    | 93         | 0                   | 9    | 4     | 0    | 13         | 270        |
| Total       | 28                | 351  | 18    | 0    | 397        | 59                     | 34   | 31    | 5    | 129        | 0                 | 372  | 25    | 0    | 397        | 8                   | 29   | 14    | 0    | 51         | 974        |
| 12:00 PM    | 14                | 123  | 10    | 0    | 147        | 5                      | 9    | 16    | 3    | 33         | 6                 | 98   | 9     | 0    | 113        | 3                   | 10   | 4     | 1    | 18         | 311        |
| 12:15 PM    | 13                | 91   | 5     | 3    | 112        | 3                      | 13   | 18    | 4    | 38         | 2                 | 106  | 7     | 0    | 115        | 2                   | 5    | 5     | 1    | 13         | 278        |
| 12:30 PM    | 9                 | 90   | 10    | 1    | 110        | 4                      | 12   | 20    | 5    | 41         | 4                 | 83   | 5     | 0    | 92         | 0                   | 14   | 5     | 0    | 19         | 262        |
| 12:45 PM    | 8                 | 108  | 7     | 0    | 123        | 6                      | 13   | 23    | 10   | 52         | 5                 | 123  | 11    | 0    | 139        | 3                   | 6    | 3     | 0    | 12         | 326        |
| Total       | 44                | 412  | 32    | 4    | 492        | 18                     | 47   | 77    | 22   | 164        | 17                | 410  | 32    | 0    | 459        | 8                   | 35   | 17    | 2    | 62         | 1177       |
| 01:00 PM    | 7                 | 115  | 7     | 0    | 129        | 7                      | 16   | 8     | 3    | 34         | 12                | 110  | 11    | 0    | 133        | 6                   | 12   | 2     | 2    | 22         | 318        |
| 01:15 PM    | 9                 | 90   | 4     | 0    | 103        | 8                      | 9    | 10    | 3    | 30         | 8                 | 75   | 8     | 0    | 91         | 4                   | 13   | 6     | 0    | 23         | 247        |
| 01:30 PM    | 9                 | 100  | 8     | 0    | 117        | 4                      | 8    | 10    | 4    | 26         | 5                 | 96   | 10    | 0    | 111        | 4                   | 15   | 0     | 2    | 21         | 275        |
| 01:45 PM    | 13                | 83   | 2     | 0    | 98         | 13                     | 10   | 6     | 8    | 37         | 10                | 97   | 10    | 0    | 117        | 3                   | 13   | 1     | 0    | 17         | 269        |
| Total       | 38                | 388  | 21    | 0    | 447        | 32                     | 43   | 34    | 18   | 127        | 35                | 378  | 39    | 0    | 452        | 17                  | 53   | 9     | 4    | 83         | 1109       |
| 04:00 PM    | 15                | 139  | 8     | 2    | 164        | 10                     | 21   | 8     | 4    | 43         | 0                 | 100  | 17    | 0    | 117        | 2                   | 13   | 4     | 0    | 19         | 343        |
| 04:15 PM    | 20                | 102  | 6     | 2    | 130        | 13                     | 12   | 14    | 1    | 40         | 1                 | 99   | 19    | 0    | 119        | 4                   | 13   | 2     | 0    | 19         | 308        |
| 04:30 PM    | 28                | 132  | 11    | 2    | 173        | 15                     | 23   | 11    | 5    | 54         | 0                 | 93   | 20    | 0    | 113        | 3                   | 12   | 2     | 0    | 17         | 357        |
| 04:45 PM    | 13                | 101  | 7     | 1    | 122        | 18                     | 18   | 20    | 6    | 62         | 0                 | 83   | 13    | 0    | 96         | 2                   | 27   | 3     | 0    | 32         | 312        |
| Total       | 76                | 474  | 32    | 7    | 589        | 56                     | 74   | 53    | 16   | 199        | 1                 | 375  | 69    | 0    | 445        | 11                  | 65   | 11    | 0    | 87         | 1320       |
| 05:00 PM    | 22                | 121  | 9     | 0    | 152        | 16                     | 21   | 13    | 7    | 57         | 3                 | 103  | 27    | 0    | 133        | 8                   | 16   | 2     | 9    | 35         | 377        |
| 05:15 PM    | 34                | 90   | 7     | 0    | 131        | 16                     | 31   | 17    | 3    | 67         | 3                 | 84   | 20    | 0    | 107        | 3                   | 28   | 2     | 0    | 33         | 338        |
| 05:30 PM    | 14                | 103  | 7     | 0    | 124        | 16                     | 31   | 11    | 1    | 59         | 5                 | 80   | 25    | 0    | 110        | 7                   | 15   | 7     | 1    | 30         | 323        |
| 05:45 PM    | 7                 | 78   | 3     | 0    | 88         | 23                     | 20   | 5     | 7    | 55         | 4                 | 85   | 13    | 0    | 102        | 3                   | 14   | 4     | 2    | 23         | 268        |
| Total       | 77                | 392  | 26    | 0    | 495        | 71                     | 103  | 46    | 18   | 238        | 15                | 352  | 85    | 0    | 452        | 21                  | 73   | 15    | 12   | 121        | 1306       |
| Grand Total | 293               | 2353 | 147   | 11   | 2804       | 268                    | 337  | 269   | 86   | 960        | 70                | 2160 | 282   | 0    | 2512       | 71                  | 296  | 73    | 22   | 462        | 6738       |
| Apprch %    | 10.4              | 83.9 | 5.2   | 0.4  |            | 27.9                   | 35.1 | 28    | 9    |            | 2.8               | 86   | 11.2  | 0    |            | 15.4                | 64.1 | 15.8  | 4.8  |            |            |
| Total %     | 4.3               | 34.9 | 2.2   | 0.2  | 41.6       | 4                      | 5    | 4     | 1.3  | 14.2       | 1                 | 32.1 | 4.2   | 0    | 37.3       | 1.1                 | 4.4  | 1.1   | 0.3  | 6.9        |            |
| Car         | 288               | 2253 | 143   | 0    | 2684       | 257                    | 336  | 266   | 0    | 859        | 70                | 2069 | 270   | 0    | 2409       | 68                  | 296  | 71    | 0    | 435        | 6387       |
| % Car       | 98.3              | 95.8 | 97.3  | 0    | 95.7       | 95.9                   | 99.7 | 98.9  | 0    | 89.5       | 100               | 95.8 | 95.7  | 0    | 95.9       | 95.8                | 100  | 97.3  | 0    | 94.2       | 94.8       |
| Truck       | 4                 | 78   | 1     | 0    | 83         | 6                      | 1    | 2     | 0    | 9          | 0                 | 65   | 7     | 0    | 72         | 1                   | 0    | 0     | 0    | 1          | 165        |
| % Truck     | 1.4               | 3.3  | 0.7   | 0    | 3          | 2.2                    | 0.3  | 0.7   | 0    | 0.9        | 0                 | 3    | 2.5   | 0    | 2.9        | 1.4                 | 0    | 0     | 0    | 0.2        | 2.4        |
| Bus         | 1                 | 22   | 3     | 0    | 26         | 5                      | 0    | 1     | 0    | 6          | 0                 | 26   | 5     | 0    | 31         | 2                   | 0    | 2     | 0    | 4          | 67         |
| % Bus       | 0.3               | 0.9  | 2     | 0    | 0.9        | 1.9                    | 0    | 0.4   | 0    | 0.6        | 0                 | 1.2  | 1.8   | 0    | 1.2        | 2.8                 | 0    | 2.7   | 0    | 0.9        | 1          |
| Ped         | 0                 | 0    | 0     | 11   | 11         | 0                      | 0    | 0     | 86   | 86         | 0                 | 0    | 0     | 0    | 0          | 0                   | 0    | 0     | 22   | 22         | 119        |
| % Ped       | 0                 | 0    | 0     | 100  | 0.4        | 0                      | 0    | 0     | 100  | 9          | 0                 | 0    | 0     | 0    | 0          | 0                   | 0    | 0     | 100  | 4.8        | 1.8        |



# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead-\_NYS\_25\_at\_Hubbard Ave Wkday

Site Code :

Start Date : 5/16/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

| Start Time  | NYS 25 Southbound |      |      |            | Hubbard Ave Westbound |       |      |            | NYS 25 Northbound |       |      |            | Int. Total |
|-------------|-------------------|------|------|------------|-----------------------|-------|------|------------|-------------------|-------|------|------------|------------|
|             | Left              | Thru | Peds | App. Total | Left                  | Right | Peds | App. Total | Thru              | Right | Peds | App. Total |            |
| 07:00 AM    | 5                 | 44   | 0    | 49         | 34                    | 0     | 0    | 34         | 31                | 15    | 0    | 46         | 129        |
| 07:15 AM    | 4                 | 38   | 0    | 42         | 29                    | 4     | 0    | 33         | 35                | 17    | 0    | 52         | 127        |
| 07:30 AM    | 3                 | 49   | 0    | 52         | 44                    | 10    | 0    | 54         | 34                | 14    | 0    | 48         | 154        |
| 07:45 AM    | 1                 | 64   | 0    | 65         | 44                    | 7     | 2    | 53         | 35                | 9     | 0    | 44         | 162        |
| Total       | 13                | 195  | 0    | 208        | 151                   | 21    | 2    | 174        | 135               | 55    | 0    | 190        | 572        |
| 08:00 AM    | 4                 | 46   | 0    | 50         | 30                    | 2     | 0    | 32         | 45                | 11    | 0    | 56         | 138        |
| 08:15 AM    | 2                 | 53   | 0    | 55         | 36                    | 5     | 1    | 42         | 49                | 12    | 0    | 61         | 158        |
| 08:30 AM    | 5                 | 58   | 0    | 63         | 46                    | 7     | 0    | 53         | 51                | 11    | 0    | 62         | 178        |
| 08:45 AM    | 2                 | 73   | 0    | 75         | 49                    | 6     | 0    | 55         | 52                | 9     | 0    | 61         | 191        |
| Total       | 13                | 230  | 0    | 243        | 161                   | 20    | 1    | 182        | 197               | 43    | 0    | 240        | 665        |
| 12:00 PM    | 4                 | 74   | 0    | 78         | 20                    | 8     | 0    | 28         | 69                | 30    | 0    | 99         | 205        |
| 12:15 PM    | 3                 | 63   | 0    | 66         | 19                    | 7     | 0    | 26         | 70                | 25    | 0    | 95         | 187        |
| 12:30 PM    | 5                 | 55   | 0    | 60         | 22                    | 3     | 2    | 27         | 65                | 22    | 0    | 87         | 174        |
| 12:45 PM    | 6                 | 75   | 0    | 81         | 22                    | 7     | 0    | 29         | 81                | 31    | 0    | 112        | 222        |
| Total       | 18                | 267  | 0    | 285        | 83                    | 25    | 2    | 110        | 285               | 108   | 0    | 393        | 788        |
| 01:00 PM    | 12                | 59   | 0    | 71         | 24                    | 11    | 0    | 35         | 93                | 18    | 0    | 111        | 217        |
| 01:15 PM    | 4                 | 63   | 0    | 67         | 22                    | 9     | 0    | 31         | 64                | 16    | 0    | 80         | 178        |
| 01:30 PM    | 8                 | 62   | 0    | 70         | 24                    | 9     | 0    | 33         | 53                | 15    | 0    | 68         | 171        |
| 01:45 PM    | 4                 | 68   | 0    | 72         | 21                    | 7     | 1    | 29         | 58                | 27    | 0    | 85         | 186        |
| Total       | 28                | 252  | 0    | 280        | 91                    | 36    | 1    | 128        | 268               | 76    | 0    | 344        | 752        |
| 04:00 PM    | 11                | 91   | 0    | 102        | 30                    | 11    | 0    | 41         | 79                | 37    | 0    | 116        | 259        |
| 04:15 PM    | 10                | 73   | 0    | 83         | 28                    | 12    | 0    | 40         | 75                | 38    | 0    | 113        | 236        |
| 04:30 PM    | 13                | 77   | 0    | 90         | 23                    | 16    | 1    | 40         | 67                | 35    | 0    | 102        | 232        |
| 04:45 PM    | 12                | 64   | 0    | 76         | 27                    | 9     | 0    | 36         | 62                | 35    | 0    | 97         | 209        |
| Total       | 46                | 305  | 0    | 351        | 108                   | 48    | 1    | 157        | 283               | 145   | 0    | 428        | 936        |
| 05:00 PM    | 8                 | 70   | 0    | 78         | 41                    | 11    | 0    | 52         | 64                | 36    | 0    | 100        | 230        |
| 05:15 PM    | 9                 | 67   | 0    | 76         | 34                    | 10    | 0    | 44         | 59                | 31    | 0    | 90         | 210        |
| 05:30 PM    | 8                 | 50   | 0    | 58         | 30                    | 4     | 0    | 34         | 49                | 35    | 0    | 84         | 176        |
| 05:45 PM    | 1                 | 42   | 0    | 43         | 29                    | 8     | 0    | 37         | 49                | 36    | 0    | 85         | 165        |
| Total       | 26                | 229  | 0    | 255        | 134                   | 33    | 0    | 167        | 221               | 138   | 0    | 359        | 781        |
| Grand Total | 144               | 1478 | 0    | 1622       | 728                   | 183   | 7    | 918        | 1389              | 565   | 0    | 1954       | 4494       |
| Apprch %    | 8.9               | 91.1 | 0    |            | 79.3                  | 19.9  | 0.8  |            | 71.1              | 28.9  | 0    |            |            |
| Total %     | 3.2               | 32.9 | 0    | 36.1       | 16.2                  | 4.1   | 0.2  | 20.4       | 30.9              | 12.6  | 0    | 43.5       |            |
| Car         | 129               | 1417 | 0    | 1546       | 692                   | 159   | 0    | 851        | 1322              | 539   | 0    | 1861       | 4258       |
| % Car       | 89.6              | 95.9 | 0    | 95.3       | 95.1                  | 86.9  | 0    | 92.7       | 95.2              | 95.4  | 0    | 95.2       | 94.7       |
| Truck       | 11                | 48   | 0    | 59         | 27                    | 22    | 0    | 49         | 45                | 15    | 0    | 60         | 168        |
| % Truck     | 7.6               | 3.2  | 0    | 3.6        | 3.7                   | 12    | 0    | 5.3        | 3.2               | 2.7   | 0    | 3.1        | 3.7        |
| Bus         | 4                 | 13   | 0    | 17         | 9                     | 2     | 0    | 11         | 22                | 11    | 0    | 33         | 61         |
| % Bus       | 2.8               | 0.9  | 0    | 1          | 1.2                   | 1.1   | 0    | 1.2        | 1.6               | 1.9   | 0    | 1.7        | 1.4        |
| Ped         | 0                 | 0    | 0    | 0          | 0                     | 0     | 7    | 7          | 0                 | 0     | 0    | 0          | 7          |
| % Ped       | 0                 | 0    | 0    | 0          | 0                     | 0     | 100  | 0.8        | 0                 | 0     | 0    | 0          | 0.2        |

# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_-\_Roanoke Ave at E 2nd St Wkday

Site Code :

Start Date : 5/16/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

| Start Time  | Roanoke Ave Southbound |      |       |      |            | E 2nd St Westbound |      |       |      |            | Roanoke Ave Northbound |      |       |      |            | E 2nd St Eastbound |      |       |      |            | Int. Total |
|-------------|------------------------|------|-------|------|------------|--------------------|------|-------|------|------------|------------------------|------|-------|------|------------|--------------------|------|-------|------|------------|------------|
|             | Left                   | Thru | Right | Peds | App. Total | Left               | Thru | Right | Peds | App. Total | Left                   | Thru | Right | Peds | App. Total | Left               | Thru | Right | Peds | App. Total |            |
| 07:00 AM    | 1                      | 43   | 1     | 1    | 46         | 0                  | 4    | 5     | 0    | 9          | 1                      | 46   | 0     | 0    | 47         | 0                  | 5    | 0     | 1    | 6          | 108        |
| 07:15 AM    | 3                      | 28   | 1     | 2    | 34         | 1                  | 4    | 3     | 0    | 8          | 1                      | 49   | 2     | 0    | 52         | 0                  | 3    | 0     | 0    | 3          | 97         |
| 07:30 AM    | 3                      | 38   | 2     | 0    | 43         | 1                  | 6    | 2     | 2    | 11         | 0                      | 52   | 1     | 0    | 53         | 1                  | 8    | 1     | 0    | 10         | 117        |
| 07:45 AM    | 3                      | 32   | 4     | 2    | 41         | 2                  | 4    | 4     | 1    | 11         | 6                      | 73   | 2     | 0    | 81         | 1                  | 5    | 1     | 0    | 7          | 140        |
| Total       | 10                     | 141  | 8     | 5    | 164        | 4                  | 18   | 14    | 3    | 39         | 8                      | 220  | 5     | 0    | 233        | 2                  | 21   | 2     | 1    | 26         | 462        |
| 08:00 AM    | 7                      | 45   | 1     | 1    | 54         | 1                  | 10   | 0     | 1    | 12         | 2                      | 55   | 1     | 0    | 58         | 3                  | 6    | 1     | 0    | 10         | 134        |
| 08:15 AM    | 7                      | 54   | 3     | 2    | 66         | 5                  | 9    | 5     | 1    | 20         | 2                      | 64   | 1     | 0    | 67         | 1                  | 5    | 1     | 1    | 8          | 161        |
| 08:30 AM    | 7                      | 36   | 3     | 1    | 47         | 2                  | 6    | 7     | 0    | 15         | 0                      | 62   | 1     | 0    | 63         | 4                  | 5    | 2     | 0    | 11         | 136        |
| 08:45 AM    | 7                      | 45   | 3     | 1    | 56         | 5                  | 18   | 9     | 1    | 33         | 6                      | 58   | 4     | 0    | 68         | 2                  | 7    | 4     | 1    | 14         | 171        |
| Total       | 28                     | 180  | 10    | 5    | 223        | 13                 | 43   | 21    | 3    | 80         | 10                     | 239  | 7     | 0    | 256        | 10                 | 23   | 8     | 2    | 43         | 602        |
| 12:00 PM    | 5                      | 75   | 7     | 0    | 87         | 0                  | 10   | 8     | 3    | 21         | 3                      | 61   | 2     | 0    | 66         | 4                  | 10   | 1     | 3    | 18         | 192        |
| 12:15 PM    | 9                      | 51   | 10    | 2    | 72         | 0                  | 13   | 9     | 3    | 25         | 5                      | 71   | 1     | 1    | 78         | 2                  | 17   | 7     | 8    | 34         | 209        |
| 12:30 PM    | 14                     | 60   | 1     | 2    | 77         | 0                  | 12   | 6     | 0    | 18         | 7                      | 61   | 1     | 3    | 72         | 4                  | 7    | 6     | 3    | 20         | 187        |
| 12:45 PM    | 13                     | 54   | 5     | 2    | 74         | 0                  | 9    | 7     | 1    | 17         | 4                      | 78   | 7     | 5    | 94         | 4                  | 15   | 4     | 1    | 24         | 209        |
| Total       | 41                     | 240  | 23    | 6    | 310        | 0                  | 44   | 30    | 7    | 81         | 19                     | 271  | 11    | 9    | 310        | 14                 | 49   | 18    | 15   | 96         | 797        |
| 01:00 PM    | 7                      | 65   | 7     | 0    | 79         | 1                  | 14   | 7     | 1    | 23         | 8                      | 81   | 7     | 2    | 98         | 7                  | 22   | 5     | 0    | 34         | 234        |
| 01:15 PM    | 7                      | 65   | 4     | 0    | 76         | 2                  | 8    | 6     | 0    | 16         | 6                      | 86   | 6     | 1    | 99         | 5                  | 8    | 0     | 2    | 15         | 206        |
| 01:30 PM    | 11                     | 68   | 5     | 1    | 85         | 3                  | 12   | 7     | 1    | 23         | 5                      | 93   | 3     | 5    | 106        | 5                  | 4    | 3     | 0    | 12         | 226        |
| 01:45 PM    | 11                     | 75   | 6     | 2    | 94         | 0                  | 15   | 9     | 1    | 25         | 6                      | 72   | 10    | 5    | 93         | 5                  | 12   | 1     | 3    | 21         | 233        |
| Total       | 36                     | 273  | 22    | 3    | 334        | 6                  | 49   | 29    | 3    | 87         | 25                     | 332  | 26    | 13   | 396        | 22                 | 46   | 9     | 5    | 82         | 899        |
| 04:00 PM    | 6                      | 83   | 7     | 3    | 99         | 2                  | 22   | 8     | 3    | 35         | 4                      | 62   | 2     | 0    | 68         | 9                  | 9    | 2     | 3    | 23         | 225        |
| 04:15 PM    | 12                     | 72   | 3     | 0    | 87         | 2                  | 19   | 8     | 0    | 29         | 1                      | 74   | 1     | 2    | 78         | 5                  | 22   | 4     | 0    | 31         | 225        |
| 04:30 PM    | 8                      | 63   | 5     | 1    | 77         | 5                  | 32   | 6     | 2    | 45         | 4                      | 76   | 3     | 7    | 90         | 7                  | 11   | 1     | 1    | 20         | 232        |
| 04:45 PM    | 10                     | 72   | 8     | 0    | 90         | 1                  | 24   | 9     | 6    | 40         | 5                      | 73   | 1     | 3    | 82         | 5                  | 7    | 6     | 2    | 20         | 232        |
| Total       | 36                     | 290  | 23    | 4    | 353        | 10                 | 97   | 31    | 11   | 149        | 14                     | 285  | 7     | 12   | 318        | 26                 | 49   | 13    | 6    | 94         | 914        |
| 05:00 PM    | 9                      | 71   | 4     | 0    | 84         | 0                  | 20   | 6     | 5    | 31         | 7                      | 69   | 4     | 4    | 84         | 5                  | 15   | 10    | 3    | 33         | 232        |
| 05:15 PM    | 8                      | 75   | 5     | 0    | 88         | 0                  | 18   | 10    | 4    | 32         | 1                      | 72   | 0     | 2    | 75         | 5                  | 9    | 2     | 4    | 20         | 215        |
| 05:30 PM    | 6                      | 60   | 2     | 0    | 68         | 0                  | 15   | 6     | 0    | 21         | 4                      | 67   | 2     | 0    | 73         | 3                  | 6    | 0     | 3    | 12         | 174        |
| 05:45 PM    | 7                      | 53   | 2     | 2    | 64         | 0                  | 7    | 6     | 0    | 13         | 3                      | 71   | 3     | 0    | 77         | 3                  | 9    | 5     | 0    | 17         | 171        |
| Total       | 30                     | 259  | 13    | 2    | 304        | 0                  | 60   | 28    | 9    | 97         | 15                     | 279  | 9     | 6    | 309        | 16                 | 39   | 17    | 10   | 82         | 792        |
| Grand Total | 181                    | 1383 | 99    | 25   | 1688       | 33                 | 311  | 153   | 36   | 533        | 91                     | 1626 | 65    | 40   | 1822       | 90                 | 227  | 67    | 39   | 423        | 4466       |
| Apprch %    | 10.7                   | 81.9 | 5.9   | 1.5  |            | 6.2                | 58.3 | 28.7  | 6.8  |            | 5                      | 89.2 | 3.6   | 2.2  |            | 21.3               | 53.7 | 15.8  | 9.2  |            |            |
| Total %     | 4.1                    | 31   | 2.2   | 0.6  | 37.8       | 0.7                | 7    | 3.4   | 0.8  | 11.9       | 2                      | 36.4 | 1.5   | 0.9  | 40.8       | 2                  | 5.1  | 1.5   | 0.9  | 9.5        |            |
| Car         | 178                    | 1338 | 97    | 0    | 1613       | 33                 | 306  | 152   | 0    | 491        | 90                     | 1591 | 62    | 0    | 1743       | 87                 | 222  | 66    | 0    | 375        | 4222       |
| % Car       | 98.3                   | 96.7 | 98    | 0    | 95.6       | 100                | 98.4 | 99.3  | 0    | 92.1       | 98.9                   | 97.8 | 95.4  | 0    | 95.7       | 96.7               | 97.8 | 98.5  | 0    | 88.7       | 94.5       |
| Truck       | 1                      | 27   | 1     | 0    | 29         | 0                  | 3    | 0     | 0    | 3          | 1                      | 22   | 2     | 0    | 25         | 2                  | 2    | 0     | 0    | 4          | 61         |
| % Truck     | 0.6                    | 2    | 1     | 0    | 1.7        | 0                  | 1    | 0     | 0    | 0.6        | 1.1                    | 1.4  | 3.1   | 0    | 1.4        | 2.2                | 0.9  | 0     | 0    | 0.9        | 1.4        |
| Bus         | 2                      | 18   | 1     | 0    | 21         | 0                  | 2    | 1     | 0    | 3          | 0                      | 13   | 1     | 0    | 14         | 1                  | 3    | 1     | 0    | 5          | 43         |
| % Bus       | 1.1                    | 1.3  | 1     | 0    | 1.2        | 0                  | 0.6  | 0.7   | 0    | 0.6        | 0                      | 0.8  | 1.5   | 0    | 0.8        | 1.1                | 1.3  | 1.5   | 0    | 1.2        | 1          |
| Ped         | 0                      | 0    | 0     | 25   | 25         | 0                  | 0    | 0     | 36   | 36         | 0                      | 0    | 0     | 40   | 40         | 0                  | 0    | 0     | 39   | 39         | 140        |
| % Ped       | 0                      | 0    | 0     | 100  | 1.5        | 0                  | 0    | 0     | 100  | 6.8        | 0                      | 0    | 0     | 100  | 2.2        | 0                  | 0    | 0     | 100  | 9.2        | 3.1        |

# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_-\_Griffing\_at E 2nd wkday

Site Code :

Start Date : 5/16/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

|             | Southbound St.<br>Southbound |      |       |      |            | Westbound St.<br>Westbound |      |       |      |            | Northbound St.<br>Northbound |      |       |      |            | Eastbound St.<br>Eastbound |      |       |      |            |            |
|-------------|------------------------------|------|-------|------|------------|----------------------------|------|-------|------|------------|------------------------------|------|-------|------|------------|----------------------------|------|-------|------|------------|------------|
| Start Time  | Left                         | Thru | Right | Peds | App. Total | Left                       | Thru | Right | Peds | App. Total | Left                         | Thru | Right | Peds | App. Total | Left                       | Thru | Right | Peds | App. Total | Int. Total |
| 07:00 AM    | 7                            | 32   | 0     | 1    | 40         | 1                          | 0    | 7     | 0    | 8          | 0                            | 32   | 3     | 0    | 35         | 1                          | 0    | 0     | 2    | 3          | 86         |
| 07:15 AM    | 5                            | 26   | 0     | 0    | 31         | 1                          | 0    | 5     | 0    | 6          | 0                            | 23   | 1     | 0    | 24         | 0                          | 0    | 0     | 1    | 1          | 62         |
| 07:30 AM    | 12                           | 16   | 0     | 1    | 29         | 4                          | 0    | 5     | 4    | 13         | 0                            | 16   | 0     | 0    | 16         | 0                          | 0    | 0     | 0    | 0          | 58         |
| 07:45 AM    | 7                            | 24   | 0     | 0    | 31         | 3                          | 1    | 8     | 1    | 13         | 0                            | 31   | 2     | 0    | 33         | 0                          | 0    | 0     | 1    | 1          | 78         |
| Total       | 31                           | 98   | 0     | 2    | 131        | 9                          | 1    | 25    | 5    | 40         | 0                            | 102  | 6     | 0    | 108        | 1                          | 0    | 0     | 4    | 5          | 284        |
| 08:00 AM    | 8                            | 25   | 3     | 2    | 38         | 2                          | 1    | 9     | 0    | 12         | 0                            | 14   | 1     | 0    | 15         | 0                          | 1    | 0     | 1    | 2          | 67         |
| 08:15 AM    | 4                            | 17   | 0     | 2    | 23         | 3                          | 0    | 9     | 2    | 14         | 1                            | 21   | 3     | 0    | 25         | 0                          | 1    | 0     | 0    | 1          | 63         |
| 08:30 AM    | 5                            | 17   | 0     | 0    | 22         | 8                          | 1    | 7     | 0    | 16         | 0                            | 27   | 8     | 2    | 37         | 0                          | 0    | 0     | 2    | 2          | 77         |
| 08:45 AM    | 10                           | 26   | 1     | 2    | 39         | 12                         | 1    | 15    | 1    | 29         | 0                            | 33   | 2     | 0    | 35         | 1                          | 0    | 0     | 2    | 3          | 106        |
| Total       | 27                           | 85   | 4     | 6    | 122        | 25                         | 3    | 40    | 3    | 71         | 1                            | 95   | 14    | 2    | 112        | 1                          | 2    | 0     | 5    | 8          | 313        |
| 12:00 PM    | 6                            | 23   | 0     | 2    | 31         | 8                          | 1    | 13    | 2    | 24         | 0                            | 20   | 4     | 0    | 24         | 1                          | 0    | 1     | 4    | 6          | 85         |
| 12:15 PM    | 13                           | 27   | 1     | 0    | 41         | 9                          | 0    | 19    | 2    | 30         | 0                            | 30   | 7     | 0    | 37         | 0                          | 0    | 1     | 12   | 13         | 121        |
| 12:30 PM    | 4                            | 31   | 0     | 0    | 35         | 5                          | 0    | 15    | 1    | 21         | 0                            | 23   | 6     | 0    | 29         | 0                          | 2    | 0     | 6    | 8          | 93         |
| 12:45 PM    | 12                           | 41   | 1     | 4    | 58         | 5                          | 1    | 14    | 5    | 25         | 0                            | 29   | 5     | 1    | 35         | 3                          | 3    | 0     | 6    | 12         | 130        |
| Total       | 35                           | 122  | 2     | 6    | 165        | 27                         | 2    | 61    | 10   | 100        | 0                            | 102  | 22    | 1    | 125        | 4                          | 5    | 2     | 28   | 39         | 429        |
| 01:00 PM    | 21                           | 23   | 2     | 2    | 48         | 9                          | 2    | 17    | 2    | 30         | 0                            | 30   | 3     | 1    | 34         | 2                          | 2    | 3     | 7    | 14         | 126        |
| 01:15 PM    | 6                            | 31   | 0     | 1    | 38         | 7                          | 0    | 17    | 4    | 28         | 0                            | 41   | 3     | 0    | 44         | 0                          | 4    | 0     | 4    | 8          | 118        |
| 01:30 PM    | 4                            | 22   | 0     | 2    | 28         | 14                         | 0    | 14    | 8    | 36         | 0                            | 36   | 3     | 4    | 43         | 0                          | 0    | 0     | 9    | 9          | 116        |
| 01:45 PM    | 7                            | 25   | 1     | 3    | 36         | 3                          | 3    | 19    | 7    | 32         | 0                            | 44   | 4     | 1    | 49         | 2                          | 1    | 1     | 1    | 5          | 122        |
| Total       | 38                           | 101  | 3     | 8    | 150        | 33                         | 5    | 67    | 21   | 126        | 0                            | 151  | 13    | 6    | 170        | 4                          | 7    | 4     | 21   | 36         | 482        |
| 04:00 PM    | 10                           | 37   | 0     | 1    | 48         | 16                         | 0    | 27    | 1    | 44         | 0                            | 34   | 4     | 0    | 38         | 0                          | 4    | 0     | 4    | 8          | 138        |
| 04:15 PM    | 20                           | 31   | 0     | 2    | 53         | 12                         | 0    | 21    | 1    | 34         | 0                            | 28   | 5     | 0    | 33         | 0                          | 0    | 0     | 4    | 4          | 124        |
| 04:30 PM    | 11                           | 31   | 0     | 4    | 46         | 13                         | 0    | 33    | 6    | 52         | 0                            | 28   | 3     | 0    | 31         | 1                          | 1    | 0     | 3    | 5          | 134        |
| 04:45 PM    | 10                           | 23   | 0     | 2    | 35         | 19                         | 1    | 22    | 2    | 44         | 0                            | 38   | 0     | 0    | 38         | 6                          | 2    | 1     | 6    | 15         | 132        |
| Total       | 51                           | 122  | 0     | 9    | 182        | 60                         | 1    | 103   | 10   | 174        | 0                            | 128  | 12    | 0    | 140        | 7                          | 7    | 1     | 17   | 32         | 528        |
| 05:00 PM    | 15                           | 31   | 1     | 1    | 48         | 12                         | 0    | 29    | 0    | 41         | 1                            | 23   | 7     | 1    | 32         | 0                          | 1    | 0     | 2    | 3          | 124        |
| 05:15 PM    | 7                            | 19   | 0     | 0    | 26         | 10                         | 0    | 19    | 5    | 34         | 0                            | 27   | 2     | 0    | 29         | 0                          | 0    | 1     | 1    | 2          | 91         |
| 05:30 PM    | 4                            | 29   | 0     | 0    | 33         | 6                          | 1    | 22    | 0    | 29         | 0                            | 31   | 2     | 0    | 33         | 0                          | 1    | 1     | 1    | 3          | 98         |
| 05:45 PM    | 14                           | 6    | 0     | 3    | 23         | 1                          | 0    | 8     | 4    | 13         | 0                            | 42   | 4     | 2    | 48         | 0                          | 0    | 0     | 6    | 6          | 90         |
| Total       | 40                           | 85   | 1     | 4    | 130        | 29                         | 1    | 78    | 9    | 117        | 1                            | 123  | 15    | 3    | 142        | 0                          | 2    | 2     | 10   | 14         | 403        |
| Grand Total | 222                          | 613  | 10    | 35   | 880        | 183                        | 13   | 374   | 58   | 628        | 2                            | 701  | 82    | 12   | 797        | 17                         | 23   | 9     | 85   | 134        | 2439       |
| Apprch %    | 25.2                         | 69.7 | 1.1   | 4    |            | 29.1                       | 2.1  | 59.6  | 9.2  |            | 0.3                          | 88   | 10.3  | 1.5  |            | 12.7                       | 17.2 | 6.7   | 63.4 |            |            |
| Total %     | 9.1                          | 25.1 | 0.4   | 1.4  | 36.1       | 7.5                        | 0.5  | 15.3  | 2.4  | 25.7       | 0.1                          | 28.7 | 3.4   | 0.5  | 32.7       | 0.7                        | 0.9  | 0.4   | 3.5  | 5.5        |            |
| Car         | 216                          | 562  | 10    | 0    | 788        | 181                        | 13   | 368   | 0    | 562        | 2                            | 640  | 77    | 0    | 719        | 17                         | 23   | 9     | 0    | 49         | 2118       |
| % Car       | 97.3                         | 91.7 | 100   | 0    | 89.5       | 98.9                       | 100  | 98.4  | 0    | 89.5       | 100                          | 91.3 | 93.9  | 0    | 90.2       | 100                        | 100  | 100   | 0    | 36.6       | 86.8       |
| Truck       | 3                            | 18   | 0     | 0    | 21         | 2                          | 0    | 3     | 0    | 5          | 0                            | 21   | 3     | 0    | 24         | 0                          | 0    | 0     | 0    | 0          | 50         |
| % Truck     | 1.4                          | 2.9  | 0     | 0    | 2.4        | 1.1                        | 0    | 0.8   | 0    | 0.8        | 0                            | 3    | 3.7   | 0    | 3          | 0                          | 0    | 0     | 0    | 0          | 2.1        |
| Bus         | 3                            | 33   | 0     | 0    | 36         | 0                          | 0    | 3     | 0    | 3          | 0                            | 40   | 2     | 0    | 42         | 0                          | 0    | 0     | 0    | 0          | 81         |
| % Bus       | 1.4                          | 5.4  | 0     | 0    | 4.1        | 0                          | 0    | 0.8   | 0    | 0.5        | 0                            | 5.7  | 2.4   | 0    | 5.3        | 0                          | 0    | 0     | 0    | 0          | 3.3        |
| Ped         | 0                            | 0    | 0     | 35   | 35         | 0                          | 0    | 0     | 58   | 58         | 0                            | 0    | 0     | 12   | 12         | 0                          | 0    | 0     | 85   | 85         | 190        |
| % Ped       | 0                            | 0    | 0     | 100  | 4          | 0                          | 0    | 0     | 100  | 9.2        | 0                            | 0    | 0     | 100  | 1.5        | 0                          | 0    | 0     | 100  | 63.4       | 7.8        |



# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_-\_Roanoke Ave at Railroad Ave Wkday

Site Code :

Start Date : 5/16/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

| Start Time  | Roanoke Ave Southbound |       |      |            | Roanoke Ave Northbound |      |      |            | Railroad Ave Eastbound |       |      |            | Int. Total |
|-------------|------------------------|-------|------|------------|------------------------|------|------|------------|------------------------|-------|------|------------|------------|
|             | Thru                   | Right | Peds | App. Total | Left                   | Thru | Peds | App. Total | Left                   | Right | Peds | App. Total |            |
| 07:15 AM    | 34                     | 14    | 0    | 48         | 1                      | 51   | 0    | 52         | 9                      | 2     | 0    | 11         | 111        |
| 07:30 AM    | 42                     | 5     | 0    | 47         | 0                      | 50   | 0    | 50         | 7                      | 0     | 0    | 7          | 104        |
| 07:45 AM    | 51                     | 15    | 1    | 67         | 3                      | 69   | 0    | 72         | 8                      | 1     | 0    | 9          | 148        |
| Total       | 127                    | 34    | 1    | 162        | 4                      | 170  | 0    | 174        | 24                     | 3     | 0    | 27         | 363        |
| 08:00 AM    | 56                     | 16    | 1    | 73         | 2                      | 49   | 2    | 53         | 10                     | 4     | 1    | 15         | 141        |
| 08:15 AM    | 63                     | 20    | 0    | 83         | 0                      | 64   | 1    | 65         | 8                      | 2     | 1    | 11         | 159        |
| 08:30 AM    | 51                     | 6     | 2    | 59         | 0                      | 60   | 0    | 60         | 12                     | 2     | 1    | 15         | 134        |
| 08:45 AM    | 54                     | 16    | 0    | 70         | 1                      | 59   | 1    | 61         | 6                      | 1     | 1    | 8          | 139        |
| Total       | 224                    | 58    | 3    | 285        | 3                      | 232  | 4    | 239        | 36                     | 9     | 4    | 49         | 573        |
| 11:45 AM    | 8                      | 1     | 0    | 9          | 0                      | 15   | 10   | 25         | 1                      | 1     | 0    | 2          | 36         |
| Total       | 8                      | 1     | 0    | 9          | 0                      | 15   | 10   | 25         | 1                      | 1     | 0    | 2          | 36         |
| 12:00 PM    | 79                     | 10    | 0    | 89         | 1                      | 83   | 1    | 85         | 18                     | 5     | 1    | 24         | 198        |
| 12:15 PM    | 74                     | 18    | 1    | 93         | 3                      | 72   | 0    | 75         | 19                     | 5     | 6    | 30         | 198        |
| 12:30 PM    | 75                     | 20    | 1    | 96         | 1                      | 63   | 0    | 64         | 19                     | 4     | 6    | 29         | 189        |
| 12:45 PM    | 76                     | 17    | 0    | 93         | 1                      | 88   | 0    | 89         | 16                     | 2     | 3    | 21         | 203        |
| Total       | 304                    | 65    | 2    | 371        | 6                      | 306  | 1    | 313        | 72                     | 16    | 16   | 104        | 788        |
| 01:00 PM    | 94                     | 25    | 0    | 119        | 5                      | 95   | 3    | 103        | 11                     | 3     | 3    | 17         | 239        |
| 01:15 PM    | 74                     | 23    | 0    | 97         | 3                      | 95   | 4    | 102        | 17                     | 3     | 0    | 20         | 219        |
| 01:30 PM    | 89                     | 26    | 0    | 115        | 5                      | 97   | 1    | 103        | 26                     | 4     | 2    | 32         | 250        |
| 01:45 PM    | 85                     | 30    | 0    | 115        | 4                      | 71   | 1    | 76         | 13                     | 1     | 1    | 15         | 206        |
| Total       | 342                    | 104   | 0    | 446        | 17                     | 358  | 9    | 384        | 67                     | 11    | 6    | 84         | 914        |
| 03:45 PM    | 8                      | 3     | 0    | 11         | 1                      | 4    | 0    | 5          | 7                      | 3     | 0    | 10         | 26         |
| Total       | 8                      | 3     | 0    | 11         | 1                      | 4    | 0    | 5          | 7                      | 3     | 0    | 10         | 26         |
| 04:00 PM    | 92                     | 23    | 0    | 115        | 3                      | 83   | 0    | 86         | 17                     | 3     | 1    | 21         | 222        |
| 04:15 PM    | 82                     | 19    | 1    | 102        | 1                      | 84   | 0    | 85         | 12                     | 6     | 0    | 18         | 205        |
| 04:30 PM    | 79                     | 34    | 0    | 113        | 7                      | 86   | 2    | 95         | 18                     | 3     | 0    | 21         | 229        |
| 04:45 PM    | 87                     | 27    | 0    | 114        | 3                      | 84   | 0    | 87         | 24                     | 7     | 2    | 33         | 234        |
| Total       | 340                    | 103   | 1    | 444        | 14                     | 337  | 2    | 353        | 71                     | 19    | 3    | 93         | 890        |
| 05:00 PM    | 77                     | 25    | 5    | 107        | 6                      | 73   | 1    | 80         | 21                     | 3     | 4    | 28         | 215        |
| 05:15 PM    | 88                     | 22    | 1    | 111        | 3                      | 90   | 1    | 94         | 13                     | 5     | 1    | 19         | 224        |
| 05:30 PM    | 71                     | 25    | 2    | 98         | 3                      | 66   | 3    | 72         | 21                     | 1     | 0    | 22         | 192        |
| 05:45 PM    | 49                     | 18    | 1    | 68         | 8                      | 68   | 2    | 78         | 10                     | 1     | 1    | 12         | 158        |
| Total       | 285                    | 90    | 9    | 384        | 20                     | 297  | 7    | 324        | 65                     | 10    | 6    | 81         | 789        |
| Grand Total | 1638                   | 458   | 16   | 2112       | 65                     | 1719 | 33   | 1817       | 343                    | 72    | 35   | 450        | 4379       |
| Apprch %    | 77.6                   | 21.7  | 0.8  |            | 3.6                    | 94.6 | 1.8  |            | 76.2                   | 16    | 7.8  |            |            |
| Total %     | 37.4                   | 10.5  | 0.4  | 48.2       | 1.5                    | 39.3 | 0.8  | 41.5       | 7.8                    | 1.6   | 0.8  | 10.3       |            |
| Car         | 1591                   | 453   | 0    | 2044       | 63                     | 1674 | 0    | 1737       | 340                    | 70    | 0    | 410        | 4191       |
| % Car       | 97.1                   | 98.9  | 0    | 96.8       | 96.9                   | 97.4 | 0    | 95.6       | 99.1                   | 97.2  | 0    | 91.1       | 95.7       |
| Truck       | 23                     | 2     | 0    | 25         | 1                      | 19   | 0    | 20         | 2                      | 1     | 0    | 3          | 48         |
| % Truck     | 1.4                    | 0.4   | 0    | 1.2        | 1.5                    | 1.1  | 0    | 1.1        | 0.6                    | 1.4   | 0    | 0.7        | 1.1        |
| Bus         | 24                     | 3     | 0    | 27         | 1                      | 26   | 0    | 27         | 1                      | 1     | 0    | 2          | 56         |
| % Bus       | 1.5                    | 0.7   | 0    | 1.3        | 1.5                    | 1.5  | 0    | 1.5        | 0.3                    | 1.4   | 0    | 0.4        | 1.3        |
| Ped         | 0                      | 0     | 16   | 16         | 0                      | 0    | 33   | 33         | 0                      | 0     | 35   | 35         | 84         |
| % Ped       | 0                      | 0     | 100  | 0.8        | 0                      | 0    | 100  | 1.8        | 0                      | 0     | 100  | 7.8        | 1.9        |

# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_-\_Roanoke Ave at Northville Tpke Wkday

Site Code :

Start Date : 5/16/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

| Start Time  | Roanoke Ave Southbound |      |      |            | Northville Tpke Westbound |       |      |            | Roanoke Ave Northbound |       |      |            | Int. Total |
|-------------|------------------------|------|------|------------|---------------------------|-------|------|------------|------------------------|-------|------|------------|------------|
|             | Left                   | Thru | Peds | App. Total | Left                      | Right | Peds | App. Total | Thru                   | Right | Peds | App. Total |            |
| 07:00 AM    | 0                      | 28   | 0    | 28         | 24                        | 6     | 0    | 30         | 50                     | 14    | 0    | 64         | 122        |
| 07:15 AM    | 2                      | 24   | 0    | 26         | 19                        | 4     | 0    | 23         | 36                     | 17    | 0    | 53         | 102        |
| 07:30 AM    | 1                      | 33   | 1    | 35         | 23                        | 6     | 1    | 30         | 41                     | 15    | 0    | 56         | 121        |
| 07:45 AM    | 2                      | 33   | 0    | 35         | 24                        | 7     | 2    | 33         | 62                     | 14    | 0    | 76         | 144        |
| Total       | 5                      | 118  | 1    | 124        | 90                        | 23    | 3    | 116        | 189                    | 60    | 0    | 249        | 489        |
| 08:00 AM    | 4                      | 43   | 0    | 47         | 28                        | 8     | 2    | 38         | 56                     | 14    | 0    | 70         | 155        |
| 08:15 AM    | 3                      | 54   | 3    | 60         | 31                        | 10    | 2    | 43         | 55                     | 15    | 0    | 70         | 173        |
| 08:30 AM    | 5                      | 44   | 12   | 61         | 18                        | 11    | 8    | 37         | 57                     | 21    | 0    | 78         | 176        |
| 08:45 AM    | 6                      | 48   | 8    | 62         | 31                        | 7     | 4    | 42         | 59                     | 16    | 0    | 75         | 179        |
| Total       | 18                     | 189  | 23   | 230        | 108                       | 36    | 16   | 160        | 227                    | 66    | 0    | 293        | 683        |
| 12:00 PM    | 2                      | 61   | 0    | 63         | 29                        | 9     | 3    | 41         | 76                     | 27    | 0    | 103        | 207        |
| 12:15 PM    | 10                     | 61   | 0    | 71         | 25                        | 5     | 5    | 35         | 69                     | 24    | 0    | 93         | 199        |
| 12:30 PM    | 4                      | 64   | 1    | 69         | 35                        | 5     | 4    | 44         | 56                     | 26    | 0    | 82         | 195        |
| 12:45 PM    | 2                      | 72   | 0    | 74         | 26                        | 6     | 1    | 33         | 75                     | 25    | 0    | 100        | 207        |
| Total       | 18                     | 258  | 1    | 277        | 115                       | 25    | 13   | 153        | 276                    | 102   | 0    | 378        | 808        |
| 01:00 PM    | 4                      | 80   | 0    | 84         | 29                        | 6     | 0    | 35         | 82                     | 23    | 0    | 105        | 224        |
| 01:15 PM    | 3                      | 63   | 0    | 66         | 37                        | 6     | 0    | 43         | 87                     | 28    | 0    | 115        | 224        |
| 01:30 PM    | 4                      | 70   | 1    | 75         | 41                        | 6     | 5    | 52         | 76                     | 31    | 0    | 107        | 234        |
| 01:45 PM    | 3                      | 81   | 0    | 84         | 48                        | 9     | 0    | 57         | 75                     | 22    | 0    | 97         | 238        |
| Total       | 14                     | 294  | 1    | 309        | 155                       | 27    | 5    | 187        | 320                    | 104   | 0    | 424        | 920        |
| 04:00 PM    | 10                     | 77   | 0    | 87         | 36                        | 3     | 0    | 39         | 81                     | 23    | 1    | 105        | 231        |
| 04:15 PM    | 4                      | 62   | 0    | 66         | 33                        | 7     | 0    | 40         | 60                     | 24    | 0    | 84         | 190        |
| 04:30 PM    | 5                      | 60   | 0    | 65         | 49                        | 4     | 3    | 56         | 80                     | 29    | 0    | 109        | 230        |
| 04:45 PM    | 4                      | 73   | 0    | 77         | 43                        | 4     | 1    | 48         | 78                     | 28    | 0    | 106        | 231        |
| Total       | 23                     | 272  | 0    | 295        | 161                       | 18    | 4    | 183        | 299                    | 104   | 1    | 404        | 882        |
| 05:00 PM    | 10                     | 70   | 0    | 80         | 39                        | 5     | 6    | 50         | 65                     | 30    | 0    | 95         | 225        |
| 05:15 PM    | 6                      | 65   | 0    | 71         | 40                        | 8     | 0    | 48         | 73                     | 26    | 0    | 99         | 218        |
| 05:30 PM    | 11                     | 58   | 0    | 69         | 27                        | 4     | 0    | 31         | 67                     | 28    | 2    | 97         | 197        |
| 05:45 PM    | 6                      | 61   | 0    | 67         | 27                        | 4     | 0    | 31         | 64                     | 22    | 2    | 88         | 186        |
| Total       | 33                     | 254  | 0    | 287        | 133                       | 21    | 6    | 160        | 269                    | 106   | 4    | 379        | 826        |
| Grand Total | 111                    | 1385 | 26   | 1522       | 762                       | 150   | 47   | 959        | 1580                   | 542   | 5    | 2127       | 4608       |
| Apprch %    | 7.3                    | 91   | 1.7  |            | 79.5                      | 15.6  | 4.9  |            | 74.3                   | 25.5  | 0.2  |            |            |
| Total %     | 2.4                    | 30.1 | 0.6  | 33         | 16.5                      | 3.3   | 1    | 20.8       | 34.3                   | 11.8  | 0.1  | 46.2       |            |
| Car         | 107                    | 1352 | 0    | 1459       | 746                       | 146   | 0    | 892        | 1537                   | 537   | 0    | 2074       | 4425       |
| % Car       | 96.4                   | 97.6 | 0    | 95.9       | 97.9                      | 97.3  | 0    | 93         | 97.3                   | 99.1  | 0    | 97.5       | 96         |
| Truck       | 0                      | 17   | 0    | 17         | 10                        | 0     | 0    | 10         | 17                     | 4     | 0    | 21         | 48         |
| % Truck     | 0                      | 1.2  | 0    | 1.1        | 1.3                       | 0     | 0    | 1          | 1.1                    | 0.7   | 0    | 1          | 1          |
| Bus         | 4                      | 16   | 0    | 20         | 6                         | 4     | 0    | 10         | 26                     | 1     | 0    | 27         | 57         |
| % Bus       | 3.6                    | 1.2  | 0    | 1.3        | 0.8                       | 2.7   | 0    | 1          | 1.6                    | 0.2   | 0    | 1.3        | 1.2        |
| Ped         | 0                      | 0    | 26   | 26         | 0                         | 0     | 47   | 47         | 0                      | 0     | 5    | 5          | 78         |
| % Ped       | 0                      | 0    | 100  | 1.7        | 0                         | 0     | 100  | 4.9        | 0                      | 0     | 100  | 0.2        | 1.7        |

# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_-\_Griffing\_at Court wkday

Site Code :

Start Date : 5/16/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

|             | Southbound St.<br>Southbound |       |      |            | Griffing Ave<br>Northbound |      |      |            | Court St<br>Eastbound |       |      |            |            |
|-------------|------------------------------|-------|------|------------|----------------------------|------|------|------------|-----------------------|-------|------|------------|------------|
| Start Time  | Thru                         | Right | Peds | App. Total | Left                       | Thru | Peds | App. Total | Left                  | Right | Peds | App. Total | Int. Total |
| 07:00 AM    | 33                           | 5     | 0    | 38         | 0                          | 39   | 0    | 39         | 5                     | 8     | 2    | 15         | 92         |
| 07:15 AM    | 27                           | 11    | 0    | 38         | 4                          | 23   | 0    | 27         | 12                    | 3     | 3    | 18         | 83         |
| 07:30 AM    | 16                           | 5     | 0    | 21         | 3                          | 17   | 0    | 20         | 16                    | 16    | 2    | 34         | 75         |
| 07:45 AM    | 24                           | 9     | 0    | 33         | 3                          | 36   | 0    | 39         | 18                    | 13    | 2    | 33         | 105        |
| Total       | 100                          | 30    | 0    | 130        | 10                         | 115  | 0    | 125        | 51                    | 40    | 9    | 100        | 355        |
| 08:00 AM    | 24                           | 8     | 0    | 32         | 7                          | 14   | 0    | 21         | 22                    | 11    | 0    | 33         | 86         |
| 08:15 AM    | 15                           | 14    | 0    | 29         | 9                          | 23   | 0    | 32         | 15                    | 11    | 0    | 26         | 87         |
| 08:30 AM    | 18                           | 7     | 0    | 25         | 10                         | 26   | 0    | 36         | 25                    | 12    | 0    | 37         | 98         |
| 08:45 AM    | 19                           | 18    | 1    | 38         | 14                         | 30   | 0    | 44         | 16                    | 22    | 0    | 38         | 120        |
| Total       | 76                           | 47    | 1    | 124        | 40                         | 93   | 0    | 133        | 78                    | 56    | 0    | 134        | 391        |
| 12:00 PM    | 19                           | 7     | 1    | 27         | 12                         | 23   | 2    | 37         | 13                    | 11    | 3    | 27         | 91         |
| 12:15 PM    | 26                           | 9     | 1    | 36         | 18                         | 36   | 8    | 62         | 20                    | 16    | 4    | 40         | 138        |
| 12:30 PM    | 30                           | 14    | 0    | 44         | 13                         | 25   | 5    | 43         | 23                    | 9     | 4    | 36         | 123        |
| 12:45 PM    | 30                           | 14    | 0    | 44         | 7                          | 40   | 3    | 50         | 14                    | 20    | 4    | 38         | 132        |
| Total       | 105                          | 44    | 2    | 151        | 50                         | 124  | 18   | 192        | 70                    | 56    | 15   | 141        | 484        |
| 01:00 PM    | 21                           | 20    | 2    | 43         | 14                         | 34   | 5    | 53         | 11                    | 22    | 3    | 36         | 132        |
| 01:15 PM    | 26                           | 14    | 1    | 41         | 16                         | 41   | 4    | 61         | 17                    | 11    | 2    | 30         | 132        |
| 01:30 PM    | 22                           | 18    | 0    | 40         | 11                         | 46   | 4    | 61         | 19                    | 7     | 5    | 31         | 132        |
| 01:45 PM    | 20                           | 24    | 1    | 45         | 10                         | 50   | 3    | 63         | 15                    | 12    | 6    | 33         | 141        |
| Total       | 89                           | 76    | 4    | 169        | 51                         | 171  | 16   | 238        | 62                    | 52    | 16   | 130        | 537        |
| 04:00 PM    | 41                           | 28    | 0    | 69         | 21                         | 40   | 1    | 62         | 20                    | 10    | 5    | 35         | 166        |
| 04:15 PM    | 39                           | 20    | 0    | 59         | 16                         | 39   | 2    | 57         | 10                    | 9     | 3    | 22         | 138        |
| 04:30 PM    | 27                           | 34    | 0    | 61         | 30                         | 32   | 3    | 65         | 16                    | 10    | 5    | 31         | 157        |
| 04:45 PM    | 24                           | 20    | 0    | 44         | 25                         | 53   | 0    | 78         | 19                    | 14    | 0    | 33         | 155        |
| Total       | 131                          | 102   | 0    | 233        | 92                         | 164  | 6    | 262        | 65                    | 43    | 13   | 121        | 616        |
| 05:00 PM    | 27                           | 31    | 0    | 58         | 20                         | 33   | 0    | 53         | 15                    | 12    | 5    | 32         | 143        |
| 05:15 PM    | 23                           | 24    | 0    | 47         | 13                         | 32   | 0    | 45         | 20                    | 5     | 1    | 26         | 118        |
| 05:30 PM    | 22                           | 15    | 0    | 37         | 16                         | 41   | 0    | 57         | 13                    | 5     | 3    | 21         | 115        |
| 05:45 PM    | 12                           | 19    | 0    | 31         | 11                         | 39   | 0    | 50         | 13                    | 8     | 8    | 29         | 110        |
| Total       | 84                           | 89    | 0    | 173        | 60                         | 145  | 0    | 205        | 61                    | 30    | 17   | 108        | 486        |
| Grand Total | 585                          | 388   | 7    | 980        | 303                        | 812  | 40   | 1155       | 387                   | 277   | 70   | 734        | 2869       |
| Apprch %    | 59.7                         | 39.6  | 0.7  |            | 26.2                       | 70.3 | 3.5  |            | 52.7                  | 37.7  | 9.5  |            |            |
| Total %     | 20.4                         | 13.5  | 0.2  | 34.2       | 10.6                       | 28.3 | 1.4  | 40.3       | 13.5                  | 9.7   | 2.4  | 25.6       |            |
| Car         | 538                          | 378   | 0    | 916        | 297                        | 752  | 0    | 1049       | 369                   | 270   | 0    | 639        | 2604       |
| % Car       | 92                           | 97.4  | 0    | 93.5       | 98                         | 92.6 | 0    | 90.8       | 95.3                  | 97.5  | 0    | 87.1       | 90.8       |
| Truck       | 13                           | 1     | 0    | 14         | 5                          | 16   | 0    | 21         | 3                     | 6     | 0    | 9          | 44         |
| % Truck     | 2.2                          | 0.3   | 0    | 1.4        | 1.7                        | 2    | 0    | 1.8        | 0.8                   | 2.2   | 0    | 1.2        | 1.5        |
| Bus         | 34                           | 9     | 0    | 43         | 1                          | 44   | 0    | 45         | 15                    | 1     | 0    | 16         | 104        |
| % Bus       | 5.8                          | 2.3   | 0    | 4.4        | 0.3                        | 5.4  | 0    | 3.9        | 3.9                   | 0.4   | 0    | 2.2        | 3.6        |
| Ped         | 0                            | 0     | 7    | 7          | 0                          | 0    | 40   | 40         | 0                     | 0     | 70   | 70         | 117        |
| % Ped       | 0                            | 0     | 100  | 0.7        | 0                          | 0    | 100  | 3.5        | 0                     | 0     | 100  | 9.5        | 4.1        |



572 Walt Whitman Road  
Melville, New York 11747

Page No : 1

[illegible]

# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_- \_NYS\_25\_at River Rd Sat

Site Code :

Start Date : 5/18/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

| Start Time  | Parking Lot Southbound |      |       |      |            | NYS 25 Westbound |      |       |      |            | River Rd Northbound |      |       |      |            | NYS 25 Eastbound |      |       |      |            | Int. Total |
|-------------|------------------------|------|-------|------|------------|------------------|------|-------|------|------------|---------------------|------|-------|------|------------|------------------|------|-------|------|------------|------------|
|             | Left                   | Thru | Right | Peds | App. Total | Left             | Thru | Right | Peds | App. Total | Left                | Thru | Right | Peds | App. Total | Left             | Thru | Right | Peds | App. Total |            |
| 11:00 AM    | 4                      | 0    | 1     | 0    | 5          | 11               | 42   | 2     | 0    | 55         | 2                   | 1    | 14    | 0    | 17         | 3                | 113  | 1     | 0    | 117        | 194        |
| 11:15 AM    | 1                      | 0    | 1     | 0    | 2          | 9                | 52   | 6     | 0    | 67         | 1                   | 0    | 16    | 0    | 17         | 3                | 115  | 2     | 0    | 120        | 206        |
| 11:30 AM    | 3                      | 0    | 6     | 0    | 9          | 6                | 46   | 3     | 0    | 55         | 1                   | 0    | 7     | 0    | 8          | 4                | 144  | 4     | 0    | 152        | 224        |
| 11:45 AM    | 4                      | 0    | 4     | 0    | 8          | 9                | 55   | 3     | 0    | 67         | 1                   | 0    | 22    | 0    | 23         | 0                | 149  | 1     | 0    | 150        | 248        |
| Total       | 12                     | 0    | 12    | 0    | 24         | 35               | 195  | 14    | 0    | 244        | 5                   | 1    | 59    | 0    | 65         | 10               | 521  | 8     | 0    | 539        | 872        |
| 12:00 PM    | 2                      | 0    | 4     | 0    | 6          | 9                | 49   | 4     | 0    | 62         | 1                   | 0    | 9     | 0    | 10         | 6                | 131  | 2     | 0    | 139        | 217        |
| 12:15 PM    | 3                      | 0    | 1     | 0    | 4          | 10               | 60   | 5     | 0    | 75         | 2                   | 0    | 10    | 0    | 12         | 5                | 132  | 2     | 0    | 139        | 230        |
| 12:30 PM    | 1                      | 0    | 1     | 0    | 2          | 8                | 58   | 3     | 0    | 69         | 2                   | 0    | 13    | 0    | 15         | 3                | 123  | 0     | 0    | 126        | 212        |
| 12:45 PM    | 1                      | 0    | 4     | 0    | 5          | 10               | 62   | 6     | 0    | 78         | 3                   | 0    | 19    | 0    | 22         | 3                | 134  | 5     | 0    | 142        | 247        |
| Total       | 7                      | 0    | 10    | 0    | 17         | 37               | 229  | 18    | 0    | 284        | 8                   | 0    | 51    | 0    | 59         | 17               | 520  | 9     | 0    | 546        | 906        |
| 01:00 PM    | 4                      | 0    | 2     | 0    | 6          | 13               | 68   | 1     | 0    | 82         | 0                   | 1    | 20    | 0    | 21         | 6                | 154  | 2     | 0    | 162        | 271        |
| 01:15 PM    | 7                      | 0    | 0     | 0    | 7          | 16               | 58   | 8     | 0    | 82         | 2                   | 0    | 15    | 0    | 17         | 6                | 111  | 2     | 0    | 119        | 225        |
| 01:30 PM    | 9                      | 0    | 4     | 0    | 13         | 9                | 79   | 15    | 0    | 103        | 0                   | 1    | 6     | 1    | 8          | 4                | 111  | 1     | 0    | 116        | 240        |
| 01:45 PM    | 11                     | 0    | 3     | 0    | 14         | 17               | 77   | 12    | 0    | 106        | 1                   | 0    | 8     | 0    | 9          | 7                | 120  | 1     | 0    | 128        | 257        |
| Total       | 31                     | 0    | 9     | 0    | 40         | 55               | 282  | 36    | 0    | 373        | 3                   | 2    | 49    | 1    | 55         | 23               | 496  | 6     | 0    | 525        | 993        |
| Grand Total | 50                     | 0    | 31    | 0    | 81         | 127              | 706  | 68    | 0    | 901        | 16                  | 3    | 159   | 1    | 179        | 50               | 1537 | 23    | 0    | 1610       | 2771       |
| Apprch %    | 61.7                   | 0    | 38.3  | 0    |            | 14.1             | 78.4 | 7.5   | 0    |            | 8.9                 | 1.7  | 88.8  | 0.6  |            | 3.1              | 95.5 | 1.4   | 0    |            |            |
| Total %     | 1.8                    | 0    | 1.1   | 0    | 2.9        | 4.6              | 25.5 | 2.5   | 0    | 32.5       | 0.6                 | 0.1  | 5.7   | 0    | 6.5        | 1.8              | 55.5 | 0.8   | 0    | 58.1       |            |
| Car         | 50                     | 0    | 30    | 0    | 80         | 124              | 689  | 68    | 0    | 881        | 16                  | 3    | 156   | 0    | 175        | 49               | 1516 | 23    | 0    | 1588       | 2724       |
| % Car       | 100                    | 0    | 96.8  | 0    | 98.8       | 97.6             | 97.6 | 100   | 0    | 97.8       | 100                 | 100  | 98.1  | 0    | 97.8       | 98               | 98.6 | 100   | 0    | 98.6       | 98.3       |
| Truck       | 0                      | 0    | 1     | 0    | 1          | 1                | 17   | 0     | 0    | 18         | 0                   | 0    | 0     | 0    | 0          | 1                | 17   | 0     | 0    | 18         | 37         |
| % Truck     | 0                      | 0    | 3.2   | 0    | 1.2        | 0.8              | 2.4  | 0     | 0    | 2          | 0                   | 0    | 0     | 0    | 0          | 2                | 1.1  | 0     | 0    | 1.1        | 1.3        |
| Bus         | 0                      | 0    | 0     | 0    | 0          | 2                | 0    | 0     | 0    | 2          | 0                   | 0    | 3     | 0    | 3          | 0                | 4    | 0     | 0    | 4          | 9          |
| % Bus       | 0                      | 0    | 0     | 0    | 0          | 1.6              | 0    | 0     | 0    | 0.2        | 0                   | 0    | 1.9   | 0    | 1.7        | 0                | 0.3  | 0     | 0    | 0.2        | 0.3        |
| Ped         | 0                      | 0    | 0     | 0    | 0          | 0                | 0    | 0     | 0    | 0          | 0                   | 0    | 0     | 1    | 1          | 0                | 0    | 0     | 0    | 0          | 1          |
| % Ped       | 0                      | 0    | 0     | 0    | 0          | 0                | 0    | 0     | 0    | 0          | 0                   | 0    | 0     | 100  | 0.6        | 0                | 0    | 0     | 0    | 0          | 0          |

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_-\_NYS\_25\_at Tanger Mall Dr Sat

Site Code :

Start Date : 5/18/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

[illegible]



# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : NYS 25 at Kromere Ave Sat

Site Code : 00000000

Start Date : 5/18/2013

Page No : 1

Groups Printed- Cars - Trucks - Buses

|             | Kroemer Ave Southbound |      |       |      |            | NYS 25 Westbound |      |       |      |            | Forge Rd Northbound |      |       |      |            | NYS 25 Eastbound |      |       |      |            |            |
|-------------|------------------------|------|-------|------|------------|------------------|------|-------|------|------------|---------------------|------|-------|------|------------|------------------|------|-------|------|------------|------------|
| Start Time  | Left                   | Thru | Right | Peds | App. Total | Left             | Thru | Right | Peds | App. Total | Left                | Thru | Right | Peds | App. Total | Left             | Thru | Right | Peds | App. Total | Int. Total |
| 11:00 AM    | 8                      | 1    | 12    | 0    | 21         | 5                | 63   | 12    | 0    | 80         | 5                   | 5    | 8     | 0    | 18         | 9                | 81   | 2     | 1    | 93         | 212        |
| 11:15 AM    | 13                     | 5    | 7     | 0    | 25         | 11               | 69   | 7     | 0    | 87         | 1                   | 4    | 5     | 1    | 11         | 8                | 64   | 0     | 0    | 72         | 195        |
| 11:30 AM    | 15                     | 2    | 3     | 0    | 20         | 3                | 75   | 8     | 0    | 86         | 1                   | 5    | 4     | 0    | 10         | 11               | 97   | 2     | 0    | 110        | 226        |
| 11:45 AM    | 7                      | 8    | 7     | 1    | 23         | 5                | 79   | 12    | 0    | 96         | 2                   | 5    | 5     | 0    | 12         | 10               | 88   | 0     | 0    | 98         | 229        |
| Total       | 43                     | 16   | 29    | 1    | 89         | 24               | 286  | 39    | 0    | 349        | 9                   | 19   | 22    | 1    | 51         | 38               | 330  | 4     | 1    | 373        | 862        |
| 12:00 PM    | 10                     | 5    | 7     | 0    | 22         | 15               | 68   | 18    | 1    | 102        | 2                   | 2    | 5     | 0    | 9          | 10               | 90   | 4     | 0    | 104        | 237        |
| 12:15 PM    | 13                     | 0    | 9     | 0    | 22         | 2                | 94   | 13    | 0    | 109        | 1                   | 1    | 7     | 0    | 9          | 7                | 79   | 0     | 0    | 86         | 226        |
| 12:30 PM    | 10                     | 5    | 9     | 0    | 24         | 7                | 75   | 8     | 0    | 90         | 0                   | 3    | 7     | 0    | 10         | 10               | 88   | 0     | 0    | 98         | 222        |
| 12:45 PM    | 11                     | 2    | 8     | 0    | 21         | 5                | 96   | 15    | 0    | 116        | 3                   | 1    | 4     | 0    | 8          | 8                | 96   | 0     | 0    | 104        | 249        |
| Total       | 44                     | 12   | 33    | 0    | 89         | 29               | 333  | 54    | 1    | 417        | 6                   | 7    | 23    | 0    | 36         | 35               | 353  | 4     | 0    | 392        | 934        |
| 01:00 PM    | 9                      | 1    | 5     | 0    | 15         | 4                | 86   | 20    | 0    | 110        | 5                   | 3    | 7     | 0    | 15         | 8                | 93   | 2     | 0    | 103        | 243        |
| 01:15 PM    | 16                     | 5    | 15    | 0    | 36         | 12               | 95   | 12    | 0    | 119        | 3                   | 4    | 8     | 0    | 15         | 8                | 107  | 1     | 0    | 116        | 286        |
| 01:30 PM    | 10                     | 2    | 6     | 0    | 18         | 8                | 108  | 11    | 0    | 127        | 1                   | 2    | 8     | 0    | 11         | 4                | 87   | 0     | 0    | 91         | 247        |
| 01:45 PM    | 10                     | 4    | 11    | 0    | 25         | 7                | 103  | 11    | 0    | 121        | 4                   | 5    | 6     | 0    | 15         | 8                | 85   | 1     | 0    | 94         | 255        |
| Total       | 45                     | 12   | 37    | 0    | 94         | 31               | 392  | 54    | 0    | 477        | 13                  | 14   | 29    | 0    | 56         | 28               | 372  | 4     | 0    | 404        | 1031       |
| Grand Total | 132                    | 40   | 99    | 1    | 272        | 84               | 1011 | 147   | 1    | 1243       | 28                  | 40   | 74    | 1    | 143        | 101              | 1055 | 12    | 1    | 1169       | 2827       |
| Apprch %    | 48.5                   | 14.7 | 36.4  | 0.4  |            | 6.8              | 81.3 | 11.8  | 0.1  |            | 19.6                | 28   | 51.7  | 0.7  |            | 8.6              | 90.2 | 1     | 0.1  |            |            |
| Total %     | 4.7                    | 1.4  | 3.5   | 0    | 9.6        | 3                | 35.8 | 5.2   | 0    | 44         | 1                   | 1.4  | 2.6   | 0    | 5.1        | 3.6              | 37.3 | 0.4   | 0    | 41.4       |            |
| Cars        | 127                    | 40   | 95    | 1    | 263        | 84               | 988  | 129   | 1    | 1202       | 28                  | 39   | 72    | 1    | 140        | 93               | 1021 | 12    | 1    | 1127       | 2732       |
| % Cars      | 96.2                   | 100  | 96    | 100  | 96.7       | 100              | 97.7 | 87.8  | 100  | 96.7       | 100                 | 97.5 | 97.3  | 100  | 97.9       | 92.1             | 96.8 | 100   | 100  | 96.4       | 96.6       |
| Trucks      | 5                      | 0    | 4     | 0    | 9          | 0                | 19   | 16    | 0    | 35         | 0                   | 1    | 2     | 0    | 3          | 7                | 32   | 0     | 0    | 39         | 86         |
| % Trucks    | 3.8                    | 0    | 4     | 0    | 3.3        | 0                | 1.9  | 10.9  | 0    | 2.8        | 0                   | 2.5  | 2.7   | 0    | 2.1        | 6.9              | 3    | 0     | 0    | 3.3        | 3          |
| Buses       | 0                      | 0    | 0     | 0    | 0          | 0                | 4    | 2     | 0    | 6          | 0                   | 0    | 0     | 0    | 0          | 1                | 2    | 0     | 0    | 3          | 9          |
| % Buses     | 0                      | 0    | 0     | 0    | 0          | 0                | 0.4  | 1.4   | 0    | 0.5        | 0                   | 0    | 0     | 0    | 0          | 1                | 0.2  | 0     | 0    | 0.3        | 0.3        |

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_ - NYS 25 at Mill Rd Sat

Site Code :

Start Date : 5/18/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

[illegible]

# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_-\_NYS\_25\_at Center St-Nugent St Sat

Site Code :

Start Date : 5/18/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

| Start Time  | Center St Southbound |      |       |      |            | NYS 25 Westbound |      |       |      |            | Nugent St Northbound |      |       |      |            | NYS 25 Eastbound |      |       |      |            | Int. Total |
|-------------|----------------------|------|-------|------|------------|------------------|------|-------|------|------------|----------------------|------|-------|------|------------|------------------|------|-------|------|------------|------------|
|             | Left                 | Thru | Right | Peds | App. Total | Left             | Thru | Right | Peds | App. Total | Left                 | Thru | Right | Peds | App. Total | Left             | Thru | Right | Peds | App. Total |            |
| 11:00 AM    | 0                    | 16   | 10    | 0    | 26         | 7                | 56   | 2     | 1    | 66         | 95                   | 27   | 18    | 2    | 142        | 11               | 74   | 69    | 0    | 154        | 388        |
| 11:15 AM    | 0                    | 21   | 8     | 0    | 29         | 9                | 54   | 2     | 0    | 65         | 100                  | 32   | 26    | 1    | 159        | 10               | 82   | 62    | 0    | 154        | 407        |
| 11:30 AM    | 0                    | 25   | 16    | 0    | 41         | 10               | 75   | 0     | 0    | 85         | 90                   | 14   | 22    | 0    | 126        | 13               | 72   | 85    | 0    | 170        | 422        |
| 11:45 AM    | 1                    | 33   | 10    | 0    | 44         | 15               | 54   | 0     | 4    | 73         | 104                  | 36   | 17    | 0    | 157        | 15               | 61   | 85    | 0    | 161        | 435        |
| Total       | 1                    | 95   | 44    | 0    | 140        | 41               | 239  | 4     | 5    | 289        | 389                  | 109  | 83    | 3    | 584        | 49               | 289  | 301   | 0    | 639        | 1652       |
| 12:00 PM    | 1                    | 28   | 16    | 0    | 45         | 11               | 64   | 1     | 0    | 76         | 84                   | 40   | 27    | 1    | 152        | 13               | 67   | 94    | 0    | 174        | 447        |
| 12:15 PM    | 1                    | 27   | 15    | 0    | 43         | 16               | 67   | 1     | 0    | 84         | 93                   | 29   | 21    | 0    | 143        | 12               | 84   | 88    | 0    | 184        | 454        |
| 12:30 PM    | 0                    | 35   | 13    | 1    | 49         | 23               | 67   | 1     | 0    | 91         | 82                   | 29   | 22    | 0    | 133        | 11               | 89   | 83    | 0    | 183        | 456        |
| 12:45 PM    | 0                    | 28   | 13    | 1    | 42         | 13               | 69   | 1     | 1    | 84         | 106                  | 37   | 29    | 0    | 172        | 13               | 67   | 67    | 0    | 147        | 445        |
| Total       | 2                    | 118  | 57    | 2    | 179        | 63               | 267  | 4     | 1    | 335        | 365                  | 135  | 99    | 1    | 600        | 49               | 307  | 332   | 0    | 688        | 1802       |
| 01:00 PM    | 0                    | 24   | 11    | 0    | 35         | 20               | 75   | 0     | 0    | 95         | 99                   | 28   | 16    | 1    | 144        | 11               | 89   | 68    | 0    | 168        | 442        |
| 01:15 PM    | 0                    | 25   | 18    | 0    | 43         | 9                | 76   | 2     | 0    | 87         | 86                   | 24   | 18    | 0    | 128        | 15               | 86   | 82    | 0    | 183        | 441        |
| 01:30 PM    | 2                    | 40   | 8     | 0    | 50         | 12               | 75   | 1     | 3    | 91         | 100                  | 31   | 14    | 0    | 145        | 18               | 78   | 89    | 0    | 185        | 471        |
| 01:45 PM    | 0                    | 26   | 14    | 0    | 40         | 19               | 85   | 2     | 0    | 106        | 98                   | 22   | 20    | 0    | 140        | 20               | 81   | 92    | 0    | 193        | 479        |
| Total       | 2                    | 115  | 51    | 0    | 168        | 60               | 311  | 5     | 3    | 379        | 383                  | 105  | 68    | 1    | 557        | 64               | 334  | 331   | 0    | 729        | 1833       |
| Grand Total | 5                    | 328  | 152   | 2    | 487        | 164              | 817  | 13    | 9    | 1003       | 1137                 | 349  | 250   | 5    | 1741       | 162              | 930  | 964   | 0    | 2056       | 5287       |
| Apprch %    | 1                    | 67.4 | 31.2  | 0.4  |            | 16.4             | 81.5 | 1.3   | 0.9  |            | 65.3                 | 20   | 14.4  | 0.3  |            | 7.9              | 45.2 | 46.9  | 0    |            |            |
| Total %     | 0.1                  | 6.2  | 2.9   | 0    | 9.2        | 3.1              | 15.5 | 0.2   | 0.2  | 19         | 21.5                 | 6.6  | 4.7   | 0.1  | 32.9       | 3.1              | 17.6 | 18.2  | 0    | 38.9       |            |
| Car         | 5                    | 316  | 147   | 0    | 468        | 158              | 795  | 13    | 0    | 966        | 1107                 | 335  | 249   | 0    | 1691       | 161              | 920  | 936   | 0    | 2017       | 5142       |
| % Car       | 100                  | 96.3 | 96.7  | 0    | 96.1       | 96.3             | 97.3 | 100   | 0    | 96.3       | 97.4                 | 96   | 99.6  | 0    | 97.1       | 99.4             | 98.9 | 97.1  | 0    | 98.1       | 97.3       |
| Truck       | 0                    | 4    | 2     | 0    | 6          | 6                | 19   | 0     | 0    | 25         | 27                   | 3    | 1     | 0    | 31         | 1                | 9    | 25    | 0    | 35         | 97         |
| % Truck     | 0                    | 1.2  | 1.3   | 0    | 1.2        | 3.7              | 2.3  | 0     | 0    | 2.5        | 2.4                  | 0.9  | 0.4   | 0    | 1.8        | 0.6              | 1    | 2.6   | 0    | 1.7        | 1.8        |
| Bus         | 0                    | 8    | 3     | 0    | 11         | 0                | 3    | 0     | 0    | 3          | 3                    | 11   | 0     | 0    | 14         | 0                | 1    | 3     | 0    | 4          | 32         |
| % Bus       | 0                    | 2.4  | 2     | 0    | 2.3        | 0                | 0.4  | 0     | 0    | 0.3        | 0.3                  | 3.2  | 0     | 0    | 0.8        | 0                | 0.1  | 0.3   | 0    | 0.2        | 0.6        |
| Ped         | 0                    | 0    | 0     | 2    | 2          | 0                | 0    | 0     | 9    | 9          | 0                    | 0    | 0     | 5    | 5          | 0                | 0    | 0     | 0    | 0          | 16         |
| % Ped       | 0                    | 0    | 0     | 100  | 0.4        | 0                | 0    | 0     | 100  | 0.9        | 0                    | 0    | 0     | 100  | 0.3        | 0                | 0    | 0     | 0    | 0          | 0.3        |



# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_-\_NYS\_25\_at Osborn Ave Sat

Site Code :

Start Date : 5/18/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

| Start Time  | Osborn Ave Southbound |       |      |            | NYS 25 Westbound |      |       |      |            | NYS 25 Eastbound |      |      |            | Int. Total |
|-------------|-----------------------|-------|------|------------|------------------|------|-------|------|------------|------------------|------|------|------------|------------|
|             | Left                  | Right | Peds | App. Total | Left             | Thru | Right | Peds | App. Total | Left             | Thru | Peds | App. Total |            |
| 11:00 AM    | 27                    | 1     | 0    | 28         | 0                | 61   | 17    | 1    | 79         | 1                | 87   | 0    | 88         | 195        |
| 11:15 AM    | 19                    | 1     | 1    | 21         | 0                | 65   | 13    | 2    | 80         | 0                | 109  | 1    | 110        | 211        |
| 11:30 AM    | 25                    | 0     | 0    | 25         | 0                | 87   | 16    | 0    | 103        | 1                | 96   | 0    | 97         | 225        |
| 11:45 AM    | 46                    | 1     | 0    | 47         | 0                | 68   | 13    | 1    | 82         | 0                | 77   | 0    | 77         | 206        |
| Total       | 117                   | 3     | 1    | 121        | 0                | 281  | 59    | 4    | 344        | 2                | 369  | 1    | 372        | 837        |
| 12:00 PM    | 31                    | 1     | 0    | 32         | 0                | 71   | 13    | 0    | 84         | 1                | 89   | 1    | 91         | 207        |
| 12:15 PM    | 24                    | 0     | 1    | 25         | 0                | 88   | 17    | 1    | 106        | 1                | 113  | 0    | 114        | 245        |
| 12:30 PM    | 19                    | 5     | 0    | 24         | 0                | 86   | 16    | 0    | 102        | 1                | 109  | 0    | 110        | 236        |
| 12:45 PM    | 29                    | 0     | 1    | 30         | 0                | 82   | 20    | 0    | 102        | 0                | 97   | 0    | 97         | 229        |
| Total       | 103                   | 6     | 2    | 111        | 0                | 327  | 66    | 1    | 394        | 3                | 408  | 1    | 412        | 917        |
| 01:00 PM    | 18                    | 2     | 2    | 22         | 1                | 90   | 13    | 0    | 104        | 2                | 101  | 0    | 103        | 229        |
| 01:15 PM    | 30                    | 4     | 0    | 34         | 1                | 85   | 14    | 0    | 100        | 1                | 95   | 0    | 96         | 230        |
| 01:30 PM    | 33                    | 3     | 0    | 36         | 0                | 85   | 9     | 3    | 97         | 2                | 100  | 0    | 102        | 235        |
| 01:45 PM    | 37                    | 3     | 0    | 40         | 0                | 101  | 15    | 0    | 116        | 3                | 97   | 0    | 100        | 256        |
| Total       | 118                   | 12    | 2    | 132        | 2                | 361  | 51    | 3    | 417        | 8                | 393  | 0    | 401        | 950        |
| Grand Total | 338                   | 21    | 5    | 364        | 2                | 969  | 176   | 8    | 1155       | 13               | 1170 | 2    | 1185       | 2704       |
| Apprch %    | 92.9                  | 5.8   | 1.4  |            | 0.2              | 83.9 | 15.2  | 0.7  |            | 1.1              | 98.7 | 0.2  |            |            |
| Total %     | 12.5                  | 0.8   | 0.2  | 13.5       | 0.1              | 35.8 | 6.5   | 0.3  | 42.7       | 0.5              | 43.3 | 0.1  | 43.8       |            |
| Car         | 330                   | 21    | 0    | 351        | 2                | 944  | 168   | 0    | 1114       | 13               | 1157 | 0    | 1170       | 2635       |
| % Car       | 97.6                  | 100   | 0    | 96.4       | 100              | 97.4 | 95.5  | 0    | 96.5       | 100              | 98.9 | 0    | 98.7       | 97.4       |
| Truck       | 4                     | 0     | 0    | 4          | 0                | 24   | 7     | 0    | 31         | 0                | 13   | 0    | 13         | 48         |
| % Truck     | 1.2                   | 0     | 0    | 1.1        | 0                | 2.5  | 4     | 0    | 2.7        | 0                | 1.1  | 0    | 1.1        | 1.8        |
| Bus         | 4                     | 0     | 0    | 4          | 0                | 1    | 1     | 0    | 2          | 0                | 0    | 0    | 0          | 6          |
| % Bus       | 1.2                   | 0     | 0    | 1.1        | 0                | 0.1  | 0.6   | 0    | 0.2        | 0                | 0    | 0    | 0          | 0.2        |
| Ped         | 0                     | 0     | 5    | 5          | 0                | 0    | 0     | 8    | 8          | 0                | 0    | 2    | 2          | 15         |
| % Ped       | 0                     | 0     | 100  | 1.4        | 0                | 0    | 0     | 100  | 0.7        | 0                | 0    | 100  | 0.2        | 0.6        |

# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_-NYS\_25\_at Griffing Ave Sat

Site Code :

Start Date : 5/18/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

| Start Time  | Griffing Ave Southbound |       |      |            | NYS 25 Westbound |       |      |            | NYS 25 Eastbound |      |      |            | Int. Total |
|-------------|-------------------------|-------|------|------------|------------------|-------|------|------------|------------------|------|------|------------|------------|
|             | Left                    | Right | Peds | App. Total | Thru             | Right | Peds | App. Total | Left             | Thru | Peds | App. Total |            |
| 11:00 AM    | 11                      | 9     | 4    | 24         | 64               | 17    | 5    | 86         | 4                | 111  | 5    | 120        | 230        |
| 11:15 AM    | 9                       | 6     | 2    | 17         | 74               | 13    | 2    | 89         | 7                | 123  | 1    | 131        | 237        |
| 11:30 AM    | 13                      | 7     | 2    | 22         | 95               | 21    | 0    | 116        | 5                | 123  | 3    | 131        | 269        |
| 11:45 AM    | 22                      | 8     | 2    | 32         | 71               | 24    | 11   | 106        | 7                | 112  | 2    | 121        | 259        |
| Total       | 55                      | 30    | 10   | 95         | 304              | 75    | 18   | 397        | 23               | 469  | 11   | 503        | 995        |
| 12:00 PM    | 15                      | 5     | 4    | 24         | 89               | 23    | 7    | 119        | 6                | 112  | 13   | 131        | 274        |
| 12:15 PM    | 36                      | 12    | 6    | 54         | 99               | 28    | 3    | 130        | 7                | 132  | 7    | 146        | 330        |
| 12:30 PM    | 30                      | 9     | 2    | 41         | 91               | 17    | 7    | 115        | 3                | 131  | 6    | 140        | 296        |
| 12:45 PM    | 14                      | 11    | 3    | 28         | 94               | 22    | 7    | 123        | 3                | 130  | 2    | 135        | 286        |
| Total       | 95                      | 37    | 15   | 147        | 373              | 90    | 24   | 487        | 19               | 505  | 28   | 552        | 1186       |
| 01:00 PM    | 17                      | 4     | 5    | 26         | 94               | 15    | 5    | 114        | 3                | 110  | 3    | 116        | 256        |
| 01:15 PM    | 9                       | 13    | 14   | 36         | 91               | 20    | 5    | 116        | 4                | 129  | 11   | 144        | 296        |
| 01:30 PM    | 17                      | 11    | 5    | 33         | 92               | 23    | 3    | 118        | 8                | 130  | 5    | 143        | 294        |
| 01:45 PM    | 19                      | 8     | 2    | 29         | 121              | 20    | 9    | 150        | 5                | 128  | 8    | 141        | 320        |
| Total       | 62                      | 36    | 26   | 124        | 398              | 78    | 22   | 498        | 20               | 497  | 27   | 544        | 1166       |
| Grand Total | 212                     | 103   | 51   | 366        | 1075             | 243   | 64   | 1382       | 62               | 1471 | 66   | 1599       | 3347       |
| Apprch %    | 57.9                    | 28.1  | 13.9 |            | 77.8             | 17.6  | 4.6  |            | 3.9              | 92   | 4.1  |            |            |
| Total %     | 6.3                     | 3.1   | 1.5  | 10.9       | 32.1             | 7.3   | 1.9  | 41.3       | 1.9              | 43.9 | 2    | 47.8       |            |
| Car         | 211                     | 102   | 0    | 313        | 1043             | 237   | 0    | 1280       | 61               | 1451 | 0    | 1512       | 3105       |
| % Car       | 99.5                    | 99    | 0    | 85.5       | 97               | 97.5  | 0    | 92.6       | 98.4             | 98.6 | 0    | 94.6       | 92.8       |
| Truck       | 1                       | 1     | 0    | 2          | 28               | 2     | 0    | 30         | 1                | 16   | 0    | 17         | 49         |
| % Truck     | 0.5                     | 1     | 0    | 0.5        | 2.6              | 0.8   | 0    | 2.2        | 1.6              | 1.1  | 0    | 1.1        | 1.5        |
| Bus         | 0                       | 0     | 0    | 0          | 4                | 4     | 0    | 8          | 0                | 4    | 0    | 4          | 12         |
| % Bus       | 0                       | 0     | 0    | 0          | 0.4              | 1.6   | 0    | 0.6        | 0                | 0.3  | 0    | 0.3        | 0.4        |
| Ped         | 0                       | 0     | 51   | 51         | 0                | 0     | 64   | 64         | 0                | 0    | 66   | 66         | 181        |
| % Ped       | 0                       | 0     | 100  | 13.9       | 0                | 0     | 100  | 4.6        | 0                | 0    | 100  | 4.1        | 5.4        |

# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead \_ \_ NYS\_25\_at Peconic Ave Sat

Site Code :

Start Date : 5/18/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

| Start Time  | NYS 25<br>Westbound |      |      |            | Peconic Ave<br>Northbound |       |      |            | NYS 25<br>Eastbound |       |      |            | Int. Total |
|-------------|---------------------|------|------|------------|---------------------------|-------|------|------------|---------------------|-------|------|------------|------------|
|             | Left                | Thru | Peds | App. Total | Left                      | Right | Peds | App. Total | Thru                | Right | Peds | App. Total |            |
| 11:00 AM    | 83                  | 44   | 0    | 127        | 38                        | 131   | 1    | 170        | 61                  | 51    | 3    | 115        | 412        |
| 11:15 AM    | 73                  | 40   | 0    | 113        | 54                        | 115   | 4    | 173        | 94                  | 47    | 1    | 142        | 428        |
| 11:30 AM    | 95                  | 58   | 0    | 153        | 55                        | 144   | 6    | 205        | 93                  | 47    | 2    | 142        | 500        |
| 11:45 AM    | 104                 | 52   | 0    | 156        | 44                        | 122   | 7    | 173        | 64                  | 68    | 2    | 134        | 463        |
| Total       | 355                 | 194  | 0    | 549        | 191                       | 512   | 18   | 721        | 312                 | 213   | 8    | 533        | 1803       |
| 12:00 PM    | 81                  | 54   | 0    | 135        | 62                        | 136   | 12   | 210        | 62                  | 48    | 2    | 112        | 457        |
| 12:15 PM    | 84                  | 77   | 0    | 161        | 60                        | 123   | 5    | 188        | 84                  | 78    | 2    | 164        | 513        |
| 12:30 PM    | 86                  | 42   | 0    | 128        | 56                        | 112   | 9    | 177        | 87                  | 72    | 0    | 159        | 464        |
| 12:45 PM    | 91                  | 55   | 0    | 146        | 53                        | 124   | 12   | 189        | 79                  | 58    | 3    | 140        | 475        |
| Total       | 342                 | 228  | 0    | 570        | 231                       | 495   | 38   | 764        | 312                 | 256   | 7    | 575        | 1909       |
| 01:00 PM    | 89                  | 61   | 0    | 150        | 53                        | 119   | 11   | 183        | 67                  | 65    | 3    | 135        | 468        |
| 01:15 PM    | 83                  | 56   | 1    | 140        | 38                        | 120   | 10   | 168        | 80                  | 51    | 5    | 136        | 444        |
| 01:30 PM    | 102                 | 64   | 0    | 166        | 54                        | 104   | 6    | 164        | 97                  | 56    | 2    | 155        | 485        |
| 01:45 PM    | 93                  | 67   | 0    | 160        | 64                        | 113   | 1    | 178        | 80                  | 50    | 8    | 138        | 476        |
| Total       | 367                 | 248  | 1    | 616        | 209                       | 456   | 28   | 693        | 324                 | 222   | 18   | 564        | 1873       |
| Grand Total | 1064                | 670  | 1    | 1735       | 631                       | 1463  | 84   | 2178       | 948                 | 691   | 33   | 1672       | 5585       |
| Apprch %    | 61.3                | 38.6 | 0.1  |            | 29                        | 67.2  | 3.9  |            | 56.7                | 41.3  | 2    |            |            |
| Total %     | 19.1                | 12   | 0    | 31.1       | 11.3                      | 26.2  | 1.5  | 39         | 17                  | 12.4  | 0.6  | 29.9       |            |
| Car         | 1049                | 644  | 0    | 1693       | 617                       | 1449  | 0    | 2066       | 936                 | 685   | 0    | 1621       | 5380       |
| % Car       | 98.6                | 96.1 | 0    | 97.6       | 97.8                      | 99    | 0    | 94.9       | 98.7                | 99.1  | 0    | 96.9       | 96.3       |
| Truck       | 11                  | 20   | 0    | 31         | 12                        | 11    | 0    | 23         | 9                   | 5     | 0    | 14         | 68         |
| % Truck     | 1                   | 3    | 0    | 1.8        | 1.9                       | 0.8   | 0    | 1.1        | 0.9                 | 0.7   | 0    | 0.8        | 1.2        |
| Bus         | 4                   | 6    | 0    | 10         | 2                         | 3     | 0    | 5          | 3                   | 1     | 0    | 4          | 19         |
| % Bus       | 0.4                 | 0.9  | 0    | 0.6        | 0.3                       | 0.2   | 0    | 0.2        | 0.3                 | 0.1   | 0    | 0.2        | 0.3        |
| Ped         | 0                   | 0    | 1    | 1          | 0                         | 0     | 84   | 84         | 0                   | 0     | 33   | 33         | 118        |
| % Ped       | 0                   | 0    | 100  | 0.1        | 0                         | 0     | 100  | 3.9        | 0                   | 0     | 100  | 2          | 2.1        |



# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_-\_NYS\_25\_at Roanoke Ave Sat

Site Code :

Start Date : 5/18/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

| Start Time  | Roanoke Ave Southbound |       |      |            | NYS 25 Westbound |       |      |            | NYS 25 Eastbound |      |      |            | Int. Total |
|-------------|------------------------|-------|------|------------|------------------|-------|------|------------|------------------|------|------|------------|------------|
|             | Left                   | Right | Peds | App. Total | Thru             | Right | Peds | App. Total | Left             | Thru | Peds | App. Total |            |
| 11:00 AM    | 0                      | 56    | 3    | 59         | 68               | 11    | 9    | 88         | 77               | 110  | 0    | 187        | 334        |
| 11:15 AM    | 0                      | 48    | 3    | 51         | 76               | 4     | 4    | 84         | 73               | 135  | 0    | 208        | 343        |
| 11:30 AM    | 0                      | 53    | 2    | 55         | 82               | 10    | 2    | 94         | 88               | 147  | 0    | 235        | 384        |
| 11:45 AM    | 0                      | 69    | 7    | 76         | 91               | 1     | 5    | 97         | 58               | 122  | 1    | 181        | 354        |
| Total       | 0                      | 226   | 15   | 241        | 317              | 26    | 20   | 363        | 296              | 514  | 1    | 811        | 1415       |
| 12:00 PM    | 0                      | 52    | 5    | 57         | 84               | 8     | 4    | 96         | 79               | 117  | 1    | 197        | 350        |
| 12:15 PM    | 0                      | 71    | 4    | 75         | 99               | 10    | 4    | 113        | 73               | 127  | 0    | 200        | 388        |
| 12:30 PM    | 0                      | 70    | 13   | 83         | 69               | 5     | 7    | 81         | 61               | 130  | 1    | 192        | 356        |
| 12:45 PM    | 0                      | 58    | 15   | 73         | 81               | 9     | 7    | 97         | 78               | 132  | 0    | 210        | 380        |
| Total       | 0                      | 251   | 37   | 288        | 333              | 32    | 22   | 387        | 291              | 506  | 2    | 799        | 1474       |
| 01:00 PM    | 0                      | 57    | 6    | 63         | 87               | 7     | 5    | 99         | 80               | 106  | 0    | 186        | 348        |
| 01:15 PM    | 0                      | 63    | 8    | 71         | 79               | 14    | 3    | 96         | 69               | 137  | 0    | 206        | 373        |
| 01:30 PM    | 1                      | 67    | 7    | 75         | 90               | 6     | 8    | 104        | 61               | 136  | 1    | 198        | 377        |
| 01:45 PM    | 0                      | 61    | 11   | 72         | 114              | 14    | 5    | 133        | 55               | 147  | 0    | 202        | 407        |
| Total       | 1                      | 248   | 32   | 281        | 370              | 41    | 21   | 432        | 265              | 526  | 1    | 792        | 1505       |
| Grand Total | 1                      | 725   | 84   | 810        | 1020             | 99    | 63   | 1182       | 852              | 1546 | 4    | 2402       | 4394       |
| Apprch %    | 0.1                    | 89.5  | 10.4 |            | 86.3             | 8.4   | 5.3  |            | 35.5             | 64.4 | 0.2  |            |            |
| Total %     | 0                      | 16.5  | 1.9  | 18.4       | 23.2             | 2.3   | 1.4  | 26.9       | 19.4             | 35.2 | 0.1  | 54.7       |            |
| Car         | 1                      | 714   | 0    | 715        | 991              | 99    | 0    | 1090       | 844              | 1525 | 0    | 2369       | 4174       |
| % Car       | 100                    | 98.5  | 0    | 88.3       | 97.2             | 100   | 0    | 92.2       | 99.1             | 98.6 | 0    | 98.6       | 95         |
| Truck       | 0                      | 9     | 0    | 9          | 22               | 0     | 0    | 22         | 7                | 15   | 0    | 22         | 53         |
| % Truck     | 0                      | 1.2   | 0    | 1.1        | 2.2              | 0     | 0    | 1.9        | 0.8              | 1    | 0    | 0.9        | 1.2        |
| Bus         | 0                      | 2     | 0    | 2          | 7                | 0     | 0    | 7          | 1                | 6    | 0    | 7          | 16         |
| % Bus       | 0                      | 0.3   | 0    | 0.2        | 0.7              | 0     | 0    | 0.6        | 0.1              | 0.4  | 0    | 0.3        | 0.4        |
| Ped         | 0                      | 0     | 84   | 84         | 0                | 0     | 63   | 63         | 0                | 0    | 4    | 4          | 151        |
| % Ped       | 0                      | 0     | 100  | 10.4       | 0                | 0     | 100  | 5.3        | 0                | 0    | 100  | 0.2        | 3.4        |

# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_-\_NYS\_25\_at Ostrander Ave Sat

Site Code :

Start Date : 5/18/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

| Start Time  | Ostrander Ave Southbound |      |       |      |            | NYS 25 Westbound |      |       |      |            | Ostrander Ave Northbound |      |       |      |            | NYS 25 Eastbound |      |       |      |            | Int. Total |
|-------------|--------------------------|------|-------|------|------------|------------------|------|-------|------|------------|--------------------------|------|-------|------|------------|------------------|------|-------|------|------------|------------|
|             | Left                     | Thru | Right | Peds | App. Total | Left             | Thru | Right | Peds | App. Total | Left                     | Thru | Right | Peds | App. Total | Left             | Thru | Right | Peds | App. Total |            |
| 11:00 AM    | 7                        | 0    | 11    | 11   | 29         | 5                | 91   | 15    | 1    | 112        | 0                        | 0    | 0     | 9    | 9          | 16               | 105  | 6     | 54   | 181        | 331        |
| 11:15 AM    | 2                        | 0    | 13    | 45   | 60         | 1                | 69   | 11    | 0    | 81         | 0                        | 0    | 0     | 9    | 9          | 26               | 87   | 4     | 59   | 176        | 326        |
| 11:30 AM    | 8                        | 0    | 17    | 19   | 44         | 2                | 96   | 8     | 0    | 106        | 0                        | 0    | 0     | 12   | 12         | 21               | 107  | 7     | 55   | 190        | 352        |
| 11:45 AM    | 5                        | 1    | 9     | 42   | 57         | 1                | 95   | 8     | 4    | 108        | 0                        | 0    | 0     | 8    | 8          | 14               | 93   | 2     | 69   | 178        | 351        |
| Total       | 22                       | 1    | 50    | 117  | 190        | 9                | 351  | 42    | 5    | 407        | 0                        | 0    | 0     | 38   | 38         | 77               | 392  | 19    | 237  | 725        | 1360       |
| 12:00 PM    | 7                        | 2    | 13    | 22   | 44         | 2                | 95   | 7     | 0    | 104        | 0                        | 0    | 0     | 7    | 7          | 21               | 97   | 2     | 36   | 156        | 311        |
| 12:15 PM    | 2                        | 0    | 11    | 36   | 49         | 0                | 102  | 11    | 7    | 120        | 0                        | 0    | 0     | 13   | 13         | 17               | 108  | 3     | 52   | 180        | 362        |
| 12:30 PM    | 8                        | 1    | 15    | 30   | 54         | 2                | 75   | 11    | 1    | 89         | 0                        | 1    | 0     | 13   | 14         | 14               | 116  | 6     | 46   | 182        | 339        |
| 12:45 PM    | 9                        | 0    | 14    | 34   | 57         | 0                | 97   | 9     | 0    | 106        | 0                        | 0    | 0     | 36   | 36         | 18               | 95   | 3     | 75   | 191        | 390        |
| Total       | 26                       | 3    | 53    | 122  | 204        | 4                | 369  | 38    | 8    | 419        | 0                        | 1    | 0     | 69   | 70         | 70               | 416  | 14    | 209  | 709        | 1402       |
| 01:00 PM    | 8                        | 1    | 23    | 40   | 72         | 1                | 90   | 10    | 2    | 103        | 0                        | 0    | 0     | 8    | 8          | 14               | 99   | 3     | 74   | 190        | 373        |
| 01:15 PM    | 7                        | 0    | 21    | 18   | 46         | 0                | 86   | 8     | 0    | 94         | 0                        | 0    | 0     | 10   | 10         | 27               | 123  | 2     | 44   | 196        | 346        |
| 01:30 PM    | 9                        | 2    | 14    | 34   | 59         | 0                | 93   | 11    | 1    | 105        | 0                        | 0    | 0     | 11   | 11         | 13               | 106  | 3     | 72   | 194        | 369        |
| 01:45 PM    | 6                        | 0    | 31    | 48   | 85         | 5                | 100  | 10    | 4    | 119        | 0                        | 0    | 0     | 20   | 20         | 21               | 105  | 4     | 70   | 200        | 424        |
| Total       | 30                       | 3    | 89    | 140  | 262        | 6                | 369  | 39    | 7    | 421        | 0                        | 0    | 0     | 49   | 49         | 75               | 433  | 12    | 260  | 780        | 1512       |
| Grand Total | 78                       | 7    | 192   | 379  | 656        | 19               | 1089 | 119   | 20   | 1247       | 0                        | 1    | 0     | 156  | 157        | 222              | 1241 | 45    | 706  | 2214       | 4274       |
| Apprch %    | 11.9                     | 1.1  | 29.3  | 57.8 |            | 1.5              | 87.3 | 9.5   | 1.6  |            | 0                        | 0.6  | 0     | 99.4 |            | 10               | 56.1 | 2     | 31.9 |            |            |
| Total %     | 1.8                      | 0.2  | 4.5   | 8.9  | 15.3       | 0.4              | 25.5 | 2.8   | 0.5  | 29.2       | 0                        | 0    | 0     | 3.6  | 3.7        | 5.2              | 29   | 1.1   | 16.5 | 51.8       |            |
| Car         | 78                       | 6    | 192   | 0    | 276        | 19               | 1065 | 119   | 0    | 1203       | 0                        | 1    | 0     | 0    | 1          | 221              | 1226 | 45    | 0    | 1492       | 2972       |
| % Car       | 100                      | 85.7 | 100   | 0    | 42.1       | 100              | 97.8 | 100   | 0    | 96.5       | 0                        | 100  | 0     | 0    | 0.6        | 99.5             | 98.8 | 100   | 0    | 67.4       | 69.5       |
| Truck       | 0                        | 1    | 0     | 0    | 1          | 0                | 21   | 0     | 0    | 21         | 0                        | 0    | 0     | 0    | 0          | 1                | 11   | 0     | 0    | 12         | 34         |
| % Truck     | 0                        | 14.3 | 0     | 0    | 0.2        | 0                | 1.9  | 0     | 0    | 1.7        | 0                        | 0    | 0     | 0    | 0          | 0.5              | 0.9  | 0     | 0    | 0.5        | 0.8        |
| Bus         | 0                        | 0    | 0     | 0    | 0          | 0                | 3    | 0     | 0    | 3          | 0                        | 0    | 0     | 0    | 0          | 0                | 4    | 0     | 0    | 4          | 7          |
| % Bus       | 0                        | 0    | 0     | 0    | 0          | 0                | 0.3  | 0     | 0    | 0.2        | 0                        | 0    | 0     | 0    | 0          | 0                | 0.3  | 0     | 0    | 0.2        | 0.2        |
| Ped         | 0                        | 0    | 0     | 379  | 379        | 0                | 0    | 0     | 20   | 20         | 0                        | 0    | 0     | 156  | 156        | 0                | 0    | 0     | 706  | 706        | 1261       |
| % Ped       | 0                        | 0    | 0     | 100  | 57.8       | 0                | 0    | 0     | 100  | 1.6        | 0                        | 0    | 0     | 100  | 99.4       | 0                | 0    | 0     | 100  | 31.9       | 29.5       |

# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_-\_NYS\_25\_at Riverside Dr Sat

Site Code :

Start Date : 5/18/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

|             | NYS 25<br>Southbound |      |       |      |            | Westbound St.<br>Westbound |      |       |      |            | NYS 25<br>Northbound |      |       |      |            | Eastbound St.<br>Eastbound |      |       |      |            |            |
|-------------|----------------------|------|-------|------|------------|----------------------------|------|-------|------|------------|----------------------|------|-------|------|------------|----------------------------|------|-------|------|------------|------------|
| Start Time  | Left                 | Thru | Right | Peds | App. Total | Left                       | Thru | Right | Peds | App. Total | Left                 | Thru | Right | Peds | App. Total | Left                       | Thru | Right | Peds | App. Total | Int. Total |
| 11:00 AM    | 8                    | 74   | 3     | 0    | 85         | 14                         | 11   | 6     | 1    | 32         | 1                    | 91   | 13    | 0    | 105        | 4                          | 10   | 10    | 2    | 26         | 248        |
| 11:15 AM    | 12                   | 72   | 8     | 2    | 94         | 13                         | 13   | 12    | 1    | 39         | 0                    | 79   | 9     | 0    | 88         | 4                          | 10   | 3     | 1    | 18         | 239        |
| 11:30 AM    | 8                    | 80   | 16    | 1    | 105        | 6                          | 15   | 10    | 2    | 33         | 0                    | 101  | 13    | 0    | 114        | 4                          | 15   | 6     | 0    | 25         | 277        |
| 11:45 AM    | 10                   | 74   | 5     | 2    | 91         | 14                         | 15   | 9     | 2    | 40         | 0                    | 80   | 13    | 0    | 93         | 3                          | 14   | 2     | 0    | 19         | 243        |
| Total       | 38                   | 300  | 32    | 5    | 375        | 47                         | 54   | 37    | 6    | 144        | 1                    | 351  | 48    | 0    | 400        | 15                         | 49   | 21    | 3    | 88         | 1007       |
| 12:00 PM    | 11                   | 75   | 8     | 0    | 94         | 12                         | 10   | 7     | 3    | 32         | 2                    | 94   | 9     | 0    | 105        | 4                          | 13   | 3     | 3    | 23         | 254        |
| 12:15 PM    | 12                   | 92   | 5     | 2    | 111        | 8                          | 16   | 9     | 1    | 34         | 4                    | 88   | 10    | 0    | 102        | 4                          | 18   | 5     | 1    | 28         | 275        |
| 12:30 PM    | 12                   | 68   | 12    | 0    | 92         | 4                          | 17   | 6     | 2    | 29         | 1                    | 106  | 14    | 0    | 121        | 5                          | 12   | 3     | 2    | 22         | 264        |
| 12:45 PM    | 20                   | 91   | 8     | 0    | 119        | 8                          | 15   | 9     | 8    | 40         | 3                    | 82   | 13    | 0    | 98         | 0                          | 9    | 2     | 4    | 15         | 272        |
| Total       | 55                   | 326  | 33    | 2    | 416        | 32                         | 58   | 31    | 14   | 135        | 10                   | 370  | 46    | 0    | 426        | 13                         | 52   | 13    | 10   | 88         | 1065       |
| 01:00 PM    | 11                   | 76   | 7     | 0    | 94         | 11                         | 12   | 10    | 0    | 33         | 2                    | 90   | 7     | 0    | 99         | 1                          | 19   | 4     | 2    | 26         | 252        |
| 01:15 PM    | 4                    | 73   | 3     | 0    | 80         | 9                          | 15   | 12    | 0    | 36         | 2                    | 119  | 13    | 0    | 134        | 6                          | 15   | 1     | 0    | 22         | 272        |
| 01:30 PM    | 8                    | 103  | 3     | 0    | 114        | 8                          | 8    | 9     | 0    | 25         | 6                    | 99   | 14    | 0    | 119        | 8                          | 20   | 3     | 1    | 32         | 290        |
| 01:45 PM    | 9                    | 84   | 6     | 0    | 99         | 12                         | 19   | 11    | 0    | 42         | 2                    | 90   | 14    | 0    | 106        | 7                          | 5    | 3     | 0    | 15         | 262        |
| Total       | 32                   | 336  | 19    | 0    | 387        | 40                         | 54   | 42    | 0    | 136        | 12                   | 398  | 48    | 0    | 458        | 22                         | 59   | 11    | 3    | 95         | 1076       |
| Grand Total | 125                  | 962  | 84    | 7    | 1178       | 119                        | 166  | 110   | 20   | 415        | 23                   | 1119 | 142   | 0    | 1284       | 50                         | 160  | 45    | 16   | 271        | 3148       |
| Apprch %    | 10.6                 | 81.7 | 7.1   | 0.6  |            | 28.7                       | 40   | 26.5  | 4.8  |            | 1.8                  | 87.1 | 11.1  | 0    |            | 18.5                       | 59   | 16.6  | 5.9  |            |            |
| Total %     | 4                    | 30.6 | 2.7   | 0.2  | 37.4       | 3.8                        | 5.3  | 3.5   | 0.6  | 13.2       | 0.7                  | 35.5 | 4.5   | 0    | 40.8       | 1.6                        | 5.1  | 1.4   | 0.5  | 8.6        |            |
| Car         | 123                  | 936  | 82    | 0    | 1141       | 119                        | 162  | 108   | 0    | 389        | 23                   | 1106 | 141   | 0    | 1270       | 50                         | 160  | 43    | 0    | 253        | 3053       |
| % Car       | 98.4                 | 97.3 | 97.6  | 0    | 96.9       | 100                        | 97.6 | 98.2  | 0    | 93.7       | 100                  | 98.8 | 99.3  | 0    | 98.9       | 100                        | 100  | 95.6  | 0    | 93.4       | 97         |
| Truck       | 2                    | 21   | 2     | 0    | 25         | 0                          | 4    | 2     | 0    | 6          | 0                    | 9    | 1     | 0    | 10         | 0                          | 0    | 2     | 0    | 2          | 43         |
| % Truck     | 1.6                  | 2.2  | 2.4   | 0    | 2.1        | 0                          | 2.4  | 1.8   | 0    | 1.4        | 0                    | 0.8  | 0.7   | 0    | 0.8        | 0                          | 0    | 4.4   | 0    | 0.7        | 1.4        |
| Bus         | 0                    | 5    | 0     | 0    | 5          | 0                          | 0    | 0     | 0    | 0          | 0                    | 4    | 0     | 0    | 4          | 0                          | 0    | 0     | 0    | 0          | 9          |
| % Bus       | 0                    | 0.5  | 0     | 0    | 0.4        | 0                          | 0    | 0     | 0    | 0          | 0                    | 0.4  | 0     | 0    | 0.3        | 0                          | 0    | 0     | 0    | 0          | 0.3        |
| Ped         | 0                    | 0    | 0     | 7    | 7          | 0                          | 0    | 0     | 20   | 20         | 0                    | 0    | 0     | 0    | 0          | 0                          | 0    | 0     | 16   | 16         | 43         |
| % Ped       | 0                    | 0    | 0     | 100  | 0.6        | 0                          | 0    | 0     | 100  | 4.8        | 0                    | 0    | 0     | 0    | 0          | 0                          | 0    | 0     | 100  | 5.9        | 1.4        |



# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead-\_NYS\_25\_at\_Hubbard Ave Sat

Site Code :

Start Date : 5/18/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

| Start Time  | NYS 25<br>Southbound |      |      |            | Hubbard Ave<br>Westbound |       |      |            | NYS 25<br>Northbound |       |      |            | Int. Total |
|-------------|----------------------|------|------|------------|--------------------------|-------|------|------------|----------------------|-------|------|------------|------------|
|             | Left                 | Thru | Peds | App. Total | Left                     | Right | Peds | App. Total | Thru                 | Right | Peds | App. Total |            |
| 11:00 AM    | 10                   | 43   | 0    | 53         | 25                       | 8     | 0    | 33         | 62                   | 38    | 0    | 100        | 186        |
| 11:15 AM    | 13                   | 49   | 0    | 62         | 35                       | 25    | 0    | 60         | 57                   | 25    | 0    | 82         | 204        |
| 11:30 AM    | 11                   | 48   | 0    | 59         | 35                       | 13    | 0    | 48         | 81                   | 22    | 0    | 103        | 210        |
| 11:45 AM    | 9                    | 51   | 0    | 60         | 26                       | 8     | 0    | 34         | 59                   | 25    | 0    | 84         | 178        |
| Total       | 43                   | 191  | 0    | 234        | 121                      | 54    | 0    | 175        | 259                  | 110   | 0    | 369        | 778        |
| 12:00 PM    | 8                    | 52   | 0    | 60         | 33                       | 11    | 1    | 45         | 62                   | 25    | 0    | 87         | 192        |
| 12:15 PM    | 11                   | 61   | 0    | 72         | 28                       | 10    | 0    | 38         | 63                   | 35    | 0    | 98         | 208        |
| 12:30 PM    | 14                   | 52   | 0    | 66         | 25                       | 8     | 0    | 33         | 71                   | 24    | 0    | 95         | 194        |
| 12:45 PM    | 12                   | 70   | 0    | 82         | 32                       | 14    | 0    | 46         | 67                   | 23    | 0    | 90         | 218        |
| Total       | 45                   | 235  | 0    | 280        | 118                      | 43    | 1    | 162        | 263                  | 107   | 0    | 370        | 812        |
| 01:00 PM    | 6                    | 56   | 0    | 62         | 29                       | 8     | 0    | 37         | 67                   | 14    | 0    | 81         | 180        |
| 01:15 PM    | 11                   | 50   | 0    | 61         | 29                       | 13    | 0    | 42         | 76                   | 24    | 0    | 100        | 203        |
| 01:30 PM    | 18                   | 74   | 0    | 92         | 25                       | 6     | 0    | 31         | 95                   | 25    | 0    | 120        | 243        |
| 01:45 PM    | 9                    | 61   | 0    | 70         | 29                       | 9     | 0    | 38         | 67                   | 20    | 0    | 87         | 195        |
| Total       | 44                   | 241  | 0    | 285        | 112                      | 36    | 0    | 148        | 305                  | 83    | 0    | 388        | 821        |
| Grand Total | 132                  | 667  | 0    | 799        | 351                      | 133   | 1    | 485        | 827                  | 300   | 0    | 1127       | 2411       |
| Apprch %    | 16.5                 | 83.5 | 0    |            | 72.4                     | 27.4  | 0.2  |            | 73.4                 | 26.6  | 0    |            |            |
| Total %     | 5.5                  | 27.7 | 0    | 33.1       | 14.6                     | 5.5   | 0    | 20.1       | 34.3                 | 12.4  | 0    | 46.7       |            |
| Car         | 130                  | 651  | 0    | 781        | 343                      | 131   | 0    | 474        | 819                  | 293   | 0    | 1112       | 2367       |
| % Car       | 98.5                 | 97.6 | 0    | 97.7       | 97.7                     | 98.5  | 0    | 97.7       | 99                   | 97.7  | 0    | 98.7       | 98.2       |
| Truck       | 2                    | 14   | 0    | 16         | 6                        | 2     | 0    | 8          | 6                    | 5     | 0    | 11         | 35         |
| % Truck     | 1.5                  | 2.1  | 0    | 2          | 1.7                      | 1.5   | 0    | 1.6        | 0.7                  | 1.7   | 0    | 1          | 1.5        |
| Bus         | 0                    | 2    | 0    | 2          | 2                        | 0     | 0    | 2          | 2                    | 2     | 0    | 4          | 8          |
| % Bus       | 0                    | 0.3  | 0    | 0.3        | 0.6                      | 0     | 0    | 0.4        | 0.2                  | 0.7   | 0    | 0.4        | 0.3        |
| Ped         | 0                    | 0    | 0    | 0          | 0                        | 0     | 1    | 1          | 0                    | 0     | 0    | 0          | 1          |
| % Ped       | 0                    | 0    | 0    | 0          | 0                        | 0     | 100  | 0.2        | 0                    | 0     | 0    | 0          | 0          |

# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_-\_Griffing Ave at Court St Sat

Site Code :

Start Date : 5/18/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

| Start Time  | Griffing Ave Southbound |       |      |            | Griffing Ave Northbound |      |      |            | Court St Eastbound |       |      |            | Int. Total |
|-------------|-------------------------|-------|------|------------|-------------------------|------|------|------------|--------------------|-------|------|------------|------------|
|             | Thru                    | Right | Peds | App. Total | Left                    | Thru | Peds | App. Total | Left               | Right | Peds | App. Total |            |
| 11:00 AM    | 11                      | 9     | 0    | 20         | 4                       | 21   | 0    | 25         | 8                  | 6     | 3    | 17         | 62         |
| 11:15 AM    | 13                      | 3     | 1    | 17         | 5                       | 27   | 1    | 33         | 18                 | 9     | 2    | 29         | 79         |
| 11:30 AM    | 19                      | 4     | 0    | 23         | 7                       | 26   | 0    | 33         | 7                  | 6     | 7    | 20         | 76         |
| 11:45 AM    | 22                      | 9     | 0    | 31         | 4                       | 33   | 0    | 37         | 9                  | 9     | 4    | 22         | 90         |
| Total       | 65                      | 25    | 1    | 91         | 20                      | 107  | 1    | 128        | 42                 | 30    | 16   | 88         | 307        |
| 12:00 PM    | 20                      | 8     | 1    | 29         | 11                      | 35   | 0    | 46         | 17                 | 9     | 6    | 32         | 107        |
| 12:15 PM    | 41                      | 8     | 0    | 49         | 1                       | 29   | 0    | 30         | 12                 | 8     | 0    | 20         | 99         |
| 12:30 PM    | 23                      | 7     | 0    | 30         | 13                      | 21   | 0    | 34         | 8                  | 15    | 5    | 28         | 92         |
| 12:45 PM    | 19                      | 10    | 0    | 29         | 7                       | 24   | 0    | 31         | 15                 | 10    | 4    | 29         | 89         |
| Total       | 103                     | 33    | 1    | 137        | 32                      | 109  | 0    | 141        | 52                 | 42    | 15   | 109        | 387        |
| 01:00 PM    | 19                      | 3     | 0    | 22         | 6                       | 24   | 0    | 30         | 6                  | 6     | 7    | 19         | 71         |
| 01:15 PM    | 16                      | 7     | 0    | 23         | 3                       | 30   | 0    | 33         | 10                 | 4     | 11   | 25         | 81         |
| 01:30 PM    | 16                      | 6     | 0    | 22         | 10                      | 26   | 0    | 36         | 13                 | 9     | 6    | 28         | 86         |
| 01:45 PM    | 18                      | 8     | 0    | 26         | 9                       | 22   | 0    | 31         | 11                 | 7     | 8    | 26         | 83         |
| Total       | 69                      | 24    | 0    | 93         | 28                      | 102  | 0    | 130        | 40                 | 26    | 32   | 98         | 321        |
| Grand Total | 237                     | 82    | 2    | 321        | 80                      | 318  | 1    | 399        | 134                | 98    | 63   | 295        | 1015       |
| Apprch %    | 73.8                    | 25.5  | 0.6  |            | 20.1                    | 79.7 | 0.3  |            | 45.4               | 33.2  | 21.4 |            |            |
| Total %     | 23.3                    | 8.1   | 0.2  | 31.6       | 7.9                     | 31.3 | 0.1  | 39.3       | 13.2               | 9.7   | 6.2  | 29.1       |            |
| Car         | 236                     | 82    | 0    | 318        | 79                      | 310  | 0    | 389        | 132                | 98    | 0    | 230        | 937        |
| % Car       | 99.6                    | 100   | 0    | 99.1       | 98.8                    | 97.5 | 0    | 97.5       | 98.5               | 100   | 0    | 78         | 92.3       |
| Truck       | 1                       | 0     | 0    | 1          | 1                       | 4    | 0    | 5          | 1                  | 0     | 0    | 1          | 7          |
| % Truck     | 0.4                     | 0     | 0    | 0.3        | 1.2                     | 1.3  | 0    | 1.3        | 0.7                | 0     | 0    | 0.3        | 0.7        |
| Bus         | 0                       | 0     | 0    | 0          | 0                       | 4    | 0    | 4          | 1                  | 0     | 0    | 1          | 5          |
| % Bus       | 0                       | 0     | 0    | 0          | 0                       | 1.3  | 0    | 1          | 0.7                | 0     | 0    | 0.3        | 0.5        |
| Ped         | 0                       | 0     | 2    | 2          | 0                       | 0    | 1    | 1          | 0                  | 0     | 63   | 63         | 66         |
| % Ped       | 0                       | 0     | 100  | 0.6        | 0                       | 0    | 100  | 0.3        | 0                  | 0     | 100  | 21.4       | 6.5        |

# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_-\_Griffing\_at E 2nd Sat

Site Code :

Start Date : 5/18/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

| Start Time  | Griffing Ave Southbound |      |       |      |            | W 2nd Street Westbound |      |       |      |            | Griffing Ave Northbound |      |       |      |            | Parking Lot Access Eastbound |      |       |      |            | Int. Total |
|-------------|-------------------------|------|-------|------|------------|------------------------|------|-------|------|------------|-------------------------|------|-------|------|------------|------------------------------|------|-------|------|------------|------------|
|             | Left                    | Thru | Right | Peds | App. Total | Left                   | Thru | Right | Peds | App. Total | Left                    | Thru | Right | Peds | App. Total | Left                         | Thru | Right | Peds | App. Total |            |
| 11:00 AM    | 7                       | 13   | 0     | 1    | 21         | 7                      | 0    | 8     | 2    | 17         | 0                       | 19   | 3     | 0    | 22         | 0                            | 0    | 0     | 1    | 1          | 61         |
| 11:15 AM    | 8                       | 13   | 0     | 0    | 21         | 5                      | 0    | 10    | 0    | 15         | 0                       | 15   | 4     | 0    | 19         | 0                            | 0    | 0     | 1    | 1          | 56         |
| 11:30 AM    | 3                       | 18   | 0     | 0    | 21         | 7                      | 0    | 7     | 0    | 14         | 0                       | 25   | 3     | 0    | 28         | 0                            | 0    | 0     | 8    | 8          | 71         |
| 11:45 AM    | 10                      | 23   | 0     | 0    | 33         | 8                      | 0    | 13    | 0    | 21         | 0                       | 28   | 2     | 0    | 30         | 0                            | 0    | 0     | 4    | 4          | 88         |
| Total       | 28                      | 67   | 0     | 1    | 96         | 27                     | 0    | 38    | 2    | 67         | 0                       | 87   | 12    | 0    | 99         | 0                            | 0    | 0     | 14   | 14         | 276        |
| 12:00 PM    | 8                       | 23   | 0     | 0    | 31         | 8                      | 0    | 13    | 2    | 23         | 0                       | 34   | 3     | 0    | 37         | 0                            | 0    | 0     | 4    | 4          | 95         |
| 12:15 PM    | 2                       | 47   | 0     | 0    | 49         | 3                      | 0    | 5     | 0    | 8          | 0                       | 25   | 4     | 0    | 29         | 1                            | 1    | 0     | 0    | 2          | 88         |
| 12:30 PM    | 12                      | 29   | 0     | 1    | 42         | 7                      | 0    | 12    | 1    | 20         | 0                       | 22   | 3     | 1    | 26         | 0                            | 1    | 0     | 4    | 5          | 93         |
| 12:45 PM    | 10                      | 17   | 0     | 0    | 27         | 7                      | 0    | 9     | 3    | 19         | 0                       | 18   | 4     | 1    | 23         | 1                            | 0    | 0     | 5    | 6          | 75         |
| Total       | 32                      | 116  | 0     | 1    | 149        | 25                     | 0    | 39    | 6    | 70         | 0                       | 99   | 14    | 2    | 115        | 2                            | 2    | 0     | 13   | 17         | 351        |
| 01:00 PM    | 5                       | 17   | 0     | 0    | 22         | 7                      | 0    | 14    | 3    | 24         | 0                       | 19   | 4     | 2    | 25         | 0                            | 0    | 0     | 1    | 1          | 72         |
| 01:15 PM    | 5                       | 16   | 0     | 0    | 21         | 9                      | 0    | 9     | 2    | 20         | 0                       | 23   | 2     | 1    | 26         | 0                            | 0    | 0     | 1    | 1          | 68         |
| 01:30 PM    | 6                       | 19   | 0     | 1    | 26         | 8                      | 0    | 8     | 3    | 19         | 0                       | 25   | 8     | 1    | 34         | 0                            | 0    | 0     | 2    | 2          | 81         |
| 01:45 PM    | 8                       | 15   | 1     | 2    | 26         | 8                      | 0    | 10    | 1    | 19         | 0                       | 18   | 6     | 0    | 24         | 0                            | 0    | 0     | 1    | 1          | 70         |
| Total       | 24                      | 67   | 1     | 3    | 95         | 32                     | 0    | 41    | 9    | 82         | 0                       | 85   | 20    | 4    | 109        | 0                            | 0    | 0     | 5    | 5          | 291        |
| Grand Total | 84                      | 250  | 1     | 5    | 340        | 84                     | 0    | 118   | 17   | 219        | 0                       | 271  | 46    | 6    | 323        | 2                            | 2    | 0     | 32   | 36         | 918        |
| Apprch %    | 24.7                    | 73.5 | 0.3   | 1.5  |            | 38.4                   | 0    | 53.9  | 7.8  |            | 0                       | 83.9 | 14.2  | 1.9  |            | 5.6                          | 5.6  | 0     | 88.9 |            |            |
| Total %     | 9.2                     | 27.2 | 0.1   | 0.5  | 37         | 9.2                    | 0    | 12.9  | 1.9  | 23.9       | 0                       | 29.5 | 5     | 0.7  | 35.2       | 0.2                          | 0.2  | 0     | 3.5  | 3.9        |            |
| Car         | 84                      | 249  | 1     | 0    | 334        | 84                     | 0    | 116   | 0    | 200        | 0                       | 266  | 46    | 0    | 312        | 2                            | 2    | 0     | 0    | 4          | 850        |
| % Car       | 100                     | 99.6 | 100   | 0    | 98.2       | 100                    | 0    | 98.3  | 0    | 91.3       | 0                       | 98.2 | 100   | 0    | 96.6       | 100                          | 100  | 0     | 0    | 11.1       | 92.6       |
| Truck       | 0                       | 1    | 0     | 0    | 1          | 0                      | 0    | 2     | 0    | 2          | 0                       | 1    | 0     | 0    | 1          | 0                            | 0    | 0     | 0    | 0          | 4          |
| % Truck     | 0                       | 0.4  | 0     | 0    | 0.3        | 0                      | 0    | 1.7   | 0    | 0.9        | 0                       | 0.4  | 0     | 0    | 0.3        | 0                            | 0    | 0     | 0    | 0          | 0.4        |
| Bus         | 0                       | 0    | 0     | 0    | 0          | 0                      | 0    | 0     | 0    | 0          | 0                       | 4    | 0     | 0    | 4          | 0                            | 0    | 0     | 0    | 0          | 4          |
| % Bus       | 0                       | 0    | 0     | 0    | 0          | 0                      | 0    | 0     | 0    | 0          | 0                       | 1.5  | 0     | 0    | 1.2        | 0                            | 0    | 0     | 0    | 0          | 0.4        |
| Ped         | 0                       | 0    | 0     | 5    | 5          | 0                      | 0    | 0     | 17   | 17         | 0                       | 0    | 0     | 6    | 6          | 0                            | 0    | 0     | 32   | 32         | 60         |
| % Ped       | 0                       | 0    | 0     | 100  | 1.5        | 0                      | 0    | 0     | 100  | 7.8        | 0                       | 0    | 0     | 100  | 1.9        | 0                            | 0    | 0     | 100  | 88.9       | 6.5        |



# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_-\_Roanoke Ave at E 2nd St Sat

Site Code :

Start Date : 5/18/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

| Start Time  | Roanoke Ave Southbound |      |       |      |            | E 2nd St Westbound |      |       |      |            | Roanoke Ave Northbound |      |       |      |            | E 2nd St Eastbound |      |       |      |            | Int. Total |
|-------------|------------------------|------|-------|------|------------|--------------------|------|-------|------|------------|------------------------|------|-------|------|------------|--------------------|------|-------|------|------------|------------|
|             | Left                   | Thru | Right | Peds | App. Total | Left               | Thru | Right | Peds | App. Total | Left                   | Thru | Right | Peds | App. Total | Left               | Thru | Right | Peds | App. Total |            |
| 11:00 AM    | 1                      | 44   | 4     | 4    | 53         | 5                  | 9    | 4     | 3    | 21         | 3                      | 78   | 2     | 0    | 83         | 5                  | 9    | 2     | 5    | 21         | 178        |
| 11:15 AM    | 3                      | 53   | 6     | 0    | 62         | 1                  | 9    | 11    | 3    | 24         | 2                      | 78   | 1     | 0    | 81         | 4                  | 12   | 2     | 0    | 18         | 185        |
| 11:30 AM    | 8                      | 50   | 5     | 0    | 63         | 3                  | 5    | 4     | 1    | 13         | 1                      | 90   | 0     | 0    | 91         | 3                  | 5    | 2     | 3    | 13         | 180        |
| 11:45 AM    | 3                      | 60   | 6     | 0    | 69         | 5                  | 6    | 10    | 0    | 21         | 5                      | 58   | 3     | 0    | 66         | 5                  | 6    | 5     | 1    | 17         | 173        |
| Total       | 15                     | 207  | 21    | 4    | 247        | 14                 | 29   | 29    | 7    | 79         | 11                     | 304  | 6     | 0    | 321        | 17                 | 32   | 11    | 9    | 69         | 716        |
| 12:00 PM    | 5                      | 56   | 7     | 0    | 68         | 1                  | 12   | 6     | 0    | 19         | 0                      | 77   | 3     | 0    | 80         | 3                  | 7    | 1     | 1    | 12         | 179        |
| 12:15 PM    | 9                      | 80   | 3     | 0    | 92         | 1                  | 1    | 3     | 0    | 5          | 2                      | 82   | 4     | 0    | 88         | 4                  | 4    | 3     | 1    | 12         | 197        |
| 12:30 PM    | 2                      | 62   | 7     | 2    | 73         | 3                  | 11   | 3     | 0    | 17         | 2                      | 69   | 2     | 0    | 73         | 2                  | 16   | 3     | 1    | 22         | 185        |
| 12:45 PM    | 8                      | 56   | 3     | 0    | 67         | 0                  | 7    | 4     | 0    | 11         | 4                      | 74   | 8     | 0    | 86         | 3                  | 7    | 3     | 1    | 14         | 178        |
| Total       | 24                     | 254  | 20    | 2    | 300        | 5                  | 31   | 16    | 0    | 52         | 8                      | 302  | 17    | 0    | 327        | 12                 | 34   | 10    | 4    | 60         | 739        |
| 01:00 PM    | 9                      | 51   | 5     | 1    | 66         | 5                  | 10   | 5     | 1    | 21         | 2                      | 77   | 1     | 0    | 80         | 4                  | 6    | 1     | 0    | 11         | 178        |
| 01:15 PM    | 6                      | 59   | 5     | 2    | 72         | 4                  | 10   | 3     | 1    | 18         | 3                      | 77   | 2     | 1    | 83         | 2                  | 7    | 2     | 4    | 15         | 188        |
| 01:30 PM    | 2                      | 65   | 3     | 0    | 70         | 1                  | 11   | 6     | 1    | 19         | 3                      | 70   | 2     | 2    | 77         | 4                  | 7    | 3     | 0    | 14         | 180        |
| 01:45 PM    | 5                      | 60   | 3     | 1    | 69         | 5                  | 14   | 5     | 1    | 25         | 4                      | 68   | 2     | 5    | 79         | 4                  | 11   | 3     | 3    | 21         | 194        |
| Total       | 22                     | 235  | 16    | 4    | 277        | 15                 | 45   | 19    | 4    | 83         | 12                     | 292  | 7     | 8    | 319        | 14                 | 31   | 9     | 7    | 61         | 740        |
| Grand Total | 61                     | 696  | 57    | 10   | 824        | 34                 | 105  | 64    | 11   | 214        | 31                     | 898  | 30    | 8    | 967        | 43                 | 97   | 30    | 20   | 190        | 2195       |
| Apprch %    | 7.4                    | 84.5 | 6.9   | 1.2  |            | 15.9               | 49.1 | 29.9  | 5.1  |            | 3.2                    | 92.9 | 3.1   | 0.8  |            | 22.6               | 51.1 | 15.8  | 10.5 |            |            |
| Total %     | 2.8                    | 31.7 | 2.6   | 0.5  | 37.5       | 1.5                | 4.8  | 2.9   | 0.5  | 9.7        | 1.4                    | 40.9 | 1.4   | 0.4  | 44.1       | 2                  | 4.4  | 1.4   | 0.9  | 8.7        |            |
| Car         | 60                     | 685  | 57    | 0    | 802        | 34                 | 103  | 64    | 0    | 201        | 30                     | 890  | 30    | 0    | 950        | 43                 | 97   | 30    | 0    | 170        | 2123       |
| % Car       | 98.4                   | 98.4 | 100   | 0    | 97.3       | 100                | 98.1 | 100   | 0    | 93.9       | 96.8                   | 99.1 | 100   | 0    | 98.2       | 100                | 100  | 100   | 0    | 89.5       | 96.7       |
| Truck       | 1                      | 9    | 0     | 0    | 10         | 0                  | 2    | 0     | 0    | 2          | 1                      | 7    | 0     | 0    | 8          | 0                  | 0    | 0     | 0    | 0          | 20         |
| % Truck     | 1.6                    | 1.3  | 0     | 0    | 1.2        | 0                  | 1.9  | 0     | 0    | 0.9        | 3.2                    | 0.8  | 0     | 0    | 0.8        | 0                  | 0    | 0     | 0    | 0          | 0.9        |
| Bus         | 0                      | 2    | 0     | 0    | 2          | 0                  | 0    | 0     | 0    | 0          | 0                      | 1    | 0     | 0    | 1          | 0                  | 0    | 0     | 0    | 0          | 3          |
| % Bus       | 0                      | 0.3  | 0     | 0    | 0.2        | 0                  | 0    | 0     | 0    | 0          | 0                      | 0.1  | 0     | 0    | 0.1        | 0                  | 0    | 0     | 0    | 0          | 0.1        |
| Ped         | 0                      | 0    | 0     | 10   | 10         | 0                  | 0    | 0     | 11   | 11         | 0                      | 0    | 0     | 8    | 8          | 0                  | 0    | 0     | 20   | 20         | 49         |
| % Ped       | 0                      | 0    | 0     | 100  | 1.2        | 0                  | 0    | 0     | 100  | 5.1        | 0                      | 0    | 0     | 100  | 0.8        | 0                  | 0    | 0     | 100  | 10.5       | 2.2        |

# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_-\_Roanoke Ave at Railroad Ave Sat

Site Code :

Start Date : 5/18/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

| Start Time  | Roanoke Ave Southbound |       |      |            | Roanoke Ave Northbound |      |      |            | Railroad Ave Eastbound |       |      |            | Int. Total |
|-------------|------------------------|-------|------|------------|------------------------|------|------|------------|------------------------|-------|------|------------|------------|
|             | Thru                   | Right | Peds | App. Total | Left                   | Thru | Peds | App. Total | Left                   | Right | Peds | App. Total |            |
| 11:00 AM    | 48                     | 12    | 0    | 60         | 1                      | 87   | 2    | 90         | 8                      | 1     | 6    | 15         | 165        |
| 11:15 AM    | 63                     | 11    | 0    | 74         | 5                      | 74   | 0    | 79         | 13                     | 2     | 0    | 15         | 168        |
| 11:30 AM    | 62                     | 14    | 0    | 76         | 5                      | 99   | 0    | 104        | 13                     | 3     | 3    | 19         | 199        |
| 11:45 AM    | 75                     | 21    | 2    | 98         | 2                      | 70   | 0    | 72         | 11                     | 1     | 2    | 14         | 184        |
| Total       | 248                    | 58    | 2    | 308        | 13                     | 330  | 2    | 345        | 45                     | 7     | 11   | 63         | 716        |
| 12:00 PM    | 68                     | 16    | 0    | 84         | 4                      | 69   | 1    | 74         | 16                     | 0     | 1    | 17         | 175        |
| 12:15 PM    | 89                     | 22    | 0    | 111        | 1                      | 89   | 1    | 91         | 12                     | 2     | 1    | 15         | 217        |
| 12:30 PM    | 73                     | 13    | 0    | 86         | 1                      | 70   | 0    | 71         | 14                     | 3     | 2    | 19         | 176        |
| 12:45 PM    | 67                     | 13    | 2    | 82         | 3                      | 80   | 0    | 83         | 15                     | 1     | 2    | 18         | 183        |
| Total       | 297                    | 64    | 2    | 363        | 9                      | 308  | 2    | 319        | 57                     | 6     | 6    | 69         | 751        |
| 01:00 PM    | 67                     | 12    | 0    | 79         | 4                      | 83   | 2    | 89         | 10                     | 1     | 0    | 11         | 179        |
| 01:15 PM    | 76                     | 17    | 0    | 93         | 3                      | 84   | 2    | 89         | 11                     | 1     | 1    | 13         | 195        |
| 01:30 PM    | 74                     | 17    | 2    | 93         | 2                      | 78   | 0    | 80         | 18                     | 0     | 0    | 18         | 191        |
| 01:45 PM    | 64                     | 25    | 0    | 89         | 3                      | 74   | 4    | 81         | 12                     | 3     | 1    | 16         | 186        |
| Total       | 281                    | 71    | 2    | 354        | 12                     | 319  | 8    | 339        | 51                     | 5     | 2    | 58         | 751        |
| Grand Total | 826                    | 193   | 6    | 1025       | 34                     | 957  | 12   | 1003       | 153                    | 18    | 19   | 190        | 2218       |
| Apprch %    | 80.6                   | 18.8  | 0.6  |            | 3.4                    | 95.4 | 1.2  |            | 80.5                   | 9.5   | 10   |            |            |
| Total %     | 37.2                   | 8.7   | 0.3  | 46.2       | 1.5                    | 43.1 | 0.5  | 45.2       | 6.9                    | 0.8   | 0.9  | 8.6        |            |
| Car         | 815                    | 192   | 0    | 1007       | 34                     | 950  | 0    | 984        | 152                    | 18    | 0    | 170        | 2161       |
| % Car       | 98.7                   | 99.5  | 0    | 98.2       | 100                    | 99.3 | 0    | 98.1       | 99.3                   | 100   | 0    | 89.5       | 97.4       |
| Truck       | 10                     | 0     | 0    | 10         | 0                      | 6    | 0    | 6          | 1                      | 0     | 0    | 1          | 17         |
| % Truck     | 1.2                    | 0     | 0    | 1          | 0                      | 0.6  | 0    | 0.6        | 0.7                    | 0     | 0    | 0.5        | 0.8        |
| Bus         | 1                      | 1     | 0    | 2          | 0                      | 1    | 0    | 1          | 0                      | 0     | 0    | 0          | 3          |
| % Bus       | 0.1                    | 0.5   | 0    | 0.2        | 0                      | 0.1  | 0    | 0.1        | 0                      | 0     | 0    | 0          | 0.1        |
| Ped         | 0                      | 0     | 6    | 6          | 0                      | 0    | 12   | 12         | 0                      | 0     | 19   | 19         | 37         |
| % Ped       | 0                      | 0     | 100  | 0.6        | 0                      | 0    | 100  | 1.2        | 0                      | 0     | 100  | 10         | 1.7        |

# NELSON & POPE

572 Walt Whitman Road  
Melville, New York 11747

File Name : Riverhead\_-Roanoke Ave at Northville Tpke Sat

Site Code :

Start Date : 5/18/2013

Page No : 1

Groups Printed- Car - Truck - Bus - Ped

| Start Time  | Roanoke Ave Southbound |      |      |            | Northville Tpke Westbound |       |      |            | Roanoke Ave Northbound |       |      |            | Int. Total |
|-------------|------------------------|------|------|------------|---------------------------|-------|------|------------|------------------------|-------|------|------------|------------|
|             | Left                   | Thru | Peds | App. Total | Left                      | Right | Peds | App. Total | Thru                   | Right | Peds | App. Total |            |
| 11:00 AM    | 5                      | 39   | 0    | 44         | 20                        | 6     | 0    | 26         | 68                     | 25    | 0    | 93         | 163        |
| 11:15 AM    | 1                      | 49   | 0    | 50         | 25                        | 0     | 0    | 25         | 65                     | 19    | 0    | 84         | 159        |
| 11:30 AM    | 2                      | 51   | 0    | 53         | 28                        | 1     | 0    | 29         | 78                     | 31    | 0    | 109        | 191        |
| 11:45 AM    | 3                      | 58   | 0    | 61         | 35                        | 5     | 2    | 42         | 68                     | 20    | 0    | 88         | 191        |
| Total       | 11                     | 197  | 0    | 208        | 108                       | 12    | 2    | 122        | 279                    | 95    | 0    | 374        | 704        |
| 12:00 PM    | 4                      | 55   | 0    | 59         | 34                        | 7     | 0    | 41         | 59                     | 25    | 0    | 84         | 184        |
| 12:15 PM    | 6                      | 75   | 0    | 81         | 34                        | 3     | 1    | 38         | 71                     | 32    | 0    | 103        | 222        |
| 12:30 PM    | 4                      | 59   | 0    | 63         | 28                        | 1     | 1    | 30         | 60                     | 24    | 0    | 84         | 177        |
| 12:45 PM    | 3                      | 46   | 0    | 49         | 32                        | 4     | 3    | 39         | 68                     | 24    | 0    | 92         | 180        |
| Total       | 17                     | 235  | 0    | 252        | 128                       | 15    | 5    | 148        | 258                    | 105   | 0    | 363        | 763        |
| 01:00 PM    | 3                      | 56   | 0    | 59         | 24                        | 8     | 0    | 32         | 76                     | 17    | 0    | 93         | 184        |
| 01:15 PM    | 2                      | 63   | 0    | 65         | 29                        | 7     | 0    | 36         | 64                     | 25    | 0    | 89         | 190        |
| 01:30 PM    | 3                      | 62   | 0    | 65         | 29                        | 7     | 0    | 36         | 66                     | 34    | 0    | 100        | 201        |
| 01:45 PM    | 2                      | 49   | 0    | 51         | 36                        | 5     | 1    | 42         | 60                     | 27    | 0    | 87         | 180        |
| Total       | 10                     | 230  | 0    | 240        | 118                       | 27    | 1    | 146        | 266                    | 103   | 0    | 369        | 755        |
| Grand Total | 38                     | 662  | 0    | 700        | 354                       | 54    | 8    | 416        | 803                    | 303   | 0    | 1106       | 2222       |
| Apprch %    | 5.4                    | 94.6 | 0    |            | 85.1                      | 13    | 1.9  |            | 72.6                   | 27.4  | 0    |            |            |
| Total %     | 1.7                    | 29.8 | 0    | 31.5       | 15.9                      | 2.4   | 0.4  | 18.7       | 36.1                   | 13.6  | 0    | 49.8       |            |
| Car         | 38                     | 651  | 0    | 689        | 354                       | 52    | 0    | 406        | 799                    | 300   | 0    | 1099       | 2194       |
| % Car       | 100                    | 98.3 | 0    | 98.4       | 100                       | 96.3  | 0    | 97.6       | 99.5                   | 99    | 0    | 99.4       | 98.7       |
| Truck       | 0                      | 10   | 0    | 10         | 0                         | 2     | 0    | 2          | 4                      | 3     | 0    | 7          | 19         |
| % Truck     | 0                      | 1.5  | 0    | 1.4        | 0                         | 3.7   | 0    | 0.5        | 0.5                    | 1     | 0    | 0.6        | 0.9        |
| Bus         | 0                      | 1    | 0    | 1          | 0                         | 0     | 0    | 0          | 0                      | 0     | 0    | 0          | 1          |
| % Bus       | 0                      | 0.2  | 0    | 0.1        | 0                         | 0     | 0    | 0          | 0                      | 0     | 0    | 0          | 0          |
| Ped         | 0                      | 0    | 0    | 0          | 0                         | 0     | 8    | 8          | 0                      | 0     | 0    | 0          | 8          |
| % Ped       | 0                      | 0    | 0    | 0          | 0                         | 0     | 100  | 1.9        | 0                      | 0     | 0    | 0          | 0.4        |



# NELSON & POPE

572 Walt Whitman Road  
Melville NY, 11747  
631 427 5665

Site Code:  
Station ID:  
NYS 25 East of Kromer Rd  
Latitude: 0' 0.000 Undefined

| Start Time | 13-May-13 |    | Tue   |    | Wed   |     | Thu   |      | Fri   |      | Weekday Average |      | Sat   |      | Sun   |      |
|------------|-----------|----|-------|----|-------|-----|-------|------|-------|------|-----------------|------|-------|------|-------|------|
|            | WB        | EB | WB    | EB | WB    | EB  | WB    | EB   | WB    | EB   | WB              | EB   | WB    | EB   | WB    | EB   |
| 12:00 AM   | *         | *  | *     | *  | *     | *   | 14    | 29   | 22    | 26   | 18              | 28   | 45    | 43   | 52    | 39   |
| 01:00      | *         | *  | *     | *  | *     | *   | 15    | 20   | 13    | 18   | 14              | 19   | 36    | 36   | 29    | 22   |
| 02:00      | *         | *  | *     | *  | *     | *   | 13    | 27   | 13    | 19   | 13              | 28   | 17    | 24   | 15    | 26   |
| 03:00      | *         | *  | *     | *  | *     | *   | 10    | 19   | 11    | 21   | 10              | 20   | 15    | 19   | 21    | 27   |
| 04:00      | *         | *  | *     | *  | *     | *   | 19    | 20   | 20    | 23   | 20              | 22   | 26    | 30   | 18    | 19   |
| 05:00      | *         | *  | *     | *  | *     | *   | 58    | 84   | 70    | 76   | 61              | 77   | 35    | 52   | 20    | 31   |
| 06:00      | *         | *  | *     | *  | *     | *   | 135   | 182  | 126   | 176  | 130             | 179  | 77    | 124  | 53    | 56   |
| 07:00      | *         | *  | *     | *  | *     | *   | 219   | 307  | 218   | 296  | 218             | 302  | 154   | 177  | 89    | 71   |
| 08:00      | *         | *  | *     | *  | *     | *   | 205   | 365  | 218   | 355  | 212             | 360  | 188   | 243  | 112   | 137  |
| 09:00      | *         | *  | *     | *  | *     | *   | 258   | 394  | 253   | 347  | 256             | 370  | 225   | 256  | 181   | 188  |
| 10:00      | *         | *  | *     | *  | *     | *   | 326   | 310  | 308   | 327  | 317             | 318  | 322   | 308  | 273   | 233  |
| 11:00      | *         | *  | *     | *  | *     | *   | 371   | 308  | 314   | 339  | 342             | 324  | 338   | 384  | 404   | 262  |
| 12:00 PM   | *         | *  | *     | *  | *     | *   | 347   | 356  | 370   | 369  | 358             | 362  | 370   | 373  | 442   | 301  |
| 01:00      | *         | *  | *     | *  | *     | *   | 375   | 372  | 388   | 383  | 382             | 378  | 422   | 399  | 430   | 333  |
| 02:00      | *         | *  | *     | *  | *     | *   | 392   | 338  | 407   | 348  | 400             | 343  | 448   | 368  | 431   | 308  |
| 03:00      | *         | *  | *     | *  | *     | *   | 428   | 344  | 414   | 350  | 421             | 347  | 443   | 324  | 379   | 289  |
| 04:00      | *         | *  | *     | *  | *     | *   | 482   | 354  | 483   | 408  | 482             | 381  | 449   | 348  | 373   | 289  |
| 05:00      | *         | *  | *     | *  | *     | *   | 422   | 356  | 444   | 362  | 433             | 359  | 350   | 330  | 282   | 234  |
| 06:00      | *         | *  | *     | *  | *     | *   | 330   | 337  | 317   | 311  | 324             | 324  | 293   | 289  | 207   | 198  |
| 07:00      | *         | *  | *     | *  | *     | *   | 257   | 238  | 267   | 319  | 262             | 278  | 277   | 252  | 155   | 178  |
| 08:00      | *         | *  | *     | *  | *     | *   | 238   | 204  | 221   | 248  | 230             | 226  | 185   | 152  | 124   | 185  |
| 09:00      | *         | *  | *     | *  | *     | *   | 157   | 126  | 150   | 164  | 146             | 143  | 146   | 160  | 78    | 88   |
| 10:00      | *         | *  | *     | *  | *     | *   | 89    | 63   | 124   | 101  | 97              | 76   | 105   | 133  | 47    | 48   |
| 11:00      | *         | *  | *     | *  | *     | *   | 40    | 52   | 81    | 94   | 53              | 69   | 108   | 94   | 31    | 48   |
| Total      | 0         | 0  | 0     | 0  | 246   | 263 | 5200  | 5205 | 5246  | 5484 | 5199            | 5333 | 5074  | 4918 | 4246  | 3610 |
| Day        | 0         |    | 10405 |    | 10730 |     | 10532 |      | 9992  |      | 7856            |      |       |      |       |      |
| AM Peak    | 11:00     |    | 09:00 |    | 11:00 |     | 11:00 |      | 08:00 |      | 09:00           |      | 11:00 |      | 11:00 |      |
| Vol.       | 371       |    | 394   |    | 314   |     | 342   |      | 355   |      | 370             |      | 338   |      | 404   |      |
| PM Peak    | 21:00     |    | 13:00 |    | 16:00 |     | 16:00 |      | 16:00 |      | 16:00           |      | 16:00 |      | 12:00 |      |
| Vol.       | 131       |    | 372   |    | 483   |     | 482   |      | 408   |      | 381             |      | 449   |      | 442   |      |

# NELSON & POPE

572 Walt Whitman Road  
Melville NY, 11747  
631 427 5665

Site Code:  
Station ID:  
NYS 25 East of Kromer Rd  
Latitude: 0' 0.000 Undefined

| Start Time | 20-May-13 |       | Tue   |       | Wed   |       | Thu         |    | Fri |    | Weekday Average |      | Sat |    | Sun |    |
|------------|-----------|-------|-------|-------|-------|-------|-------------|----|-----|----|-----------------|------|-----|----|-----|----|
|            | WB        | EB    | WB    | EB    | WB    | EB    | WB          | EB | WB  | EB | WB              | EB   | WB  | EB | WB  | EB |
| 12:00 AM   | 20        | 24    | 18    | 28    | 21    | 31    | *           | *  | *   | *  | 20              | 28   | *   | *  | *   | *  |
| 01:00      | 14        | 21    | 13    | 22    | 10    | 16    | *           | *  | *   | *  | 12              | 20   | *   | *  | *   | *  |
| 02:00      | 13        | 23    | 18    | 30    | 19    | 32    | *           | *  | *   | *  | 17              | 28   | *   | *  | *   | *  |
| 03:00      | 10        | 29    | 19    | 22    | 13    | 21    | *           | *  | *   | *  | 14              | 24   | *   | *  | *   | *  |
| 04:00      | 15        | 26    | 25    | 17    | 28    | 24    | *           | *  | *   | *  | 23              | 22   | *   | *  | *   | *  |
| 05:00      | 64        | 67    | 70    | 70    | 70    | 75    | *           | *  | *   | *  | 68              | 71   | *   | *  | *   | *  |
| 06:00      | 136       | 177   | 133   | 175   | 136   | 168   | *           | *  | *   | *  | 135             | 173  | *   | *  | *   | *  |
| 07:00      | 218       | 254   | 205   | 307   | 210   | 298   | *           | *  | *   | *  | 211             | 286  | *   | *  | *   | *  |
| 08:00      | 228       | 389   | 223   | 377   | 191   | 358   | *           | *  | *   | *  | 214             | 375  | *   | *  | *   | *  |
| 09:00      | 205       | 376   | 219   | 379   | 254   | 408   | *           | *  | *   | *  | 226             | 388  | *   | *  | *   | *  |
| 10:00      | 288       | 282   | 301   | 351   | 304   | 296   | *           | *  | *   | *  | 298             | 310  | *   | *  | *   | *  |
| 11:00      | 375       | 306   | 375   | 284   | 380   | 279   | *           | *  | *   | *  | 377             | 290  | *   | *  | *   | *  |
| 12:00 PM   | 387       | 293   | 394   | 303   | 387   | 338   | *           | *  | *   | *  | 389             | 311  | *   | *  | *   | *  |
| 01:00      | 382       | 305   | 374   | 367   | 358   | 356   | *           | *  | *   | *  | 371             | 343  | *   | *  | *   | *  |
| 02:00      | 318       | 330   | 388   | 307   | 356   | 346   | *           | *  | *   | *  | 354             | 328  | *   | *  | *   | *  |
| 03:00      | 399       | 348   | 421   | 318   | 421   | 336   | *           | *  | *   | *  | 414             | 334  | *   | *  | *   | *  |
| 04:00      | 465       | 326   | 473   | 350   | 452   | 316   | *           | *  | *   | *  | 463             | 331  | *   | *  | *   | *  |
| 05:00      | 393       | 348   | 406   | 354   | 428   | 361   | *           | *  | *   | *  | 409             | 354  | *   | *  | *   | *  |
| 06:00      | 280       | 288   | 310   | 259   | 289   | 261   | *           | *  | *   | *  | 293             | 269  | *   | *  | *   | *  |
| 07:00      | 242       | 210   | 287   | 225   | 244   | 228   | *           | *  | *   | *  | 258             | 221  | *   | *  | *   | *  |
| 08:00      | 178       | 168   | 195   | 158   | 227   | 183   | *           | *  | *   | *  | 200             | 170  | *   | *  | *   | *  |
| 09:00      | 123       | 128   | 119   | 154   | 131   | 131   | *           | *  | *   | *  | 124             | 138  | *   | *  | *   | *  |
| 10:00      | 79        | 65    | 83    | 81    | 46    | 59    | *           | *  | *   | *  | 69              | 68   | *   | *  | *   | *  |
| 11:00      | 30        | 41    | 28    | 60    | *     | *     | *           | *  | *   | *  | 29              | 50   | *   | *  | *   | *  |
| Total      | 4862      | 4824  | 5097  | 4998  | 4975  | 4921  | 0           | 0  | 0   | 0  | 4988            | 4932 | 0   | 0  | 0   | 0  |
| Day        | 9686      |       | 10095 |       | 9896  |       | 0           |    | 0   |    | 9920            |      | 0   |    | 0   |    |
| AM Peak    | 11:00     | 08:00 | 11:00 | 09:00 | 11:00 | 09:00 | 11:00 09:00 |    |     |    |                 |      |     |    |     |    |
| Vol.       | 375       | 389   | 375   | 379   | 380   | 408   | 377 388     |    |     |    |                 |      |     |    |     |    |
| PM Peak    | 16:00     | 15:00 | 16:00 | 13:00 | 16:00 | 17:00 | 16:00 17:00 |    |     |    |                 |      |     |    |     |    |
| Vol.       | 465       | 348   | 473   | 367   | 452   | 361   | 463 354     |    |     |    |                 |      |     |    |     |    |

|             |           |       |           |       |       |       |      |      |
|-------------|-----------|-------|-----------|-------|-------|-------|------|------|
| Comb. Total | 9686      | 10095 | 10405     | 10405 | 10730 | 20452 | 9992 | 7856 |
| ADT         | ADT 9,794 |       | ADT 9,794 |       |       |       |      |      |

# NELSON & POPE

572 Walt Whitman Road  
Melville NY, 11747  
631 427 5665

Site Code:  
Station ID:  
NYS 25 between Peconic Ave and  
Roanoke Ave  
Latitude: 0' 0.000 Undefined

| Start Time | 13-May-13 |    | Tue   |    | Wed   |    | Thu   |      | Fri   |      | Weekday Average |      | Sat   |      | Sun   |      |
|------------|-----------|----|-------|----|-------|----|-------|------|-------|------|-----------------|------|-------|------|-------|------|
|            | WB        | EB | WB    | EB | WB    | EB | WB    | EB   | WB    | EB   | WB              | EB   | WB    | EB   | WB    | EB   |
| 12:00 AM   | *         | *  | *     | *  | *     | *  | 64    | 70   | 65    | 54   | 64              | 62   | 135   | 133  | 131   | 139  |
| 01:00      | *         | *  | *     | *  | *     | *  | 22    | 26   | 37    | 52   | 30              | 39   | 78    | 69   | 73    | 78   |
| 02:00      | *         | *  | *     | *  | *     | *  | 12    | 14   | 23    | 36   | 18              | 25   | 45    | 40   | 28    | 53   |
| 03:00      | *         | *  | *     | *  | *     | *  | 21    | 26   | 26    | 39   | 24              | 32   | 30    | 35   | 55    | 40   |
| 04:00      | *         | *  | *     | *  | *     | *  | 36    | 49   | 32    | 40   | 34              | 44   | 37    | 38   | 34    | 44   |
| 05:00      | *         | *  | *     | *  | *     | *  | 122   | 141  | 135   | 150  | 128             | 146  | 106   | 115  | 68    | 92   |
| 06:00      | *         | *  | *     | *  | *     | *  | 230   | 356  | 268   | 303  | 249             | 330  | 218   | 239  | 114   | 178  |
| 07:00      | *         | *  | *     | *  | *     | *  | 266   | 448  | 242   | 444  | 254             | 446  | 235   | 291  | 173   | 227  |
| 08:00      | *         | *  | *     | *  | *     | *  | 247   | 502  | 272   | 503  | 260             | 502  | 228   | 403  | 191   | 314  |
| 09:00      | *         | *  | *     | *  | *     | *  | 215   | 529  | 242   | 481  | 228             | 505  | 258   | 441  | 239   | 410  |
| 10:00      | *         | *  | *     | *  | *     | *  | 250   | 501  | 290   | 490  | 270             | 496  | 255   | 453  | 297   | 444  |
| 11:00      | *         | *  | *     | *  | *     | *  | 290   | 471  | 288   | 486  | 289             | 478  | 254   | 511  | 295   | 489  |
| 12:00 PM   | *         | *  | *     | *  | *     | *  | 267   | 480  | 337   | 456  | 302             | 468  | 267   | 489  | 322   | 460  |
| 01:00      | *         | *  | *     | *  | *     | *  | 259   | 505  | 277   | 455  | 268             | 480  | 259   | 402  | 331   | 453  |
| 02:00      | *         | *  | *     | *  | *     | *  | 309   | 455  | 336   | 402  | 322             | 428  | 324   | 388  | 341   | 393  |
| 03:00      | *         | *  | *     | *  | *     | *  | 292   | 428  | 277   | 411  | 284             | 420  | 307   | 414  | 339   | 430  |
| 04:00      | *         | *  | *     | *  | *     | *  | 314   | 461  | 291   | 388  | 302             | 424  | 392   | 412  | 361   | 345  |
| 05:00      | *         | *  | *     | *  | *     | *  | 257   | 479  | 291   | 441  | 274             | 460  | 335   | 406  | 329   | 386  |
| 06:00      | *         | *  | *     | *  | *     | *  | 233   | 501  | 276   | 461  | 254             | 481  | 297   | 433  | 311   | 393  |
| 07:00      | *         | *  | *     | *  | *     | *  | 254   | 425  | 276   | 487  | 265             | 456  | 312   | 435  | 255   | 314  |
| 08:00      | *         | *  | *     | *  | *     | *  | 248   | 372  | 305   | 421  | 276             | 396  | 299   | 348  | 281   | 304  |
| 09:00      | *         | *  | *     | *  | *     | *  | 278   | 329  | 350   | 286  | 314             | 308  | 280   | 294  | 219   | 225  |
| 10:00      | *         | *  | *     | *  | *     | *  | 183   | 223  | 256   | 244  | 198             | 216  | 262   | 253  | 173   | 179  |
| 11:00      | *         | *  | *     | *  | *     | *  | 127   | 129  | 208   | 203  | 144             | 149  | 226   | 220  | 118   | 139  |
| Total      | 0         | 0  | 0     | 0  | 0     | 0  | 4796  | 7920 | 5400  | 7733 | 5051            | 7791 | 5439  | 7262 | 5078  | 6529 |
| Day        | 0         |    | 0     |    | 0     |    | 12716 |      | 13133 |      | 12842           |      | 12701 |      | 11607 |      |
| AM Peak    | 11:00     |    | 09:00 |    | 10:00 |    | 08:00 |      | 08:00 |      | 11:00           |      | 09:00 |      | 10:00 |      |
| Vol.       | 290       |    | 529   |    | 290   |    | 503   |      | 503   |      | 289             |      | 258   |      | 297   |      |
| PM Peak    | 22:00     |    | 22:00 |    | 21:00 |    | 19:00 |      | 19:00 |      | 14:00           |      | 16:00 |      | 16:00 |      |
| Vol.       | 156       |    | 181   |    | 350   |    | 487   |      | 487   |      | 322             |      | 392   |      | 361   |      |



# NELSON & POPE

572 Walt Whitman Road  
Melville NY, 11747  
631 427 5665

Site Code:  
Station ID:  
NYS 25 between Peconic Ave and  
Roanoke Ave  
Latitude: 0' 0.000 Undefined

| Start Time | 20-May-13 |       | Tue   |       | Wed   |       | Thu |    | Fri |    | Weekday Average |      | Sat |    | Sun |    |
|------------|-----------|-------|-------|-------|-------|-------|-----|----|-----|----|-----------------|------|-----|----|-----|----|
|            | WB        | EB    | WB    | EB    | WB    | EB    | WB  | EB | WB  | EB | WB              | EB   | WB  | EB | WB  | EB |
| 12:00 AM   | 51        | 83    | 61    | 54    | 62    | 73    | *   | *  | *   | *  | 58              | 70   | *   | *  | *   | *  |
| 01:00      | 41        | 43    | 25    | 36    | 26    | 34    | *   | *  | *   | *  | 31              | 38   | *   | *  | *   | *  |
| 02:00      | 27        | 23    | 14    | 20    | 20    | 21    | *   | *  | *   | *  | 20              | 21   | *   | *  | *   | *  |
| 03:00      | 16        | 24    | 26    | 33    | 18    | 28    | *   | *  | *   | *  | 20              | 28   | *   | *  | *   | *  |
| 04:00      | 37        | 26    | 45    | 33    | 40    | 39    | *   | *  | *   | *  | 41              | 33   | *   | *  | *   | *  |
| 05:00      | 142       | 145   | 146   | 138   | 144   | 129   | *   | *  | *   | *  | 144             | 137  | *   | *  | *   | *  |
| 06:00      | 231       | 306   | 242   | 321   | 257   | 346   | *   | *  | *   | *  | 243             | 324  | *   | *  | *   | *  |
| 07:00      | 264       | 402   | 253   | 434   | 245   | 437   | *   | *  | *   | *  | 254             | 424  | *   | *  | *   | *  |
| 08:00      | 266       | 470   | 270   | 489   | 252   | 535   | *   | *  | *   | *  | 263             | 498  | *   | *  | *   | *  |
| 09:00      | 252       | 560   | 217   | 528   | 258   | 486   | *   | *  | *   | *  | 242             | 525  | *   | *  | *   | *  |
| 10:00      | 287       | 506   | 247   | 524   | 215   | 524   | *   | *  | *   | *  | 250             | 518  | *   | *  | *   | *  |
| 11:00      | 278       | 454   | 259   | 469   | 275   | 441   | *   | *  | *   | *  | 271             | 455  | *   | *  | *   | *  |
| 12:00 PM   | 278       | 466   | 290   | 437   | 284   | 478   | *   | *  | *   | *  | 284             | 460  | *   | *  | *   | *  |
| 01:00      | 271       | 457   | 290   | 437   | 312   | 476   | *   | *  | *   | *  | 291             | 457  | *   | *  | *   | *  |
| 02:00      | 295       | 394   | 316   | 489   | 316   | 401   | *   | *  | *   | *  | 309             | 428  | *   | *  | *   | *  |
| 03:00      | 286       | 461   | 319   | 444   | 275   | 447   | *   | *  | *   | *  | 293             | 451  | *   | *  | *   | *  |
| 04:00      | 296       | 433   | 314   | 449   | 298   | 429   | *   | *  | *   | *  | 303             | 437  | *   | *  | *   | *  |
| 05:00      | 278       | 434   | 291   | 427   | 303   | 383   | *   | *  | *   | *  | 291             | 415  | *   | *  | *   | *  |
| 06:00      | 250       | 439   | 274   | 451   | 274   | 468   | *   | *  | *   | *  | 266             | 453  | *   | *  | *   | *  |
| 07:00      | 269       | 420   | 288   | 399   | 264   | 427   | *   | *  | *   | *  | 274             | 415  | *   | *  | *   | *  |
| 08:00      | 292       | 365   | 278   | 357   | 271   | 370   | *   | *  | *   | *  | 280             | 364  | *   | *  | *   | *  |
| 09:00      | 280       | 273   | 272   | 275   | 250   | 295   | *   | *  | *   | *  | 267             | 281  | *   | *  | *   | *  |
| 10:00      | 211       | 158   | 199   | 205   | *     | *     | *   | *  | *   | *  | 205             | 182  | *   | *  | *   | *  |
| 11:00      | 116       | 129   | 98    | 120   | *     | *     | *   | *  | *   | *  | 107             | 124  | *   | *  | *   | *  |
| Total      | 5014      | 7471  | 5034  | 7569  | 4659  | 7267  | 0   | 0  | 0   | 0  | 5007            | 7538 | 0   | 0  | 0   | 0  |
| Day        | 12485     |       | 12603 |       | 11926 |       | 0   |    | 0   |    | 12545           |      | 0   |    | 0   |    |
| AM Peak    | 10:00     | 09:00 | 08:00 | 09:00 | 11:00 | 08:00 |     |    |     |    |                 |      |     |    |     |    |
| Vol.       | 287       | 560   | 270   | 528   | 275   | 535   |     |    |     |    |                 |      |     |    |     |    |
| PM Peak    | 16:00     | 12:00 | 15:00 | 14:00 | 14:00 | 12:00 |     |    |     |    |                 |      |     |    |     |    |
| Vol.       | 296       | 466   | 319   | 489   | 316   | 478   |     |    |     |    |                 |      |     |    |     |    |

|             |            |       |            |       |            |       |       |       |
|-------------|------------|-------|------------|-------|------------|-------|-------|-------|
| Comb. Total | 12485      | 12603 | 12475      | 12716 | 13133      | 25387 | 12701 | 11607 |
| ADT         | ADT 12,541 |       | ADT 12,541 |       | ADT 12,541 |       |       |       |

## Page 1

Site Code:  
Station ID:  
NYS 25 east of Howell St

Latitude: 0' 0.000 Undefined

| Start Time   | 13-May-13 |    | Tue |    | Wed |     | Thu   |       | Fri   |       | Weekday Average |       | Sat   |       | Sun   |       |
|--------------|-----------|----|-----|----|-----|-----|-------|-------|-------|-------|-----------------|-------|-------|-------|-------|-------|
|              | WB        | EB | WB  | EB | WB  | EB  | WB    | EB    | WB    | EB    | WB              | EB    | WB    | EB    | WB    | EB    |
| 12:00 AM     | *         | *  | *   | *  | *   | *   | 21    | 28    | 32    | 21    | 26              | 24    | 57    | 76    | 65    | 64    |
| 01:00        | *         | *  | *   | *  | *   | *   | 9     | 16    | 19    | 27    | 14              | 22    | 27    | 38    | 31    | 52    |
| 02:00        | *         | *  | *   | *  | *   | *   | 6     | 7     | 11    | 15    | 8               | 11    | 23    | 24    | 21    | 48    |
| 03:00        | *         | *  | *   | *  | *   | *   | 14    | 8     | 18    | 17    | 16              | 12    | 20    | 25    | 37    | 32    |
| 04:00        | *         | *  | *   | *  | *   | *   | 20    | 24    | 19    | 15    | 20              | 20    | 25    | 15    | 21    | 26    |
| 05:00        | *         | *  | *   | *  | *   | *   | 91    | 68    | 83    | 64    | 87              | 66    | 64    | 64    | 34    | 29    |
| 06:00        | *         | *  | *   | *  | *   | *   | 204   | 185   | 234   | 194   | 219             | 190   | 161   | 140   | 91    | 63    |
| 07:00        | *         | *  | *   | *  | *   | *   | 338   | 274   | 286   | 302   | 312             | 288   | 229   | 159   | 125   | 108   |
| 08:00        | *         | *  | *   | *  | *   | *   | 362   | 392   | 362   | 414   | 362             | 403   | 236   | 201   | 153   | 135   |
| 09:00        | *         | *  | *   | *  | *   | *   | 379   | 398   | 401   | 397   | 390             | 398   | 278   | 272   | 197   | 181   |
| 10:00        | *         | *  | *   | *  | *   | *   | 384   | 345   | 408   | 366   | 396             | 356   | 297   | 328   | 261   | 197   |
| 11:00        | *         | *  | *   | *  | *   | *   | 359   | 361   | 441   | 368   | 400             | 364   | 332   | 355   | 313   | 254   |
| 12:00 PM     | *         | *  | *   | *  | *   | *   | 445   | 416   | 471   | 429   | 458             | 422   | 396   | 364   | 348   | 300   |
| 01:00        | *         | *  | *   | *  | *   | *   | 409   | 399   | 429   | 419   | 419             | 409   | 384   | 393   | 360   | 293   |
| 02:00        | *         | *  | *   | *  | *   | *   | 408   | 378   | 460   | 388   | 434             | 383   | 415   | 356   | 363   | 307   |
| 03:00        | *         | *  | *   | *  | *   | *   | 423   | 365   | 417   | 389   | 420             | 377   | 377   | 333   | 352   | 246   |
| 04:00        | *         | *  | *   | *  | *   | *   | 563   | 417   | 566   | 433   | 564             | 425   | 403   | 322   | 288   | 253   |
| 05:00        | *         | *  | *   | *  | *   | *   | 437   | 385   | 465   | 363   | 451             | 374   | 354   | 316   | 234   | 227   |
| 06:00        | *         | *  | *   | *  | *   | *   | 342   | 314   | 399   | 336   | 370             | 325   | 305   | 258   | 212   | 205   |
| 07:00        | *         | *  | *   | *  | *   | *   | 262   | 303   | 292   | 318   | 277             | 310   | 287   | 290   | 207   | 194   |
| 08:00        | *         | *  | *   | *  | *   | *   | 196   | 220   | 285   | 308   | 240             | 264   | 243   | 266   | 153   | 191   |
| 09:00        | *         | *  | *   | *  | *   | *   | 160   | 215   | 226   | 276   | 193             | 246   | 181   | 217   | 102   | 120   |
| 10:00        | *         | *  | *   | *  | *   | *   | 88    | 109   | 140   | 203   | 114             | 156   | 141   | 166   | 72    | 84    |
| 11:00        | *         | *  | *   | *  | *   | *   | 72    | 72    | 106   | 126   | 73              | 87    | 113   | 105   | 50    | 65    |
| Total        | 0         | 0  | 0   | 0  | 0   | 63  | 5992  | 5699  | 6570  | 6188  | 6263            | 5932  | 5348  | 5073  | 4090  | 3674  |
| Day          |           |    |     |    |     | 105 | 11691 |       | 12758 |       | 12195           |       | 10421 |       |       |       |
| AM Peak Vol. |           |    |     |    |     |     | 10:00 | 09:00 | 11:00 | 08:00 | 11:00           | 08:00 | 11:00 | 11:00 | 11:00 | 11:00 |
| PM Peak Vol. |           |    |     |    |     |     | 384   | 398   | 441   | 414   | 400             | 403   | 332   | 355   | 313   | 254   |
|              |           |    |     |    |     |     | 23:00 | 23:00 | 16:00 | 16:00 | 16:00           | 16:00 | 14:00 | 13:00 | 14:00 | 14:00 |
|              |           |    |     |    |     |     | 42    | 417   | 566   | 433   | 564             | 425   | 415   | 393   | 363   | 307   |

**NELSON & POPE**  
572 Walt Whitman Road  
Melville NY, 11747  
631 427 5665

Site Code:  
Station ID:  
NYS 25 east of Howell St  
Latitude: 0' 0.000 Undefined

| Start Time | 20-May-13 |       |       |       |       |       | Weekday Average |    |    |    |    |    | Sat   |       |    | Sun |    |    |
|------------|-----------|-------|-------|-------|-------|-------|-----------------|----|----|----|----|----|-------|-------|----|-----|----|----|
|            | WB        | EB    | Tue   | Wed   | Thu   | Fri   | WB              | EB | WB | EB | WB | EB | WB    | EB    | WB | WB  | EB | EB |
| 12:00 AM   | 15        | 32    | 32    | 23    | 30    | *     | *               | *  | *  | *  | *  | *  | *     | *     | *  | *   | *  | *  |
| 01:00      | 11        | 16    | 16    | 11    | 19    | *     | *               | *  | *  | *  | *  | *  | *     | *     | *  | *   | *  | *  |
| 02:00      | 10        | 8     | 12    | 18    | 15    | *     | *               | *  | *  | *  | *  | *  | *     | *     | *  | *   | *  | *  |
| 03:00      | 10        | 11    | 17    | 15    | 9     | *     | *               | *  | *  | *  | *  | *  | *     | *     | *  | *   | *  | *  |
| 04:00      | 23        | 15    | 24    | 21    | 29    | *     | *               | *  | *  | *  | *  | *  | *     | *     | *  | *   | *  | *  |
| 05:00      | 86        | 68    | 85    | 66    | 59    | *     | *               | *  | *  | *  | *  | *  | *     | *     | *  | *   | *  | *  |
| 06:00      | 234       | 184   | 218   | 181   | 169   | *     | *               | *  | *  | *  | *  | *  | *     | *     | *  | *   | *  | *  |
| 07:00      | 297       | 281   | 278   | 300   | 237   | *     | *               | *  | *  | *  | *  | *  | *     | *     | *  | *   | *  | *  |
| 08:00      | 356       | 392   | 342   | 391   | 329   | *     | *               | *  | *  | *  | *  | *  | *     | *     | *  | *   | *  | *  |
| 09:00      | 390       | 405   | 367   | 365   | 343   | *     | *               | *  | *  | *  | *  | *  | *     | *     | *  | *   | *  | *  |
| 10:00      | 394       | 370   | 370   | 333   | 293   | *     | *               | *  | *  | *  | *  | *  | *     | *     | *  | *   | *  | *  |
| 11:00      | 446       | 382   | 407   | 337   | 316   | *     | *               | *  | *  | *  | *  | *  | *     | *     | *  | *   | *  | *  |
| 12:00 PM   | 389       | 372   | 433   | 392   | 305   | *     | *               | *  | *  | *  | *  | *  | *     | *     | *  | *   | *  | *  |
| 01:00      | 399       | 389   | 402   | 392   | 286   | *     | *               | *  | *  | *  | *  | *  | *     | *     | *  | *   | *  | *  |
| 02:00      | 409       | 378   | 422   | 356   | 265   | *     | *               | *  | *  | *  | *  | *  | *     | *     | *  | *   | *  | *  |
| 03:00      | 410       | 356   | 383   | 359   | 244   | *     | *               | *  | *  | *  | *  | *  | *     | *     | *  | *   | *  | *  |
| 04:00      | 536       | 398   | 440   | 331   | 251   | *     | *               | *  | *  | *  | *  | *  | *     | *     | *  | *   | *  | *  |
| 05:00      | 382       | 334   | 358   | 279   | 250   | *     | *               | *  | *  | *  | *  | *  | *     | *     | *  | *   | *  | *  |
| 06:00      | 298       | 276   | 304   | 257   | 226   | *     | *               | *  | *  | *  | *  | *  | *     | *     | *  | *   | *  | *  |
| 07:00      | 259       | 301   | 228   | 248   | 223   | *     | *               | *  | *  | *  | *  | *  | *     | *     | *  | *   | *  | *  |
| 08:00      | 210       | 238   | 194   | 214   | 167   | *     | *               | *  | *  | *  | *  | *  | *     | *     | *  | *   | *  | *  |
| 09:00      | 144       | 193   | 150   | 182   | 159   | *     | *               | *  | *  | *  | *  | *  | *     | *     | *  | *   | *  | *  |
| 10:00      | 78        | 94    | 80    | 112   | *     | *     | *               | *  | *  | *  | *  | *  | *     | *     | *  | *   | *  | *  |
| 11:00      | 50        | 52    | 48    | 55    | *     | *     | *               | *  | *  | *  | *  | *  | *     | *     | *  | *   | *  | *  |
| Total      | 5836      | 5545  | 5610  | 5249  | 4399  | 4210  | 0               | 0  | 0  | 0  | 0  | 0  | 0     | 0     | 0  | 0   | 0  | 0  |
| Day        | 11381     |       | 10859 |       | 8609  |       | 0               | 0  | 0  | 0  | 0  | 0  | 0     | 0     | 0  | 0   | 0  | 0  |
| AM Peak    | 11:00     | 09:00 | 11:00 | 08:00 | 09:00 | 08:00 |                 |    |    |    |    |    | 11:00 | 08:00 |    |     |    |    |
| Vol.       | 446       | 405   | 407   | 391   | 323   | 343   |                 |    |    |    |    |    | 390   | 371   |    |     |    |    |
| PM Peak    | 16:00     | 16:00 | 16:00 | 12:00 | 16:00 | 12:00 |                 |    |    |    |    |    | 16:00 | 12:00 |    |     |    |    |
| Vol.       | 536       | 398   | 440   | 392   | 336   | 305   |                 |    |    |    |    |    | 437   | 356   |    |     |    |    |

|             |            |       |             |       |       |       |       |      |
|-------------|------------|-------|-------------|-------|-------|-------|-------|------|
| Comb. Total | 11381      | 10859 | 8714        | 11691 | 12758 | 22575 | 10421 | 7764 |
| ADT         | ADT 10,812 |       | AADT 10,812 |       |       |       |       |      |



[illegible]

# NELSON & POPE

572 Walt Whitman Road  
Melville NY, 11747  
631 427 5665

Site Code:  
Station ID:  
Route 25 East of Sweezy Ave  
Latitude: 0' 0.000 Undefined

| Start Time | 20-May-13 |       | Tue   |       | Wed   |       | Thu |    | Fri |    | Weekday Average |       | Sat |    | Sun |    |
|------------|-----------|-------|-------|-------|-------|-------|-----|----|-----|----|-----------------|-------|-----|----|-----|----|
|            | WB        | EB    | WB    | EB    | WB    | EB    | WB  | EB | WB  | EB | WB              | EB    | WB  | EB | WB  | EB |
| 12:00 AM   | 24        | 28    | 29    | 42    | 34    | 37    | *   | *  | *   | *  | 29              | 36    | *   | *  | *   | *  |
| 01:00      | 13        | 20    | 14    | 20    | 12    | 21    | *   | *  | *   | *  | 13              | 20    | *   | *  | *   | *  |
| 02:00      | 14        | 21    | 18    | 29    | 18    | 22    | *   | *  | *   | *  | 17              | 24    | *   | *  | *   | *  |
| 03:00      | 9         | 22    | 20    | 30    | 11    | 22    | *   | *  | *   | *  | 13              | 25    | *   | *  | *   | *  |
| 04:00      | 24        | 29    | 28    | 20    | 32    | 23    | *   | *  | *   | *  | 28              | 24    | *   | *  | *   | *  |
| 05:00      | 96        | 123   | 98    | 135   | 96    | 153   | *   | *  | *   | *  | 97              | 137   | *   | *  | *   | *  |
| 06:00      | 240       | 355   | 242   | 365   | 249   | 354   | *   | *  | *   | *  | 244             | 358   | *   | *  | *   | *  |
| 07:00      | 347       | 389   | 363   | 420   | 351   | 442   | *   | *  | *   | *  | 354             | 417   | *   | *  | *   | *  |
| 08:00      | 385       | 483   | 362   | 506   | 375   | 508   | *   | *  | *   | *  | 374             | 499   | *   | *  | *   | *  |
| 09:00      | 453       | 506   | 469   | 539   | 472   | 563   | *   | *  | *   | *  | 465             | 536   | *   | *  | *   | *  |
| 10:00      | 543       | 489   | 524   | 522   | 497   | 455   | *   | *  | *   | *  | 521             | 482   | *   | *  | *   | *  |
| 11:00      | 613       | 496   | 592   | 469   | 639   | 447   | *   | *  | *   | *  | 615             | 471   | *   | *  | *   | *  |
| 12:00 PM   | 686       | 520   | 672   | 513   | 624   | 539   | *   | *  | *   | *  | 661             | 524   | *   | *  | *   | *  |
| 01:00      | 615       | 562   | 603   | 600   | 606   | 594   | *   | *  | *   | *  | 608             | 585   | *   | *  | *   | *  |
| 02:00      | 531       | 572   | 579   | 586   | 618   | 610   | *   | *  | *   | *  | 576             | 589   | *   | *  | *   | *  |
| 03:00      | 608       | 580   | 652   | 545   | 635   | 555   | *   | *  | *   | *  | 632             | 560   | *   | *  | *   | *  |
| 04:00      | 712       | 553   | 675   | 537   | 666   | 548   | *   | *  | *   | *  | 684             | 546   | *   | *  | *   | *  |
| 05:00      | 633       | 577   | 627   | 557   | 685   | 561   | *   | *  | *   | *  | 648             | 565   | *   | *  | *   | *  |
| 06:00      | 516       | 491   | 529   | 418   | 539   | 491   | *   | *  | *   | *  | 528             | 467   | *   | *  | *   | *  |
| 07:00      | 450       | 381   | 465   | 423   | 462   | 372   | *   | *  | *   | *  | 459             | 392   | *   | *  | *   | *  |
| 08:00      | 334       | 364   | 382   | 343   | 385   | 385   | *   | *  | *   | *  | 367             | 364   | *   | *  | *   | *  |
| 09:00      | 222       | 262   | 251   | 330   | 212   | 286   | *   | *  | *   | *  | 228             | 293   | *   | *  | *   | *  |
| 10:00      | 131       | 137   | 121   | 180   | 91    | 128   | *   | *  | *   | *  | 114             | 148   | *   | *  | *   | *  |
| 11:00      | 62        | 77    | 55    | 82    | *     | *     | *   | *  | *   | *  | 58              | 80    | *   | *  | *   | *  |
| Total      | 8261      | 8017  | 8370  | 8211  | 8309  | 8116  | 0   | 0  | 0   | 0  | 8333            | 8142  | 0   | 0  | 0   | 0  |
| Day        | 16278     |       | 16581 |       | 16425 |       | 0   | 0  | 0   | 0  | 16475           |       | 0   | 0  | 0   | 0  |
| AM Peak    | 11:00     | 09:00 | 11:00 | 09:00 | 11:00 | 09:00 |     |    |     |    | 11:00           | 09:00 |     |    |     |    |
| Vol.       | 613       | 506   | 592   | 539   | 639   | 563   |     |    |     |    | 615             | 536   |     |    |     |    |
| PM Peak    | 16:00     | 15:00 | 16:00 | 13:00 | 17:00 | 14:00 |     |    |     |    | 16:00           | 14:00 |     |    |     |    |
| Vol.       | 712       | 580   | 675   | 600   | 685   | 610   |     |    |     |    | 684             | 589   |     |    |     |    |

|             |            |       |            |       |            |       |            |       |
|-------------|------------|-------|------------|-------|------------|-------|------------|-------|
| Comb. Total | 16278      | 16581 | 16557      | 16442 | 17597      | 33473 | 16823      | 13749 |
| ADT         | ADT 16,295 |       | ADT 16,295 |       | ADT 16,295 |       | ADT 16,295 |       |

# NELSON & POPE

572 Walt Whitman Road  
Melville NY, 11747  
631 427 5665

Site Code:  
Station ID:  
NYS 25 west of Tanger Outlet Drive  
Latitude: 0' 0.000 Undefined

| Start Time | 13-May-13 |    | Tue |    | Wed |     | Thu   |       | Fri   |       | Weekday Average |       | Sat   |       | Sun   |       |
|------------|-----------|----|-----|----|-----|-----|-------|-------|-------|-------|-----------------|-------|-------|-------|-------|-------|
|            | EB        | WB | EB  | WB | EB  | WB  | EB    | WB    | EB    | WB    | EB              | WB    | EB    | WB    | EB    | WB    |
| 12:00 AM   | *         | *  | *   | *  | *   | *   | 30    | 11    | 27    | 14    | 28              | 12    | 35    | 39    | 41    | 40    |
| 01:00      | *         | *  | *   | *  | *   | *   | 11    | 10    | 17    | 11    | 14              | 10    | 24    | 28    | 23    | 29    |
| 02:00      | *         | *  | *   | *  | *   | *   | 16    | 10    | 15    | 6     | 16              | 8     | 20    | 10    | 18    | 10    |
| 03:00      | *         | *  | *   | *  | *   | *   | 12    | 12    | 13    | 16    | 12              | 14    | 13    | 17    | 18    | 21    |
| 04:00      | *         | *  | *   | *  | *   | *   | 26    | 17    | 27    | 21    | 26              | 19    | 28    | 26    | 17    | 16    |
| 05:00      | *         | *  | *   | *  | *   | *   | 66    | 42    | 63    | 45    | 64              | 44    | 41    | 26    | 23    | 16    |
| 06:00      | *         | *  | *   | *  | *   | *   | 141   | 105   | 130   | 83    | 136             | 94    | 102   | 66    | 56    | 36    |
| 07:00      | *         | *  | *   | *  | *   | *   | 251   | 150   | 219   | 133   | 235             | 142   | 137   | 107   | 84    | 65    |
| 08:00      | *         | *  | *   | *  | *   | *   | 349   | 147   | 280   | 96    | 314             | 122   | 197   | 98    | 138   | 68    |
| 09:00      | *         | *  | *   | *  | *   | *   | 389   | 180   | 262   | 110   | 326             | 145   | 209   | 132   | 243   | 119   |
| 10:00      | *         | *  | *   | *  | *   | *   | 318   | 205   | 252   | 155   | 285             | 180   | 398   | 218   | 350   | 162   |
| 11:00      | *         | *  | *   | *  | *   | *   | 364   | 234   | 230   | 186   | 297             | 210   | 548   | 220   | 444   | 202   |
| 12:00 PM   | *         | *  | *   | *  | *   | *   | 368   | 241   | 276   | 192   | 322             | 216   | 503   | 248   | 465   | 292   |
| 01:00      | *         | *  | *   | *  | *   | *   | 248   | 198   | 242   | 195   | 245             | 196   | 522   | 315   | 447   | 302   |
| 02:00      | *         | *  | *   | *  | *   | *   | 231   | 214   | 222   | 221   | 226             | 218   | 493   | 346   | 355   | 352   |
| 03:00      | *         | *  | *   | *  | *   | *   | 206   | 238   | 226   | 219   | 216             | 228   | 384   | 361   | 327   | 340   |
| 04:00      | *         | *  | *   | *  | *   | *   | 204   | 257   | 201   | 249   | 202             | 253   | 360   | 373   | 264   | 318   |
| 05:00      | *         | *  | *   | *  | *   | *   | 216   | 251   | 222   | 257   | 219             | 254   | 309   | 354   | 201   | 278   |
| 06:00      | *         | *  | *   | *  | *   | *   | 196   | 187   | 192   | 215   | 194             | 201   | 276   | 271   | 170   | 210   |
| 07:00      | *         | *  | *   | *  | *   | *   | 148   | 198   | 200   | 197   | 174             | 198   | 207   | 296   | 125   | 160   |
| 08:00      | *         | *  | *   | *  | *   | *   | 125   | 167   | 127   | 185   | 126             | 178   | 117   | 216   | 122   | 205   |
| 09:00      | *         | *  | *   | *  | *   | *   | 88    | 173   | 71    | 201   | 80              | 187   | 95    | 229   | 62    | 86    |
| 10:00      | *         | *  | *   | *  | *   | *   | 59    | 72    | 66    | 107   | 61              | 87    | 83    | 139   | 54    | 46    |
| 11:00      | *         | *  | *   | *  | *   | *   | 47    | 30    | 71    | 77    | 55              | 50    | 68    | 91    | 46    | 31    |
| Total      | 0         | 0  | 0   | 0  | 105 | 125 | 4709  | 3349  | 3651  | 3191  | 3873            | 3264  | 5169  | 4226  | 4093  | 3404  |
| Day        | 0         | 0  | 0   | 0  | 230 | 230 | 7458  | 6842  | 7137  | 9395  | 7497            |       |       |       |       |       |
| AM Peak    |           |    |     |    |     |     | 09:00 | 11:00 | 08:00 | 11:00 | 09:00           | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 |
| Vol.       |           |    |     |    |     |     | 389   | 234   | 280   | 186   | 326             | 210   | 548   | 220   | 444   | 202   |
| PM Peak    |           |    |     |    |     |     | 12:00 | 16:00 | 12:00 | 17:00 | 12:00           | 17:00 | 13:00 | 16:00 | 12:00 | 14:00 |
| Vol.       |           |    |     |    |     |     | 368   | 257   | 276   | 257   | 322             | 254   | 522   | 373   | 465   | 352   |

# NELSON & POPE

572 Walt Whitman Road  
Melville NY, 11747  
631 427 5665

Site Code:  
Station ID:  
NYS 25 west of Tanger Outlet Drive  
Latitude: 0' 0.000 Undefined

| Start Time | 20-May-13 |       | Tue   |       | Wed   |       | Thu |    | Fri |    | Weekday Average |       | Sat |    | Sun |    |
|------------|-----------|-------|-------|-------|-------|-------|-----|----|-----|----|-----------------|-------|-----|----|-----|----|
|            | EB        | WB    | EB    | WB    | EB    | WB    | EB  | WB | EB  | WB | EB              | WB    | EB  | WB | EB  | WB |
| 12:00 AM   | 26        | 16    | 33    | 11    | 32    | 15    | *   | *  | *   | *  | 30              | 14    | *   | *  | *   | *  |
| 01:00      | 21        | 10    | 16    | 5     | 15    | 10    | *   | *  | *   | *  | 17              | 8     | *   | *  | *   | *  |
| 02:00      | 12        | 10    | 15    | 13    | 15    | 10    | *   | *  | *   | *  | 14              | 11    | *   | *  | *   | *  |
| 03:00      | 16        | 9     | 14    | 18    | 11    | 15    | *   | *  | *   | *  | 14              | 14    | *   | *  | *   | *  |
| 04:00      | 24        | 14    | 25    | 25    | 21    | 17    | *   | *  | *   | *  | 23              | 19    | *   | *  | *   | *  |
| 05:00      | 65        | 48    | 84    | 59    | 70    | 55    | *   | *  | *   | *  | 66              | 54    | *   | *  | *   | *  |
| 06:00      | 151       | 100   | 146   | 101   | 156   | 100   | *   | *  | *   | *  | 151             | 100   | *   | *  | *   | *  |
| 07:00      | 234       | 173   | 265   | 146   | 261   | 155   | *   | *  | *   | *  | 253             | 158   | *   | *  | *   | *  |
| 08:00      | 394       | 161   | 350   | 145   | 369   | 126   | *   | *  | *   | *  | 371             | 144   | *   | *  | *   | *  |
| 09:00      | 358       | 129   | 387   | 158   | 381   | 160   | *   | *  | *   | *  | 375             | 149   | *   | *  | *   | *  |
| 10:00      | 352       | 199   | 354   | 194   | 329   | 205   | *   | *  | *   | *  | 345             | 199   | *   | *  | *   | *  |
| 11:00      | 303       | 233   | 311   | 253   | 341   | 276   | *   | *  | *   | *  | 318             | 254   | *   | *  | *   | *  |
| 12:00 PM   | 342       | 276   | 335   | 283   | 364   | 254   | *   | *  | *   | *  | 347             | 271   | *   | *  | *   | *  |
| 01:00      | 280       | 256   | 353   | 283   | 331   | 266   | *   | *  | *   | *  | 321             | 268   | *   | *  | *   | *  |
| 02:00      | 295       | 279   | 307   | 286   | 316   | 314   | *   | *  | *   | *  | 306             | 293   | *   | *  | *   | *  |
| 03:00      | 302       | 316   | 297   | 340   | 326   | 318   | *   | *  | *   | *  | 308             | 325   | *   | *  | *   | *  |
| 04:00      | 301       | 359   | 301   | 384   | 307   | 383   | *   | *  | *   | *  | 303             | 375   | *   | *  | *   | *  |
| 05:00      | 304       | 379   | 294   | 346   | 322   | 379   | *   | *  | *   | *  | 307             | 366   | *   | *  | *   | *  |
| 06:00      | 227       | 235   | 237   | 227   | 219   | 237   | *   | *  | *   | *  | 228             | 233   | *   | *  | *   | *  |
| 07:00      | 176       | 204   | 180   | 242   | 191   | 195   | *   | *  | *   | *  | 182             | 214   | *   | *  | *   | *  |
| 08:00      | 130       | 153   | 138   | 182   | 135   | 197   | *   | *  | *   | *  | 134             | 177   | *   | *  | *   | *  |
| 09:00      | 79        | 195   | 96    | 188   | 70    | 202   | *   | *  | *   | *  | 82              | 195   | *   | *  | *   | *  |
| 10:00      | 40        | 69    | 74    | 91    | 49    | 77    | *   | *  | *   | *  | 54              | 79    | *   | *  | *   | *  |
| 11:00      | 38        | 37    | 52    | 31    | *     | *     | *   | *  | *   | *  | 45              | 34    | *   | *  | *   | *  |
| Total      | 4470      | 3860  | 4644  | 4011  | 4631  | 3986  | 0   | 0  | 0   | 0  | 4594            | 3956  | 0   | 0  | 0   | 0  |
| Day        | 8330      |       | 8655  |       | 8597  |       | 0   | 0  | 0   | 0  | 8550            |       | 0   | 0  | 0   | 0  |
| AM Peak    | 08:00     | 11:00 | 09:00 | 11:00 | 09:00 | 11:00 |     |    |     |    | 09:00           | 11:00 |     |    |     |    |
| Vol.       | 394       | 233   | 387   | 253   | 381   | 276   |     |    |     |    | 375             | 294   |     |    |     |    |
| PM Peak    | 12:00     | 17:00 | 13:00 | 16:00 | 12:00 | 16:00 |     |    |     |    | 12:00           | 16:00 |     |    |     |    |
| Vol.       | 342       | 379   | 353   | 384   | 364   | 383   |     |    |     |    | 347             | 375   |     |    |     |    |

|             |           |      |           |      |            |       |      |      |
|-------------|-----------|------|-----------|------|------------|-------|------|------|
| Comb. Total | 8330      | 8655 | 8827      | 7458 | 6842       | 15687 | 9395 | 7497 |
| ADT         | ADT 8,030 |      | ADT 8,030 |      | AADT 8,030 |       |      |      |



## **Appendix B: Trip Generation**

Detailed Average Rate Trip Calculations  
For 3 Dwelling Units of Apartments(220) - [E]

Project: Riverhead BOA - Vacant Eastern parcels  
Phase:

Open Date:  
Analysis Date:

Description: Apartments

|                            | Average<br>Rate | Standard<br>Deviation | Adjustment<br>Factor | Driveway<br>Volume |
|----------------------------|-----------------|-----------------------|----------------------|--------------------|
| Avg. Weekday 2-Way Volume  | 47.25           | 0.00                  | 1.00                 | 142                |
| 7-9 AM Peak Hour Enter     | 0.35            | 0.00                  | 1.00                 | 1                  |
| 7-9 AM Peak Hour Exit      | 1.39            | 0.00                  | 1.00                 | 4                  |
| 7-9 AM Peak Hour Total     | 1.73            | 0.00                  | 1.00                 | 5                  |
| 4-6 PM Peak Hour Enter     | 4.18            | 0.00                  | 1.00                 | 13                 |
| 4-6 PM Peak Hour Exit      | 2.25            | 0.00                  | 1.00                 | 6                  |
| 4-6 PM Peak Hour Total     | 6.43            | 0.00                  | 1.00                 | 19                 |
| AM Pk Hr, Generator, Enter | 0.39            | 0.00                  | 1.00                 | 1                  |
| AM Pk Hr, Generator, Exit  | 0.96            | 0.00                  | 1.00                 | 3                  |
| AM Pk Hr, Generator, Total | 1.36            | 0.00                  | 1.00                 | 4                  |
| PM Pk Hr, Generator, Enter | 3.40            | 0.00                  | 1.00                 | 10                 |
| PM Pk Hr, Generator, Exit  | 2.17            | 0.00                  | 1.00                 | 7                  |
| PM Pk Hr, Generator, Total | 5.57            | 0.00                  | 1.00                 | 17                 |
| Saturday 2-Way Volume      | -77.55          | 0.00                  | 1.00                 | -233               |
| Saturday Peak Hour Enter   | 0.00            | 0.00                  | 1.00                 | 0                  |
| Saturday Peak Hour Exit    | 0.00            | 0.00                  | 1.00                 | 0                  |
| Saturday Peak Hour Total   | 6.82            | 0.00                  | 1.00                 | 20                 |
| Sunday 2-Way Volume        | -27.29          | 0.00                  | 1.00                 | -82                |
| Sunday Peak Hour Enter     | 0.00            | 0.00                  | 1.00                 | 0                  |
| Sunday Peak Hour Exit      | 0.00            | 0.00                  | 1.00                 | 0                  |
| Sunday Peak Hour Total     | 0.00            | 0.00                  | 1.00                 | 0                  |

The above rates were calculated from these equations:

24-Hr. 2-Way Volume:  $T = 6.06(X) + 123.56, R^2 = 0.87$   
 7-9 AM Peak Hr. Total:  $T = .49(X) + 3.73$   
 $R^2 = 0.83, 0.2 \text{ Enter}, 0.8 \text{ Exit}$   
 4-6 PM Peak Hr. Total:  $T = .55(X) + 17.65$   
 $R^2 = 0.77, 0.65 \text{ Enter}, 0.35 \text{ Exit}$   
 AM Gen Pk Hr. Total:  $T = .54(X) + 2.45$   
 $R^2 = 0.82, 0.29 \text{ Enter}, 0.71 \text{ Exit}$   
 PM Gen Pk Hr. Total:  $T = .6(X) + 14.91$   
 $R^2 = 0.8, 0.61 \text{ Enter}, 0.39 \text{ Exit}$   
 Sat. 2-Way Volume:  $T = 7.85(X) + -256.19, R^2 = 0.85$   
 Sat. Pk Hr. Total:  $T = .41(X) + 19.23$   
 $R^2 = 0.56, 0 \text{ Enter}, 0 \text{ Exit}$   
 Sun. 2-Way Volume:  $T = 6.42(X) + -101.12, R^2 = 0.82$   
 Sun. Pk Hr. Total:  $0$   
 $R^2 = 0, 0 \text{ Enter}, 0 \text{ Exit}$

Note: A zero indicates no data available.

Source: Institute of Transportation Engineers  
Trip Generation Manual, 9th Edition, 2012

Detailed Average Rate Trip Calculations  
For 3.929816 Th.Sq.Ft. GFA of Day Care Center(565) - [R]

Project: Riverhead BOA - Vacant parcels -  
Phase:

Open Date:  
Analysis Date:

Description: Day Care

---

|                            | Average<br>Rate | Standard<br>Deviation | Adjustment<br>Factor | Driveway<br>Volume |
|----------------------------|-----------------|-----------------------|----------------------|--------------------|
| <hr/>                      |                 |                       |                      |                    |
| Avg. Weekday 2-Way Volume  | 74.06           | 24.53                 | 1.00                 | 291                |
| 7-9 AM Peak Hour Enter     | 6.46            | 0.00                  | 1.00                 | 25                 |
| 7-9 AM Peak Hour Exit      | 5.72            | 0.00                  | 1.00                 | 23                 |
| 7-9 AM Peak Hour Total     | 12.18           | 6.40                  | 1.00                 | 48                 |
| 4-6 PM Peak Hour Enter     | 5.80            | 0.00                  | 1.00                 | 23                 |
| 4-6 PM Peak Hour Exit      | 6.54            | 0.00                  | 1.00                 | 25                 |
| 4-6 PM Peak Hour Total     | 12.34           | 6.93                  | 1.00                 | 48                 |
| AM Pk Hr, Generator, Enter | 7.12            | 0.00                  | 1.00                 | 28                 |
| AM Pk Hr, Generator, Exit  | 6.32            | 0.00                  | 1.00                 | 25                 |
| AM Pk Hr, Generator, Total | 13.44           | 7.17                  | 1.00                 | 53                 |
| PM Pk Hr, Generator, Enter | 6.46            | 0.00                  | 1.00                 | 25                 |
| PM Pk Hr, Generator, Exit  | 7.29            | 0.00                  | 1.00                 | 29                 |
| PM Pk Hr, Generator, Total | 13.75           | 7.45                  | 1.00                 | 54                 |
| Saturday 2-Way Volume      | 6.21            | 5.44                  | 1.00                 | 24                 |
| Saturday Peak Hour Enter   | 1.07            | 0.00                  | 1.00                 | 4                  |
| Saturday Peak Hour Exit    | 0.63            | 0.00                  | 1.00                 | 3                  |
| Saturday Peak Hour Total   | 1.70            | 1.78                  | 1.00                 | 7                  |
| Sunday 2-Way Volume        | 5.83            | 4.12                  | 1.00                 | 23                 |
| Sunday Peak Hour Enter     | 0.94            | 0.00                  | 1.00                 | 4                  |
| Sunday Peak Hour Exit      | 0.80            | 0.00                  | 1.00                 | 3                  |
| Sunday Peak Hour Total     | 1.74            | 1.30                  | 1.00                 | 7                  |

---

Note: A zero indicates no data available.

Source: Institute of Transportation Engineers  
Trip Generation Manual, 9th Edition, 2012

TRIP GENERATION 2013, TRAFFICWARE, LLC

Detailed Average Rate Trip Calculations  
For 7.61296 Th.Sq.Ft. GFA of General Office Building(710) - [R]

Project: Riverhead BOA - Vacant parcels -  
Phase:

Open Date:  
Analysis Date:

Description: Office

---

|                            | Average<br>Rate | Standard<br>Deviation | Adjustment<br>Factor | Driveway<br>Volume |
|----------------------------|-----------------|-----------------------|----------------------|--------------------|
| <hr/>                      |                 |                       |                      |                    |
| Avg. Weekday 2-Way Volume  | 11.03           | 6.15                  | 1.00                 | 84                 |
| 7-9 AM Peak Hour Enter     | 1.37            | 0.00                  | 1.00                 | 10                 |
| 7-9 AM Peak Hour Exit      | 0.19            | 0.00                  | 1.00                 | 2                  |
| 7-9 AM Peak Hour Total     | 1.56            | 1.40                  | 1.00                 | 12                 |
| 4-6 PM Peak Hour Enter     | 0.25            | 0.00                  | 1.00                 | 2                  |
| 4-6 PM Peak Hour Exit      | 1.24            | 0.00                  | 1.00                 | 9                  |
| 4-6 PM Peak Hour Total     | 1.49            | 1.37                  | 1.00                 | 11                 |
| AM Pk Hr, Generator, Enter | 1.37            | 0.00                  | 1.00                 | 10                 |
| AM Pk Hr, Generator, Exit  | 0.19            | 0.00                  | 1.00                 | 2                  |
| AM Pk Hr, Generator, Total | 1.56            | 1.40                  | 1.00                 | 12                 |
| PM Pk Hr, Generator, Enter | 0.25            | 0.00                  | 1.00                 | 2                  |
| PM Pk Hr, Generator, Exit  | 1.24            | 0.00                  | 1.00                 | 9                  |
| PM Pk Hr, Generator, Total | 1.49            | 1.37                  | 1.00                 | 11                 |
| Saturday 2-Way Volume      | 2.46            | 2.21                  | 1.00                 | 19                 |
| Saturday Peak Hour Enter   | 0.23            | 0.00                  | 1.00                 | 2                  |
| Saturday Peak Hour Exit    | 0.20            | 0.00                  | 1.00                 | 1                  |
| Saturday Peak Hour Total   | 0.43            | 0.72                  | 1.00                 | 3                  |
| Sunday 2-Way Volume        | 1.05            | 1.43                  | 1.00                 | 8                  |
| Sunday Peak Hour Enter     | 0.09            | 0.00                  | 1.00                 | 1                  |
| Sunday Peak Hour Exit      | 0.07            | 0.00                  | 1.00                 | 0                  |
| Sunday Peak Hour Total     | 0.16            | 0.44                  | 1.00                 | 1                  |

---

Note: A zero indicates no data available.

Source: Institute of Transportation Engineers  
Trip Generation Manual, 9th Edition, 2012

TRIP GENERATION 2013, TRAFFICWARE, LLC



Detailed Average Rate Trip Calculations  
For 26.188 Th.Sq.Ft. GFA of Health/Fitness Club(492) - [R]

Project: Appolo  
Phase:

Open Date:  
Analysis Date:

Description:

---

|                            | Average<br>Rate | Standard<br>Deviation | Adjustment<br>Factor | Driveway<br>Volume |
|----------------------------|-----------------|-----------------------|----------------------|--------------------|
| <hr/>                      |                 |                       |                      |                    |
| Avg. Weekday 2-Way Volume  | 32.93           | 0.00                  | 1.00                 | 862                |
| 7-9 AM Peak Hour Enter     | 0.71            | 0.00                  | 1.00                 | 19                 |
| 7-9 AM Peak Hour Exit      | 0.71            | 0.00                  | 1.00                 | 18                 |
| 7-9 AM Peak Hour Total     | 1.41            | 1.31                  | 1.00                 | 37                 |
| 4-6 PM Peak Hour Enter     | 2.01            | 0.00                  | 1.00                 | 53                 |
| 4-6 PM Peak Hour Exit      | 1.52            | 0.00                  | 1.00                 | 39                 |
| 4-6 PM Peak Hour Total     | 3.53            | 2.00                  | 1.00                 | 92                 |
| AM Pk Hr, Generator, Enter | 0.67            | 0.00                  | 1.00                 | 18                 |
| AM Pk Hr, Generator, Exit  | 0.76            | 0.00                  | 1.00                 | 19                 |
| AM Pk Hr, Generator, Total | 1.43            | 1.42                  | 1.00                 | 37                 |
| PM Pk Hr, Generator, Enter | 2.07            | 0.00                  | 1.00                 | 54                 |
| PM Pk Hr, Generator, Exit  | 1.99            | 0.00                  | 1.00                 | 52                 |
| PM Pk Hr, Generator, Total | 4.06            | 2.02                  | 1.00                 | 106                |
| Saturday 2-Way Volume      | 20.87           | 0.00                  | 1.00                 | 547                |
| Saturday Peak Hour Enter   | 1.25            | 0.00                  | 1.00                 | 33                 |
| Saturday Peak Hour Exit    | 1.53            | 0.00                  | 1.00                 | 40                 |
| Saturday Peak Hour Total   | 2.78            | 0.00                  | 1.00                 | 73                 |
| Sunday 2-Way Volume        | 26.73           | 0.00                  | 1.00                 | 700                |
| Sunday Peak Hour Enter     | 0.00            | 0.00                  | 1.00                 | 0                  |
| Sunday Peak Hour Exit      | 0.00            | 0.00                  | 1.00                 | 0                  |
| Sunday Peak Hour Total     | 2.47            | 0.00                  | 1.00                 | 65                 |

---

Note: A zero indicates no data available.  
Source: Institute of Transportation Engineers  
Trip Generation Manual, 9th Edition, 2012

TRIP GENERATION 2013, TRAFFICWARE, LLC

Detailed Average Rate Trip Calculations  
For 19 Dwelling Units of Apartments(220) - [E]

Project: Appolo  
Phase:

Open Date:  
Analysis Date:

Description:

|                            | Average<br>Rate | Standard<br>Deviation | Adjustment<br>Factor | Driveway<br>Volume |
|----------------------------|-----------------|-----------------------|----------------------|--------------------|
| Avg. Weekday 2-Way Volume  | 12.56           | 0.00                  | 1.00                 | 239                |
| 7-9 AM Peak Hour Enter     | 0.14            | 0.00                  | 1.00                 | 3                  |
| 7-9 AM Peak Hour Exit      | 0.55            | 0.00                  | 1.00                 | 10                 |
| 7-9 AM Peak Hour Total     | 0.69            | 0.00                  | 1.00                 | 13                 |
| 4-6 PM Peak Hour Enter     | 0.96            | 0.00                  | 1.00                 | 18                 |
| 4-6 PM Peak Hour Exit      | 0.52            | 0.00                  | 1.00                 | 10                 |
| 4-6 PM Peak Hour Total     | 1.48            | 0.00                  | 1.00                 | 28                 |
| AM Pk Hr, Generator, Enter | 0.19            | 0.00                  | 1.00                 | 4                  |
| AM Pk Hr, Generator, Exit  | 0.47            | 0.00                  | 1.00                 | 9                  |
| AM Pk Hr, Generator, Total | 0.67            | 0.00                  | 1.00                 | 13                 |
| PM Pk Hr, Generator, Enter | 0.84            | 0.00                  | 1.00                 | 16                 |
| PM Pk Hr, Generator, Exit  | 0.54            | 0.00                  | 1.00                 | 10                 |
| PM Pk Hr, Generator, Total | 1.38            | 0.00                  | 1.00                 | 26                 |
| Saturday 2-Way Volume      | -5.63           | 0.00                  | 1.00                 | -107               |
| Saturday Peak Hour Enter   | 0.00            | 0.00                  | 1.00                 | 0                  |
| Saturday Peak Hour Exit    | 0.00            | 0.00                  | 1.00                 | 0                  |
| Saturday Peak Hour Total   | 1.42            | 0.00                  | 1.00                 | 27                 |
| Sunday 2-Way Volume        | 1.10            | 0.00                  | 1.00                 | 21                 |
| Sunday Peak Hour Enter     | 0.00            | 0.00                  | 1.00                 | 0                  |
| Sunday Peak Hour Exit      | 0.00            | 0.00                  | 1.00                 | 0                  |
| Sunday Peak Hour Total     | 0.00            | 0.00                  | 1.00                 | 0                  |

The above rates were calculated from these equations:

24-Hr. 2-Way Volume:  $T = 6.06(X) + 123.56, R^2 = 0.87$   
7-9 AM Peak Hr. Total:  $T = .49(X) + 3.73$   
 $R^2 = 0.83, 0.2 \text{ Enter, } 0.8 \text{ Exit}$   
4-6 PM Peak Hr. Total:  $T = .55(X) + 17.65$   
 $R^2 = 0.77, 0.65 \text{ Enter, } 0.35 \text{ Exit}$   
AM Gen Pk Hr. Total:  $T = .54(X) + 2.45$   
 $R^2 = 0.82, 0.29 \text{ Enter, } 0.71 \text{ Exit}$   
PM Gen Pk Hr. Total:  $T = .6(X) + 14.91$   
 $R^2 = 0.8, 0.61 \text{ Enter, } 0.39 \text{ Exit}$   
Sat. 2-Way Volume:  $T = 7.85(X) + -256.19, R^2 = 0.85$   
Sat. Pk Hr. Total:  $T = .41(X) + 19.23$   
 $R^2 = 0.56, 0 \text{ Enter, } 0 \text{ Exit}$   
Sun. 2-Way Volume:  $T = 6.42(X) + -101.12, R^2 = 0.82$   
Sun. Pk Hr. Total:  $0$   
 $R^2 = 0, 0 \text{ Enter, } 0 \text{ Exit}$

Note: A zero indicates no data available.

Source: Institute of Transportation Engineers  
Trip Generation Manual, 9th Edition, 2012

Detailed Average Rate Trip Calculations  
For 6.39183 Th.Sq.Ft. GFA of Furniture Store(890) - [R]

Project: Appolo  
Phase:

Open Date:  
Analysis Date:

Description:

|                            | Average<br>Rate | Standard<br>Deviation | Adjustment<br>Factor | Driveway<br>Volume |
|----------------------------|-----------------|-----------------------|----------------------|--------------------|
| Avg. Weekday 2-Way Volume  | 5.06            | 4.38                  | 1.00                 | 32                 |
| 7-9 AM Peak Hour Enter     | 0.12            | 0.00                  | 1.00                 | 1                  |
| 7-9 AM Peak Hour Exit      | 0.05            | 0.00                  | 1.00                 | 0                  |
| 7-9 AM Peak Hour Total     | 0.17            | 0.44                  | 1.00                 | 1                  |
| 4-6 PM Peak Hour Enter     | 0.22            | 0.00                  | 1.00                 | 1                  |
| 4-6 PM Peak Hour Exit      | 0.23            | 0.00                  | 1.00                 | 2                  |
| 4-6 PM Peak Hour Total     | 0.45            | 0.74                  | 1.00                 | 3                  |
| AM Pk Hr, Generator, Enter | 0.25            | 0.00                  | 1.00                 | 2                  |
| AM Pk Hr, Generator, Exit  | 0.15            | 0.00                  | 1.00                 | 1                  |
| AM Pk Hr, Generator, Total | 0.40            | 0.68                  | 1.00                 | 3                  |
| PM Pk Hr, Generator, Enter | 0.27            | 0.00                  | 1.00                 | 2                  |
| PM Pk Hr, Generator, Exit  | 0.27            | 0.00                  | 1.00                 | 1                  |
| PM Pk Hr, Generator, Total | 0.53            | 0.81                  | 1.00                 | 3                  |
| Saturday 2-Way Volume      | 4.94            | 4.26                  | 1.00                 | 32                 |
| Saturday Peak Hour Enter   | 0.51            | 0.00                  | 1.00                 | 3                  |
| Saturday Peak Hour Exit    | 0.44            | 0.00                  | 1.00                 | 3                  |
| Saturday Peak Hour Total   | 0.95            | 1.13                  | 1.00                 | 6                  |
| Sunday 2-Way Volume        | 4.64            | 4.28                  | 1.00                 | 30                 |
| Sunday Peak Hour Enter     | 0.00            | 0.00                  | 1.00                 | 0                  |
| Sunday Peak Hour Exit      | 0.00            | 0.00                  | 1.00                 | 0                  |
| Sunday Peak Hour Total     | 0.92            | 1.18                  | 1.00                 | 6                  |

Note: A zero indicates no data available.

Source: Institute of Transportation Engineers  
Trip Generation Manual, 9th Edition, 2012

TRIP GENERATION 2013, TRAFFICWARE, LLC

Detailed Average Rate Trip Calculations  
For 9 Dwelling Units of Apartments(220) - [E]

Project: Riverhead BOA - Vacant Central parcels  
Phase:

Open Date:  
Analysis Date:

Description: Residential

|                            | Average<br>Rate | Standard<br>Deviation | Adjustment<br>Factor | Driveway<br>Volume |
|----------------------------|-----------------|-----------------------|----------------------|--------------------|
| Avg. Weekday 2-Way Volume  | 19.79           | 0.00                  | 1.00                 | 178                |
| 7-9 AM Peak Hour Enter     | 0.18            | 0.00                  | 1.00                 | 2                  |
| 7-9 AM Peak Hour Exit      | 0.72            | 0.00                  | 1.00                 | 6                  |
| 7-9 AM Peak Hour Total     | 0.90            | 0.00                  | 1.00                 | 8                  |
| 4-6 PM Peak Hour Enter     | 1.63            | 0.00                  | 1.00                 | 15                 |
| 4-6 PM Peak Hour Exit      | 0.88            | 0.00                  | 1.00                 | 8                  |
| 4-6 PM Peak Hour Total     | 2.51            | 0.00                  | 1.00                 | 23                 |
| AM Pk Hr, Generator, Enter | 0.24            | 0.00                  | 1.00                 | 2                  |
| AM Pk Hr, Generator, Exit  | 0.58            | 0.00                  | 1.00                 | 5                  |
| AM Pk Hr, Generator, Total | 0.81            | 0.00                  | 1.00                 | 7                  |
| PM Pk Hr, Generator, Enter | 1.38            | 0.00                  | 1.00                 | 12                 |
| PM Pk Hr, Generator, Exit  | 0.88            | 0.00                  | 1.00                 | 8                  |
| PM Pk Hr, Generator, Total | 2.26            | 0.00                  | 1.00                 | 20                 |
| Saturday 2-Way Volume      | -20.62          | 0.00                  | 1.00                 | -186               |
| Saturday Peak Hour Enter   | 0.00            | 0.00                  | 1.00                 | 0                  |
| Saturday Peak Hour Exit    | 0.00            | 0.00                  | 1.00                 | 0                  |
| Saturday Peak Hour Total   | 2.55            | 0.00                  | 1.00                 | 23                 |
| Sunday 2-Way Volume        | -4.82           | 0.00                  | 1.00                 | -43                |
| Sunday Peak Hour Enter     | 0.00            | 0.00                  | 1.00                 | 0                  |
| Sunday Peak Hour Exit      | 0.00            | 0.00                  | 1.00                 | 0                  |
| Sunday Peak Hour Total     | 0.00            | 0.00                  | 1.00                 | 0                  |

The above rates were calculated from these equations:

24-Hr. 2-Way Volume:  $T = 6.06(X) + 123.56$ ,  $R^2 = 0.87$   
7-9 AM Peak Hr. Total:  $T = .49(X) + 3.73$   
 $R^2 = 0.83$ , 0.2 Enter, 0.8 Exit  
4-6 PM Peak Hr. Total:  $T = .55(X) + 17.65$   
 $R^2 = 0.77$ , 0.65 Enter, 0.35 Exit  
AM Gen Pk Hr. Total:  $T = .54(X) + 2.45$   
 $R^2 = 0.82$ , 0.29 Enter, 0.71 Exit  
PM Gen Pk Hr. Total:  $T = .6(X) + 14.91$   
 $R^2 = 0.8$ , 0.61 Enter, 0.39 Exit  
Sat. 2-Way Volume:  $T = 7.85(X) + -256.19$ ,  $R^2 = 0.85$   
Sat. Pk Hr. Total:  $T = .41(X) + 19.23$   
 $R^2 = 0.56$ , 0 Enter, 0 Exit  
Sun. 2-Way Volume:  $T = 6.42(X) + -101.12$ ,  $R^2 = 0.82$   
Sun. Pk Hr. Total: 0  
 $R^2 = 0$ , 0 Enter, 0 Exit

Note: A zero indicates no data available.

Source: Institute of Transportation Engineers  
Trip Generation Manual, 9th Edition, 2012



Detailed Average Rate Trip Calculations  
For 6 Dwelling Units of Apartments(220) - [E]

Project: Riverhead BOA - Vacant Western parcels  
Phase:

Open Date:  
Analysis Date:

Description: residential

|                            | Average<br>Rate | Standard<br>Deviation | Adjustment<br>Factor | Driveway<br>Volume |
|----------------------------|-----------------|-----------------------|----------------------|--------------------|
| Avg. Weekday 2-Way Volume  | 26.65           | 0.00                  | 1.00                 | 160                |
| 7-9 AM Peak Hour Enter     | 0.22            | 0.00                  | 1.00                 | 1                  |
| 7-9 AM Peak Hour Exit      | 0.89            | 0.00                  | 1.00                 | 6                  |
| 7-9 AM Peak Hour Total     | 1.11            | 0.00                  | 1.00                 | 7                  |
| 4-6 PM Peak Hour Enter     | 2.27            | 0.00                  | 1.00                 | 14                 |
| 4-6 PM Peak Hour Exit      | 1.22            | 0.00                  | 1.00                 | 7                  |
| 4-6 PM Peak Hour Total     | 3.49            | 0.00                  | 1.00                 | 21                 |
| AM Pk Hr, Generator, Enter | 0.28            | 0.00                  | 1.00                 | 2                  |
| AM Pk Hr, Generator, Exit  | 0.67            | 0.00                  | 1.00                 | 4                  |
| AM Pk Hr, Generator, Total | 0.95            | 0.00                  | 1.00                 | 6                  |
| PM Pk Hr, Generator, Enter | 1.88            | 0.00                  | 1.00                 | 11                 |
| PM Pk Hr, Generator, Exit  | 1.20            | 0.00                  | 1.00                 | 8                  |
| PM Pk Hr, Generator, Total | 3.08            | 0.00                  | 1.00                 | 19                 |
| Saturday 2-Way Volume      | -34.85          | 0.00                  | 1.00                 | -209               |
| Saturday Peak Hour Enter   | 0.00            | 0.00                  | 1.00                 | 0                  |
| Saturday Peak Hour Exit    | 0.00            | 0.00                  | 1.00                 | 0                  |
| Saturday Peak Hour Total   | 3.61            | 0.00                  | 1.00                 | 22                 |
| Sunday 2-Way Volume        | -10.43          | 0.00                  | 1.00                 | -63                |
| Sunday Peak Hour Enter     | 0.00            | 0.00                  | 1.00                 | 0                  |
| Sunday Peak Hour Exit      | 0.00            | 0.00                  | 1.00                 | 0                  |
| Sunday Peak Hour Total     | 0.00            | 0.00                  | 1.00                 | 0                  |

The above rates were calculated from these equations:

24-Hr. 2-Way Volume:  $T = 6.06(X) + 123.56, R^2 = 0.87$   
 7-9 AM Peak Hr. Total:  $T = .49(X) + 3.73$   
 $R^2 = 0.83, 0.2 \text{ Enter}, 0.8 \text{ Exit}$   
 4-6 PM Peak Hr. Total:  $T = .55(X) + 17.65$   
 $R^2 = 0.77, 0.65 \text{ Enter}, 0.35 \text{ Exit}$   
 AM Gen Pk Hr. Total:  $T = .54(X) + 2.45$   
 $R^2 = 0.82, 0.29 \text{ Enter}, 0.71 \text{ Exit}$   
 PM Gen Pk Hr. Total:  $T = .6(X) + 14.91$   
 $R^2 = 0.8, 0.61 \text{ Enter}, 0.39 \text{ Exit}$   
 Sat. 2-Way Volume:  $T = 7.85(X) + -256.19, R^2 = 0.85$   
 Sat. Pk Hr. Total:  $T = .41(X) + 19.23$   
 $R^2 = 0.56, 0 \text{ Enter}, 0 \text{ Exit}$   
 Sun. 2-Way Volume:  $T = 6.42(X) + -101.12, R^2 = 0.82$   
 Sun. Pk Hr. Total:  $0$   
 $R^2 = 0, 0 \text{ Enter}, 0 \text{ Exit}$

Note: A zero indicates no data available.

Source: Institute of Transportation Engineers  
Trip Generation Manual, 9th Edition, 2012

Detailed Average Rate Trip Calculations  
For 3.948184 Th.Sq.Ft. GFA of Medical-Dental Office Building(720) - [R]

Project: Riverhead BOA - Vacant Western parcels  
Phase:

Open Date:  
Analysis Date:

Description: Medical Office

|                            | Average<br>Rate | Standard<br>Deviation | Adjustment<br>Factor | Driveway<br>Volume |
|----------------------------|-----------------|-----------------------|----------------------|--------------------|
| Avg. Weekday 2-Way Volume  | 36.13           | 10.18                 | 1.00                 | 143                |
| 7-9 AM Peak Hour Enter     | 1.89            | 0.00                  | 1.00                 | 7                  |
| 7-9 AM Peak Hour Exit      | 0.50            | 0.00                  | 1.00                 | 2                  |
| 7-9 AM Peak Hour Total     | 2.39            | 1.89                  | 1.00                 | 9                  |
| 4-6 PM Peak Hour Enter     | 1.00            | 0.00                  | 1.00                 | 4                  |
| 4-6 PM Peak Hour Exit      | 2.57            | 0.00                  | 1.00                 | 10                 |
| 4-6 PM Peak Hour Total     | 3.57            | 2.47                  | 1.00                 | 14                 |
| AM Pk Hr, Generator, Enter | 2.35            | 0.00                  | 1.00                 | 9                  |
| AM Pk Hr, Generator, Exit  | 1.15            | 0.00                  | 1.00                 | 5                  |
| AM Pk Hr, Generator, Total | 3.50            | 2.35                  | 1.00                 | 14                 |
| PM Pk Hr, Generator, Enter | 1.67            | 0.00                  | 1.00                 | 7                  |
| PM Pk Hr, Generator, Exit  | 2.60            | 0.00                  | 1.00                 | 10                 |
| PM Pk Hr, Generator, Total | 4.27            | 2.50                  | 1.00                 | 17                 |
| Saturday 2-Way Volume      | 8.96            | 9.17                  | 1.00                 | 35                 |
| Saturday Peak Hour Enter   | 2.07            | 0.00                  | 1.00                 | 8                  |
| Saturday Peak Hour Exit    | 1.56            | 0.00                  | 1.00                 | 6                  |
| Saturday Peak Hour Total   | 3.63            | 1.93                  | 1.00                 | 14                 |
| Sunday 2-Way Volume        | 1.55            | 1.80                  | 1.00                 | 6                  |
| Sunday Peak Hour Enter     | 0.21            | 0.00                  | 1.00                 | 1                  |
| Sunday Peak Hour Exit      | 0.19            | 0.00                  | 1.00                 | 1                  |
| Sunday Peak Hour Total     | 0.40            | 0.00                  | 1.00                 | 2                  |

Note: A zero indicates no data available.

Source: Institute of Transportation Engineers  
Trip Generation Manual, 9th Edition, 2012

TRIP GENERATION 2013, TRAFFICWARE, LLC

Summary of Multi-Use Trip Generation  
Average Weekday Driveway Volumes (Unadjusted for Internal Trips)

Project: Riverhead BOA - Vacant Western parcels  
Phase:

Open Date:  
Analysis Date:

Description: Medical Office

---

| ITE:Land Use                                                      | 24 Hour<br>Two-Way<br>Volume | AM Pk Hour |      | PM Pk Hour |      |
|-------------------------------------------------------------------|------------------------------|------------|------|------------|------|
|                                                                   |                              | Enter      | Exit | Enter      | Exit |
| 720: Medical-Dental Office Building<br>3.948184 Th.Sq.Ft. GFA [R] | 143                          | 7          | 2    | 4          | 10   |
| 220: Apartments<br>6 Dwelling Units [E]                           | 160                          | 1          | 6    | 14         | 7    |
| <hr/>                                                             |                              |            |      |            |      |
| Total Driveway Volume                                             | 303                          | 8          | 8    | 18         | 17   |
| Total Peak Hour Pass-By Trips                                     |                              | 0          | 0    | 0          | 0    |
| Total Peak Hour Vol. Added to Adjacent Streets                    |                              | 8          | 8    | 18         | 17   |

---

Note: A zero indicates no data available.  
Source: Institute of Transportation Engineers  
Trip Generation Manual, 9th Edition, 2012

TRIP GENERATION 2013, TRAFFICWARE, LLC

Summary of Multi-Use Trip Generation  
Saturday and Sunday Driveway Volumes (Unadjusted for Internal Trips)

Project: Riverhead BOA - Vacant Western parcels  
Phase:

Open Date:  
Analysis Date:

Description: Medical Office

| ITE:Land Use                                                      | Saturday               |                    |                   | Sunday                 |                    |                   |
|-------------------------------------------------------------------|------------------------|--------------------|-------------------|------------------------|--------------------|-------------------|
|                                                                   | 24 Hr<br>2-Way<br>Vol. | Peak Hour<br>Enter | Peak Hour<br>Exit | 24 Hr<br>2-Way<br>Vol. | Peak Hour<br>Enter | Peak Hour<br>Exit |
| 720: Medical-Dental Office Building<br>3.948184 Th.Sq.Ft. GFA [R] | 35                     | 8                  | 6                 | 6                      | 1                  | 1                 |
| 220: Apartments<br>6 Dwelling Units [E]                           | -209                   | 0                  | 0                 | -63                    | 0                  | 0                 |
| Total Driveway Volume                                             | -174                   | 8                  | 6                 | -57                    | 1                  | 1                 |
| Total Peak Hour Pass-By Trips                                     |                        | 0                  | 0                 |                        | 0                  | 0                 |
| Total Pk Hr Vol Added to Adjacent Streets                         |                        | 8                  | 6                 |                        | 1                  | 1                 |

Note: A zero indicates no data available.  
Source: Institute of Transportation Engineers  
Trip Generation Manual, 9th Edition, 2012

TRIP GENERATION 2013, TRAFFICWARE, LLC



Detailed Average Rate Trip Calculations  
For 8 Dwelling Units of Apartments(220) - [E]

Project: Zenith Building  
Phase:

Open Date:  
Analysis Date:

Description:

|                            | Average<br>Rate | Standard<br>Deviation | Adjustment<br>Factor | Driveway<br>Volume |
|----------------------------|-----------------|-----------------------|----------------------|--------------------|
| Avg. Weekday 2-Way Volume  | 21.50           | 0.00                  | 1.00                 | 172                |
| 7-9 AM Peak Hour Enter     | 0.19            | 0.00                  | 1.00                 | 2                  |
| 7-9 AM Peak Hour Exit      | 0.77            | 0.00                  | 1.00                 | 6                  |
| 7-9 AM Peak Hour Total     | 0.96            | 0.00                  | 1.00                 | 8                  |
| 4-6 PM Peak Hour Enter     | 1.79            | 0.00                  | 1.00                 | 14                 |
| 4-6 PM Peak Hour Exit      | 0.96            | 0.00                  | 1.00                 | 8                  |
| 4-6 PM Peak Hour Total     | 2.76            | 0.00                  | 1.00                 | 22                 |
| AM Pk Hr, Generator, Enter | 0.25            | 0.00                  | 1.00                 | 2                  |
| AM Pk Hr, Generator, Exit  | 0.60            | 0.00                  | 1.00                 | 5                  |
| AM Pk Hr, Generator, Total | 0.85            | 0.00                  | 1.00                 | 7                  |
| PM Pk Hr, Generator, Enter | 1.50            | 0.00                  | 1.00                 | 12                 |
| PM Pk Hr, Generator, Exit  | 0.96            | 0.00                  | 1.00                 | 8                  |
| PM Pk Hr, Generator, Total | 2.46            | 0.00                  | 1.00                 | 20                 |
| Saturday 2-Way Volume      | -24.17          | 0.00                  | 1.00                 | -193               |
| Saturday Peak Hour Enter   | 0.00            | 0.00                  | 1.00                 | 0                  |
| Saturday Peak Hour Exit    | 0.00            | 0.00                  | 1.00                 | 0                  |
| Saturday Peak Hour Total   | 2.81            | 0.00                  | 1.00                 | 23                 |
| Sunday 2-Way Volume        | -6.22           | 0.00                  | 1.00                 | -50                |
| Sunday Peak Hour Enter     | 0.00            | 0.00                  | 1.00                 | 0                  |
| Sunday Peak Hour Exit      | 0.00            | 0.00                  | 1.00                 | 0                  |
| Sunday Peak Hour Total     | 0.00            | 0.00                  | 1.00                 | 0                  |

The above rates were calculated from these equations:

24-Hr. 2-Way Volume:  $T = 6.06(X) + 123.56, R^2 = 0.87$   
7-9 AM Peak Hr. Total:  $T = .49(X) + 3.73$   
 $R^2 = 0.83, 0.2 \text{ Enter}, 0.8 \text{ Exit}$   
4-6 PM Peak Hr. Total:  $T = .55(X) + 17.65$   
 $R^2 = 0.77, 0.65 \text{ Enter}, 0.35 \text{ Exit}$   
AM Gen Pk Hr. Total:  $T = .54(X) + 2.45$   
 $R^2 = 0.82, 0.29 \text{ Enter}, 0.71 \text{ Exit}$   
PM Gen Pk Hr. Total:  $T = .6(X) + 14.91$   
 $R^2 = 0.8, 0.61 \text{ Enter}, 0.39 \text{ Exit}$   
Sat. 2-Way Volume:  $T = 7.85(X) + -256.19, R^2 = 0.85$   
Sat. Pk Hr. Total:  $T = .41(X) + 19.23$   
 $R^2 = 0.56, 0 \text{ Enter}, 0 \text{ Exit}$   
Sun. 2-Way Volume:  $T = 6.42(X) + -101.12, R^2 = 0.82$   
Sun. Pk Hr. Total:  $0$   
 $R^2 = 0, 0 \text{ Enter}, 0 \text{ Exit}$

Note: A zero indicates no data available.  
Source: Institute of Transportation Engineers  
Trip Generation Manual, 9th Edition, 2012

Summary of Pass-By Trips  
For 5.317 Th.Sq.Ft. GLA of Shopping Center(820) - [R]

Project: Zenith Building  
Phase:

Open Date:  
Analysis Date:

Description:

---

|                          | Driveway<br>Volume | Pass-By<br>Trips | Volume Added to<br>Adjacent Streets |
|--------------------------|--------------------|------------------|-------------------------------------|
| <hr/>                    |                    |                  |                                     |
| Average Weekday          |                    |                  |                                     |
| 7-9 AM Peak Hour Enter   | 3                  | 0                | 3                                   |
| 7-9 AM Peak Hour Exit    | 2                  | 0                | 2                                   |
| 7-9 AM Peak Hour Total   | 5                  | 0                | 5                                   |
| 4-6 PM Peak Hour Enter   | 9                  | 3                | 6                                   |
| 4-6 PM Peak Hour Exit    | 11                 | 4                | 7                                   |
| 4-6 PM Peak Hour Total   | 20                 | 7                | 13                                  |
| Saturday                 |                    |                  |                                     |
| Saturday Peak Hour Enter | 13                 | 3                | 10                                  |
| Saturday Peak Hour Exit  | 13                 | 3                | 10                                  |
| Saturday Peak Hour Total | 26                 | 7                | 19                                  |

---

Pass-By Trips were calculated on the basis of the following:

Weekday P.M. Peak Period Pass-By Trip Percentage = 34  
Saturday Midday Pk. Pd. Pass-By Trip Percentage = 26

Number of Pass-By Studies:100 for Weekday PM PK PD and 11 for Saturday.

---

Note: A zero indicates no data available.  
Source: Institute of Transportation Engineers  
Trip Generation Manual, 9th Edition, 2012

TRIP GENERATION 2013, TRAFFICWARE, LLC

Summary of Pass-By Trips  
For 200 Seats of Quality Restaurant(931) - [R]

Project: Summerwind  
Phase:

Open Date:  
Analysis Date:

Description:

---

|                          | Driveway<br>Volume | Pass-By<br>Trips | Volume Added to<br>Adjacent Streets |
|--------------------------|--------------------|------------------|-------------------------------------|
| <hr/>                    |                    |                  |                                     |
| Average Weekday          |                    |                  |                                     |
| 7-9 AM Peak Hour Enter   | 0                  | 0                | 0                                   |
| 7-9 AM Peak Hour Exit    | 0                  | 0                | 0                                   |
| 7-9 AM Peak Hour Total   | 6                  | 0                | 6                                   |
| 4-6 PM Peak Hour Enter   | 34                 | 15               | 19                                  |
| 4-6 PM Peak Hour Exit    | 18                 | 8                | 10                                  |
| 4-6 PM Peak Hour Total   | 52                 | 23               | 29                                  |
| Saturday                 |                    |                  |                                     |
| Saturday Peak Hour Enter | 38                 | 0                | 38                                  |
| Saturday Peak Hour Exit  | 28                 | 0                | 28                                  |
| Saturday Peak Hour Total | 66                 | 0                | 66                                  |

---

Pass-By Trips were calculated on the basis of the following:

Weekday P.M. Peak Period Average Pass-By Trip Percentage = 44  
Saturday Midday Pk. Pd. Average Pass-By Trip Percentage = 0

Number of Pass-By Studies: 4

---

Note: A zero indicates no data available.  
Source: Institute of Transportation Engineers  
Trip Generation Manual, 9th Edition, 2012

TRIP GENERATION 2013, TRAFFICWARE, LLC

Detailed Average Rate Trip Calculations  
For 52 Dwelling Units of Apartments(220) - [E]

Project: Summerwind  
Phase:

Open Date:  
Analysis Date:

Description:

|                            | Average<br>Rate | Standard<br>Deviation | Adjustment<br>Factor | Driveway<br>Volume |
|----------------------------|-----------------|-----------------------|----------------------|--------------------|
| Avg. Weekday 2-Way Volume  | 8.44            | 0.00                  | 1.00                 | 439                |
| 7-9 AM Peak Hour Enter     | 0.11            | 0.00                  | 1.00                 | 6                  |
| 7-9 AM Peak Hour Exit      | 0.45            | 0.00                  | 1.00                 | 23                 |
| 7-9 AM Peak Hour Total     | 0.56            | 0.00                  | 1.00                 | 29                 |
| 4-6 PM Peak Hour Enter     | 0.58            | 0.00                  | 1.00                 | 30                 |
| 4-6 PM Peak Hour Exit      | 0.31            | 0.00                  | 1.00                 | 16                 |
| 4-6 PM Peak Hour Total     | 0.89            | 0.00                  | 1.00                 | 46                 |
| AM Pk Hr, Generator, Enter | 0.17            | 0.00                  | 1.00                 | 9                  |
| AM Pk Hr, Generator, Exit  | 0.42            | 0.00                  | 1.00                 | 22                 |
| AM Pk Hr, Generator, Total | 0.59            | 0.00                  | 1.00                 | 31                 |
| PM Pk Hr, Generator, Enter | 0.54            | 0.00                  | 1.00                 | 28                 |
| PM Pk Hr, Generator, Exit  | 0.35            | 0.00                  | 1.00                 | 18                 |
| PM Pk Hr, Generator, Total | 0.89            | 0.00                  | 1.00                 | 46                 |
| Saturday 2-Way Volume      | 2.92            | 0.00                  | 1.00                 | 152                |
| Saturday Peak Hour Enter   | 0.00            | 0.00                  | 1.00                 | 0                  |
| Saturday Peak Hour Exit    | 0.00            | 0.00                  | 1.00                 | 0                  |
| Saturday Peak Hour Total   | 0.78            | 0.00                  | 1.00                 | 41                 |
| Sunday 2-Way Volume        | 4.48            | 0.00                  | 1.00                 | 233                |
| Sunday Peak Hour Enter     | 0.00            | 0.00                  | 1.00                 | 0                  |
| Sunday Peak Hour Exit      | 0.00            | 0.00                  | 1.00                 | 0                  |
| Sunday Peak Hour Total     | 0.00            | 0.00                  | 1.00                 | 0                  |

The above rates were calculated from these equations:

24-Hr. 2-Way Volume:  $T = 6.06(X) + 123.56, R^2 = 0.87$   
7-9 AM Peak Hr. Total:  $T = .49(X) + 3.73$   
 $R^2 = 0.83, 0.2 \text{ Enter}, 0.8 \text{ Exit}$   
4-6 PM Peak Hr. Total:  $T = .55(X) + 17.65$   
 $R^2 = 0.77, 0.65 \text{ Enter}, 0.35 \text{ Exit}$   
AM Gen Pk Hr. Total:  $T = .54(X) + 2.45$   
 $R^2 = 0.82, 0.29 \text{ Enter}, 0.71 \text{ Exit}$   
PM Gen Pk Hr. Total:  $T = .6(X) + 14.91$   
 $R^2 = 0.8, 0.61 \text{ Enter}, 0.39 \text{ Exit}$   
Sat. 2-Way Volume:  $T = 7.85(X) + -256.19, R^2 = 0.85$   
Sat. Pk Hr. Total:  $T = .41(X) + 19.23$   
 $R^2 = 0.56, 0 \text{ Enter}, 0 \text{ Exit}$   
Sun. 2-Way Volume:  $T = 6.42(X) + -101.12, R^2 = 0.82$   
Sun. Pk Hr. Total:  $0$   
 $R^2 = 0, 0 \text{ Enter}, 0 \text{ Exit}$

Note: A zero indicates no data available.

Source: Institute of Transportation Engineers  
Trip Generation Manual, 9th Edition, 2012



Detailed Average Rate Trip Calculations  
For 2.59 Th.Sq.Ft. GFA of Drive-in Bank(912) ~ [R]

Project: Summerwind  
Phase:

Open Date:  
Analysis Date:

Description:

|                            | Average<br>Rate | Standard<br>Deviation | Adjustment<br>Factor | Driveway<br>Volume |
|----------------------------|-----------------|-----------------------|----------------------|--------------------|
| Avg. Weekday 2-Way Volume  | 148.15          | 97.36                 | 1.00                 | 384                |
| 7-9 AM Peak Hour Enter     | 6.89            | 0.00                  | 1.00                 | 18                 |
| 7-9 AM Peak Hour Exit      | 5.19            | 0.00                  | 1.00                 | 13                 |
| 7-9 AM Peak Hour Total     | 12.08           | 6.88                  | 1.00                 | 31                 |
| 4-6 PM Peak Hour Enter     | 12.15           | 0.00                  | 1.00                 | 31                 |
| 4-6 PM Peak Hour Exit      | 12.15           | 0.00                  | 1.00                 | 32                 |
| 4-6 PM Peak Hour Total     | 24.30           | 16.24                 | 1.00                 | 63                 |
| AM Pk Hr, Generator, Enter | 9.31            | 0.00                  | 1.00                 | 24                 |
| AM Pk Hr, Generator, Exit  | 8.26            | 0.00                  | 1.00                 | 22                 |
| AM Pk Hr, Generator, Total | 17.57           | 10.68                 | 1.00                 | 46                 |
| PM Pk Hr, Generator, Enter | 13.61           | 0.00                  | 1.00                 | 35                 |
| PM Pk Hr, Generator, Exit  | 13.08           | 0.00                  | 1.00                 | 34                 |
| PM Pk Hr, Generator, Total | 26.69           | 14.58                 | 1.00                 | 69                 |
| Saturday 2-Way Volume      | 86.32           | 36.65                 | 1.00                 | 224                |
| Saturday Peak Hour Enter   | 13.42           | 0.00                  | 1.00                 | 35                 |
| Saturday Peak Hour Exit    | 12.89           | 0.00                  | 1.00                 | 33                 |
| Saturday Peak Hour Total   | 26.31           | 15.79                 | 1.00                 | 68                 |
| Sunday 2-Way Volume        | 31.90           | 15.45                 | 1.00                 | 83                 |
| Sunday Peak Hour Enter     | 0.00            | 0.00                  | 1.00                 | 0                  |
| Sunday Peak Hour Exit      | 0.00            | 0.00                  | 1.00                 | 0                  |
| Sunday Peak Hour Total     | 4.78            | 2.17                  | 1.00                 | 12                 |

Note: A zero indicates no data available.

Source: Institute of Transportation Engineers  
Trip Generation Manual, 9th Edition, 2012

TRIP GENERATION 2013, TRAFFICWARE, LLC

Summary of Pass-By Trips  
For 40 Seats of Quality Restaurant(931) - [R]

Project: The Simple Table  
Phase:

Open Date:  
Analysis Date:

Description:

---

|                          | Driveway<br>Volume | Pass-By<br>Trips | Volume Added to<br>Adjacent Streets |
|--------------------------|--------------------|------------------|-------------------------------------|
| <hr/>                    |                    |                  |                                     |
| Average Weekday          |                    |                  |                                     |
| 7-9 AM Peak Hour Enter   | 0                  | 0                | 0                                   |
| 7-9 AM Peak Hour Exit    | 0                  | 0                | 0                                   |
| 7-9 AM Peak Hour Total   | 1                  | 0                | 1                                   |
| 4-6 PM Peak Hour Enter   | 7                  | 3                | 4                                   |
| 4-6 PM Peak Hour Exit    | 3                  | 1                | 2                                   |
| 4-6 PM Peak Hour Total   | 10                 | 4                | 6                                   |
| Saturday                 |                    |                  |                                     |
| Saturday Peak Hour Enter | 8                  | 0                | 8                                   |
| Saturday Peak Hour Exit  | 5                  | 0                | 5                                   |
| Saturday Peak Hour Total | 13                 | 0                | 13                                  |

---

Pass-By Trips were calculated on the basis of the following:

Weekday P.M. Peak Period Average Pass-By Trip Percentage = 44  
Saturday Midday Pk. Pd. Average Pass-By Trip Percentage = 0

Number of Pass-By Studies: 4

---

Note: A zero indicates no data available.  
Source: Institute of Transportation Engineers  
Trip Generation Manual, 9th Edition, 2012

TRIP GENERATION 2013, TRAFFICWARE, LLC

Detailed Average Rate Trip Calculations  
For 2.8 Th.Sq.Ft. GFA of Mini-Warehouse(151) - [R]

Project: Presto Peconic Property  
Phase:

Open Date:  
Analysis Date:

Description:

---

|                            | Average<br>Rate | Standard<br>Deviation | Adjustment<br>Factor | Driveway<br>Volume |
|----------------------------|-----------------|-----------------------|----------------------|--------------------|
| Avg. Weekday 2-Way Volume  | 2.50            | 1.78                  | 1.00                 | 7                  |
| 7-9 AM Peak Hour Enter     | 0.08            | 0.00                  | 1.00                 | 0                  |
| 7-9 AM Peak Hour Exit      | 0.06            | 0.00                  | 1.00                 | 0                  |
| 7-9 AM Peak Hour Total     | 0.14            | 0.38                  | 1.00                 | 0                  |
| 4-6 PM Peak Hour Enter     | 0.13            | 0.00                  | 1.00                 | 0                  |
| 4-6 PM Peak Hour Exit      | 0.13            | 0.00                  | 1.00                 | 0                  |
| 4-6 PM Peak Hour Total     | 0.26            | 0.52                  | 1.00                 | 1                  |
| AM Pk Hr, Generator, Enter | 0.13            | 0.00                  | 1.00                 | 0                  |
| AM Pk Hr, Generator, Exit  | 0.15            | 0.00                  | 1.00                 | 0                  |
| AM Pk Hr, Generator, Total | 0.28            | 0.54                  | 1.00                 | 1                  |
| PM Pk Hr, Generator, Enter | 0.15            | 0.00                  | 1.00                 | 0                  |
| PM Pk Hr, Generator, Exit  | 0.14            | 0.00                  | 1.00                 | 0                  |
| PM Pk Hr, Generator, Total | 0.29            | 0.54                  | 1.00                 | 1                  |
| Saturday 2-Way Volume      | 2.33            | 1.69                  | 1.00                 | 7                  |
| Saturday Peak Hour Enter   | 0.00            | 0.00                  | 1.00                 | 0                  |
| Saturday Peak Hour Exit    | 0.00            | 0.00                  | 1.00                 | 0                  |
| Saturday Peak Hour Total   | 0.40            | 0.64                  | 1.00                 | 1                  |
| Sunday 2-Way Volume        | 1.78            | 1.46                  | 1.00                 | 5                  |
| Sunday Peak Hour Enter     | 0.00            | 0.00                  | 1.00                 | 0                  |
| Sunday Peak Hour Exit      | 0.00            | 0.00                  | 1.00                 | 0                  |
| Sunday Peak Hour Total     | 0.30            | 0.55                  | 1.00                 | 1                  |

---

Note: A zero indicates no data available.

Source: Institute of Transportation Engineers  
Trip Generation Manual, 9th Edition, 2012

TRIP GENERATION 2013, TRAFFICWARE, LLC

Detailed Average Rate Trip Calculations  
For 1.056 Th.Sq.Ft. GFA of General Light Industrial(110) - [R]

Project: 206 Raynor Ave  
Phase:

Open Date:  
Analysis Date:

Description:

|                            | Average<br>Rate | Standard<br>Deviation | Adjustment<br>Factor | Driveway<br>Volume |
|----------------------------|-----------------|-----------------------|----------------------|--------------------|
| Avg. Weekday 2-Way Volume  | 6.97            | 4.24                  | 1.00                 | 7                  |
| 7-9 AM Peak Hour Enter     | 0.81            | 0.00                  | 1.00                 | 1                  |
| 7-9 AM Peak Hour Exit      | 0.11            | 0.00                  | 1.00                 | 0                  |
| 7-9 AM Peak Hour Total     | 0.92            | 1.07                  | 1.00                 | 1                  |
| 4-6 PM Peak Hour Enter     | 0.12            | 0.00                  | 1.00                 | 0                  |
| 4-6 PM Peak Hour Exit      | 0.85            | 0.00                  | 1.00                 | 1                  |
| 4-6 PM Peak Hour Total     | 0.97            | 1.16                  | 1.00                 | 1                  |
| AM Pk Hr, Generator, Enter | 0.91            | 0.00                  | 1.00                 | 1                  |
| AM Pk Hr, Generator, Exit  | 0.10            | 0.00                  | 1.00                 | 0                  |
| AM Pk Hr, Generator, Total | 1.01            | 1.10                  | 1.00                 | 1                  |
| PM Pk Hr, Generator, Enter | 0.15            | 0.00                  | 1.00                 | 0                  |
| PM Pk Hr, Generator, Exit  | 0.93            | 0.00                  | 1.00                 | 1                  |
| PM Pk Hr, Generator, Total | 1.08            | 1.18                  | 1.00                 | 1                  |
| Saturday 2-Way Volume      | 1.32            | 1.48                  | 1.00                 | 1                  |
| Saturday Peak Hour Enter   | 0.07            | 0.00                  | 1.00                 | 0                  |
| Saturday Peak Hour Exit    | 0.07            | 0.00                  | 1.00                 | 0                  |
| Saturday Peak Hour Total   | 0.14            | 0.41                  | 1.00                 | 0                  |
| Sunday 2-Way Volume        | 0.68            | 1.14                  | 1.00                 | 1                  |
| Sunday Peak Hour Enter     | 0.05            | 0.00                  | 1.00                 | 0                  |
| Sunday Peak Hour Exit      | 0.05            | 0.00                  | 1.00                 | 0                  |
| Sunday Peak Hour Total     | 0.10            | 0.33                  | 1.00                 | 0                  |

Note: A zero indicates no data available.

Source: Institute of Transportation Engineers  
Trip Generation Manual, 9th Edition, 2012

TRIP GENERATION 2013, TRAFFICWARE, LLC



Average Retail rates were calculated as the average of

Per 1000 SF

|                                              |      | AM     | PM    | Sat  | AM   | PM   | Sat  |      |
|----------------------------------------------|------|--------|-------|------|------|------|------|------|
|                                              |      | In     | Out   | In   | Out  | In   | Out  |      |
| 2. Hardware/Paint Store - ITE LUC 816        | 1.08 | 11.18  | 4.84  |      |      |      |      |      |
| 3. Specialty Retail Center - ITE LUC 826     | 2.71 | 8.55   | 6.84  |      |      |      |      |      |
| 4. Automobile Part Sales - ITE LUC 843       | 2.21 | 7.48   | 5.98  | 44%  | 56%  | 47%  | 53%  | 50%  |
| 5. Apparel Store - ITE LUC 876               | 0    | 4.79   | 3.83  |      |      | 48%  | 52%  | 50%  |
| 6. Pharmacy without Drive-thru - ITE LUC 880 | 2.94 | 10.68  | 8.4   |      |      | 49%  | 51%  |      |
| 7. Video Rental - ITE LUC 896                | 0    | 17     | 13.6  |      |      | 50%  | 50%  |      |
| 9. Walk-in Bank - ITE LUC 911                | 6.15 | 13.53  | 12.3  | 65%  | 35%  | 49%  | 51%  | 49%  |
| 10. Furniture Store - ITE LUC 890            | 0.17 | 4.94   | 0.45  |      |      | 46%  | 54%  |      |
| 12. Drinking Place - ITE LUC 931             | 0    | 14.18  | 11.34 |      |      | 44%  | 56%  |      |
| 13- Quality Restaurant -ITE LUC 932          | 0.81 | 10.82  | 7.49  | 69%  | 31%  | 48%  | 52%  | 50%  |
| Total                                        | 16.1 | 103.15 | 75.07 |      |      | 66%  | 34%  |      |
| Average Rate                                 | 1.61 | 10.32  | 7.51  | 178% | 122% | 67%  | 33%  | 41%  |
|                                              |      |        |       | 59%  | 41%  | 514% | 486% | 242% |
|                                              |      |        |       |      |      | 51%  | 49%  | 48%  |

## **Appendix C: Level of Service Definitions**

## LEVEL OF SERVICE: SIGNALIZED INTERSECTIONS

Level of service for signalized intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. The levels of service range between level of service A (relatively congestion-free) and level of service F (congested).

The delay experienced by a motorist is made up of a number of factors that relate to control, geometry, traffic, and incidents at an intersection. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during ideal conditions: in the absence of traffic control, in the absence of geometric delay, in the absence of any incidents, and when there are no other vehicles on the road. The portion of the total delay attributed to the control facility is called the control delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Control delay may also be referred to as signal delay for signalized intersections.

Level of service criteria for signalized intersections is determined in terms of the average control delay per vehicle. The following average control delays are used to determine approach levels of service:

|                    |                                              |
|--------------------|----------------------------------------------|
| Level of Service A | $\leq 10.0$ seconds per vehicle              |
| Level of Service B | $> 10.0$ and $\leq 20.0$ seconds per vehicle |
| Level of Service C | $> 20.0$ and $\leq 35.0$ seconds per vehicle |
| Level of Service D | $> 35.0$ and $\leq 55.0$ seconds per vehicle |
| Level of Service E | $> 55.0$ and $\leq 80.0$ seconds per vehicle |
| Level of Service F | $> 80.0$ seconds per vehicle                 |

**Level of Service A** describes operations with very low control delay. This occurs when progression is extremely favorable; most vehicles arrive during the green phase and do not stop at all. Short traffic signal cycles may contribute to low delay.

**Level of Service B** generally occurs with good progression and/or short traffic signal cycle lengths. More vehicles stop than for level of service A, causing higher average delays.

**Level of Service C** has higher delays than level of service B. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures, where motorists are required to wait through an entire signal cycle, may begin to appear at this level. The number of vehicles stopping is significant, although many still pass through the intersection without stopping.

**Level of Service D** At this level, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths or high volume-to-capacity ratios. The proportion of stopping vehicles increases. Individual cycle failures are noticeable.

**Level of Service E** is considered the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths and high volume-to-capacity ratios. Individual cycle failures occur frequently.

**Level of Service F** is considered unacceptable to most drivers. This condition often occurs with over saturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may occur at volume to capacity ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

## LEVEL OF SERVICE: TWO WAY STOP CONTROLLED INTERSECTIONS

The quality of traffic service at a two-way stop controlled, or "TWSC," intersection is measured according to the level of service and capacity of individual legs. The level of service ranges from LOS A to LOS F, just as with signalized intersections.

The right of way at the TWSC intersection is controlled by stop signs on two opposing legs of an intersection (on one leg of a "T"-type intersection). The capacity of a controlled leg is based on the distribution of gaps in the major street traffic flow, driver judgment in selecting a gap through which to execute the desired maneuver and the follow up time required by each driver in a queue.

The level of service for a TWSC intersection is determined by the computed or measured control delay and is defined for each minor movement. Level of service is not defined for the intersection as a whole. The delay experienced by a motorist is made up of a number of factors that relate to control, geometry, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during conditions with ideal geometry and in the absence of incidents, control, and traffic. This program only quantifies that portion of the total delay attributed to traffic control measures, either traffic signals or stop signs. This delay is called control delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration. Average control delay for any particular minor movement is a function of the approach and the degree of saturation.

The expectation is that TWSC intersections are designed to carry smaller traffic volumes than signalized intersections. Therefore, the delay threshold times are lower for the same LOS grades. The following average control delays are used to determine approach levels of service:

|                    |                                          |
|--------------------|------------------------------------------|
| Level of Service A | $\leq 10$ seconds per vehicle            |
| Level of Service B | $> 10$ and $\leq 15$ seconds per vehicle |
| Level of Service C | $> 15$ and $\leq 25$ seconds per vehicle |
| Level of Service D | $> 25$ and $\leq 35$ seconds per vehicle |
| Level of Service E | $> 35$ and $\leq 50$ seconds per vehicle |
| Level of Service F | $> 50$ seconds per vehicle               |



## **Appendix D: Capacity Analysis/Level of Service Worksheets & Summary Tables**

## **Base Condition Capacity Analyses**

# Timings

## 5: Nugent St/Court St & W Main St

Timing Plan: PM Peak Hour

|                      |  |  |  |  |  |  |   |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                                | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |                                                                                     |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |                                                                                     |
| Volume (vph)         | 60                                                                                | 352                                                                               | 427                                                                               | 185                                                                               | 350                                                                               | 396                                                                               | 167                                                                                | 72                                                                                  | 2                                                                                   | 307                                                                                 |                                                                                     |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | Perm                                                                              | NA                                                                                | pm+pt                                                                             | NA                                                                                 | Free                                                                                | Perm                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases     |                                                                                   | 2                                                                                 |                                                                                   |                                                                                   | 6                                                                                 | 7                                                                                 | 4                                                                                  |                                                                                     |                                                                                     | 8                                                                                   |                                                                                     |
| Permitted Phases     | 2                                                                                 |                                                                                   | 2                                                                                 | 6                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                  | Free                                                                                | 8                                                                                   |                                                                                     |                                                                                     |
| Detector Phase       | 2                                                                                 | 2                                                                                 | 2                                                                                 | 6                                                                                 | 6                                                                                 | 7                                                                                 | 4                                                                                  |                                                                                     | 8                                                                                   | 8                                                                                   |                                                                                     |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 3.0                                                                               | 5.0                                                                                |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Minimum Split (s)    | 21.5                                                                              | 21.5                                                                              | 21.5                                                                              | 21.5                                                                              | 21.5                                                                              | 9.0                                                                               | 12.0                                                                               |                                                                                     | 11.8                                                                                | 11.8                                                                                |                                                                                     |
| Total Split (s)      | 28.0                                                                              | 28.0                                                                              | 28.0                                                                              | 28.0                                                                              | 28.0                                                                              | 16.0                                                                              | 32.0                                                                               |                                                                                     | 16.0                                                                                | 16.0                                                                                |                                                                                     |
| Total Split (%)      | 46.7%                                                                             | 46.7%                                                                             | 46.7%                                                                             | 46.7%                                                                             | 46.7%                                                                             | 26.7%                                                                             | 53.3%                                                                              |                                                                                     | 26.7%                                                                               | 26.7%                                                                               |                                                                                     |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.0                                                                               | 3.5                                                                                |                                                                                     | 3.5                                                                                 | 3.5                                                                                 |                                                                                     |
| All-Red Time (s)     | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 2.0                                                                               | 2.3                                                                                |                                                                                     | 2.3                                                                                 | 2.3                                                                                 |                                                                                     |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Total Lost Time (s)  | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 5.0                                                                               | 5.8                                                                                |                                                                                     |                                                                                     | 5.8                                                                                 |                                                                                     |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Lead                                                                              |                                                                                    |                                                                                     | Lag                                                                                 | Lag                                                                                 |                                                                                     |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Yes                                                                               |                                                                                    |                                                                                     | Yes                                                                                 | Yes                                                                                 |                                                                                     |
| Recall Mode          | Max                                                                               | Max                                                                               | Max                                                                               | None                                                                              | None                                                                              | None                                                                              | None                                                                               |                                                                                     | None                                                                                | None                                                                                |                                                                                     |
| Act Effct Green (s)  | 21.5                                                                              | 21.5                                                                              | 21.5                                                                              | 21.5                                                                              | 21.5                                                                              | 27.0                                                                              | 26.2                                                                               | 60.0                                                                                |                                                                                     | 10.2                                                                                |                                                                                     |
| Actuated g/C Ratio   | 0.36                                                                              | 0.36                                                                              | 0.36                                                                              | 0.36                                                                              | 0.36                                                                              | 0.45                                                                              | 0.44                                                                               | 1.00                                                                                |                                                                                     | 0.17                                                                                |                                                                                     |
| v/c Ratio            | 0.29                                                                              | 0.58                                                                              | 0.51                                                                              | 0.80                                                                              | 0.67                                                                              | 1.01                                                                              | 0.24                                                                               | 0.05                                                                                |                                                                                     | 1.23                                                                                |                                                                                     |
| Control Delay        | 18.1                                                                              | 20.0                                                                              | 4.0                                                                               | 41.6                                                                              | 22.4                                                                              | 64.2                                                                              | 11.7                                                                               | 0.1                                                                                 |                                                                                     | 149.9                                                                               |                                                                                     |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 |                                                                                     |
| Total Delay          | 18.1                                                                              | 20.0                                                                              | 4.0                                                                               | 41.6                                                                              | 22.4                                                                              | 64.2                                                                              | 11.7                                                                               | 0.1                                                                                 |                                                                                     | 149.9                                                                               |                                                                                     |
| LOS                  | B                                                                                 | B                                                                                 | A                                                                                 | D                                                                                 | C                                                                                 | E                                                                                 | B                                                                                  | A                                                                                   |                                                                                     | F                                                                                   |                                                                                     |
| Approach Delay       |                                                                                   | 11.7                                                                              |                                                                                   |                                                                                   | 29.0                                                                              |                                                                                   | 43.1                                                                               |                                                                                     |                                                                                     | 149.9                                                                               |                                                                                     |
| Approach LOS         |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | C                                                                                 |                                                                                   | D                                                                                  |                                                                                     |                                                                                     | F                                                                                   |                                                                                     |

### Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 60

Natural Cycle: 80

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.23

Intersection Signal Delay: 46.8

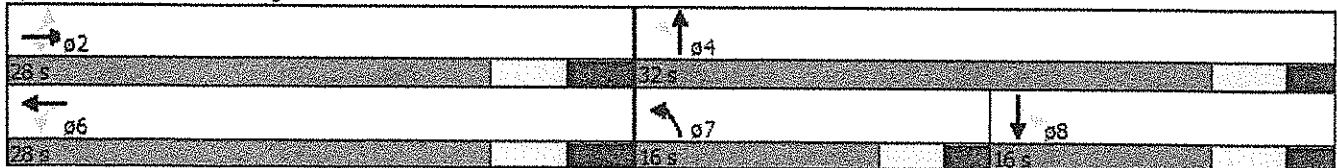
Intersection Capacity Utilization 96.1%

Analysis Period (min) 15

Intersection LOS: D

ICU Level of Service F

### Splits and Phases: 5: Nugent St/Court St & W Main St



# Timings

6: W Main St & Osborn Ave

Timing Plan: PM Peak Hour



| Lane Group           | EBL   | EBT   | WBT   | SBL   |
|----------------------|-------|-------|-------|-------|
| Lane Configurations  |       | ↰     | ↱     | ↰     |
| Volume (vph)         | 7     | 422   | 545   | 102   |
| Turn Type            | Perm  | NA    | NA    | NA    |
| Protected Phases     |       | 4     | 8     | 6     |
| Permitted Phases     | 4     |       |       |       |
| Detector Phase       | 4     | 4     | 8     | 6     |
| Switch Phase         |       |       |       |       |
| Minimum Initial (s)  | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)    | 11.3  | 11.3  | 11.3  | 11.2  |
| Total Split (s)      | 60.0  | 60.0  | 60.0  | 25.0  |
| Total Split (%)      | 70.6% | 70.6% | 70.6% | 29.4% |
| Yellow Time (s)      | 3.5   | 3.5   | 3.5   | 3.5   |
| All-Red Time (s)     | 2.8   | 2.8   | 2.8   | 2.7   |
| Lost Time Adjust (s) |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  |       | 6.3   | 6.3   | 6.2   |
| Lead/Lag             |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |
| Recall Mode          | Max   | Max   | Max   | None  |
| Act Effct Green (s)  |       | 57.9  | 57.9  | 10.9  |
| Actuated g/C Ratio   |       | 0.75  | 0.75  | 0.14  |
| v/c Ratio            |       | 0.35  | 0.55  | 0.53  |
| Control Delay        |       | 5.8   | 8.0   | 37.1  |
| Queue Delay          |       | 0.3   | 0.0   | 0.0   |
| Total Delay          |       | 6.1   | 8.0   | 37.1  |
| LOS                  |       | A     | A     | D     |
| Approach Delay       |       | 6.1   | 8.0   | 37.1  |
| Approach LOS         |       | A     | A     | D     |

## Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 77.2

Natural Cycle: 55

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 10.2

Intersection Capacity Utilization 49.7%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service A

Splits and Phases: 6: W Main St & Osborn Ave





# Timings

## 7: W Main St & Griffing Ave

Timing Plan: PM Peak Hour

| Lane Group           | EBL   | EBT   | WBT   | SBL   |
|----------------------|-------|-------|-------|-------|
| Lane Configurations  |       | ↰     | ↱     | ↰     |
| Volume (vph)         | 32    | 509   | 508   | 124   |
| Turn Type            | Perm  | NA    | NA    | NA    |
| Protected Phases     |       | 2     | 6     | 4     |
| Permitted Phases     | 2     |       |       |       |
| Detector Phase       | 2     | 2     | 6     | 4     |
| Switch Phase         |       |       |       |       |
| Minimum Initial (s)  | 10.0  | 10.0  | 10.0  | 5.0   |
| Minimum Split (s)    | 15.8  | 15.8  | 15.8  | 10.5  |
| Total Split (s)      | 20.0  | 20.0  | 20.0  | 35.0  |
| Total Split (%)      | 36.4% | 36.4% | 36.4% | 63.6% |
| Yellow Time (s)      | 3.5   | 3.5   | 3.5   | 3.5   |
| All-Red Time (s)     | 2.3   | 2.3   | 2.3   | 2.0   |
| Lost Time Adjust (s) |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  |       | 5.8   | 5.8   | 5.5   |
| Lead/Lag             |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |
| Recall Mode          | Max   | Max   | Max   | None  |
| Act Effct Green (s)  |       | 18.3  | 18.3  | 8.2   |
| Actuated g/C Ratio   |       | 0.53  | 0.53  | 0.24  |
| v/c Ratio            |       | 0.59  | 0.66  | 0.44  |
| Control Delay        |       | 13.4  | 15.3  | 10.9  |
| Queue Delay          |       | 0.0   | 0.0   | 0.0   |
| Total Delay          |       | 13.4  | 15.3  | 10.9  |
| LOS                  |       | B     | B     | B     |
| Approach Delay       |       | 13.4  | 15.3  | 10.9  |
| Approach LOS         |       | B     | B     | B     |

### Intersection Summary

Cycle Length: 55

Actuated Cycle Length: 34.5

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 13.9

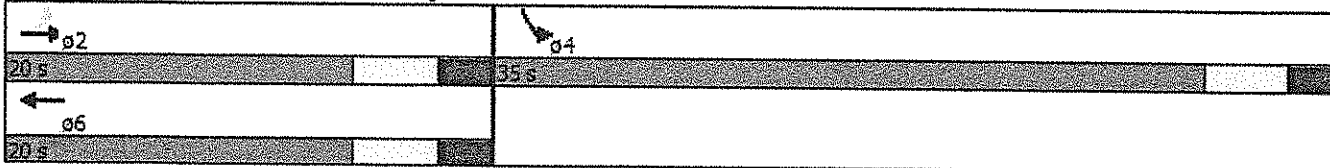
Intersection Capacity Utilization 73.0%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service C

### Splits and Phases: 7: W Main St & Griffing Ave



# Timings

8: Peconic Ave & W Main St

Timing Plan: PM Peak Hour

|                      | →     | ↘     | ↙      | ←     | ↖     | ↗      |      |       |      |      |      |
|----------------------|-------|-------|--------|-------|-------|--------|------|-------|------|------|------|
| Lane Group           | EBT   | EBR   | WBL    | WBT   | NBL   | NBR    | ø3   | ø6    | ø8   | ø9   | ø13  |
| Lane Configurations  | ↑     | ↗     | ↖      | ↑     | ↖     | ↗      |      |       |      |      |      |
| Volume (vph)         | 367   | 241   | 515    | 410   | 207   | 645    |      |       |      |      |      |
| Turn Type            | NA    | pm+ov | custom | NA    | NA    | custom |      |       |      |      |      |
| Protected Phases     | 2     | 4     | 3 9    | 6 3   | 4     | 3 13   | 3    | 6     | 8    | 9    | 13   |
| Permitted Phases     |       | 2     | 6      |       |       | 4 3    |      |       |      |      |      |
| Detector Phase       | 2     | 4     | 3 9    | 6 3   | 4     | 3 13   |      |       |      |      |      |
| Switch Phase         |       |       |        |       |       |        |      |       |      |      |      |
| Minimum Initial (s)  | 10.0  | 10.0  |        |       | 10.0  |        | 4.0  | 10.0  | 10.0 | 22.0 | 22.0 |
| Minimum Split (s)    | 15.9  | 15.9  |        |       | 15.9  |        | 9.9  | 28.0  | 15.0 | 25.0 | 25.0 |
| Total Split (s)      | 56.0  | 41.0  |        |       | 41.0  |        | 55.0 | 56.0  | 96.0 | 28.0 | 28.0 |
| Total Split (%)      | 31.1% | 22.8% |        |       | 22.8% |        | 31%  | 31%   | 53%  | 16%  | 16%  |
| Yellow Time (s)      | 3.5   | 3.5   |        |       | 3.5   |        | 3.5  | 3.5   | 3.0  | 2.0  | 2.0  |
| All-Red Time (s)     | 2.4   | 2.4   |        |       | 2.4   |        | 2.4  | 2.4   | 2.0  | 1.0  | 1.0  |
| Lost Time Adjust (s) | 0.0   | 0.0   |        |       | 0.0   |        |      |       |      |      |      |
| Total Lost Time (s)  | 5.9   | 5.9   |        |       | 5.9   |        |      |       |      |      |      |
| Lead/Lag             |       | Lead  |        |       | Lead  |        | Lag  |       |      |      |      |
| Lead-Lag Optimize?   |       |       |        |       |       |        |      |       |      |      |      |
| Recall Mode          | C-Min | None  |        |       | None  |        | None | C-Min | None | None | None |
| Act Effct Green (s)  | 56.6  | 91.5  | 133.2  | 108.2 | 29.1  | 111.6  |      |       |      |      |      |
| Actuated g/C Ratio   | 0.31  | 0.51  | 0.74   | 0.60  | 0.16  | 0.62   |      |       |      |      |      |
| v/c Ratio            | 0.69  | 0.34  | 0.60   | 0.40  | 0.83  | 0.72   |      |       |      |      |      |
| Control Delay        | 62.5  | 27.8  | 40.5   | 2.3   | 96.5  | 28.2   |      |       |      |      |      |
| Queue Delay          | 56.2  | 2.3   | 33.4   | 1.7   | 0.0   | 0.7    |      |       |      |      |      |
| Total Delay          | 118.7 | 30.1  | 73.9   | 4.1   | 96.5  | 28.9   |      |       |      |      |      |
| LOS                  | F     | C     | E      | A     | F     | C      |      |       |      |      |      |
| Approach Delay       | 83.6  |       |        | 43.0  | 45.3  |        |      |       |      |      |      |
| Approach LOS         | F     |       |        | D     | D     |        |      |       |      |      |      |

## Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 54.4

Intersection LOS: D

Intersection Capacity Utilization 74.1%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 8: Peconic Ave & W Main St

|                           |                       |                       |                        |
|---------------------------|-----------------------|-----------------------|------------------------|
| #8 #9<br>→ ø2 (R)<br>56 s | #8 #9<br>↘ ø4<br>51 s | #8 #9<br>↙ ø3<br>55 s | #8 #9<br>↗ ø9<br>28 s  |
| #8 #9<br>← ø6 (R)<br>56 s | #9<br>→ ø8<br>96 s    |                       | #8 #9<br>↘ ø13<br>28 s |

# Timings

9: W Main St & Roanoke Ave

Timing Plan: PM Peak Hour

|                      |  |  |  |  |       |      |      |      |      |      |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|------|------|------|------|------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBT                                                                               | SBR                                                                               | ø2    | ø3   | ø4   | ø8   | ø9   | ø13  |
| Lane Configurations  |  |  |  |  |       |      |      |      |      |      |
| Volume (vph)         | 345                                                                               | 658                                                                               | 588                                                                               | 327                                                                               |       |      |      |      |      |      |
| Turn Type            | custom                                                                            | NA                                                                                | NA                                                                                | custom                                                                            |       |      |      |      |      |      |
| Protected Phases     | 4 13                                                                              | 8 2                                                                               | 6                                                                                 | 3 9                                                                               | 2     | 3    | 4    | 8    | 9    | 13   |
| Permitted Phases     | 8                                                                                 |                                                                                   |                                                                                   |                                                                                   |       |      |      |      |      |      |
| Detector Phase       | 4 13                                                                              | 8 2                                                                               | 6                                                                                 | 3 9                                                                               |       |      |      |      |      |      |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |       |      |      |      |      |      |
| Minimum Initial (s)  |                                                                                   |                                                                                   | 10.0                                                                              |                                                                                   | 10.0  | 4.0  | 10.0 | 10.0 | 22.0 | 22.0 |
| Minimum Split (s)    |                                                                                   |                                                                                   | 28.0                                                                              |                                                                                   | 15.9  | 9.9  | 15.9 | 15.0 | 25.0 | 25.0 |
| Total Split (s)      |                                                                                   |                                                                                   | 56.0                                                                              |                                                                                   | 56.0  | 55.0 | 41.0 | 96.0 | 28.0 | 28.0 |
| Total Split (%)      |                                                                                   |                                                                                   | 31.1%                                                                             |                                                                                   | 31%   | 31%  | 23%  | 53%  | 16%  | 16%  |
| Yellow Time (s)      |                                                                                   |                                                                                   | 3.5                                                                               |                                                                                   | 3.5   | 3.5  | 3.5  | 3.0  | 2.0  | 2.0  |
| All-Red Time (s)     |                                                                                   |                                                                                   | 2.4                                                                               |                                                                                   | 2.4   | 2.4  | 2.4  | 2.0  | 1.0  | 1.0  |
| Lost Time Adjust (s) |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |       |      |      |      |      |      |
| Total Lost Time (s)  |                                                                                   |                                                                                   | 5.9                                                                               |                                                                                   |       |      |      |      |      |      |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |       | Lag  | Lead |      |      |      |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |       |      |      |      |      |      |
| Recall Mode          |                                                                                   |                                                                                   | C-Min                                                                             |                                                                                   | C-Min | None | None | None | None | None |
| Act Effct Green (s)  | 105.7                                                                             | 150.0                                                                             | 56.6                                                                              | 76.7                                                                              |       |      |      |      |      |      |
| Actuated g/C Ratio   | 0.59                                                                              | 0.83                                                                              | 0.31                                                                              | 0.43                                                                              |       |      |      |      |      |      |
| v/c Ratio            | 0.51                                                                              | 0.39                                                                              | 0.69                                                                              | 0.52                                                                              |       |      |      |      |      |      |
| Control Delay        | 6.1                                                                               | 2.0                                                                               | 58.8                                                                              | 41.5                                                                              |       |      |      |      |      |      |
| Queue Delay          | 2.0                                                                               | 1.8                                                                               | 7.0                                                                               | 1.9                                                                               |       |      |      |      |      |      |
| Total Delay          | 8.1                                                                               | 3.8                                                                               | 65.8                                                                              | 43.3                                                                              |       |      |      |      |      |      |
| LOS                  | A                                                                                 | A                                                                                 | E                                                                                 | D                                                                                 |       |      |      |      |      |      |
| Approach Delay       |                                                                                   | 5.3                                                                               | 65.8                                                                              |                                                                                   |       |      |      |      |      |      |
| Approach LOS         |                                                                                   | A                                                                                 | E                                                                                 |                                                                                   |       |      |      |      |      |      |

## Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 32.2

Intersection Capacity Utilization 47.5%

Analysis Period (min) 15

Intersection LOS: C

ICU Level of Service A

## Splits and Phases: 9: W Main St & Roanoke Ave

|                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |  |  |  |  |  |
| #8                                                                                  | #9                                                                                  | ø2 (R)                                                                              | #8                                                                                  | #9                                                                                  | ø4                                                                                  | #8                                                                                  | #9                                                                                  | ø3                                                                                  |
| 56 s                                                                                |                                                                                     |                                                                                     | 41 s                                                                                |                                                                                     |                                                                                     | 55 s                                                                                |                                                                                     | 28 s                                                                                |
| #8                                                                                  | #9                                                                                  | ø6 (R)                                                                              | #9                                                                                  |                                                                                     | ø8                                                                                  | #8                                                                                  | #9                                                                                  | ø13                                                                                 |
| 56 s                                                                                |                                                                                     |                                                                                     | 96 s                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 28 s                                                                                |

# HCM Unsignalized Intersection Capacity Analysis

10: W Main St & East Ave

Timing Plan: PM Peak Hour

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR                                                                               | SBL                                                                               | SBR                                                                               |
| Lane Configurations               |                                                                                   |  |  |                                                                                   |  |                                                                                   |
| Volume (veh/h)                    | 88                                                                                | 538                                                                               | 551                                                                               | 51                                                                                | 56                                                                                | 75                                                                                |
| Sign Control                      |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   | Stop                                                                              |                                                                                   |
| Grade                             |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Hourly flow rate (vph)            | 96                                                                                | 585                                                                               | 599                                                                               | 55                                                                                | 61                                                                                | 82                                                                                |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   | None                                                                              | None                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   | 763                                                                               | 275                                                                               |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             | 0.87                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.93                                                                              | 0.87                                                                              |
| vC, conflicting volume            | 654                                                                               |                                                                                   |                                                                                   |                                                                                   | 1403                                                                              | 627                                                                               |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 529                                                                               |                                                                                   |                                                                                   |                                                                                   | 1101                                                                              | 497                                                                               |
| tC, single (s)                    | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   | 6.4                                                                               | 6.2                                                                               |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   | 3.5                                                                               | 3.3                                                                               |
| p0 queue free %                   | 90                                                                                |                                                                                   |                                                                                   |                                                                                   | 69                                                                                | 84                                                                                |
| cM capacity (veh/h)               | 913                                                                               |                                                                                   |                                                                                   |                                                                                   | 197                                                                               | 503                                                                               |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 680                                                                               | 654                                                                               | 142                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 96                                                                                | 0                                                                                 | 61                                                                                |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 55                                                                                | 82                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 913                                                                               | 1700                                                                              | 302                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.10                                                                              | 0.38                                                                              | 0.47                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 9                                                                                 | 0                                                                                 | 60                                                                                |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 2.6                                                                               | 0.0                                                                               | 27.1                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 |                                                                                   | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 2.6                                                                               | 0.0                                                                               | 27.1                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   | 3.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   | 83.0%                                                                             | ICU Level of Service                                                              |                                                                                   | E                                                                                 |                                                                                   |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |



# Timings

## 11: McDermott Ave/Maple Ave & W Main St

Timing Plan: PM Peak Hour

|                      |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | SBL                                                                                | SBT                                                                                 |
| Lane Configurations  |                                                                                   |  |                                                                                   |  |                                                                                   |  |                                                                                    |  |
| Volume (vph)         | 14                                                                                | 587                                                                               | 27                                                                                | 553                                                                               | 40                                                                                | 13                                                                                | 67                                                                                 | 14                                                                                  |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                               | NA                                                                                  |
| Protected Phases     |                                                                                   | 2                                                                                 |                                                                                   | 6                                                                                 |                                                                                   | 4                                                                                 |                                                                                    | 8                                                                                   |
| Permitted Phases     | 2                                                                                 |                                                                                   | 6                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 8                                                                                  |                                                                                     |
| Detector Phase       | 2                                                                                 | 2                                                                                 | 6                                                                                 | 6                                                                                 | 4                                                                                 | 4                                                                                 | 8                                                                                  | 8                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Minimum Initial (s)  | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                | 4.0                                                                                 |
| Minimum Split (s)    | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 9.0                                                                               | 9.0                                                                               | 9.0                                                                                | 9.0                                                                                 |
| Total Split (s)      | 67.0                                                                              | 67.0                                                                              | 67.0                                                                              | 67.0                                                                              | 23.0                                                                              | 23.0                                                                              | 23.0                                                                               | 23.0                                                                                |
| Total Split (%)      | 74.4%                                                                             | 74.4%                                                                             | 74.4%                                                                             | 74.4%                                                                             | 25.6%                                                                             | 25.6%                                                                             | 25.6%                                                                              | 25.6%                                                                               |
| Yellow Time (s)      | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                                | 3.0                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                                | 2.0                                                                                 |
| Lost Time Adjust (s) |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 |
| Total Lost Time (s)  |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                    | 5.0                                                                                 |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Recall Mode          | Max                                                                               | Max                                                                               | Max                                                                               | Max                                                                               | None                                                                              | None                                                                              | None                                                                               | None                                                                                |
| Act Effct Green (s)  |                                                                                   | 63.8                                                                              |                                                                                   | 63.8                                                                              |                                                                                   | 11.1                                                                              |                                                                                    | 11.2                                                                                |
| Actuated g/C Ratio   |                                                                                   | 0.79                                                                              |                                                                                   | 0.79                                                                              |                                                                                   | 0.14                                                                              |                                                                                    | 0.14                                                                                |
| v/c Ratio            |                                                                                   | 0.49                                                                              |                                                                                   | 0.46                                                                              |                                                                                   | 0.46                                                                              |                                                                                    | 0.57                                                                                |
| Control Delay        |                                                                                   | 6.1                                                                               |                                                                                   | 5.9                                                                               |                                                                                   | 26.5                                                                              |                                                                                    | 41.0                                                                                |
| Queue Delay          |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 |
| Total Delay          |                                                                                   | 6.1                                                                               |                                                                                   | 5.9                                                                               |                                                                                   | 26.5                                                                              |                                                                                    | 41.0                                                                                |
| LOS                  |                                                                                   | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   | C                                                                                 |                                                                                    | D                                                                                   |
| Approach Delay       |                                                                                   | 6.1                                                                               |                                                                                   | 5.9                                                                               |                                                                                   | 26.5                                                                              |                                                                                    | 41.0                                                                                |
| Approach LOS         |                                                                                   | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   | C                                                                                 |                                                                                    | D                                                                                   |

### Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 81.2

Natural Cycle: 40

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.57

Intersection Signal Delay: 10.0

Intersection Capacity Utilization 61.4%

Analysis Period (min) 15

Intersection LOS: A

ICU Level of Service B

### Splits and Phases: 11: McDermott Ave/Maple Ave & W Main St

|                                                                                     |                                                                                       |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |
| 67 s                                                                                | 23 s                                                                                  |
|  |  |
| 67 s                                                                                | 23 s                                                                                  |

# HCM Unsignalized Intersection Capacity Analysis 12: Parking Lot/Union Ave & W Main St

Timing Plan: PM Peak Hour

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |
| Volume (veh/h)                    | 22                                                                                | 660                                                                               | 23                                                                                | 23                                                                                | 574                                                                               | 23                                                                                | 9                                                                                  | 3                                                                                   | 22                                                                                  | 15                                                                                  | 2                                                                                   | 9                                                                                   |
| Sign Control                      |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |                                                                                    | Stop                                                                                |                                                                                     |                                                                                     | Stop                                                                                |                                                                                     |
| Grade                             |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                    | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Hourly flow rate (vph)            | 24                                                                                | 717                                                                               | 25                                                                                | 25                                                                                | 624                                                                               | 25                                                                                | 10                                                                                 | 3                                                                                   | 24                                                                                  | 16                                                                                  | 2                                                                                   | 10                                                                                  |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (ft)              |                                                                                   | 285                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   | 0.85                                                                              |                                                                                   |                                                                                   | 0.85                                                                               | 0.85                                                                                | 0.85                                                                                | 0.85                                                                                | 0.85                                                                                |                                                                                     |
| vC, conflicting volume            | 649                                                                               |                                                                                   |                                                                                   | 742                                                                               |                                                                                   |                                                                                   | 1475                                                                               | 1477                                                                                | 730                                                                                 | 1490                                                                                | 1477                                                                                | 636                                                                                 |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 649                                                                               |                                                                                   |                                                                                   | 607                                                                               |                                                                                   |                                                                                   | 1471                                                                               | 1472                                                                                | 593                                                                                 | 1488                                                                                | 1472                                                                                | 636                                                                                 |
| tC, single (s)                    | 4.1                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |                                                                                   | 7.1                                                                                | 6.5                                                                                 | 6.2                                                                                 | 7.1                                                                                 | 6.5                                                                                 | 6.2                                                                                 |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 2.2                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |                                                                                   | 3.5                                                                                | 4.0                                                                                 | 3.3                                                                                 | 3.5                                                                                 | 4.0                                                                                 | 3.3                                                                                 |
| p0 queue free %                   | 97                                                                                |                                                                                   |                                                                                   | 97                                                                                |                                                                                   |                                                                                   | 88                                                                                 | 97                                                                                  | 94                                                                                  | 79                                                                                  | 98                                                                                  | 98                                                                                  |
| cM capacity (veh/h)               | 947                                                                               |                                                                                   |                                                                                   | 832                                                                               |                                                                                   |                                                                                   | 83                                                                                 | 103                                                                                 | 432                                                                                 | 78                                                                                  | 103                                                                                 | 481                                                                                 |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total                      | 766                                                                               | 674                                                                               | 37                                                                                | 28                                                                                |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left                       | 24                                                                                | 25                                                                                | 10                                                                                | 16                                                                                |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right                      | 25                                                                                | 25                                                                                | 24                                                                                | 10                                                                                |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| cSH                               | 947                                                                               | 832                                                                               | 181                                                                               | 112                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.03                                                                              | 0.03                                                                              | 0.20                                                                              | 0.25                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft)            | 2                                                                                 | 2                                                                                 | 18                                                                                | 23                                                                                |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)                 | 0.7                                                                               | 0.8                                                                               | 29.9                                                                              | 47.5                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS                          | A                                                                                 | A                                                                                 | D                                                                                 | E                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 0.7                                                                               | 0.8                                                                               | 29.9                                                                              | 47.5                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      |                                                                                   |                                                                                   | D                                                                                 | E                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   | 2.3                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 54.7%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                    |                                                                                     | A                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

13: W Main St & Ostrander Ave

Timing Plan: PM Peak Hour

|                        |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement               | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations    |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |  |                                                                                     |
| Volume (veh/h)         | 40                                                                                | 642                                                                               | 12                                                                                | 5                                                                                 | 707                                                                               | 68                                                                                | 0                                                                                 | 0                                                                                   | 0                                                                                   | 38                                                                                  | 2                                                                                   | 66                                                                                  |
| Sign Control           |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Stop                                                                                |                                                                                     |                                                                                     | Stop                                                                                |                                                                                     |
| Grade                  |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor       | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.90                                                                              | 0.90                                                                              | 0.90                                                                              | 0.75                                                                              | 0.75                                                                                | 0.75                                                                                | 0.86                                                                                | 0.86                                                                                | 0.86                                                                                |
| Hourly flow rate (vph) | 44                                                                                | 705                                                                               | 13                                                                                | 6                                                                                 | 786                                                                               | 76                                                                                | 0                                                                                 | 0                                                                                   | 0                                                                                   | 44                                                                                  | 2                                                                                   | 77                                                                                  |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type            |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median storage (veh)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (ft)   |                                                                                   | 658                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked  |                                                                                   |                                                                                   |                                                                                   | 0.88                                                                              |                                                                                   |                                                                                   | 0.88                                                                              | 0.88                                                                                | 0.88                                                                                | 0.88                                                                                | 0.88                                                                                |                                                                                     |
| vC, conflicting volume | 861                                                                               |                                                                                   |                                                                                   | 719                                                                               |                                                                                   |                                                                                   | 1712                                                                              | 1672                                                                                | 712                                                                                 | 1634                                                                                | 1641                                                                                | 823                                                                                 |
| vC1, stage 1 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol     | 861                                                                               |                                                                                   |                                                                                   | 610                                                                               |                                                                                   |                                                                                   | 1742                                                                              | 1696                                                                                | 603                                                                                 | 1653                                                                                | 1661                                                                                | 823                                                                                 |
| tC, single (s)         | 4.1                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |                                                                                   | 7.1                                                                               | 6.5                                                                                 | 6.2                                                                                 | 7.1                                                                                 | 6.5                                                                                 | 6.2                                                                                 |
| tC, 2 stage (s)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                 | 2.2                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |                                                                                   | 3.5                                                                               | 4.0                                                                                 | 3.3                                                                                 | 3.5                                                                                 | 4.0                                                                                 | 3.3                                                                                 |
| p0 queue free %        | 94                                                                                |                                                                                   |                                                                                   | 99                                                                                |                                                                                   |                                                                                   | 100                                                                               | 100                                                                                 | 100                                                                                 | 33                                                                                  | 97                                                                                  | 80                                                                                  |
| cM capacity (veh/h)    | 776                                                                               |                                                                                   |                                                                                   | 859                                                                               |                                                                                   |                                                                                   | 45                                                                                | 77                                                                                  | 442                                                                                 | 66                                                                                  | 81                                                                                  | 376                                                                                 |

| Direction, Lane #      | EB 1 | WB 1 | SB 1  |
|------------------------|------|------|-------|
| Volume Total           | 763  | 867  | 123   |
| Volume Left            | 44   | 6    | 44    |
| Volume Right           | 13   | 76   | 77    |
| cSH                    | 776  | 859  | 137   |
| Volume to Capacity     | 0.06 | 0.01 | 0.90  |
| Queue Length 95th (ft) | 4    | 0    | 150   |
| Control Delay (s)      | 1.5  | 0.2  | 114.0 |
| Lane LOS               | A    | A    | F     |
| Approach Delay (s)     | 1.5  | 0.2  | 114.0 |
| Approach LOS           |      |      | F     |

| Intersection Summary              |       |                      |   |
|-----------------------------------|-------|----------------------|---|
| Average Delay                     |       | 8.8                  |   |
| Intersection Capacity Utilization | 75.2% | ICU Level of Service | D |
| Analysis Period (min)             | 15    |                      |   |

# HCM Unsignalized Intersection Capacity Analysis

14: W Main St & Riverside Dr

Timing Plan: PM Peak Hour

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement               | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations    |  |                                                                                   |  |                                                                                   |                                                                                   |  |
| Volume (veh/h)         | 71                                                                                | 169                                                                               | 534                                                                               | 87                                                                                | 197                                                                               | 619                                                                               |
| Sign Control           | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |
| Grade                  | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor       | 0.98                                                                              | 0.98                                                                              | 0.98                                                                              | 0.98                                                                              | 0.98                                                                              | 0.98                                                                              |
| Hourly flow rate (vph) | 72                                                                                | 172                                                                               | 545                                                                               | 89                                                                                | 201                                                                               | 632                                                                               |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type            |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |
| Median storage (veh)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume | 1623                                                                              | 589                                                                               |                                                                                   |                                                                                   | 634                                                                               |                                                                                   |
| vC1, stage 1 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol     | 1623                                                                              | 589                                                                               |                                                                                   |                                                                                   | 634                                                                               |                                                                                   |
| tC, single (s)         | *7.1                                                                              | *6.2                                                                              |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |
| tC, 2 stage (s)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                 | 3.5                                                                               | 3.3                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |
| p0 queue free %        | 0                                                                                 | 66                                                                                |                                                                                   |                                                                                   | 79                                                                                |                                                                                   |
| cM capacity (veh/h)    | 66                                                                                | 511                                                                               |                                                                                   |                                                                                   | 959                                                                               |                                                                                   |

| Direction, Lane #      | WB 1  | NB 1 | SB 1 |
|------------------------|-------|------|------|
| Volume Total           | 245   | 634  | 833  |
| Volume Left            | 72    | 0    | 201  |
| Volume Right           | 172   | 89   | 0    |
| cSH                    | 170   | 1700 | 959  |
| Volume to Capacity     | 1.44  | 0.37 | 0.21 |
| Queue Length 95th (ft) | 384   | 0    | 20   |
| Control Delay (s)      | 279.2 | 0.0  | 4.8  |
| Lane LOS               | F     |      | A    |
| Approach Delay (s)     | 279.2 | 0.0  | 4.8  |
| Approach LOS           | F     |      |      |

## Intersection Summary

|                                   |        |                      |   |
|-----------------------------------|--------|----------------------|---|
| Average Delay                     | 42.3   |                      |   |
| Intersection Capacity Utilization | 101.2% | ICU Level of Service | G |
| Analysis Period (min)             | 15     |                      |   |

\* User Entered Value



# HCM Unsignalized Intersection Capacity Analysis

## 15: W Main St & Fishel Ave

Timing Plan: PM Peak Hour

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |  |                                                                                   |                                                                                   |  |  |                                                                                   |
| Volume (veh/h)                    | 18                                                                                | 101                                                                               | 109                                                                               | 594                                                                               | 715                                                                               | 37                                                                                |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              |
| Hourly flow rate (vph)            | 21                                                                                | 120                                                                               | 130                                                                               | 707                                                                               | 851                                                                               | 44                                                                                |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | None                                                                              | None                                                                              |                                                                                   |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 1840                                                                              | 873                                                                               | 895                                                                               |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 1840                                                                              | 873                                                                               | 895                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.4                                                                               | 6.2                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 69                                                                                | 66                                                                                | 83                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 70                                                                                | 352                                                                               | 766                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | EB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 142                                                                               | 837                                                                               | 895                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 21                                                                                | 130                                                                               | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 120                                                                               | 0                                                                                 | 44                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 218                                                                               | 766                                                                               | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.65                                                                              | 0.17                                                                              | 0.53                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 98                                                                                | 15                                                                                | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 47.6                                                                              | 4.3                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | E                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 47.6                                                                              | 4.3                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   | 5.5                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   | 94.4%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   | F                                                                                 |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis 16: W Main St & Hubbard Ave

Timing Plan: PM Peak Hour

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement               | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations    |  |                                                                                   |  |                                                                                   |                                                                                   |  |
| Volume (veh/h)         | 118                                                                               | 53                                                                                | 440                                                                               | 158                                                                               | 50                                                                                | 458                                                                               |
| Sign Control           | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |
| Grade                  | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor       | 0.96                                                                              | 0.96                                                                              | 0.92                                                                              | 0.92                                                                              | 0.86                                                                              | 0.86                                                                              |
| Hourly flow rate (vph) | 123                                                                               | 55                                                                                | 478                                                                               | 172                                                                               | 58                                                                                | 533                                                                               |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type            |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |
| Median storage (veh)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume | 1213                                                                              | 564                                                                               |                                                                                   |                                                                                   | 650                                                                               |                                                                                   |
| vC1, stage 1 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol     | 1213                                                                              | 564                                                                               |                                                                                   |                                                                                   | 650                                                                               |                                                                                   |
| tC, single (s)         | 6.4                                                                               | 6.4                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |
| tC, 2 stage (s)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                 | 3.5                                                                               | 3.5                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |
| p0 queue free %        | 34                                                                                | 89                                                                                |                                                                                   |                                                                                   | 94                                                                                |                                                                                   |
| cM capacity (veh/h)    | 187                                                                               | 491                                                                               |                                                                                   |                                                                                   | 936                                                                               |                                                                                   |

| Direction, Lane #      | WB 1 | NB 1 | SB 1 |
|------------------------|------|------|------|
| Volume Total           | 178  | 650  | 591  |
| Volume Left            | 123  | 0    | 58   |
| Volume Right           | 55   | 172  | 0    |
| cSH                    | 232  | 1700 | 936  |
| Volume to Capacity     | 0.77 | 0.38 | 0.06 |
| Queue Length 95th (ft) | 137  | 0    | 5    |
| Control Delay (s)      | 58.3 | 0.0  | 1.6  |
| Lane LOS               | F    |      | A    |
| Approach Delay (s)     | 58.3 | 0.0  | 1.6  |
| Approach LOS           | F    |      |      |

| Intersection Summary              |  |       |                      |
|-----------------------------------|--|-------|----------------------|
| Average Delay                     |  | 8.0   |                      |
| Intersection Capacity Utilization |  | 79.4% | ICU Level of Service |
| Analysis Period (min)             |  | 15    | D                    |

# HCM Unsignalized Intersection Capacity Analysis

## 17: Peconic Ave

Timing Plan: PM Peak Hour

|                                   |  |  |                                                                                    |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                                                                                                                 | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |  |  |   |                                                                                   |                                                                                   |  |
| Volume (veh/h)                    | 101                                                                               | 19                                                                                | 832                                                                                                                                                                 | 84                                                                                | 37                                                                                | 717                                                                               |
| Sign Control                      | Stop                                                                              |                                                                                   | Free                                                                                                                                                                |                                                                                   |                                                                                   | Free                                                                              |
| Grade                             | 0%                                                                                |                                                                                   | 0%                                                                                                                                                                  |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Hourly flow rate (vph)            | 110                                                                               | 21                                                                                | 904                                                                                                                                                                 | 91                                                                                | 40                                                                                | 779                                                                               |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   | None                                                                                                                                                                |                                                                                   |                                                                                   | TWLTL                                                                             |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   | 2                                                                                 |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   | 280                                                                               |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 1810                                                                              | 498                                                                               |                                                                                                                                                                     |                                                                                   | 996                                                                               |                                                                                   |
| vC1, stage 1 conf vol             | 950                                                                               |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             | 860                                                                               |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 1810                                                                              | 498                                                                               |                                                                                                                                                                     |                                                                                   | 996                                                                               |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               |                                                                                                                                                                     |                                                                                   | 4.1                                                                               |                                                                                   |
| tC, 2 stage (s)                   | 5.8                                                                               |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               |                                                                                                                                                                     |                                                                                   | 2.2                                                                               |                                                                                   |
| p0 queue free %                   | 55                                                                                | 96                                                                                |                                                                                                                                                                     |                                                                                   | 94                                                                                |                                                                                   |
| cM capacity (veh/h)               | 246                                                                               | 518                                                                               |                                                                                                                                                                     |                                                                                   | 691                                                                               |                                                                                   |
| Direction, Lane #                 | WB 1                                                                              | WB 2                                                                              | NB 1                                                                                                                                                                | NB 2                                                                              | SB 1                                                                              |                                                                                   |
| Volume Total                      | 110                                                                               | 21                                                                                | 603                                                                                                                                                                 | 393                                                                               | 820                                                                               |                                                                                   |
| Volume Left                       | 110                                                                               | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                 | 40                                                                                |                                                                                   |
| Volume Right                      | 0                                                                                 | 21                                                                                | 0                                                                                                                                                                   | 91                                                                                | 0                                                                                 |                                                                                   |
| cSH                               | 246                                                                               | 518                                                                               | 1700                                                                                                                                                                | 1700                                                                              | 691                                                                               |                                                                                   |
| Volume to Capacity                | 0.45                                                                              | 0.04                                                                              | 0.35                                                                                                                                                                | 0.23                                                                              | 0.06                                                                              |                                                                                   |
| Queue Length 95th (ft)            | 54                                                                                | 3                                                                                 | 0                                                                                                                                                                   | 0                                                                                 | 5                                                                                 |                                                                                   |
| Control Delay (s)                 | 31.0                                                                              | 12.2                                                                              | 0.0                                                                                                                                                                 | 0.0                                                                               | 1.6                                                                               |                                                                                   |
| Lane LOS                          | D                                                                                 | B                                                                                 |                                                                                                                                                                     |                                                                                   | A                                                                                 |                                                                                   |
| Approach Delay (s)                | 28.0                                                                              |                                                                                   | 0.0                                                                                                                                                                 |                                                                                   | 1.6                                                                               |                                                                                   |
| Approach LOS                      | D                                                                                 |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 2.6                                                                                                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 80.2%                                                                                                                                                               | ICU Level of Service                                                              |                                                                                   | D                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                                                                                                  |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

## 18: Griffing Ave/Griffing St & Parking Lot/W 2nd St

Timing Plan: PM Peak Hour

|                        |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement               | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations    |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                     |                                                                                     |  |                                                                                     |
| Volume (veh/h)         | 8                                                                                 | 8                                                                                 | 2                                                                                 | 66                                                                                | 2                                                                                 | 112                                                                               | 0                                                                                 | 140                                                                                 | 14                                                                                  | 56                                                                                  | 133                                                                                 | 0                                                                                   |
| Sign Control           |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |
| Grade                  |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor       | 0.53                                                                              | 0.53                                                                              | 0.53                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.86                                                                                | 0.86                                                                                | 0.86                                                                                |
| Hourly flow rate (vph) | 15                                                                                | 15                                                                                | 4                                                                                 | 79                                                                                | 2                                                                                 | 133                                                                               | 0                                                                                 | 152                                                                                 | 15                                                                                  | 65                                                                                  | 155                                                                                 | 0                                                                                   |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | None                                                                                |                                                                                     |                                                                                     | None                                                                                |                                                                                     |
| Median storage (veh)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (ft)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 517                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume | 579                                                                               | 452                                                                               | 155                                                                               | 456                                                                               | 445                                                                               | 160                                                                               | 155                                                                               |                                                                                     |                                                                                     | 167                                                                                 |                                                                                     |                                                                                     |
| vC1, stage 1 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol     | 579                                                                               | 452                                                                               | 155                                                                               | 456                                                                               | 445                                                                               | 160                                                                               | 155                                                                               |                                                                                     |                                                                                     | 167                                                                                 |                                                                                     |                                                                                     |
| tC, single (s)         | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 4.1                                                                               |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |                                                                                     |
| tC, 2 stage (s)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                 | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |                                                                                     |
| p0 queue free %        | 96                                                                                | 97                                                                                | 100                                                                               | 84                                                                                | 100                                                                               | 85                                                                                | 100                                                                               |                                                                                     |                                                                                     | 95                                                                                  |                                                                                     |                                                                                     |
| cM capacity (veh/h)    | 350                                                                               | 482                                                                               | 896                                                                               | 486                                                                               | 487                                                                               | 883                                                                               | 1438                                                                              |                                                                                     |                                                                                     | 1398                                                                                |                                                                                     |                                                                                     |
| Direction, Lane #      | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total           | 34                                                                                | 214                                                                               | 167                                                                               | 220                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left            | 15                                                                                | 79                                                                                | 0                                                                                 | 65                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right           | 4                                                                                 | 133                                                                               | 15                                                                                | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| cSH                    | 432                                                                               | 675                                                                               | 1438                                                                              | 1398                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity     | 0.08                                                                              | 0.32                                                                              | 0.00                                                                              | 0.05                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft) | 6                                                                                 | 34                                                                                | 0                                                                                 | 4                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)      | 14.0                                                                              | 12.8                                                                              | 0.0                                                                               | 2.6                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS               | B                                                                                 | B                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)     | 14.0                                                                              | 12.8                                                                              | 0.0                                                                               | 2.6                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS           | B                                                                                 | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

### Intersection Summary

|                                   |       |                      |   |  |
|-----------------------------------|-------|----------------------|---|--|
| Average Delay                     | 6.0   |                      |   |  |
| Intersection Capacity Utilization | 41.1% | ICU Level of Service | A |  |
| Analysis Period (min)             | 15    |                      |   |  |



# HCM Unsignalized Intersection Capacity Analysis

## 19: Griffing St/Griffing Ave & Court St

Timing Plan: PM Peak Hour

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |  |                                                                                   |                                                                                   |  |  |                                                                                   |
| Volume (veh/h)                    | 71                                                                                | 47                                                                                | 100                                                                               | 179                                                                               | 143                                                                               | 111                                                                               |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.86                                                                              | 0.86                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              |
| Hourly flow rate (vph)            | 83                                                                                | 55                                                                                | 119                                                                               | 213                                                                               | 170                                                                               | 132                                                                               |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | None                                                                              | None                                                                              |                                                                                   |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   | 996                                                                               |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 688                                                                               | 236                                                                               | 302                                                                               |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 688                                                                               | 236                                                                               | 302                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.5                                                                               | 6.2                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.6                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 77                                                                                | 93                                                                                | 91                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 365                                                                               | 803                                                                               | 1264                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | EB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 137                                                                               | 332                                                                               | 302                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 83                                                                                | 119                                                                               | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 55                                                                                | 0                                                                                 | 132                                                                               |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 467                                                                               | 1264                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.29                                                                              | 0.09                                                                              | 0.18                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 30                                                                                | 8                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 15.9                                                                              | 3.5                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | C                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 15.9                                                                              | 3.5                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   | 4.3                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   | 46.1%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   | A                                                                                 |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis 20: Griffing Ave & Railroad St

Timing Plan: PM Peak Hour

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |
| Sign Control                      |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                    | Stop                                                                                |                                                                                     |                                                                                     | Stop                                                                                |                                                                                     |
| Volume (vph)                      | 16                                                                                | 96                                                                                | 28                                                                                | 22                                                                                | 94                                                                                | 22                                                                                | 30                                                                                 | 213                                                                                 | 7                                                                                   | 3                                                                                   | 207                                                                                 | 18                                                                                  |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Hourly flow rate (vph)            | 17                                                                                | 104                                                                               | 30                                                                                | 24                                                                                | 102                                                                               | 24                                                                                | 33                                                                                 | 232                                                                                 | 8                                                                                   | 3                                                                                   | 225                                                                                 | 20                                                                                  |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total (vph)                | 152                                                                               | 150                                                                               | 272                                                                               | 248                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left (vph)                 | 17                                                                                | 24                                                                                | 33                                                                                | 3                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right (vph)                | 30                                                                                | 24                                                                                | 8                                                                                 | 20                                                                                |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Hadj (s)                          | -0.06                                                                             | -0.03                                                                             | 0.04                                                                              | -0.01                                                                             |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Departure Headway (s)             | 5.5                                                                               | 5.5                                                                               | 5.2                                                                               | 5.2                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Degree Utilization, x             | 0.23                                                                              | 0.23                                                                              | 0.39                                                                              | 0.36                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Capacity (veh/h)                  | 590                                                                               | 586                                                                               | 645                                                                               | 651                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)                 | 10.1                                                                              | 10.2                                                                              | 11.5                                                                              | 11.0                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 10.1                                                                              | 10.2                                                                              | 11.5                                                                              | 11.0                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | B                                                                                 | B                                                                                 | B                                                                                 | B                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Delay                             |                                                                                   |                                                                                   | 10.8                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Level of Service                  |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 46.6%                                                                             | ICU Level of Service                                                              |                                                                                   | A                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

21: Roanoke Ave & W 2nd St/E 2nd St

Timing Plan: PM Peak Hour

|                      |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | SBL                                                                                | SBT                                                                                 |
| Lane Configurations  |                                                                                   |  |                                                                                   |  |                                                                                   |  |                                                                                    |  |
| Volume (vph)         | 24                                                                                | 60                                                                                | 9                                                                                 | 104                                                                               | 19                                                                                | 318                                                                               | 66                                                                                 | 303                                                                                 |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                               | NA                                                                                  |
| Protected Phases     |                                                                                   | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 2                                                                                 |                                                                                    | 6                                                                                   |
| Permitted Phases     | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 2                                                                                 |                                                                                   | 6                                                                                  |                                                                                     |
| Detector Phase       | 4                                                                                 | 4                                                                                 | 8                                                                                 | 8                                                                                 | 2                                                                                 | 2                                                                                 | 6                                                                                  | 6                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Minimum Initial (s)  | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 5.5                                                                               | 5.5                                                                               | 5.5                                                                                | 5.5                                                                                 |
| Minimum Split (s)    | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 10.5                                                                              | 10.5                                                                              | 10.5                                                                               | 10.5                                                                                |
| Total Split (s)      | 19.0                                                                              | 19.0                                                                              | 19.0                                                                              | 19.0                                                                              | 36.0                                                                              | 36.0                                                                              | 36.0                                                                               | 36.0                                                                                |
| Total Split (%)      | 34.5%                                                                             | 34.5%                                                                             | 34.5%                                                                             | 34.5%                                                                             | 65.5%                                                                             | 65.5%                                                                             | 65.5%                                                                              | 65.5%                                                                               |
| Yellow Time (s)      | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                                | 3.0                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                                | 2.0                                                                                 |
| Lost Time Adjust (s) |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 |
| Total Lost Time (s)  |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                    | 5.0                                                                                 |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | Max                                                                               | Max                                                                               | Max                                                                                | Max                                                                                 |
| Act Effct Green (s)  |                                                                                   | 11.2                                                                              |                                                                                   | 11.2                                                                              |                                                                                   | 33.7                                                                              |                                                                                    | 33.7                                                                                |
| Actuated g/C Ratio   |                                                                                   | 0.22                                                                              |                                                                                   | 0.22                                                                              |                                                                                   | 0.67                                                                              |                                                                                    | 0.67                                                                                |
| v/c Ratio            |                                                                                   | 0.36                                                                              |                                                                                   | 0.47                                                                              |                                                                                   | 0.31                                                                              |                                                                                    | 0.37                                                                                |
| Control Delay        |                                                                                   | 18.0                                                                              |                                                                                   | 18.5                                                                              |                                                                                   | 6.2                                                                               |                                                                                    | 6.8                                                                                 |
| Queue Delay          |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 |
| Total Delay          |                                                                                   | 18.0                                                                              |                                                                                   | 18.5                                                                              |                                                                                   | 6.2                                                                               |                                                                                    | 6.8                                                                                 |
| LOS                  |                                                                                   | B                                                                                 |                                                                                   | B                                                                                 |                                                                                   | A                                                                                 |                                                                                    | A                                                                                   |
| Approach Delay       |                                                                                   | 18.0                                                                              |                                                                                   | 18.5                                                                              |                                                                                   | 6.2                                                                               |                                                                                    | 6.8                                                                                 |
| Approach LOS         |                                                                                   | B                                                                                 |                                                                                   | B                                                                                 |                                                                                   | A                                                                                 |                                                                                    | A                                                                                   |

## Intersection Summary

Cycle Length: 55

Actuated Cycle Length: 50

Natural Cycle: 40

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.47

Intersection Signal Delay: 10.0

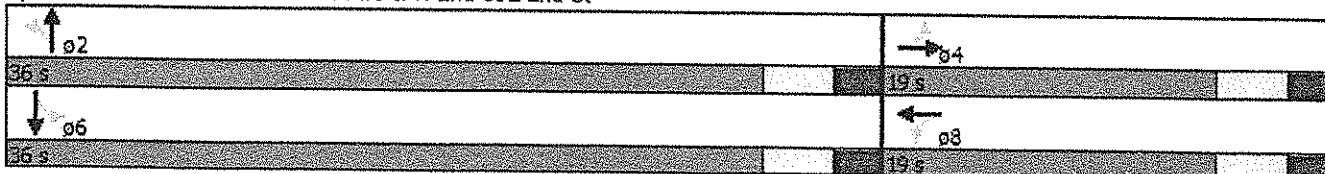
Intersection Capacity Utilization 63.0%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service B

Splits and Phases: 21: Roanoke Ave & W 2nd St/E 2nd St



# Timings

## 22: Roanoke Ave & Railroad St

Timing Plan: PM Peak Hour

|                      |  |  |  |  |      |      |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|------|
| Lane Group           | EBL                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | ø6   | ø8   |
| Lane Configurations  |  |                                                                                   |  |  |      |      |
| Volume (vph)         | 83                                                                                | 21                                                                                | 378                                                                               | 383                                                                               |      |      |
| Turn Type            | NA                                                                                | Perm                                                                              | NA                                                                                | NA                                                                                |      |      |
| Protected Phases     | 2                                                                                 |                                                                                   | 4                                                                                 | 8 6                                                                               | 6    | 8    |
| Permitted Phases     |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   |      |      |
| Detector Phase       | 2                                                                                 | 4                                                                                 | 4                                                                                 | 8 6                                                                               |      |      |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |      |
| Minimum Initial (s)  | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0  | 4.0  |
| Minimum Split (s)    | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               |                                                                                   | 9.0  | 9.0  |
| Total Split (s)      | 18.0                                                                              | 35.0                                                                              | 35.0                                                                              |                                                                                   | 27.0 | 35.0 |
| Total Split (%)      | 22.5%                                                                             | 43.8%                                                                             | 43.8%                                                                             |                                                                                   | 34%  | 44%  |
| Yellow Time (s)      | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0  | 3.0  |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0  | 2.0  |
| Lost Time Adjust (s) | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   |      |      |
| Total Lost Time (s)  | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   |      |      |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |      |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |      |
| Recall Mode          | None                                                                              | Max                                                                               | Max                                                                               |                                                                                   | Max  | Max  |
| Act Effect Green (s) | 10.5                                                                              |                                                                                   | 30.0                                                                              | 57.0                                                                              |      |      |
| Actuated g/C Ratio   | 0.14                                                                              |                                                                                   | 0.39                                                                              | 0.74                                                                              |      |      |
| v/c Ratio            | 0.54                                                                              |                                                                                   | 0.61                                                                              | 0.38                                                                              |      |      |
| Control Delay        | 36.5                                                                              |                                                                                   | 24.2                                                                              | 0.9                                                                               |      |      |
| Queue Delay          | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.4                                                                               |      |      |
| Total Delay          | 36.5                                                                              |                                                                                   | 24.2                                                                              | 1.3                                                                               |      |      |
| LOS                  | D                                                                                 |                                                                                   | C                                                                                 | A                                                                                 |      |      |
| Approach Delay       | 36.5                                                                              |                                                                                   | 24.2                                                                              | 1.3                                                                               |      |      |
| Approach LOS         | D                                                                                 |                                                                                   | C                                                                                 | A                                                                                 |      |      |

### Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 77.5

Natural Cycle: 55

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 14.8

Intersection Capacity Utilization 51.2%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service A

### Splits and Phases: 22: Roanoke Ave & Railroad St

|                                                                                                      |                                                                                                      |                                                                                                      |
|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| #22 #23<br><br>ø2 | #22 #23<br><br>ø6 | #22 #23<br><br>ø4 |
| 18 s                                                                                                 | 27 s                                                                                                 | 35 s                                                                                                 |
|                                                                                                      |                                                                                                      | #22 #23<br><br>ø8 |
|                                                                                                      |                                                                                                      | 35 s                                                                                                 |



# Timings

## 23: Roanoke Ave & Northville Turnpike

Timing Plan: PM Peak Hour

|                      | ↖     | ↑    | ↗     | ↘     | ↓     | ø2   | ø4   |
|----------------------|-------|------|-------|-------|-------|------|------|
| Lane Group           | WBL   | NBT  | NBR   | SBL   | SBT   |      |      |
| Lane Configurations  | W     | ↑    | ↗     |       | ↓     |      |      |
| Volume (vph)         | 186   | 338  | 123   | 28    | 315   |      |      |
| Turn Type            | NA    | NA   | pm+ov | Perm  | NA    |      |      |
| Protected Phases     | 6     | 4 2  | 6     |       | 8     | 2    | 4    |
| Permitted Phases     |       |      | 4 2   | 8     |       |      |      |
| Detector Phase       | 6     | 4 2  | 6     | 8     | 8     |      |      |
| Switch Phase         |       |      |       |       |       |      |      |
| Minimum Initial (s)  | 4.0   |      | 4.0   | 4.0   | 4.0   | 4.0  | 4.0  |
| Minimum Split (s)    | 9.0   |      | 9.0   | 9.0   | 9.0   | 9.0  | 9.0  |
| Total Split (s)      | 27.0  |      | 27.0  | 35.0  | 35.0  | 18.0 | 35.0 |
| Total Split (%)      | 33.8% |      | 33.8% | 43.8% | 43.8% | 23%  | 44%  |
| Yellow Time (s)      | 3.0   |      | 3.0   | 3.0   | 3.0   | 3.0  | 3.0  |
| All-Red Time (s)     | 2.0   |      | 2.0   | 2.0   | 2.0   | 2.0  | 2.0  |
| Lost Time Adjust (s) | 0.0   |      | 0.0   |       | 0.0   |      |      |
| Total Lost Time (s)  | 5.0   |      | 5.0   |       | 5.0   |      |      |
| Lead/Lag             |       |      |       |       |       |      |      |
| Lead-Lag Optimize?   |       |      |       |       |       |      |      |
| Recall Mode          | Max   |      | Max   | Max   | Max   | None | Max  |
| Act Effct Green (s)  | 22.0  | 45.5 | 77.5  |       | 30.0  |      |      |
| Actuated g/C Ratio   | 0.28  | 0.59 | 1.00  |       | 0.39  |      |      |
| v/c Ratio            | 0.45  | 0.33 | 0.08  |       | 0.54  |      |      |
| Control Delay        | 26.0  | 1.1  | 0.1   |       | 22.6  |      |      |
| Queue Delay          | 0.0   | 0.8  | 0.0   |       | 0.0   |      |      |
| Total Delay          | 26.0  | 1.8  | 0.1   |       | 22.6  |      |      |
| LOS                  | C     | A    | A     |       | C     |      |      |
| Approach Delay       | 26.0  | 1.4  |       |       | 22.6  |      |      |
| Approach LOS         | C     | A    |       |       | C     |      |      |

### Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 77.5

Natural Cycle: 55

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 13.8

Intersection Capacity Utilization 59.8%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service B

### Splits and Phases: 23: Roanoke Ave & Northville Turnpike

|                      |                      |                      |
|----------------------|----------------------|----------------------|
| #22 #23<br>↖ ↗<br>ø2 | #22 #23<br>↓ ↗<br>ø6 | #22 #23<br>↑ ↗<br>ø4 |
| 18 s                 | 27 s                 | 35 s                 |
|                      |                      | #22 #23<br>↓ ↓<br>ø8 |
|                      |                      | 35 s                 |

# Timings

## 24: Osborn Ave/Osborn St & Court St

Timing Plan: PM Peak Hour

|                      |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | SBL                                                                                | SBT                                                                                 |
| Lane Configurations  |                                                                                   |  |                                                                                   |  |                                                                                   |  |                                                                                    |  |
| Volume (vph)         | 111                                                                               | 108                                                                               | 10                                                                                | 207                                                                               | 8                                                                                 | 55                                                                                | 3                                                                                  | 100                                                                                 |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                               | NA                                                                                  |
| Protected Phases     |                                                                                   | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 2                                                                                 |                                                                                    | 6                                                                                   |
| Permitted Phases     | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 2                                                                                 |                                                                                   | 6                                                                                  |                                                                                     |
| Detector Phase       | 4                                                                                 | 4                                                                                 | 8                                                                                 | 8                                                                                 | 2                                                                                 | 2                                                                                 | 6                                                                                  | 6                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Minimum Initial (s)  | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                | 4.0                                                                                 |
| Minimum Split (s)    | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0                                                                                | 9.0                                                                                 |
| Total Split (s)      | 35.0                                                                              | 35.0                                                                              | 35.0                                                                              | 35.0                                                                              | 25.0                                                                              | 25.0                                                                              | 25.0                                                                               | 25.0                                                                                |
| Total Split (%)      | 58.3%                                                                             | 58.3%                                                                             | 58.3%                                                                             | 58.3%                                                                             | 41.7%                                                                             | 41.7%                                                                             | 41.7%                                                                              | 41.7%                                                                               |
| Yellow Time (s)      | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                                | 3.0                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                                | 2.0                                                                                 |
| Lost Time Adjust (s) |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 |
| Total Lost Time (s)  |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                    | 5.0                                                                                 |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Recall Mode          | Max                                                                               | Max                                                                               | Max                                                                               | Max                                                                               | None                                                                              | None                                                                              | None                                                                               | None                                                                                |
| Act Effct Green (s)  |                                                                                   | 30.2                                                                              |                                                                                   | 30.2                                                                              |                                                                                   | 10.5                                                                              |                                                                                    | 10.5                                                                                |
| Actuated g/C Ratio   |                                                                                   | 0.59                                                                              |                                                                                   | 0.59                                                                              |                                                                                   | 0.21                                                                              |                                                                                    | 0.21                                                                                |
| v/c Ratio            |                                                                                   | 0.29                                                                              |                                                                                   | 0.22                                                                              |                                                                                   | 0.23                                                                              |                                                                                    | 0.66                                                                                |
| Control Delay        |                                                                                   | 7.3                                                                               |                                                                                   | 6.5                                                                               |                                                                                   | 14.9                                                                              |                                                                                    | 15.7                                                                                |
| Queue Delay          |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 |
| Total Delay          |                                                                                   | 7.3                                                                               |                                                                                   | 6.5                                                                               |                                                                                   | 14.9                                                                              |                                                                                    | 15.7                                                                                |
| LOS                  |                                                                                   | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   | B                                                                                 |                                                                                    | B                                                                                   |
| Approach Delay       |                                                                                   | 7.3                                                                               |                                                                                   | 6.5                                                                               |                                                                                   | 14.9                                                                              |                                                                                    | 15.7                                                                                |
| Approach LOS         |                                                                                   | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   | B                                                                                 |                                                                                    | B                                                                                   |

### Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 50.8

Natural Cycle: 40

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 10.8

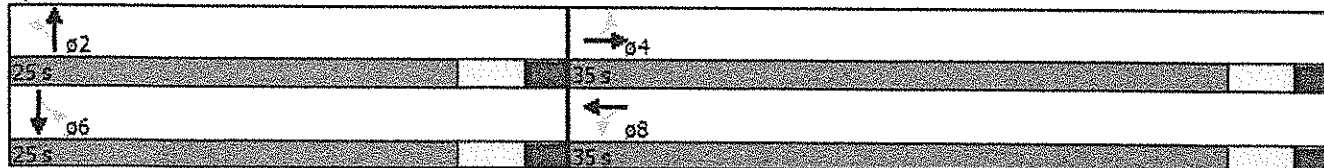
Intersection Capacity Utilization 53.6%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service A

Splits and Phases: 24: Osborn Ave/Osborn St & Court St



---

Project: CR 94 Roundabout

Scheme name: Existing Condiditons

---

## Control Data

| Option         | Setting          | Option       | Setting               |
|----------------|------------------|--------------|-----------------------|
| Capacity Model | Rodel-Win1       | Mode         | Mode2 - Full Geometry |
| Queue Model    | Rodel-Win1       | Delay Model  | Rodel-Win1            |
| Flows          | Peak Hour Factor | Time Slice   | 7.5 minutes           |
| Delay          | Queuing          | Light / Dark | Light                 |

## Geometry Data for Empirical Model

| Leg | Approach Geometry |         |   |        |    |
|-----|-------------------|---------|---|--------|----|
|     | Leg Name          | Bearing | G | V (ft) | nv |
| 1   | Peconic Avenue    | 0       | 0 | 12.00  | 1  |
| 2   | CR 94             | 78      | 0 | 12.00  | 1  |
| 3   | CR 63             | 158     | 0 | 12.00  | 1  |
| 4   | CR 104            | 230     | 0 | 12.00  | 1  |
| 5   | NYS 24            | 270     | 0 | 12.00  | 1  |

| Leg | Entry Geometry |    |         |        |       | Circ Geom |        |    |
|-----|----------------|----|---------|--------|-------|-----------|--------|----|
|     | E (ft)         | ne | L' (ft) | R (ft) | ?     | D (ft)    | C (ft) | nc |
| 1   | 18.00          | 1  | 12.00   | 75.00  | 29.00 | 170.00    | 18.00  | 1  |
| 2   | 13.00          | 1  | 12.00   | 62.00  | 20.00 | 170.00    | 18.00  | 1  |
| 3   | 13.00          | 1  | 13.00   | 63.00  | 20.00 | 170.00    | 18.00  | 1  |
| 4   | 12.00          | 1  | 0.00    | 66.00  | 40.00 | 170.00    | 18.00  | 1  |
| 5   | 13.00          | 1  | 12.00   | 66.00  | 35.00 | 170.00    | 18.00  | 1  |

| Leg | Exit Geometry |     |         |     |
|-----|---------------|-----|---------|-----|
|     | Ex (ft)       | nex | Vx (ft) | nvx |
| 1   | 14.00         | 1   | 12.00   | 1   |
| 2   | 14.00         | 1   | 22.00   | 2   |
| 3   | 14.00         | 1   | 12.00   | 1   |
| 4   | 14.00         | 1   | 12.00   | 1   |
| 5   | 14.00         | 1   | 12.00   | 1   |

| Leg | Entry Capacity Modifiers |            |                |
|-----|--------------------------|------------|----------------|
|     | + Cap (v/h)              | Xwalk Fact | Conf Level (%) |
| 1   | 0                        | 1.000      | 50             |
| 2   | 0                        | 1.000      | 50             |
| 3   | 0                        | 1.000      | 50             |
| 4   | 0                        | 1.000      | 50             |
| 5   | 0                        | 1.000      | 50             |

## Flow Modifiers and Flow Data

| Leg | Leg Name       | Flow Modifiers |        |
|-----|----------------|----------------|--------|
|     |                | %Truck         | Factor |
| 1   | Peconic Avenue | 3.0            | 1.00   |
| 2   | CR 94          | 3.0            | 1.00   |
| 3   | CR 63          | 3.0            | 1.00   |
| 4   | CR 104         | 3.0            | 1.00   |
| 5   | NYS 24         | 3.0            | 1.00   |

| Leg | Arrival Turning Flows (veh/hr) |        |        |        |        |        |
|-----|--------------------------------|--------|--------|--------|--------|--------|
|     | U-Turn                         | Exit-4 | Exit-3 | Exit-2 | Exit-1 | Bypass |
| 1   | 4                              | 186    | 200    | 336    | 199    | 0      |
| 2   | 4                              | 331    | 192    | 193    | 138    | 0      |
| 3   | 5                              | 58     | 179    | 88     | 39     | 0      |
| 4   | 3                              | 87     | 107    | 186    | 0      | 39     |
| 5   | 6                              | 102    | 160    | 250    | 316    | 0      |

| Leg | Arrival Volume Ratios |        |        | Arrival Volume Times (min) |       |       | PHF  |
|-----|-----------------------|--------|--------|----------------------------|-------|-------|------|
|     | Ratio1                | Ratio2 | Ratio3 | Time1                      | Time2 | Time3 |      |
| 1   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |
| 2   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |
| 3   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |
| 4   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |
| 5   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |



## Model Results

### Global performance

| Leg | Leg Name       | Global Performance |         |         |          |        |
|-----|----------------|--------------------|---------|---------|----------|--------|
|     |                | Parameter          | Units   | Entries | Bypasses | Total  |
| 1   | Peconic Avenue | Arrive Flows       | veh/hr  | 3369    | 39       | 3408   |
| 2   | CR 94          | Capacity           | veh/hr  | 3451    | 289      | 3740   |
| 3   | CR 63          | Average Delay      | sec/veh | 322.75  | 14.14    | 319.22 |
| 4   | CR 104         | L.O.S. (Signal)    | A – F   | F       | B        | F      |
| 5   | NYS 24         | L.O.S. (Unsig)     | A – F   | F       | B        | F      |

### Entry Flow and Capacity (60min)

| Leg | Bypass Type | Flow Rate (veh/hr) |        | Opp Rate (veh/hr) |        | Capacity (veh/hr) |        | Ave VCR |        |
|-----|-------------|--------------------|--------|-------------------|--------|-------------------|--------|---------|--------|
|     |             | Entry              | Bypass | Entry             | Bypass | Entry             | Bypass | Entry   | Bypass |
| 1   | None        | 925                |        | 686               |        | 815               |        | 1.712   |        |
| 2   | None        | 858                |        | 950               |        | 690               |        | 2.241   |        |
| 3   | None        | 369                |        | 1010              |        | 660               |        | 0.574   |        |
| 4   | Yield       | 383                | 39     | 923               | 923    | 603               | 289    | 0.658   | 0.139  |
| 5   | None        | 834                |        | 896               |        | 683               |        | 2.111   |        |

### Entry Queues and Delays (60min)

| Leg | Ave Del (sec/veh) |        |       | Max Del (sec/veh) |        | 95% Queue |        | LOS A-F |     |     |
|-----|-------------------|--------|-------|-------------------|--------|-----------|--------|---------|-----|-----|
|     | Entry             | Bypass | Leg   | Entry             | Bypass | Entry     | Bypass | Entry   | Byp | Leg |
| 1   | 292.5             |        | 292.5 | 539.9             |        | 128.5     |        | F       |     | F   |
| 2   | 505.2             |        | 505.2 | 950.8             |        | 187.0     |        | F       |     | F   |
| 3   | 12.1              |        | 12.1  | 15.8              |        | 4.1       |        | B       |     | B   |
| 4   | 16.2              | 14.1   | 16.0  | 23.7              | 17.5   | 5.7       | 0.5    | C       | B   | C   |
| 5   | 446.9             |        | 446.9 | 799.0             |        | 167.2     |        | F       |     | F   |

### Entry Slope and Intercept (60min)

| Leg | Bypass Type | Y Intercept (vehs/hr) |        | Slope (tangent) |        | X Intercept (vehs/hr) |        |
|-----|-------------|-----------------------|--------|-----------------|--------|-----------------------|--------|
|     |             | Entry                 | Bypass | Entry           | Bypass | Entry                 | Bypass |
| 1   | None        | 1165                  |        | 0.5095          |        | 2286                  |        |
| 2   | None        | 1183                  |        | 0.5193          |        | 2278                  |        |
| 3   | None        | 1185                  |        | 0.5200          |        | 2279                  |        |
| 4   | Yield       | 1039                  | 666    | 0.4730          | 0.4075 | 2197                  | 1634   |
| 5   | None        | 1127                  |        | 0.4947          |        | 2278                  |        |

### Entry Flow and Capacity (Peak 7.5min)

| Leg | Bypass Type | Flow Rate (veh/hr) |        | Opp Rate (veh/hr) |        | Capacity (veh/hr) |        | Ave VCR |        |
|-----|-------------|--------------------|--------|-------------------|--------|-------------------|--------|---------|--------|
|     |             | Entry              | Bypass | Entry             | Bypass | Entry             | Bypass | Entry   | Bypass |
| 1   | None        | 1028               |        | 694               |        | 811               |        | 1.7883  |        |
| 2   | None        | 953                |        | 949               |        | 690               |        | 2.3096  |        |
| 3   | None        | 410                |        | 1007              |        | 661               |        | 0.6363  |        |
| 4   | Yield       | 426                | 43     | 960               | 960    | 585               | 275    | 0.7530  | 0.1625 |
| 5   | None        | 927                |        | 962               |        | 651               |        | 2.2641  |        |

### Entry Queues and Delays (Peak 7.5min)

| Leg | Ave Del (sec/veh) |        |       | Max Del (sec/veh) |        | 95% Queue |        | LOS A-F |     |     |
|-----|-------------------|--------|-------|-------------------|--------|-----------|--------|---------|-----|-----|
|     | Entry             | Bypass | Leg   | Entry             | Bypass | Entry     | Bypass | Entry   | Byp | Leg |
| 1   | 294.8             |        | 294.8 | 539.9             |        | 100.5     |        | F       |     | F   |
| 2   | 504.2             |        | 504.2 | 950.8             |        | 135.4     |        | F       |     | F   |
| 3   | 12.7              |        | 12.7  | 15.8              |        | 4.1       |        | B       |     | B   |
| 4   | 18.4              | 14.4   | 18.0  | 23.7              | 17.5   | 5.7       | 0.5    | C       | B   | C   |
| 5   | 464.1             |        | 464.1 | 799.0             |        | 126.2     |        | F       |     | F   |

### Entry Slope and Intercept (Peak 7.5min)

| Leg | Bypass Type | Y Intercept (vehs/hr) |        | Slope (tangent) |        | X Intercept (vehs/hr) |        |
|-----|-------------|-----------------------|--------|-----------------|--------|-----------------------|--------|
|     |             | Entry                 | Bypass | Entry           | Bypass | Entry                 | Bypass |
| 1   | None        | 1165                  |        | 0.5095          |        | 2286                  |        |
| 2   | None        | 1183                  |        | 0.5193          |        | 2278                  |        |
| 3   | None        | 1185                  |        | 0.5200          |        | 2279                  |        |
| 4   | Yield       | 1039                  | 666    | 0.4730          | 0.4075 | 2197                  | 1634   |
| 5   | None        | 1127                  |        | 0.4947          |        | 2278                  |        |

---

## Scheme Notes

(none)

---

# Timings

## 5: Nugent St/Court St & W Main St

Timing Plan: Saturday Peak Ho

|                      |  |  |  |  |  |  |    |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |                                                                                     |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |                                                                                     |
| Volume (vph)         | 72                                                                                | 474                                                                               | 428                                                                               | 93                                                                                | 448                                                                               | 490                                                                               | 119                                                                                 | 103                                                                                 | 3                                                                                   | 130                                                                                 |                                                                                     |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | Perm                                                                              | NA                                                                                | pm+pt                                                                             | NA                                                                                  | Free                                                                                | Perm                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases     |                                                                                   | 2                                                                                 |                                                                                   |                                                                                   | 6                                                                                 | 7                                                                                 | 4                                                                                   |                                                                                     |                                                                                     | 8                                                                                   |                                                                                     |
| Permitted Phases     | 2                                                                                 |                                                                                   | 2                                                                                 | 6                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                   | Free                                                                                | 8                                                                                   |                                                                                     |                                                                                     |
| Detector Phase       | 2                                                                                 | 2                                                                                 | 2                                                                                 | 6                                                                                 | 6                                                                                 | 7                                                                                 | 4                                                                                   |                                                                                     | 8                                                                                   | 8                                                                                   |                                                                                     |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 3.0                                                                               | 5.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Minimum Split (s)    | 21.5                                                                              | 21.5                                                                              | 21.5                                                                              | 21.5                                                                              | 21.5                                                                              | 9.0                                                                               | 12.0                                                                                |                                                                                     | 11.8                                                                                | 11.8                                                                                |                                                                                     |
| Total Split (s)      | 28.0                                                                              | 28.0                                                                              | 28.0                                                                              | 28.0                                                                              | 28.0                                                                              | 16.0                                                                              | 32.0                                                                                |                                                                                     | 16.0                                                                                | 16.0                                                                                |                                                                                     |
| Total Split (%)      | 46.7%                                                                             | 46.7%                                                                             | 46.7%                                                                             | 46.7%                                                                             | 46.7%                                                                             | 26.7%                                                                             | 53.3%                                                                               |                                                                                     | 26.7%                                                                               | 26.7%                                                                               |                                                                                     |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.0                                                                               | 3.5                                                                                 |                                                                                     | 3.5                                                                                 | 3.5                                                                                 |                                                                                     |
| All-Red Time (s)     | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 2.0                                                                               | 2.3                                                                                 |                                                                                     | 2.3                                                                                 | 2.3                                                                                 |                                                                                     |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Total Lost Time (s)  | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 5.0                                                                               | 5.8                                                                                 |                                                                                     |                                                                                     | 5.8                                                                                 |                                                                                     |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Lead                                                                              |                                                                                     |                                                                                     | Lag                                                                                 | Lag                                                                                 |                                                                                     |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Yes                                                                               |                                                                                     |                                                                                     | Yes                                                                                 | Yes                                                                                 |                                                                                     |
| Recall Mode          | Max                                                                               | Max                                                                               | Max                                                                               | Max                                                                               | Max                                                                               | None                                                                              | None                                                                                |                                                                                     | None                                                                                | None                                                                                |                                                                                     |
| Act Effct Green (s)  | 21.5                                                                              | 21.5                                                                              | 21.5                                                                              | 21.5                                                                              | 21.5                                                                              | 26.2                                                                              | 25.4                                                                                | 59.2                                                                                |                                                                                     | 9.4                                                                                 |                                                                                     |
| Actuated g/C Ratio   | 0.36                                                                              | 0.36                                                                              | 0.36                                                                              | 0.36                                                                              | 0.36                                                                              | 0.44                                                                              | 0.43                                                                                | 1.00                                                                                |                                                                                     | 0.16                                                                                |                                                                                     |
| v/c Ratio            | 0.38                                                                              | 0.77                                                                              | 0.52                                                                              | 0.54                                                                              | 0.78                                                                              | 1.16                                                                              | 0.17                                                                                | 0.07                                                                                |                                                                                     | 0.67                                                                                |                                                                                     |
| Control Delay        | 21.4                                                                              | 27.2                                                                              | 4.8                                                                               | 29.3                                                                              | 28.0                                                                              | 114.2                                                                             | 11.1                                                                                | 0.1                                                                                 |                                                                                     | 31.4                                                                                |                                                                                     |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 |                                                                                     |
| Total Delay          | 21.4                                                                              | 27.2                                                                              | 4.8                                                                               | 29.3                                                                              | 28.0                                                                              | 114.2                                                                             | 11.1                                                                                | 0.1                                                                                 |                                                                                     | 31.4                                                                                |                                                                                     |
| LOS                  | C                                                                                 | C                                                                                 | A                                                                                 | C                                                                                 | C                                                                                 | F                                                                                 | B                                                                                   | A                                                                                   |                                                                                     | C                                                                                   |                                                                                     |
| Approach Delay       |                                                                                   | 16.9                                                                              |                                                                                   |                                                                                   | 28.2                                                                              |                                                                                   | 80.4                                                                                |                                                                                     |                                                                                     | 31.4                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | C                                                                                 |                                                                                   | F                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |

### Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 59.2

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.16

Intersection Signal Delay: 39.5

Intersection Capacity Utilization 95.6%

Analysis Period (min) 15

Intersection LOS: D

ICU Level of Service F

Splits and Phases: 5: Nugent St/Court St & W Main St

|                                                                                          |                                                                                            |
|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
|  28 s |  32 s   |
|  28 s |  16 s   |
|                                                                                          |  16 s |

# Timings

6: W Main St & Osborn Ave

Timing Plan: Saturday Peak Ho



| Lane Group           | EBL   | EBT   | WBT   | SBL   |
|----------------------|-------|-------|-------|-------|
| Lane Configurations  |       | ↔     | ↔     | ↔     |
| Volume (vph)         | 9     | 567   | 528   | 133   |
| Turn Type            | Perm  | NA    | NA    | NA    |
| Protected Phases     |       | 4     | 8     | 6     |
| Permitted Phases     | 4     |       |       |       |
| Detector Phase       | 4     | 4     | 8     | 6     |
| Switch Phase         |       |       |       |       |
| Minimum Initial (s)  | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)    | 11.3  | 11.3  | 11.3  | 11.2  |
| Total Split (s)      | 60.0  | 60.0  | 60.0  | 25.0  |
| Total Split (%)      | 70.6% | 70.6% | 70.6% | 29.4% |
| Yellow Time (s)      | 3.5   | 3.5   | 3.5   | 3.5   |
| All-Red Time (s)     | 2.8   | 2.8   | 2.8   | 2.7   |
| Lost Time Adjust (s) |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  |       | 6.3   | 6.3   | 6.2   |
| Lead/Lag             |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |
| Recall Mode          | Max   | Max   | Max   | None  |
| Act Effct Green (s)  |       | 53.8  | 53.8  | 13.0  |
| Actuated g/C Ratio   |       | 0.68  | 0.68  | 0.16  |
| v/c Ratio            |       | 0.47  | 0.52  | 0.61  |
| Control Delay        |       | 8.1   | 8.7   | 38.9  |
| Queue Delay          |       | 0.7   | 0.0   | 0.0   |
| Total Delay          |       | 8.8   | 8.7   | 38.9  |
| LOS                  |       | A     | A     | D     |
| Approach Delay       |       | 8.8   | 8.7   | 38.9  |
| Approach LOS         |       | A     | A     | D     |

## Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 79.3

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 12.5

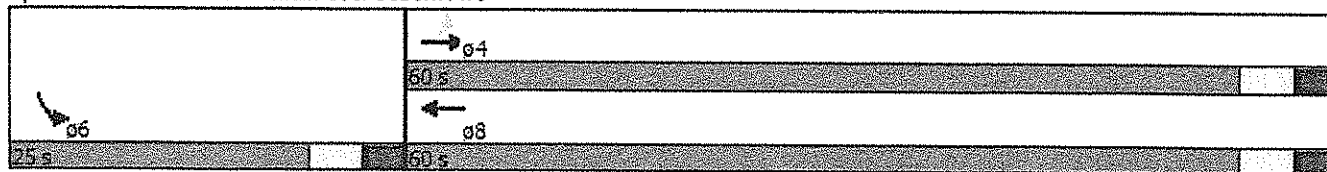
Intersection Capacity Utilization 55.7%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service B

Splits and Phases: 6: W Main St & Osborn Ave





# Timings

7: W Main St & Griffing Ave

Timing Plan: Saturday Peak Ho



| Lane Group           | EBL   | EBT   | WBT   | SBL   |
|----------------------|-------|-------|-------|-------|
| Lane Configurations  |       | ↕     | ↕     | ↕     |
| Volume (vph)         | 22    | 712   | 566   | 107   |
| Turn Type            | Perm  | NA    | NA    | NA    |
| Protected Phases     |       | 2     | 6     | 4     |
| Permitted Phases     | 2     |       |       |       |
| Detector Phase       | 2     | 2     | 6     | 4     |
| Switch Phase         |       |       |       |       |
| Minimum Initial (s)  | 10.0  | 10.0  | 10.0  | 5.0   |
| Minimum Split (s)    | 15.8  | 15.8  | 15.8  | 10.5  |
| Total Split (s)      | 20.0  | 20.0  | 20.0  | 35.0  |
| Total Split (%)      | 36.4% | 36.4% | 36.4% | 63.6% |
| Yellow Time (s)      | 3.5   | 3.5   | 3.5   | 3.5   |
| All-Red Time (s)     | 2.3   | 2.3   | 2.3   | 2.0   |
| Lost Time Adjust (s) |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  |       | 5.8   | 5.8   | 5.5   |
| Lead/Lag             |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |
| Recall Mode          | Max   | Max   | Max   | None  |
| Act Effct Green (s)  |       | 18.3  | 18.3  | 8.5   |
| Actuated g/C Ratio   |       | 0.53  | 0.53  | 0.24  |
| v/c Ratio            |       | 0.71  | 0.65  | 0.45  |
| Control Delay        |       | 18.0  | 14.9  | 11.4  |
| Queue Delay          |       | 0.0   | 0.0   | 0.0   |
| Total Delay          |       | 18.0  | 14.9  | 11.4  |
| LOS                  |       | B     | B     | B     |
| Approach Delay       |       | 18.0  | 14.9  | 11.4  |
| Approach LOS         |       | B     | B     | B     |

## Intersection Summary

Cycle Length: 55

Actuated Cycle Length: 34.7

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 15.8

Intersection Capacity Utilization 73.1%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service D

Splits and Phases: 7: W Main St & Griffing Ave

|      |      |
|------|------|
| → 2  | → 4  |
| 20 s | 35 s |
| ← 6  |      |
| 20 s |      |

# Timings

## 8: Peconic Ave & W Main St/E Main St

Timing Plan: Saturday Peak Ho

|                      | →     | ↘     | ↙      | ←     | ↖     | ↗      |      |       |      |      |      |
|----------------------|-------|-------|--------|-------|-------|--------|------|-------|------|------|------|
| Lane Group           | EBT   | EBR   | WBL    | WBT   | NBL   | NBR    | ø3   | ø6    | ø8   | ø9   | ø13  |
| Lane Configurations  | ↑     | ↗     | ↙      | ↑     | ↖     | ↗      |      |       |      |      |      |
| Volume (vph)         | 470   | 288   | 474    | 395   | 266   | 677    |      |       |      |      |      |
| Turn Type            | NA    | pm+ov | custom | NA    | NA    | custom |      |       |      |      |      |
| Protected Phases     | 2     | 4     | 3 9    | 6 3   | 4     | 3 13   | 3    | 6     | 8    | 9    | 13   |
| Permitted Phases     |       | 2     | 6      |       |       | 4 3    |      |       |      |      |      |
| Detector Phase       | 2     | 4     | 3 9    | 6 3   | 4     | 3 13   |      |       |      |      |      |
| Switch Phase         |       |       |        |       |       |        |      |       |      |      |      |
| Minimum Initial (s)  | 10.0  | 10.0  |        |       | 10.0  |        | 4.0  | 10.0  | 10.0 | 22.0 | 22.0 |
| Minimum Split (s)    | 15.9  | 15.9  |        |       | 15.9  |        | 9.9  | 28.0  | 15.0 | 25.0 | 25.0 |
| Total Split (s)      | 56.0  | 41.0  |        |       | 41.0  |        | 55.0 | 56.0  | 96.0 | 28.0 | 28.0 |
| Total Split (%)      | 31.1% | 22.8% |        |       | 22.8% |        | 31%  | 31%   | 53%  | 16%  | 16%  |
| Yellow Time (s)      | 3.5   | 3.5   |        |       | 3.5   |        | 3.5  | 3.5   | 3.0  | 2.0  | 2.0  |
| All-Red Time (s)     | 2.4   | 2.4   |        |       | 2.4   |        | 2.4  | 2.4   | 2.0  | 1.0  | 1.0  |
| Lost Time Adjust (s) | 0.0   | 0.0   |        |       | 0.0   |        |      |       |      |      |      |
| Total Lost Time (s)  | 5.9   | 5.9   |        |       | 5.9   |        |      |       |      |      |      |
| Lead/Lag             |       | Lead  |        |       | Lead  |        | Lag  |       |      |      |      |
| Lead-Lag Optimize?   |       |       |        |       |       |        |      |       |      |      |      |
| Recall Mode          | C-Min | None  |        |       | None  |        | None | C-Min | None | None | None |
| Act Effct Green (s)  | 55.7  | 94.2  | 129.6  | 104.6 | 32.7  | 112.5  |      |       |      |      |      |
| Actuated g/C Ratio   | 0.31  | 0.52  | 0.72   | 0.58  | 0.18  | 0.62   |      |       |      |      |      |
| v/c Ratio            | 0.97  | 0.42  | 0.68   | 0.43  | 0.91  | 0.74   |      |       |      |      |      |
| Control Delay        | 91.6  | 28.4  | 65.9   | 2.3   | 103.4 | 28.5   |      |       |      |      |      |
| Queue Delay          | 43.1  | 8.9   | 55.8   | 2.0   | 0.0   | 0.9    |      |       |      |      |      |
| Total Delay          | 134.7 | 37.4  | 121.8  | 4.3   | 103.4 | 29.4   |      |       |      |      |      |
| LOS                  | F     | D     | F      | A     | F     | C      |      |       |      |      |      |
| Approach Delay       | 97.7  |       |        | 68.4  | 50.3  |        |      |       |      |      |      |
| Approach LOS         | F     |       |        | E     | D     |        |      |       |      |      |      |

### Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 71.2

Intersection Capacity Utilization 80.5%

Analysis Period (min) 15

Intersection LOS: E

ICU Level of Service D

### Splits and Phases: 8: Peconic Ave & W Main St/E Main St

|                   |            |               |               |
|-------------------|------------|---------------|---------------|
| #8 #9<br>→ ø2 (R) | #8<br>↘ ø4 | #8 #9<br>↗ ø3 | #8 #9<br>↘ ø9 |
| 56 s              | 41 s       | 55 s          | 28 s          |
| #8 #9<br>← ø6 (R) | #9<br>→ ø8 |               | #8<br>↗ ø13   |
| 56 s              | 96 s       |               | 28 s          |

# Timings

9: E Main St & Roanoke Ave

Timing Plan: Saturday Peak Ho



| Lane Group           | EBL   | EBT   | WBT   | SBR    | ø2    | ø3   | ø4   | ø8   | ø9   | ø13  |
|----------------------|-------|-------|-------|--------|-------|------|------|------|------|------|
| Lane Configurations  |       |       |       |        |       |      |      |      |      |      |
| Volume (vph)         | 327   | 778   | 583   | 307    |       |      |      |      |      |      |
| Turn Type            | Perm  | NA    | NA    | custom |       |      |      |      |      |      |
| Protected Phases     |       | 8 2   | 6     | 3 9    | 2     | 3    | 4    | 8    | 9    | 13   |
| Permitted Phases     | 8 2   |       |       |        |       |      |      |      |      |      |
| Detector Phase       | 8 2   | 8 2   | 6     | 3 9    |       |      |      |      |      |      |
| Switch Phase         |       |       |       |        |       |      |      |      |      |      |
| Minimum Initial (s)  |       |       | 10.0  |        | 10.0  | 4.0  | 10.0 | 10.0 | 22.0 | 22.0 |
| Minimum Split (s)    |       |       | 28.0  |        | 15.9  | 9.9  | 15.9 | 15.0 | 25.0 | 25.0 |
| Total Split (s)      |       |       | 56.0  |        | 56.0  | 55.0 | 41.0 | 96.0 | 28.0 | 28.0 |
| Total Split (%)      |       |       | 31.1% |        | 31%   | 31%  | 23%  | 53%  | 16%  | 16%  |
| Yellow Time (s)      |       |       | 3.5   |        | 3.5   | 3.5  | 3.5  | 3.0  | 2.0  | 2.0  |
| All-Red Time (s)     |       |       | 2.4   |        | 2.4   | 2.4  | 2.4  | 2.0  | 1.0  | 1.0  |
| Lost Time Adjust (s) |       |       | 0.0   |        |       |      |      |      |      |      |
| Total Lost Time (s)  |       |       | 5.9   |        |       |      |      |      |      |      |
| Lead/Lag             |       |       |       |        |       | Lag  | Lead |      |      |      |
| Lead-Lag Optimize?   |       |       |       |        |       |      |      |      |      |      |
| Recall Mode          |       |       | C-Min |        | C-Min | None | None | None | None | None |
| Act Effct Green (s)  | 150.0 | 150.0 | 55.7  | 74.0   |       |      |      |      |      |      |
| Actuated g/C Ratio   | 0.83  | 0.83  | 0.31  | 0.41   |       |      |      |      |      |      |
| v/c Ratio            | 0.77  | 0.46  | 0.77  | 0.49   |       |      |      |      |      |      |
| Control Delay        | 13.4  | 2.2   | 63.1  | 42.3   |       |      |      |      |      |      |
| Queue Delay          | 7.6   | 5.8   | 51.5  | 1.1    |       |      |      |      |      |      |
| Total Delay          | 20.9  | 8.1   | 114.5 | 43.4   |       |      |      |      |      |      |
| LOS                  | C     | A     | F     | D      |       |      |      |      |      |      |
| Approach Delay       |       | 11.9  | 114.5 |        |       |      |      |      |      |      |
| Approach LOS         |       | B     | F     |        |       |      |      |      |      |      |

## Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 51.8

Intersection LOS: D

Intersection Capacity Utilization 46.5%

ICU Level of Service A

Analysis Period (min) 15

## Splits and Phases: 9: E Main St & Roanoke Ave

|                             |                      |                         |                         |
|-----------------------------|----------------------|-------------------------|-------------------------|
| #8 #9<br><br>ø2 (R)<br>56 s | #8<br><br>ø4<br>41 s | #8 #9<br><br>ø3<br>55 s | #8 #9<br><br>ø9<br>28 s |
| #8 #9<br><br>ø6 (R)<br>56 s | #9<br><br>ø8<br>96 s |                         | #8<br><br>ø13<br>28 s   |

# HCM Unsignalized Intersection Capacity Analysis

10: E Main St & East Ave

Timing Plan: Saturday Peak Ho

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement               | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR                                                                               | SBL                                                                               | SBR                                                                               |
| Lane Configurations    |                                                                                   |  |  |                                                                                   |  |                                                                                   |
| Volume (veh/h)         | 83                                                                                | 676                                                                               | 558                                                                               | 70                                                                                | 72                                                                                | 87                                                                                |
| Sign Control           |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   | Stop                                                                              |                                                                                   |
| Grade                  |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |
| Peak Hour Factor       | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Hourly flow rate (vph) | 90                                                                                | 735                                                                               | 607                                                                               | 76                                                                                | 78                                                                                | 95                                                                                |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type            |                                                                                   | None                                                                              | None                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Median storage (veh)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)   |                                                                                   | 768                                                                               | 275                                                                               |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked  | 0.86                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.90                                                                              | 0.86                                                                              |
| vC, conflicting volume | 683                                                                               |                                                                                   |                                                                                   |                                                                                   | 1560                                                                              | 645                                                                               |
| vC1, stage 1 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol     | 544                                                                               |                                                                                   |                                                                                   |                                                                                   | 1206                                                                              | 500                                                                               |
| tC, single (s)         | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   | 6.4                                                                               | 6.2                                                                               |
| tC, 2 stage (s)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                 | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   | 3.5                                                                               | 3.3                                                                               |
| p0 queue free %        | 90                                                                                |                                                                                   |                                                                                   |                                                                                   | 53                                                                                | 81                                                                                |
| cM capacity (veh/h)    | 885                                                                               |                                                                                   |                                                                                   |                                                                                   | 166                                                                               | 492                                                                               |

| Direction, Lane #      | EB 1 | WB 1 | SB 1 |
|------------------------|------|------|------|
| Volume Total           | 825  | 683  | 173  |
| Volume Left            | 90   | 0    | 78   |
| Volume Right           | 0    | 76   | 95   |
| cSH                    | 885  | 1700 | 261  |
| Volume to Capacity     | 0.10 | 0.40 | 0.66 |
| Queue Length 95th (ft) | 8    | 0    | 106  |
| Control Delay (s)      | 2.6  | 0.0  | 42.4 |
| Lane LOS               | A    |      | E    |
| Approach Delay (s)     | 2.6  | 0.0  | 42.4 |
| Approach LOS           |      |      | E    |

| Intersection Summary              |  |       |                      |
|-----------------------------------|--|-------|----------------------|
| Average Delay                     |  | 5.6   |                      |
| Intersection Capacity Utilization |  | 93.1% | ICU Level of Service |
| Analysis Period (min)             |  | 15    | F                    |

# Timings

## 11: McDermott Ave/Maple Ave & E Main St

Timing Plan: Saturday Peak Ho

|                      |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | SBL                                                                                | SBT                                                                                 |
| Lane Configurations  |                                                                                   |  |                                                                                   |  |                                                                                   |  |                                                                                    |  |
| Volume (vph)         | 26                                                                                | 697                                                                               | 46                                                                                | 532                                                                               | 65                                                                                | 18                                                                                | 54                                                                                 | 17                                                                                  |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                               | NA                                                                                  |
| Protected Phases     |                                                                                   | 2                                                                                 |                                                                                   | 6                                                                                 |                                                                                   | 4                                                                                 |                                                                                    | 8                                                                                   |
| Permitted Phases     | 2                                                                                 |                                                                                   | 6                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 8                                                                                  |                                                                                     |
| Detector Phase       | 2                                                                                 | 2                                                                                 | 6                                                                                 | 6                                                                                 | 4                                                                                 | 4                                                                                 | 8                                                                                  | 8                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Minimum Initial (s)  | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                | 4.0                                                                                 |
| Minimum Split (s)    | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 21.5                                                                              | 21.5                                                                              | 21.5                                                                               | 21.5                                                                                |
| Total Split (s)      | 66.0                                                                              | 66.0                                                                              | 66.0                                                                              | 66.0                                                                              | 21.5                                                                              | 21.5                                                                              | 21.5                                                                               | 21.5                                                                                |
| Total Split (%)      | 75.4%                                                                             | 75.4%                                                                             | 75.4%                                                                             | 75.4%                                                                             | 24.6%                                                                             | 24.6%                                                                             | 24.6%                                                                              | 24.6%                                                                               |
| Yellow Time (s)      | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                                | 3.5                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                                | 2.0                                                                                 |
| Lost Time Adjust (s) |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 |
| Total Lost Time (s)  |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.5                                                                               |                                                                                    | 5.5                                                                                 |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Recall Mode          | Max                                                                               | Max                                                                               | Max                                                                               | Max                                                                               | None                                                                              | None                                                                              | None                                                                               | None                                                                                |
| Act Effect Green (s) |                                                                                   | 61.1                                                                              |                                                                                   | 61.1                                                                              |                                                                                   | 12.7                                                                              |                                                                                    | 12.7                                                                                |
| Actuated g/C Ratio   |                                                                                   | 0.72                                                                              |                                                                                   | 0.72                                                                              |                                                                                   | 0.15                                                                              |                                                                                    | 0.15                                                                                |
| v/c Ratio            |                                                                                   | 0.65                                                                              |                                                                                   | 0.53                                                                              |                                                                                   | 0.76                                                                              |                                                                                    | 0.61                                                                                |
| Control Delay        |                                                                                   | 9.4                                                                               |                                                                                   | 7.7                                                                               |                                                                                   | 41.7                                                                              |                                                                                    | 38.8                                                                                |
| Queue Delay          |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 |
| Total Delay          |                                                                                   | 9.4                                                                               |                                                                                   | 7.7                                                                               |                                                                                   | 41.7                                                                              |                                                                                    | 38.8                                                                                |
| LOS                  |                                                                                   | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   | D                                                                                 |                                                                                    | D                                                                                   |
| Approach Delay       |                                                                                   | 9.4                                                                               |                                                                                   | 7.7                                                                               |                                                                                   | 41.7                                                                              |                                                                                    | 38.8                                                                                |
| Approach LOS         |                                                                                   | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   | D                                                                                 |                                                                                    | D                                                                                   |

### Intersection Summary

Cycle Length: 87.5

Actuated Cycle Length: 84.3

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 14.5

Intersection Capacity Utilization 70.2%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service C

### Splits and Phases: 11: McDermott Ave/Maple Ave & E Main St

|                                                                                     |                                                                                       |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |
| 06 s                                                                                | 21.5 s                                                                                |
|  |  |
| 06 s                                                                                | 21.5 s                                                                                |



# HCM Unsignalized Intersection Capacity Analysis 12: Parking Lot/Union Ave & E Main St/W Main St

Timing Plan: Saturday Peak Ho

|                        |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement               | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations    |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                     |                                                                                     |  |                                                                                     |
| Volume (veh/h)         | 23                                                                                | 807                                                                               | 25                                                                                | 19                                                                                | 576                                                                               | 31                                                                                | 2                                                                                 | 0                                                                                   | 13                                                                                  | 10                                                                                  | 1                                                                                   | 18                                                                                  |
| Sign Control           |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Stop                                                                                |                                                                                     |                                                                                     | Stop                                                                                |                                                                                     |
| Grade                  |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor       | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Hourly flow rate (vph) | 25                                                                                | 877                                                                               | 27                                                                                | 21                                                                                | 626                                                                               | 34                                                                                | 2                                                                                 | 0                                                                                   | 14                                                                                  | 11                                                                                  | 1                                                                                   | 20                                                                                  |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type            |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median storage (veh)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (ft)   |                                                                                   | 278                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked  |                                                                                   |                                                                                   |                                                                                   | 0.76                                                                              |                                                                                   |                                                                                   | 0.76                                                                              | 0.76                                                                                | 0.76                                                                                | 0.76                                                                                | 0.76                                                                                |                                                                                     |
| vC, conflicting volume | 660                                                                               |                                                                                   |                                                                                   | 904                                                                               |                                                                                   |                                                                                   | 1645                                                                              | 1642                                                                                | 891                                                                                 | 1639                                                                                | 1639                                                                                | 643                                                                                 |
| vC1, stage 1 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol     | 660                                                                               |                                                                                   |                                                                                   | 713                                                                               |                                                                                   |                                                                                   | 1692                                                                              | 1687                                                                                | 695                                                                                 | 1684                                                                                | 1683                                                                                | 643                                                                                 |
| tC, single (s)         | 4.1                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |                                                                                   | 7.1                                                                               | 6.5                                                                                 | 6.2                                                                                 | 7.1                                                                                 | 6.5                                                                                 | 6.2                                                                                 |
| tC, 2 stage (s)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                 | 2.2                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |                                                                                   | 3.5                                                                               | 4.0                                                                                 | 3.3                                                                                 | 3.5                                                                                 | 4.0                                                                                 | 3.3                                                                                 |
| p0 queue free %        | 97                                                                                |                                                                                   |                                                                                   | 97                                                                                |                                                                                   |                                                                                   | 96                                                                                | 100                                                                                 | 96                                                                                  | 79                                                                                  | 98                                                                                  | 96                                                                                  |
| cM capacity (veh/h)    | 938                                                                               |                                                                                   |                                                                                   | 678                                                                               |                                                                                   |                                                                                   | 51                                                                                | 68                                                                                  | 337                                                                                 | 52                                                                                  | 68                                                                                  | 477                                                                                 |

| Direction, Lane #      | EB 1 | WB 1 | NB 1 | SB 1 |
|------------------------|------|------|------|------|
| Volume Total           | 929  | 680  | 16   | 32   |
| Volume Left            | 25   | 21   | 2    | 11   |
| Volume Right           | 27   | 34   | 14   | 20   |
| cSH                    | 938  | 678  | 193  | 119  |
| Volume to Capacity     | 0.03 | 0.03 | 0.08 | 0.26 |
| Queue Length 95th (ft) | 2    | 2    | 7    | 25   |
| Control Delay (s)      | 0.7  | 0.8  | 25.3 | 45.7 |
| Lane LOS               | A    | A    | D    | E    |
| Approach Delay (s)     | 0.7  | 0.8  | 25.3 | 45.7 |
| Approach LOS           |      |      | D    | E    |

## Intersection Summary

|                                   |       |                      |   |
|-----------------------------------|-------|----------------------|---|
| Average Delay                     | 1.9   |                      |   |
| Intersection Capacity Utilization | 64.1% | ICU Level of Service | C |
| Analysis Period (min)             | 15    |                      |   |

# HCM Unsignalized Intersection Capacity Analysis

## 13: W Main St & Ostrander Ave

Timing Plan: Saturday Peak Ho

|                        |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement               | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations    |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                     |                                                                                     |  |                                                                                     |
| Volume (veh/h)         | 85                                                                                | 647                                                                               | 14                                                                                | 7                                                                                 | 571                                                                               | 46                                                                                | 0                                                                                 | 0                                                                                   | 0                                                                                   | 36                                                                                  | 4                                                                                   | 101                                                                                 |
| Sign Control           |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Stop                                                                                |                                                                                     |                                                                                     | Stop                                                                                |                                                                                     |
| Grade                  |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor       | 0.98                                                                              | 0.98                                                                              | 0.98                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.75                                                                              | 0.75                                                                                | 0.75                                                                                | 0.77                                                                                | 0.77                                                                                | 0.77                                                                                |
| Hourly flow rate (vph) | 87                                                                                | 660                                                                               | 14                                                                                | 8                                                                                 | 649                                                                               | 52                                                                                | 0                                                                                 | 0                                                                                   | 0                                                                                   | 47                                                                                  | 5                                                                                   | 131                                                                                 |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type            |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median storage veh     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (ft)   |                                                                                   | 641                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked  |                                                                                   |                                                                                   |                                                                                   | 0.83                                                                              |                                                                                   |                                                                                   | 0.83                                                                              | 0.83                                                                                | 0.83                                                                                | 0.83                                                                                | 0.83                                                                                |                                                                                     |
| vC, conflicting volume | 701                                                                               |                                                                                   |                                                                                   | 674                                                                               |                                                                                   |                                                                                   | 1665                                                                              | 1558                                                                                | 667                                                                                 | 1532                                                                                | 1539                                                                                | 675                                                                                 |
| vC1, stage 1 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol     | 701                                                                               |                                                                                   |                                                                                   | 505                                                                               |                                                                                   |                                                                                   | 1699                                                                              | 1570                                                                                | 497                                                                                 | 1538                                                                                | 1547                                                                                | 675                                                                                 |
| tC, single (s)         | 4.1                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |                                                                                   | 7.1                                                                               | 6.5                                                                                 | 6.2                                                                                 | 7.1                                                                                 | 6.5                                                                                 | 6.2                                                                                 |
| tC, 2 stage (s)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                 | 2.2                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |                                                                                   | 3.5                                                                               | 4.0                                                                                 | 3.3                                                                                 | 3.5                                                                                 | 4.0                                                                                 | 3.3                                                                                 |
| p0 queue free %        | 90                                                                                |                                                                                   |                                                                                   | 99                                                                                |                                                                                   |                                                                                   | 100                                                                               | 100                                                                                 | 100                                                                                 | 36                                                                                  | 94                                                                                  | 71                                                                                  |
| cM capacity (veh/h)    | 901                                                                               |                                                                                   |                                                                                   | 888                                                                               |                                                                                   |                                                                                   | 38                                                                                | 83                                                                                  | 479                                                                                 | 73                                                                                  | 86                                                                                  | 457                                                                                 |
| Direction, Lane #      | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total           | 761                                                                               | 709                                                                               | 0                                                                                 | 183                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left            | 87                                                                                | 8                                                                                 | 0                                                                                 | 47                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right           | 14                                                                                | 52                                                                                | 0                                                                                 | 131                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| cSH                    | 901                                                                               | 888                                                                               | 1700                                                                              | 185                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity     | 0.10                                                                              | 0.01                                                                              | 0.00                                                                              | 0.99                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft) | 8                                                                                 | 1                                                                                 | 0                                                                                 | 204                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)      | 2.4                                                                               | 0.2                                                                               | 0.0                                                                               | 115.0                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS               | A                                                                                 | A                                                                                 | A                                                                                 | F                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)     | 2.4                                                                               | 0.2                                                                               | 0.0                                                                               | 115.0                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS           |                                                                                   |                                                                                   | A                                                                                 | F                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

### Intersection Summary

|                                   |       |                      |   |
|-----------------------------------|-------|----------------------|---|
| Average Delay                     | 13.9  |                      |   |
| Intersection Capacity Utilization | 91.2% | ICU Level of Service | F |
| Analysis Period (min)             | 15    |                      |   |

# HCM Unsignalized Intersection Capacity Analysis

## 14: W Main St & Riverside Dr

Timing Plan: Saturday Peak Ho

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |  |                                                                                   |  |                                                                                   |                                                                                   |  |
| Volume (veh/h)                    | 41                                                                                | 102                                                                               | 588                                                                               | 53                                                                                | 120                                                                               | 541                                                                               |
| Sign Control                      | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |
| Grade                             | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor                  | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.86                                                                              | 0.86                                                                              |
| Hourly flow rate (vph)            | 49                                                                                | 121                                                                               | 700                                                                               | 63                                                                                | 140                                                                               | 629                                                                               |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 1640                                                                              | 732                                                                               |                                                                                   |                                                                                   | 763                                                                               |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 1640                                                                              | 732                                                                               |                                                                                   |                                                                                   | 763                                                                               |                                                                                   |
| tC, single (s)                    | 6.4                                                                               | 6.2                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |
| p0 queue free %                   | 47                                                                                | 71                                                                                |                                                                                   |                                                                                   | 83                                                                                |                                                                                   |
| cM capacity (veh/h)               | 93                                                                                | 421                                                                               |                                                                                   |                                                                                   | 836                                                                               |                                                                                   |
| Direction, Lane #                 | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 170                                                                               | 763                                                                               | 769                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 49                                                                                | 0                                                                                 | 140                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 121                                                                               | 63                                                                                | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 209                                                                               | 1700                                                                              | 836                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.81                                                                              | 0.45                                                                              | 0.17                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 148                                                                               | 0                                                                                 | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 70.0                                                                              | 0.0                                                                               | 4.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | F                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 70.0                                                                              | 0.0                                                                               | 4.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      | F                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   | 8.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   | 87.8%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   | E                                                                                 |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

15: W Main St & Fishel Ave

Timing Plan: Saturday Peak Ho

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |  |                                                                                   |                                                                                   |  |  |                                                                                   |
| Volume (veh/h)                    | 17                                                                                | 83                                                                                | 70                                                                                | 620                                                                               | 578                                                                               | 24                                                                                |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.74                                                                              | 0.74                                                                              | 0.84                                                                              | 0.84                                                                              | 0.86                                                                              | 0.86                                                                              |
| Hourly flow rate (vph)            | 23                                                                                | 112                                                                               | 83                                                                                | 738                                                                               | 672                                                                               | 28                                                                                |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | None                                                                              | None                                                                              |                                                                                   |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 1591                                                                              | 686                                                                               | 700                                                                               |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 1591                                                                              | 686                                                                               | 700                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.4                                                                               | 6.2                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 79                                                                                | 75                                                                                | 91                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 109                                                                               | 451                                                                               | 906                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | EB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 135                                                                               | 821                                                                               | 700                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 23                                                                                | 83                                                                                | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 112                                                                               | 0                                                                                 | 28                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 293                                                                               | 906                                                                               | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.46                                                                              | 0.09                                                                              | 0.41                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 57                                                                                | 8                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 27.3                                                                              | 2.3                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | D                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 27.3                                                                              | 2.3                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   | 3.4                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   | 84.4%                                                                             |                                                                                   | ICU Level of Service                                                              | E                                                                                 |                                                                                   |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

## 16: W Main St & Hubbard Ave

Timing Plan: Saturday Peak Ho

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement               | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations    |  |                                                                                   |  |                                                                                   |                                                                                   |  |
| Volume (veh/h)         | 130                                                                               | 47                                                                                | 478                                                                               | 97                                                                                | 53                                                                                | 425                                                                               |
| Sign Control           | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |
| Grade                  | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor       | 0.85                                                                              | 0.85                                                                              | 0.82                                                                              | 0.82                                                                              | 0.81                                                                              | 0.81                                                                              |
| Hourly flow rate (vph) | 153                                                                               | 55                                                                                | 583                                                                               | 118                                                                               | 65                                                                                | 525                                                                               |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type            |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |
| Median storage (veh)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume | 1298                                                                              | 642                                                                               |                                                                                   |                                                                                   | 701                                                                               |                                                                                   |
| vC1, stage 1 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol     | 1298                                                                              | 642                                                                               |                                                                                   |                                                                                   | 701                                                                               |                                                                                   |
| tC, single (s)         | 6.4                                                                               | 6.2                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |
| tC, 2 stage (s)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                 | 3.5                                                                               | 3.3                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |
| p0 queue free %        | 7                                                                                 | 88                                                                                |                                                                                   |                                                                                   | 93                                                                                |                                                                                   |
| cM capacity (veh/h)    | 165                                                                               | 478                                                                               |                                                                                   |                                                                                   | 905                                                                               |                                                                                   |

| Direction, Lane #      | WB 1  | NB 1 | SB 1 |
|------------------------|-------|------|------|
| Volume Total           | 208   | 701  | 590  |
| Volume Left            | 153   | 0    | 65   |
| Volume Right           | 55    | 118  | 0    |
| cSH                    | 199   | 1700 | 905  |
| Volume to Capacity     | 1.04  | 0.41 | 0.07 |
| Queue Length 95th (ft) | 235   | 0    | 6    |
| Control Delay (s)      | 125.5 | 0.0  | 1.9  |
| Lane LOS               | F     |      | A    |
| Approach Delay (s)     | 125.5 | 0.0  | 1.9  |
| Approach LOS           | F     |      |      |

| Intersection Summary              |  |       |                      |
|-----------------------------------|--|-------|----------------------|
| Average Delay                     |  | 18.2  |                      |
| Intersection Capacity Utilization |  | 76.4% | ICU Level of Service |
| Analysis Period (min)             |  | 15    | D                    |



# HCM Unsignalized Intersection Capacity Analysis

## 17: Peconic Ave & Parking Lot Access

Timing Plan: Saturday Peak Ho

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |  |  |  |                                                                                   |                                                                                   |  |
| Volume (veh/h)                    | 101                                                                               | 32                                                                                | 938                                                                               | 96                                                                                | 9                                                                                 | 798                                                                               |
| Sign Control                      | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |
| Grade                             | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Hourly flow rate (vph)            | 110                                                                               | 35                                                                                | 1020                                                                              | 104                                                                               | 10                                                                                | 867                                                                               |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   | TWLTL                                                                             |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 316                                                                               |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 1959                                                                              | 562                                                                               |                                                                                   |                                                                                   | 1124                                                                              |                                                                                   |
| vC1, stage 1 conf vol             | 1072                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             | 887                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 1959                                                                              | 562                                                                               |                                                                                   |                                                                                   | 1124                                                                              |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |
| tC, 2 stage (s)                   | 5.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |
| p0 queue free %                   | 51                                                                                | 93                                                                                |                                                                                   |                                                                                   | 98                                                                                |                                                                                   |
| cM capacity (veh/h)               | 225                                                                               | 470                                                                               |                                                                                   |                                                                                   | 617                                                                               |                                                                                   |
| Direction, Lane #                 | WB 1                                                                              | WB 2                                                                              | NB 1                                                                              | NB 2                                                                              | SB 1                                                                              |                                                                                   |
| Volume Total                      | 110                                                                               | 35                                                                                | 680                                                                               | 444                                                                               | 877                                                                               |                                                                                   |
| Volume Left                       | 110                                                                               | 0                                                                                 | 0                                                                                 | 0                                                                                 | 10                                                                                |                                                                                   |
| Volume Right                      | 0                                                                                 | 35                                                                                | 0                                                                                 | 104                                                                               | 0                                                                                 |                                                                                   |
| cSH                               | 225                                                                               | 470                                                                               | 1700                                                                              | 1700                                                                              | 617                                                                               |                                                                                   |
| Volume to Capacity                | 0.49                                                                              | 0.07                                                                              | 0.40                                                                              | 0.26                                                                              | 0.02                                                                              |                                                                                   |
| Queue Length 95th (ft)            | 61                                                                                | 6                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                 |                                                                                   |
| Control Delay (s)                 | 35.4                                                                              | 13.3                                                                              | 0.0                                                                               | 0.0                                                                               | 0.5                                                                               |                                                                                   |
| Lane LOS                          | E                                                                                 | B                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |
| Approach Delay (s)                | 30.1                                                                              |                                                                                   | 0.0                                                                               |                                                                                   | 0.5                                                                               |                                                                                   |
| Approach LOS                      | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 61.4%                                                                             | ICU Level of Service                                                              |                                                                                   | B                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

18: Griffing Ave/Griffing St & Parking Lot/W 2nd St

Timing Plan: Saturday Peak Ho

|                        |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement               | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations    |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                     |                                                                                     |  |                                                                                     |
| Volume (veh/h)         | 2                                                                                 | 3                                                                                 | 0                                                                                 | 30                                                                                | 0                                                                                 | 49                                                                                | 0                                                                                 | 123                                                                                 | 14                                                                                  | 36                                                                                  | 138                                                                                 | 0                                                                                   |
| Sign Control           |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |
| Grade                  |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor       | 0.73                                                                              | 0.73                                                                              | 0.73                                                                              | 0.83                                                                              | 0.83                                                                              | 0.83                                                                              | 0.96                                                                              | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                |
| Hourly flow rate (vph) | 3                                                                                 | 4                                                                                 | 0                                                                                 | 36                                                                                | 0                                                                                 | 59                                                                                | 0                                                                                 | 128                                                                                 | 15                                                                                  | 38                                                                                  | 144                                                                                 | 0                                                                                   |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | None                                                                                |                                                                                     |                                                                                     | None                                                                                |                                                                                     |
| Median storage (veh)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (ft)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 559                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume | 413                                                                               | 361                                                                               | 144                                                                               | 356                                                                               | 354                                                                               | 135                                                                               | 144                                                                               |                                                                                     |                                                                                     | 143                                                                                 |                                                                                     |                                                                                     |
| vC1, stage 1 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol     | 413                                                                               | 361                                                                               | 144                                                                               | 356                                                                               | 354                                                                               | 135                                                                               | 144                                                                               |                                                                                     |                                                                                     | 143                                                                                 |                                                                                     |                                                                                     |
| tC, single (s)         | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 4.1                                                                               |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |                                                                                     |
| tC, 2 stage (s)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                 | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |                                                                                     |
| p0 queue free %        | 99                                                                                | 99                                                                                | 100                                                                               | 94                                                                                | 100                                                                               | 94                                                                                | 100                                                                               |                                                                                     |                                                                                     | 97                                                                                  |                                                                                     |                                                                                     |
| cM capacity (veh/h)    | 507                                                                               | 554                                                                               | 909                                                                               | 587                                                                               | 553                                                                               | 919                                                                               | 1451                                                                              |                                                                                     |                                                                                     | 1422                                                                                |                                                                                     |                                                                                     |
| Direction, Lane #      | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total           | 7                                                                                 | 95                                                                                | 143                                                                               | 181                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left            | 3                                                                                 | 36                                                                                | 0                                                                                 | 38                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right           | 0                                                                                 | 59                                                                                | 15                                                                                | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| cSH                    | 534                                                                               | 757                                                                               | 1451                                                                              | 1422                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity     | 0.01                                                                              | 0.13                                                                              | 0.00                                                                              | 0.03                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft) | 1                                                                                 | 11                                                                                | 0                                                                                 | 2                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)      | 11.8                                                                              | 10.4                                                                              | 0.0                                                                               | 1.7                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS               | B                                                                                 | B                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)     | 11.8                                                                              | 10.4                                                                              | 0.0                                                                               | 1.7                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS           | B                                                                                 | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Intersection Summary

|                                   |       |                      |   |  |
|-----------------------------------|-------|----------------------|---|--|
| Average Delay                     | 3.3   |                      |   |  |
| Intersection Capacity Utilization | 32.5% | ICU Level of Service | A |  |
| Analysis Period (min)             | 15    |                      |   |  |

# HCM Unsignalized Intersection Capacity Analysis

19: Griffing St/Griffing Ave & Court St

Timing Plan: Saturday Peak Ho

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement               | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations    |  |                                                                                   |                                                                                   |  |  |                                                                                   |
| Volume (veh/h)         | 52                                                                                | 47                                                                                | 33                                                                                | 133                                                                               | 120                                                                               | 36                                                                                |
| Sign Control           | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                  | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor       | 0.80                                                                              | 0.80                                                                              | 0.80                                                                              | 0.80                                                                              | 0.71                                                                              | 0.71                                                                              |
| Hourly flow rate (vph) | 65                                                                                | 59                                                                                | 41                                                                                | 166                                                                               | 169                                                                               | 51                                                                                |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type            |                                                                                   |                                                                                   |                                                                                   | None                                                                              | None                                                                              |                                                                                   |
| Median storage veh     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)   |                                                                                   |                                                                                   |                                                                                   | 1010                                                                              |                                                                                   |                                                                                   |
| pX, platoon unblocked  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume | 443                                                                               | 194                                                                               | 220                                                                               |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol     | 443                                                                               | 194                                                                               | 220                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)         | 6.4                                                                               | 6.2                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                 | 3.5                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %        | 88                                                                                | 93                                                                                | 97                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)    | 555                                                                               | 852                                                                               | 1362                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #      | EB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total           | 124                                                                               | 208                                                                               | 220                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left            | 65                                                                                | 41                                                                                | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right           | 59                                                                                | 0                                                                                 | 51                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cSH                    | 665                                                                               | 1362                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity     | 0.19                                                                              | 0.03                                                                              | 0.13                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft) | 17                                                                                | 2                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)      | 11.6                                                                              | 1.7                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS               | B                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)     | 11.6                                                                              | 1.7                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS           | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

### Intersection Summary

|                                   |       |                      |   |  |
|-----------------------------------|-------|----------------------|---|--|
| Average Delay                     | 3.3   |                      |   |  |
| Intersection Capacity Utilization | 33.1% | ICU Level of Service | A |  |
| Analysis Period (min)             | 15    |                      |   |  |

# HCM Unsignalized Intersection Capacity Analysis

20: Griffing Ave & Railroad St

Timing Plan: Saturday Peak Ho

|                        |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement               | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations    |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                     |                                                                                     |  |                                                                                     |
| Sign Control           |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                                |                                                                                     |                                                                                     | Stop                                                                                |                                                                                     |
| Volume (vph)           | 14                                                                                | 50                                                                                | 23                                                                                | 39                                                                                | 39                                                                                | 22                                                                                | 12                                                                                | 159                                                                                 | 12                                                                                  | 12                                                                                  | 113                                                                                 | 16                                                                                  |
| Peak Hour Factor       | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Hourly flow rate (vph) | 15                                                                                | 54                                                                                | 25                                                                                | 42                                                                                | 42                                                                                | 24                                                                                | 13                                                                                | 173                                                                                 | 13                                                                                  | 13                                                                                  | 123                                                                                 | 17                                                                                  |
| Direction, Lane #      | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total (vph)     | 95                                                                                | 109                                                                               | 199                                                                               | 153                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left (vph)      | 15                                                                                | 42                                                                                | 13                                                                                | 13                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right (vph)     | 25                                                                                | 24                                                                                | 13                                                                                | 17                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Hadj (s)               | -0.09                                                                             | -0.02                                                                             | 0.01                                                                              | -0.02                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Departure Headway (s)  | 4.8                                                                               | 4.8                                                                               | 4.6                                                                               | 4.6                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Degree Utilization, x  | 0.13                                                                              | 0.15                                                                              | 0.25                                                                              | 0.20                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Capacity (veh/h)       | 686                                                                               | 682                                                                               | 743                                                                               | 730                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)      | 8.5                                                                               | 8.7                                                                               | 9.2                                                                               | 8.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)     | 8.5                                                                               | 8.7                                                                               | 9.2                                                                               | 8.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS           | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

### Intersection Summary

|                                   |       |                      |   |
|-----------------------------------|-------|----------------------|---|
| Delay                             | 8.9   |                      |   |
| Level of Service                  | A     |                      |   |
| Intersection Capacity Utilization | 30.1% | ICU Level of Service | A |
| Analysis Period (min)             | 15    |                      |   |

# Timings

21: Roanoke Ave & W 2nd St/E 2nd St

Timing Plan: Saturday Peak Ho

|                      |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | SBL                                                                               | SBT                                                                                 |
| Lane Configurations  |                                                                                   |  |                                                                                   |  |                                                                                   |  |                                                                                   |  |
| Volume (vph)         | 16                                                                                | 35                                                                                | 17                                                                                | 51                                                                                | 14                                                                                | 329                                                                               | 46                                                                                | 265                                                                                 |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                  |
| Protected Phases     |                                                                                   | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 2                                                                                 |                                                                                   | 6                                                                                   |
| Permitted Phases     | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 2                                                                                 |                                                                                   | 6                                                                                 |                                                                                     |
| Detector Phase       | 4                                                                                 | 4                                                                                 | 8                                                                                 | 8                                                                                 | 2                                                                                 | 2                                                                                 | 6                                                                                 | 6                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |
| Minimum Initial (s)  | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 5.5                                                                               | 5.5                                                                               | 5.5                                                                               | 5.5                                                                                 |
| Minimum Split (s)    | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 10.5                                                                              | 10.5                                                                              | 10.5                                                                              | 10.5                                                                                |
| Total Split (s)      | 19.0                                                                              | 19.0                                                                              | 19.0                                                                              | 19.0                                                                              | 36.0                                                                              | 36.0                                                                              | 36.0                                                                              | 36.0                                                                                |
| Total Split (%)      | 34.5%                                                                             | 34.5%                                                                             | 34.5%                                                                             | 34.5%                                                                             | 65.5%                                                                             | 65.5%                                                                             | 65.5%                                                                             | 65.5%                                                                               |
| Yellow Time (s)      | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                                 |
| Lost Time Adjust (s) |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                                 |
| Total Lost Time (s)  |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                                 |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | Max                                                                               | Max                                                                               | Max                                                                               | Max                                                                                 |
| Act Effect Green (s) |                                                                                   | 10.3                                                                              |                                                                                   | 10.3                                                                              |                                                                                   | 35.0                                                                              |                                                                                   | 35.0                                                                                |
| Actuated g/C Ratio   |                                                                                   | 0.20                                                                              |                                                                                   | 0.20                                                                              |                                                                                   | 0.68                                                                              |                                                                                   | 0.68                                                                                |
| v/c Ratio            |                                                                                   | 0.24                                                                              |                                                                                   | 0.36                                                                              |                                                                                   | 0.29                                                                              |                                                                                   | 0.30                                                                                |
| Control Delay        |                                                                                   | 16.8                                                                              |                                                                                   | 14.8                                                                              |                                                                                   | 5.5                                                                               |                                                                                   | 5.5                                                                                 |
| Queue Delay          |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                                 |
| Total Delay          |                                                                                   | 16.8                                                                              |                                                                                   | 14.8                                                                              |                                                                                   | 5.5                                                                               |                                                                                   | 5.5                                                                                 |
| LOS                  |                                                                                   | B                                                                                 |                                                                                   | B                                                                                 |                                                                                   | A                                                                                 |                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 16.8                                                                              |                                                                                   | 14.8                                                                              |                                                                                   | 5.5                                                                               |                                                                                   | 5.5                                                                                 |
| Approach LOS         |                                                                                   | B                                                                                 |                                                                                   | B                                                                                 |                                                                                   | A                                                                                 |                                                                                   | A                                                                                   |

## Intersection Summary

Cycle Length: 55

Actuated Cycle Length: 51.3

Natural Cycle: 40

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.36

Intersection Signal Delay: 7.9

Intersection Capacity Utilization 50.9%

Analysis Period (min) 15

Intersection LOS: A

ICU Level of Service A

Splits and Phases: 21: Roanoke Ave & W 2nd St/E 2nd St

|                                                                                        |                                                                                         |
|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
|  ø2 |  ø4 |
| 36 s                                                                                   | 19 s                                                                                    |
|  ø6 |  ø8 |
| 36 s                                                                                   | 19 s                                                                                    |



# Timings

22: Roanoke Ave & Railroad St

Timing Plan: Saturday Peak Ho



| Lane Group           | EBL   | NBL   | NBT   | SBT  | ø6   | ø8   |
|----------------------|-------|-------|-------|------|------|------|
| Lane Configurations  |       |       |       |      |      |      |
| Volume (vph)         | 59    | 14    | 388   | 352  |      |      |
| Turn Type            | NA    | Perm  | NA    | NA   |      |      |
| Protected Phases     | 2     |       | 4     | 8 6  | 6    | 8    |
| Permitted Phases     |       | 4     |       |      |      |      |
| Detector Phase       | 2     | 4     | 4     | 8 6  |      |      |
| Switch Phase         |       |       |       |      |      |      |
| Minimum Initial (s)  | 4.0   | 4.0   | 4.0   |      | 4.0  | 4.0  |
| Minimum Split (s)    | 9.0   | 9.0   | 9.0   |      | 9.0  | 9.0  |
| Total Split (s)      | 18.0  | 35.0  | 35.0  |      | 27.0 | 35.0 |
| Total Split (%)      | 22.5% | 43.8% | 43.8% |      | 34%  | 44%  |
| Yellow Time (s)      | 3.0   | 3.0   | 3.0   |      | 3.0  | 3.0  |
| All-Red Time (s)     | 2.0   | 2.0   | 2.0   |      | 2.0  | 2.0  |
| Lost Time Adjust (s) | 0.0   |       | 0.0   |      |      |      |
| Total Lost Time (s)  | 5.0   |       | 5.0   |      |      |      |
| Lead/Lag             |       |       |       |      |      |      |
| Lead-Lag Optimize?   |       |       |       |      |      |      |
| Recall Mode          | None  | Max   | Max   |      | Max  | Max  |
| Act Effct Green (s)  | 8.9   |       | 30.0  | 57.0 |      |      |
| Actuated g/C Ratio   | 0.12  |       | 0.39  | 0.75 |      |      |
| v/c Ratio            | 0.36  |       | 0.68  | 0.38 |      |      |
| Control Delay        | 33.3  |       | 25.2  | 1.0  |      |      |
| Queue Delay          | 0.0   |       | 0.0   | 0.0  |      |      |
| Total Delay          | 33.3  |       | 25.2  | 1.0  |      |      |
| LOS                  | C     |       | C     | A    |      |      |
| Approach Delay       | 33.3  |       | 25.2  | 1.0  |      |      |
| Approach LOS         | C     |       | C     | A    |      |      |

## Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 76

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 14.1

Intersection Capacity Utilization 43.8%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service A

## Splits and Phases: 22: Roanoke Ave & Railroad St

|             |             |             |
|-------------|-------------|-------------|
| #22 #23<br> | #22 #23<br> | #22 #23<br> |
| ø2          | ø6          | ø4          |
| 18 s        | 27 s        | 35 s        |
|             |             | #22 #23<br> |
|             |             | ø8          |
|             |             | 35 s        |

# Timings

## 23: Roanoke Ave & Northville Turnpike

Timing Plan: Saturday Peak Ho

|                      | ↖     | ↑    | ↗     | ↘     | ↓     |      |      |
|----------------------|-------|------|-------|-------|-------|------|------|
| Lane Group           | WBL   | NBT  | NBR   | SBL   | SBT   | ø2   | ø4   |
| Lane Configurations  | ↖     | ↑    | ↗     |       | ↓     |      |      |
| Volume (vph)         | 148   | 331  | 122   | 17    | 290   |      |      |
| Turn Type            | NA    | NA   | pm+ov | Perm  | NA    |      |      |
| Protected Phases     | 6     | 4 2  | 6     |       | 8     | 2    | 4    |
| Permitted Phases     |       |      | 4 2   | 8     |       |      |      |
| Detector Phase       | 6     | 4 2  | 6     | 8     | 8     |      |      |
| Switch Phase         |       |      |       |       |       |      |      |
| Minimum Initial (s)  | 4.0   |      | 4.0   | 4.0   | 4.0   | 4.0  | 4.0  |
| Minimum Split (s)    | 9.0   |      | 9.0   | 9.0   | 9.0   | 9.0  | 9.0  |
| Total Split (s)      | 27.0  |      | 27.0  | 35.0  | 35.0  | 18.0 | 35.0 |
| Total Split (%)      | 33.8% |      | 33.8% | 43.8% | 43.8% | 23%  | 44%  |
| Yellow Time (s)      | 3.0   |      | 3.0   | 3.0   | 3.0   | 3.0  | 3.0  |
| All-Red Time (s)     | 2.0   |      | 2.0   | 2.0   | 2.0   | 2.0  | 2.0  |
| Lost Time Adjust (s) | 0.0   |      | 0.0   |       | 0.0   |      |      |
| Total Lost Time (s)  | 5.0   |      | 5.0   |       | 5.0   |      |      |
| Lead/Lag             |       |      |       |       |       |      |      |
| Lead-Lag Optimize?   |       |      |       |       |       |      |      |
| Recall Mode          | Max   |      | Max   | Max   | Max   | None | Max  |
| Act Effect Green (s) | 22.0  | 44.0 | 76.0  |       | 30.0  |      |      |
| Actuated g/C Ratio   | 0.29  | 0.58 | 1.00  |       | 0.39  |      |      |
| v/c Ratio            | 0.36  | 0.35 | 0.09  |       | 0.55  |      |      |
| Control Delay        | 23.6  | 0.9  | 0.1   |       | 22.0  |      |      |
| Queue Delay          | 0.0   | 0.0  | 0.0   |       | 0.0   |      |      |
| Total Delay          | 23.6  | 0.9  | 0.1   |       | 22.0  |      |      |
| LOS                  | C     | A    | A     |       | C     |      |      |
| Approach Delay       | 23.6  | 0.7  |       |       | 22.0  |      |      |
| Approach LOS         | C     | A    |       |       | C     |      |      |

### Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 76

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 12.3

Intersection Capacity Utilization 46.8%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service A

### Splits and Phases: 23: Roanoke Ave & Northville Turnpike

|                                                                      |                                                                      |                                                                      |
|----------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------|
| <div> <div>↖</div> <div>↑</div> <div>ø2</div> </div> <div>18 s</div> | <div> <div>↓</div> <div>↗</div> <div>ø6</div> </div> <div>27 s</div> | <div> <div>↑</div> <div>↑</div> <div>ø4</div> </div> <div>35 s</div> |
|                                                                      |                                                                      | <div> <div>↓</div> <div>↓</div> <div>ø8</div> </div> <div>35 s</div> |

# Timings

## 24: Osborn Ave/Osborn St & Court St

Timing Plan: Saturday Peak Ho

|                      |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | SBL                                                                               | SBT                                                                                 |
| Lane Configurations  |                                                                                   |  |                                                                                   |  |                                                                                   |  |                                                                                   |  |
| Volume (vph)         | 112                                                                               | 83                                                                                | 18                                                                                | 58                                                                                | 3                                                                                 | 56                                                                                | 9                                                                                 | 126                                                                                 |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                  |
| Protected Phases     |                                                                                   | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 2                                                                                 |                                                                                   | 6                                                                                   |
| Permitted Phases     | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 2                                                                                 |                                                                                   | 6                                                                                 |                                                                                     |
| Detector Phase       | 4                                                                                 | 4                                                                                 | 8                                                                                 | 8                                                                                 | 2                                                                                 | 2                                                                                 | 6                                                                                 | 6                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |
| Minimum Initial (s)  | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                 |
| Minimum Split (s)    | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0                                                                                 |
| Total Split (s)      | 35.0                                                                              | 35.0                                                                              | 35.0                                                                              | 35.0                                                                              | 25.0                                                                              | 25.0                                                                              | 25.0                                                                              | 25.0                                                                                |
| Total Split (%)      | 58.3%                                                                             | 58.3%                                                                             | 58.3%                                                                             | 58.3%                                                                             | 41.7%                                                                             | 41.7%                                                                             | 41.7%                                                                             | 41.7%                                                                               |
| Yellow Time (s)      | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                                 |
| Lost Time Adjust (s) |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                                 |
| Total Lost Time (s)  |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                                 |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |
| Recall Mode          | Max                                                                               | Max                                                                               | Max                                                                               | Max                                                                               | None                                                                              | None                                                                              | None                                                                              | None                                                                                |
| Act Effct Green (s)  |                                                                                   | 30.2                                                                              |                                                                                   | 30.2                                                                              |                                                                                   | 11.6                                                                              |                                                                                   | 11.6                                                                                |
| Actuated g/C Ratio   |                                                                                   | 0.58                                                                              |                                                                                   | 0.58                                                                              |                                                                                   | 0.22                                                                              |                                                                                   | 0.22                                                                                |
| v/c Ratio            |                                                                                   | 0.25                                                                              |                                                                                   | 0.09                                                                              |                                                                                   | 0.18                                                                              |                                                                                   | 0.65                                                                                |
| Control Delay        |                                                                                   | 7.2                                                                               |                                                                                   | 5.9                                                                               |                                                                                   | 14.8                                                                              |                                                                                   | 19.3                                                                                |
| Queue Delay          |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                                 |
| Total Delay          |                                                                                   | 7.2                                                                               |                                                                                   | 5.9                                                                               |                                                                                   | 14.8                                                                              |                                                                                   | 19.3                                                                                |
| LOS                  |                                                                                   | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   | B                                                                                 |                                                                                   | B                                                                                   |
| Approach Delay       |                                                                                   | 7.2                                                                               |                                                                                   | 5.9                                                                               |                                                                                   | 14.8                                                                              |                                                                                   | 19.3                                                                                |
| Approach LOS         |                                                                                   | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   | B                                                                                 |                                                                                   | B                                                                                   |

### Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 51.8

Natural Cycle: 40

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 13.1

Intersection Capacity Utilization 44.3%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service A

Splits and Phases: 24: Osborn Ave/Osborn St & Court St

|                                                                                        |                                                                                        |
|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
|  02 |  04 |
| 25 s                                                                                   | 35 s                                                                                   |
|  06 |  08 |
| 25 s                                                                                   | 35 s                                                                                   |

---

Project: CR 94 Roundabout

Scheme name: Existing Condiditons

---

## Control Data

| Option         | Setting          | Option       | Setting               |
|----------------|------------------|--------------|-----------------------|
| Capacity Model | Rodel-Win1       | Mode         | Mode2 - Full Geometry |
| Queue Model    | Rodel-Win1       | Delay Model  | Rodel-Win1            |
| Flows          | Peak Hour Factor | Time Slice   | 7.5 minutes           |
| Delay          | Queuing          | Light / Dark | Light                 |

## Geometry Data for Empirical Model

| Leg | Approach Geometry |         |   |        |    |
|-----|-------------------|---------|---|--------|----|
|     | Leg Name          | Bearing | G | V (ft) | nv |
| 1   | Peconic Avenue    | 0       | 0 | 12.00  | 1  |
| 2   | CR 94             | 78      | 0 | 12.00  | 1  |
| 3   | CR 63             | 158     | 0 | 12.00  | 1  |
| 4   | CR 104            | 230     | 0 | 12.00  | 1  |
| 5   | NYS 24            | 270     | 0 | 12.00  | 1  |

| Leg | Entry Geometry |    |         |        |       | Circ Geom |        |    |
|-----|----------------|----|---------|--------|-------|-----------|--------|----|
|     | E (ft)         | ne | L' (ft) | R (ft) | ?     | D (ft)    | C (ft) | nc |
| 1   | 18.00          | 1  | 12.00   | 75.00  | 29.00 | 170.00    | 18.00  | 1  |
| 2   | 13.00          | 1  | 12.00   | 62.00  | 20.00 | 170.00    | 18.00  | 1  |
| 3   | 13.00          | 1  | 13.00   | 63.00  | 20.00 | 170.00    | 18.00  | 1  |
| 4   | 12.00          | 1  | 0.00    | 66.00  | 40.00 | 170.00    | 18.00  | 1  |
| 5   | 13.00          | 1  | 12.00   | 66.00  | 35.00 | 170.00    | 18.00  | 1  |

| Leg | Exit Geometry |     |         |     |
|-----|---------------|-----|---------|-----|
|     | Ex (ft)       | nex | Vx (ft) | nvx |
| 1   | 14.00         | 1   | 12.00   | 1   |
| 2   | 14.00         | 1   | 22.00   | 2   |
| 3   | 14.00         | 1   | 12.00   | 1   |
| 4   | 14.00         | 1   | 12.00   | 1   |
| 5   | 14.00         | 1   | 12.00   | 1   |

| Leg | Entry Capacity Modifiers |            |                |
|-----|--------------------------|------------|----------------|
|     | → Cap (v/h)              | Xwalk Fact | Conf Level (%) |
| 1   | 0                        | 1.000      | 50             |
| 2   | 0                        | 1.000      | 50             |
| 3   | 0                        | 1.000      | 50             |
| 4   | 0                        | 1.000      | 50             |
| 5   | 0                        | 1.000      | 50             |

## Flow Modifiers and Flow Data

| Leg | Leg Name       | Flow Modifiers |        |
|-----|----------------|----------------|--------|
|     |                | %Truck         | Factor |
| 1   | Peconic Avenue | 3.0            | 1.00   |
| 2   | CR 94          | 3.0            | 1.00   |
| 3   | CR 63          | 3.0            | 1.00   |
| 4   | CR 104         | 3.0            | 1.00   |
| 5   | NYS 24         | 3.0            | 1.00   |

| Leg | Arrival Turning Flows (veh/hr) |        |        |        |        |        |
|-----|--------------------------------|--------|--------|--------|--------|--------|
|     | U-Turn                         | Exit-4 | Exit-3 | Exit-2 | Exit-1 | Bypass |
| 1   | 4                              | 186    | 200    | 336    | 199    | 0      |
| 2   | 4                              | 331    | 192    | 193    | 138    | 0      |
| 3   | 5                              | 58     | 179    | 88     | 39     | 0      |
| 4   | 3                              | 87     | 107    | 186    | 0      | 39     |
| 5   | 6                              | 102    | 160    | 250    | 316    | 0      |

| Leg | Arrival Volume Ratios |        |        | Arrival Volume Times (min) |       |       | PHF  |
|-----|-----------------------|--------|--------|----------------------------|-------|-------|------|
|     | Ratio1                | Ratio2 | Ratio3 | Time1                      | Time2 | Time3 |      |
| 1   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |
| 2   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |
| 3   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |
| 4   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |
| 5   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |



## Model Results

### Global performance

| Leg | Leg Name       | Global Performance |         |         |          |        |
|-----|----------------|--------------------|---------|---------|----------|--------|
|     |                | Parameter          | Units   | Entries | Bypasses | Total  |
| 1   | Peconic Avenue | Arrive Flows       | veh/hr  | 3369    | 39       | 3408   |
| 2   | CR 94          | Capacity           | veh/hr  | 3451    | 289      | 3740   |
| 3   | CR 63          | Average Delay      | sec/veh | 322.75  | 14.14    | 319.22 |
| 4   | CR 104         | L.O.S. (Signal)    | A – F   | F       | B        | F      |
| 5   | NYS 24         | L.O.S. (Unsig)     | A – F   | F       | B        | F      |

### Entry Flow and Capacity (60min)

| Leg | Bypass Type | Flow Rate (veh/hr) |        | Opp Rate (veh/hr) |        | Capacity (veh/hr) |        | Ave VCR |        |
|-----|-------------|--------------------|--------|-------------------|--------|-------------------|--------|---------|--------|
|     |             | Entry              | Bypass | Entry             | Bypass | Entry             | Bypass | Entry   | Bypass |
| 1   | None        | 925                |        | 686               |        | 815               |        | 1.712   |        |
| 2   | None        | 858                |        | 950               |        | 690               |        | 2.241   |        |
| 3   | None        | 369                |        | 1010              |        | 660               |        | 0.574   |        |
| 4   | Yield       | 383                | 39     | 923               | 923    | 603               | 289    | 0.658   | 0.139  |
| 5   | None        | 834                |        | 896               |        | 683               |        | 2.111   |        |

### Entry Queues and Delays (60min)

| Leg | Ave Del (sec/veh) |        |       | Max Del (sec/veh) |        | 95% Queue |        | LOS A-F |     |     |
|-----|-------------------|--------|-------|-------------------|--------|-----------|--------|---------|-----|-----|
|     | Entry             | Bypass | Leg   | Entry             | Bypass | Entry     | Bypass | Entry   | Byp | Leg |
| 1   | 292.5             |        | 292.5 | 539.9             |        | 128.5     |        | F       |     | F   |
| 2   | 505.2             |        | 505.2 | 950.8             |        | 187.0     |        | F       |     | F   |
| 3   | 12.1              |        | 12.1  | 15.8              |        | 4.1       |        | B       |     | B   |
| 4   | 16.2              | 14.1   | 16.0  | 23.7              | 17.5   | 5.7       | 0.5    | C       | B   | C   |
| 5   | 446.9             |        | 446.9 | 799.0             |        | 167.2     |        | F       |     | F   |

### Entry Slope and Intercept (60min)

| Leg | Bypass Type | Y Intercept (vehs/hr) |        | Slope (tangent) |        | X Intercept (vehs/hr) |        |
|-----|-------------|-----------------------|--------|-----------------|--------|-----------------------|--------|
|     |             | Entry                 | Bypass | Entry           | Bypass | Entry                 | Bypass |
| 1   | None        | 1165                  |        | 0.5095          |        | 2286                  |        |
| 2   | None        | 1183                  |        | 0.5193          |        | 2278                  |        |
| 3   | None        | 1185                  |        | 0.5200          |        | 2279                  |        |
| 4   | Yield       | 1039                  | 666    | 0.4730          | 0.4075 | 2197                  | 1634   |
| 5   | None        | 1127                  |        | 0.4947          |        | 2278                  |        |

### Entry Flow and Capacity (Peak 7.5min)

| Leg | Bypass Type | Flow Rate (veh/hr) |        | Opp Rate (veh/hr) |        | Capacity (veh/hr) |        | Ave VCR |        |
|-----|-------------|--------------------|--------|-------------------|--------|-------------------|--------|---------|--------|
|     |             | Entry              | Bypass | Entry             | Bypass | Entry             | Bypass | Entry   | Bypass |
| 1   | None        | 1028               |        | 694               |        | 811               |        | 1.7883  |        |
| 2   | None        | 953                |        | 949               |        | 690               |        | 2.3096  |        |
| 3   | None        | 410                |        | 1007              |        | 661               |        | 0.6363  |        |
| 4   | Yield       | 426                | 43     | 960               | 960    | 585               | 275    | 0.7530  | 0.1625 |
| 5   | None        | 927                |        | 962               |        | 651               |        | 2.2641  |        |

### Entry Queues and Delays (Peak 7.5min)

| Leg | Ave Del (sec/veh) |        |       | Max Del (sec/veh) |        | 95% Queue |        | LOS A-F |     |     |
|-----|-------------------|--------|-------|-------------------|--------|-----------|--------|---------|-----|-----|
|     | Entry             | Bypass | Leg   | Entry             | Bypass | Entry     | Bypass | Entry   | Byp | Leg |
| 1   | 294.8             |        | 294.8 | 539.9             |        | 100.5     |        | F       |     | F   |
| 2   | 504.2             |        | 504.2 | 950.8             |        | 135.4     |        | F       |     | F   |
| 3   | 12.7              |        | 12.7  | 15.8              |        | 4.1       |        | B       |     | B   |
| 4   | 18.4              | 14.4   | 18.0  | 23.7              | 17.5   | 5.7       | 0.5    | C       | B   | C   |
| 5   | 464.1             |        | 464.1 | 799.0             |        | 126.2     |        | F       |     | F   |

### Entry Slope and Intercept (Peak 7.5min)

| Leg | Bypass Type | Y Intercept (vehs/hr) |        | Slope (tangent) |        | X Intercept (vehs/hr) |        |
|-----|-------------|-----------------------|--------|-----------------|--------|-----------------------|--------|
|     |             | Entry                 | Bypass | Entry           | Bypass | Entry                 | Bypass |
| 1   | None        | 1165                  |        | 0.5095          |        | 2286                  |        |
| 2   | None        | 1183                  |        | 0.5193          |        | 2278                  |        |
| 3   | None        | 1185                  |        | 0.5200          |        | 2279                  |        |
| 4   | Yield       | 1039                  | 666    | 0.4730          | 0.4075 | 2197                  | 1634   |
| 5   | None        | 1127                  |        | 0.4947          |        | 2278                  |        |

---

## Scheme Notes

(none)

---

## **Base Condition Mitigation 1 - Capacity Analyses**

# Timings

## 5: Nugent St/Court St & W Main St

Timing Plan: PM Peak Hour

|                      |  |  |  |  |  |  |    |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |                                                                                     |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |                                                                                     |
| Volume (vph)         | 60                                                                                | 276                                                                               | 503                                                                               | 361                                                                               | 530                                                                               | 396                                                                               | 167                                                                                 | 72                                                                                  | 2                                                                                   | 668                                                                                 |                                                                                     |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | pm+pt                                                                             | NA                                                                                | pm+pt                                                                             | NA                                                                                  | Free                                                                                | Perm                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases     |                                                                                   | 2                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                 | 7                                                                                 | 4                                                                                   |                                                                                     |                                                                                     | 8                                                                                   |                                                                                     |
| Permitted Phases     | 2                                                                                 |                                                                                   | 2                                                                                 | 6                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                   | Free                                                                                | 8                                                                                   |                                                                                     |                                                                                     |
| Detector Phase       | 2                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 | 7                                                                                 | 4                                                                                   |                                                                                     | 8                                                                                   | 8                                                                                   |                                                                                     |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 4.0                                                                               | 15.0                                                                              | 3.0                                                                               | 5.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Minimum Split (s)    | 21.5                                                                              | 21.5                                                                              | 21.5                                                                              | 8.0                                                                               | 21.5                                                                              | 9.0                                                                               | 12.0                                                                                |                                                                                     | 11.8                                                                                | 11.8                                                                                |                                                                                     |
| Total Split (s)      | 26.0                                                                              | 26.0                                                                              | 26.0                                                                              | 15.0                                                                              | 41.0                                                                              | 22.0                                                                              | 49.0                                                                                |                                                                                     | 27.0                                                                                | 27.0                                                                                |                                                                                     |
| Total Split (%)      | 28.9%                                                                             | 28.9%                                                                             | 28.9%                                                                             | 16.7%                                                                             | 45.6%                                                                             | 24.4%                                                                             | 54.4%                                                                               |                                                                                     | 30.0%                                                                               | 30.0%                                                                               |                                                                                     |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.0                                                                               | 3.5                                                                                 |                                                                                     | 3.5                                                                                 | 3.5                                                                                 |                                                                                     |
| All-Red Time (s)     | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 0.5                                                                               | 3.0                                                                               | 2.0                                                                               | 2.3                                                                                 |                                                                                     | 2.3                                                                                 | 2.3                                                                                 |                                                                                     |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Total Lost Time (s)  | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 4.0                                                                               | 6.5                                                                               | 5.0                                                                               | 5.8                                                                                 |                                                                                     |                                                                                     | 5.8                                                                                 |                                                                                     |
| Lead/Lag             | Lag                                                                               | Lag                                                                               | Lag                                                                               | Lead                                                                              |                                                                                   | Lead                                                                              |                                                                                     |                                                                                     | Lag                                                                                 | Lag                                                                                 |                                                                                     |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                               |                                                                                     |                                                                                     | Yes                                                                                 | Yes                                                                                 |                                                                                     |
| Recall Mode          | Max                                                                               | Max                                                                               | Max                                                                               | None                                                                              | None                                                                              | None                                                                              | None                                                                                |                                                                                     | None                                                                                | None                                                                                |                                                                                     |
| Act Effct Green (s)  | 19.5                                                                              | 19.5                                                                              | 19.5                                                                              | 37.0                                                                              | 34.5                                                                              | 43.7                                                                              | 42.9                                                                                | 89.7                                                                                |                                                                                     | 20.9                                                                                |                                                                                     |
| Actuated g/C Ratio   | 0.22                                                                              | 0.22                                                                              | 0.22                                                                              | 0.41                                                                              | 0.38                                                                              | 0.49                                                                              | 0.48                                                                                | 1.00                                                                                |                                                                                     | 0.23                                                                                |                                                                                     |
| v/c Ratio            | 0.42                                                                              | 0.75                                                                              | 0.79                                                                              | 0.99                                                                              | 0.77                                                                              | 1.09                                                                              | 0.22                                                                                | 0.05                                                                                |                                                                                     | 0.89                                                                                |                                                                                     |
| Control Delay        | 40.4                                                                              | 46.6                                                                              | 17.9                                                                              | 68.7                                                                              | 32.9                                                                              | 97.0                                                                              | 14.5                                                                                | 0.1                                                                                 |                                                                                     | 46.3                                                                                |                                                                                     |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 2.1                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 4.2                                                                                 |                                                                                     |
| Total Delay          | 40.4                                                                              | 46.6                                                                              | 17.9                                                                              | 68.7                                                                              | 35.1                                                                              | 97.0                                                                              | 14.5                                                                                | 0.1                                                                                 |                                                                                     | 50.5                                                                                |                                                                                     |
| LOS                  | D                                                                                 | D                                                                                 | B                                                                                 | E                                                                                 | D                                                                                 | F                                                                                 | B                                                                                   | A                                                                                   |                                                                                     | D                                                                                   |                                                                                     |
| Approach Delay       |                                                                                   | 29.0                                                                              |                                                                                   |                                                                                   | 48.6                                                                              |                                                                                   | 64.3                                                                                |                                                                                     |                                                                                     | 50.5                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | C                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   | E                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |

### Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 89.7

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.09

Intersection Signal Delay: 47.0

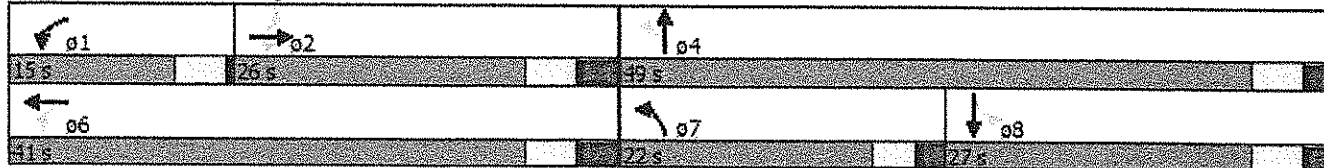
Intersection Capacity Utilization 104.8%

Analysis Period (min) 15

Intersection LOS: D

ICU Level of Service G

Splits and Phases: 5: Nugent St/Court St & W Main St





# Timings

6: W Main St & Osborn Ave

Timing Plan: PM Peak Hour

| Lane Group           | EBL   | EBT   | WBT   | SBL   |
|----------------------|-------|-------|-------|-------|
| Lane Configurations  |       | ↰     | ↱     | ↰↱    |
| Volume (vph)         | 7     | 346   | 901   | 61    |
| Turn Type            | Perm  | NA    | NA    | NA    |
| Protected Phases     |       | 4     | 8     | 6     |
| Permitted Phases     | 4     |       |       |       |
| Detector Phase       | 4     | 4     | 8     | 6     |
| Switch Phase         |       |       |       |       |
| Minimum Initial (s)  | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)    | 11.3  | 11.3  | 11.3  | 11.2  |
| Total Split (s)      | 60.0  | 60.0  | 60.0  | 25.0  |
| Total Split (%)      | 70.6% | 70.6% | 70.6% | 29.4% |
| Yellow Time (s)      | 3.5   | 3.5   | 3.5   | 3.5   |
| All-Red Time (s)     | 2.8   | 2.8   | 2.8   | 2.7   |
| Lost Time Adjust (s) |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  |       | 6.3   | 6.3   | 6.2   |
| Lead/Lag             |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |
| Recall Mode          | Max   | Max   | Max   | None  |
| Act Effect Green (s) |       | 58.0  | 58.0  | 8.6   |
| Actuated g/C Ratio   |       | 0.77  | 0.77  | 0.11  |
| v/c Ratio            |       | 0.28  | 0.84  | 0.41  |
| Control Delay        |       | 4.4   | 16.7  | 33.2  |
| Queue Delay          |       | 0.0   | 0.0   | 0.0   |
| Total Delay          |       | 4.4   | 16.7  | 33.2  |
| LOS                  |       | A     | B     | C     |
| Approach Delay       |       | 4.4   | 16.7  | 33.2  |
| Approach LOS         |       | A     | B     | C     |

## Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 75.5

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 14.7

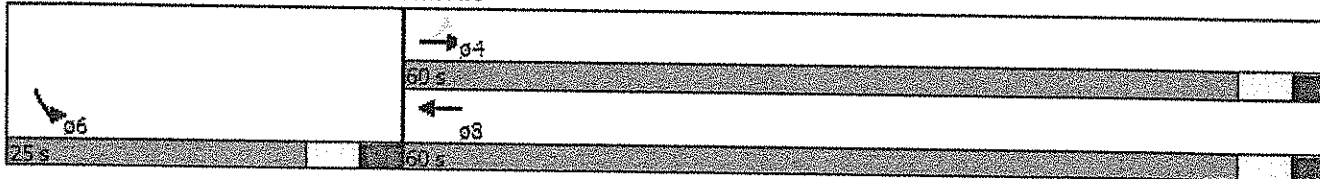
Intersection Capacity Utilization 66.2%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service C

Splits and Phases: 6: W Main St & Osborn Ave



# Timings

7: W Main St & Griffing Ave

Timing Plan: PM Peak Hour

|                      |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBT                                                                               | SBL                                                                               |
| Lane Configurations  |                                                                                   |  |  |  |
| Volume (vph)         | 32                                                                                | 392                                                                               | 864                                                                               | 26                                                                                |
| Turn Type            | Perm                                                                              | NA                                                                                | NA                                                                                | NA                                                                                |
| Protected Phases     |                                                                                   | 2                                                                                 | 6                                                                                 | 4                                                                                 |
| Permitted Phases     | 2                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Detector Phase       | 2                                                                                 | 2                                                                                 | 6                                                                                 | 4                                                                                 |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Minimum Initial (s)  | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 5.0                                                                               |
| Minimum Split (s)    | 15.8                                                                              | 15.8                                                                              | 15.8                                                                              | 10.5                                                                              |
| Total Split (s)      | 44.5                                                                              | 44.5                                                                              | 44.5                                                                              | 10.5                                                                              |
| Total Split (%)      | 80.9%                                                                             | 80.9%                                                                             | 80.9%                                                                             | 19.1%                                                                             |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               |
| All-Red Time (s)     | 2.3                                                                               | 2.3                                                                               | 2.3                                                                               | 2.0                                                                               |
| Lost Time Adjust (s) |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Lost Time (s)  |                                                                                   | 5.8                                                                               | 5.8                                                                               | 5.5                                                                               |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Recall Mode          | Max                                                                               | Max                                                                               | Max                                                                               | None                                                                              |
| Act Effct Green (s)  |                                                                                   | 42.6                                                                              | 42.6                                                                              | 5.0                                                                               |
| Actuated g/C Ratio   |                                                                                   | 0.76                                                                              | 0.76                                                                              | 0.09                                                                              |
| v/c Ratio            |                                                                                   | 0.33                                                                              | 0.71                                                                              | 0.45                                                                              |
| Control Delay        |                                                                                   | 3.7                                                                               | 8.2                                                                               | 17.7                                                                              |
| Queue Delay          |                                                                                   | 0.0                                                                               | 1.7                                                                               | 0.0                                                                               |
| Total Delay          |                                                                                   | 3.7                                                                               | 9.9                                                                               | 17.7                                                                              |
| LOS                  |                                                                                   | A                                                                                 | A                                                                                 | B                                                                                 |
| Approach Delay       |                                                                                   | 3.7                                                                               | 9.9                                                                               | 17.7                                                                              |
| Approach LOS         |                                                                                   | A                                                                                 | A                                                                                 | B                                                                                 |

## Intersection Summary

Cycle Length: 55

Actuated Cycle Length: 55.9

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 8.6

Intersection Capacity Utilization 67.4%

Analysis Period (min) 15

Intersection LOS: A

ICU Level of Service C

## Splits and Phases: 7: W Main St & Griffing Ave

|                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |
| g2                                                                                  | g4                                                                                  | g6                                                                                  |                                                                                     |
| 44.5 s                                                                              | 10.5 s                                                                              |                                                                                     |                                                                                     |
| 44.5 s                                                                              |                                                                                     |                                                                                     |                                                                                     |

# Timings

## 8: Peconic Ave & W Main St

Timing Plan: PM Peak Hour

|                      |  |  |  |  |      |       |      |      |      |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-------|------|------|------|
| Lane Group           | EBT                                                                               | WBT                                                                               | NBL                                                                               | NBR                                                                               | ø3   | ø6    | ø8   | ø9   | ø13  |
| Lane Configurations  | ↑↑                                                                                | ↑↑                                                                                | ↓                                                                                 | ↓                                                                                 |      |       |      |      |      |
| Volume (vph)         | 367                                                                               | 766                                                                               | 207                                                                               | 645                                                                               |      |       |      |      |      |
| Turn Type            | NA                                                                                | NA                                                                                | NA                                                                                | custom                                                                            |      |       |      |      |      |
| Protected Phases     | 2                                                                                 | 6 3                                                                               | 4                                                                                 | 3 13                                                                              | 3    | 6     | 8    | 9    | 13   |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   | 4 3                                                                               |      |       |      |      |      |
| Detector Phase       | 2                                                                                 | 6 3                                                                               | 4                                                                                 | 3 13                                                                              |      |       |      |      |      |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |       |      |      |      |
| Minimum Initial (s)  | 10.0                                                                              |                                                                                   | 10.0                                                                              |                                                                                   | 4.0  | 10.0  | 10.0 | 22.0 | 22.0 |
| Minimum Split (s)    | 15.9                                                                              |                                                                                   | 15.9                                                                              |                                                                                   | 9.9  | 28.0  | 15.0 | 25.0 | 25.0 |
| Total Split (s)      | 56.0                                                                              |                                                                                   | 41.0                                                                              |                                                                                   | 55.0 | 56.0  | 96.0 | 28.0 | 28.0 |
| Total Split (%)      | 31.1%                                                                             |                                                                                   | 22.8%                                                                             |                                                                                   | 31%  | 31%   | 53%  | 16%  | 16%  |
| Yellow Time (s)      | 3.5                                                                               |                                                                                   | 3.5                                                                               |                                                                                   | 3.5  | 3.5   | 3.0  | 2.0  | 2.0  |
| All-Red Time (s)     | 2.4                                                                               |                                                                                   | 2.4                                                                               |                                                                                   | 2.4  | 2.4   | 2.0  | 1.0  | 1.0  |
| Lost Time Adjust (s) | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   |      |       |      |      |      |
| Total Lost Time (s)  | 5.9                                                                               |                                                                                   | 5.9                                                                               |                                                                                   |      |       |      |      |      |
| Lead/Lag             |                                                                                   |                                                                                   | Lead                                                                              |                                                                                   | Lag  |       |      |      |      |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |       |      |      |      |
| Recall Mode          | C-Min                                                                             |                                                                                   | None                                                                              |                                                                                   | None | C-Min | None | None | None |
| Act Effct Green (s)  | 56.1                                                                              | 108.7                                                                             | 28.6                                                                              | 112.1                                                                             |      |       |      |      |      |
| Actuated g/C Ratio   | 0.31                                                                              | 0.60                                                                              | 0.16                                                                              | 0.62                                                                              |      |       |      |      |      |
| v/c Ratio            | 0.37                                                                              | 0.40                                                                              | 0.84                                                                              | 0.72                                                                              |      |       |      |      |      |
| Control Delay        | 50.3                                                                              | 1.7                                                                               | 98.7                                                                              | 27.8                                                                              |      |       |      |      |      |
| Queue Delay          | 1.3                                                                               | 0.7                                                                               | 0.0                                                                               | 0.7                                                                               |      |       |      |      |      |
| Total Delay          | 51.6                                                                              | 2.4                                                                               | 98.7                                                                              | 28.5                                                                              |      |       |      |      |      |
| LOS                  | D                                                                                 | A                                                                                 | F                                                                                 | C                                                                                 |      |       |      |      |      |
| Approach Delay       | 51.6                                                                              | 2.4                                                                               | 45.5                                                                              |                                                                                   |      |       |      |      |      |
| Approach LOS         | D                                                                                 | A                                                                                 | D                                                                                 |                                                                                   |      |       |      |      |      |

### Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 30.7

Intersection LOS: C

Intersection Capacity Utilization 59.9%

ICU Level of Service B

Analysis Period (min) 15

### Splits and Phases: 8: Peconic Ave & W Main St

|                   |               |               |                |
|-------------------|---------------|---------------|----------------|
| #8 #9<br>→ ø2 (R) | #8 #9<br>← ø4 | #8 #9<br>← ø3 | #9<br>← ø9     |
| 56 s              | 11 s          | 55 s          | 26 s           |
| #8 #9<br>← ø6 (R) | #9<br>→ ø8    |               | #8 #9<br>← ø13 |
| 56 s              | 96 s          |               | 26 s           |

# Timings

9: W Main St/E Main St & Roanoke Ave

Timing Plan: PM Peak Hour

| Lane Group           | EBL                                                                               | EBT                                                                               | WBT                                                                               | SBR                                                                               | ø2    | ø3   | ø4   | ø8   | ø9   | ø13  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|------|------|------|------|------|
| Lane Configurations  |  |  |  |  |       |      |      |      |      |      |
| Volume (vph)         | 345                                                                               | 658                                                                               | 625                                                                               | 131                                                                               |       |      |      |      |      |      |
| Turn Type            | custom                                                                            | NA                                                                                | NA                                                                                | custom                                                                            |       |      |      |      |      |      |
| Protected Phases     | 4 13                                                                              | 8 2                                                                               | 6                                                                                 | 3 9                                                                               | 2     | 3    | 4    | 8    | 9    | 13   |
| Permitted Phases     | 8                                                                                 |                                                                                   |                                                                                   |                                                                                   |       |      |      |      |      |      |
| Detector Phase       | 4 13                                                                              | 8 2                                                                               | 6                                                                                 | 3 9                                                                               |       |      |      |      |      |      |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |       |      |      |      |      |      |
| Minimum Initial (s)  |                                                                                   |                                                                                   | 10.0                                                                              |                                                                                   | 10.0  | 4.0  | 10.0 | 10.0 | 22.0 | 22.0 |
| Minimum Split (s)    |                                                                                   |                                                                                   | 28.0                                                                              |                                                                                   | 15.9  | 9.9  | 15.9 | 15.0 | 25.0 | 25.0 |
| Total Split (s)      |                                                                                   |                                                                                   | 56.0                                                                              |                                                                                   | 56.0  | 55.0 | 41.0 | 96.0 | 28.0 | 28.0 |
| Total Split (%)      |                                                                                   |                                                                                   | 31.1%                                                                             |                                                                                   | 31%   | 31%  | 23%  | 53%  | 16%  | 16%  |
| Yellow Time (s)      |                                                                                   |                                                                                   | 3.5                                                                               |                                                                                   | 3.5   | 3.5  | 3.5  | 3.0  | 2.0  | 2.0  |
| All-Red Time (s)     |                                                                                   |                                                                                   | 2.4                                                                               |                                                                                   | 2.4   | 2.4  | 2.4  | 2.0  | 1.0  | 1.0  |
| Lost Time Adjust (s) |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |       |      |      |      |      |      |
| Total Lost Time (s)  |                                                                                   |                                                                                   | 5.9                                                                               |                                                                                   |       |      |      |      |      |      |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |       | Lag  | Lead |      |      |      |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |       |      |      |      |      |      |
| Recall Mode          |                                                                                   |                                                                                   | C-Min                                                                             |                                                                                   | C-Min | None | None | None | None | None |
| Act Effct Green (s)  | 106.2                                                                             | 150.0                                                                             | 56.1                                                                              | 77.6                                                                              |       |      |      |      |      |      |
| Actuated g/C Ratio   | 0.59                                                                              | 0.83                                                                              | 0.31                                                                              | 0.43                                                                              |       |      |      |      |      |      |
| v/c Ratio            | 0.50                                                                              | 0.44                                                                              | 0.62                                                                              | 0.21                                                                              |       |      |      |      |      |      |
| Control Delay        | 6.4                                                                               | 5.3                                                                               | 56.4                                                                              | 33.1                                                                              |       |      |      |      |      |      |
| Queue Delay          | 1.8                                                                               | 1.1                                                                               | 0.0                                                                               | 0.0                                                                               |       |      |      |      |      |      |
| Total Delay          | 8.2                                                                               | 6.4                                                                               | 56.4                                                                              | 33.1                                                                              |       |      |      |      |      |      |
| LOS                  | A                                                                                 | A                                                                                 | E                                                                                 | C                                                                                 |       |      |      |      |      |      |
| Approach Delay       |                                                                                   | 7.0                                                                               | 56.4                                                                              |                                                                                   |       |      |      |      |      |      |
| Approach LOS         |                                                                                   | A                                                                                 | E                                                                                 |                                                                                   |       |      |      |      |      |      |

## Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 27.0

Intersection LOS: C

Intersection Capacity Utilization 47.4%

ICU Level of Service A

Analysis Period (min) 15

## Splits and Phases: 9: W Main St/E Main St & Roanoke Ave

|                                                                                               |                                                                                           |                                                                                             |                                                                                             |
|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| <br>ø2 (R) | <br>ø4 | <br>ø3  | <br>ø9 |
| 56 s                                                                                          | 41 s                                                                                      | 55 s                                                                                        | 23 s                                                                                        |
| <br>ø6 (R) | <br>ø8 | <br>ø13 |                                                                                             |
| 56 s                                                                                          | 96 s                                                                                      |                                                                                             | 28 s                                                                                        |

# HCM Unsignalized Intersection Capacity Analysis

## 10: E Main St & East Ave

Timing Plan: PM Peak Hour

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement               | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR                                                                               | SBL                                                                               | SBR                                                                               |
| Lane Configurations    |                                                                                   |  |  |                                                                                   |  |                                                                                   |
| Volume (veh/h)         | 88                                                                                | 538                                                                               | 588                                                                               | 51                                                                                | 56                                                                                | 75                                                                                |
| Sign Control           |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   | Stop                                                                              |                                                                                   |
| Grade                  |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |
| Peak Hour Factor       | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Hourly flow rate (vph) | 96                                                                                | 585                                                                               | 639                                                                               | 55                                                                                | 61                                                                                | 82                                                                                |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type            |                                                                                   | None                                                                              | None                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Median storage (veh)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)   |                                                                                   | 763                                                                               | 275                                                                               |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked  | 0.85                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.92                                                                              | 0.85                                                                              |
| vC, conflicting volume | 695                                                                               |                                                                                   |                                                                                   |                                                                                   | 1443                                                                              | 667                                                                               |
| vC1, stage 1 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol     | 557                                                                               |                                                                                   |                                                                                   |                                                                                   | 1115                                                                              | 524                                                                               |
| tC, single (s)         | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   | 6.4                                                                               | 6.2                                                                               |
| tC, 2 stage (s)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                 | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   | 3.5                                                                               | 3.3                                                                               |
| p0 queue free %        | 89                                                                                |                                                                                   |                                                                                   |                                                                                   | 68                                                                                | 83                                                                                |
| cM capacity (veh/h)    | 874                                                                               |                                                                                   |                                                                                   |                                                                                   | 190                                                                               | 476                                                                               |

| Direction, Lane #      | EB 1 | WB 1 | SB 1 |
|------------------------|------|------|------|
| Volume Total           | 680  | 695  | 142  |
| Volume Left            | 96   | 0    | 61   |
| Volume Right           | 0    | 55   | 82   |
| cSH                    | 874  | 1700 | 290  |
| Volume to Capacity     | 0.11 | 0.41 | 0.49 |
| Queue Length 95th (ft) | 9    | 0    | 64   |
| Control Delay (s)      | 2.7  | 0.0  | 28.9 |
| Lane LOS               | A    |      | D    |
| Approach Delay (s)     | 2.7  | 0.0  | 28.9 |
| Approach LOS           |      |      | D    |

| Intersection Summary              |  |       |                      |
|-----------------------------------|--|-------|----------------------|
| Average Delay                     |  | 3.9   |                      |
| Intersection Capacity Utilization |  | 84.9% | ICU Level of Service |
| Analysis Period (min)             |  | 15    | E                    |



# Timings

## 11: McDermott Ave/Maple Ave & E Main St

Timing Plan: PM Peak Hour

|                      |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | SBL                                                                                 | SBT                                                                                 |
| Lane Configurations  |                                                                                   |  |                                                                                   |  |                                                                                   |  |                                                                                     |  |
| Volume (vph)         | 14                                                                                | 587                                                                               | 27                                                                                | 489                                                                               | 141                                                                               | 13                                                                                | 67                                                                                  | 14                                                                                  |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                                | NA                                                                                  |
| Protected Phases     |                                                                                   | 2                                                                                 |                                                                                   | 6                                                                                 |                                                                                   | 4                                                                                 |                                                                                     | 8                                                                                   |
| Permitted Phases     | 2                                                                                 |                                                                                   | 6                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 8                                                                                   |                                                                                     |
| Detector Phase       | 2                                                                                 | 2                                                                                 | 6                                                                                 | 6                                                                                 | 4                                                                                 | 4                                                                                 | 8                                                                                   | 8                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                 | 4.0                                                                                 |
| Minimum Split (s)    | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 9.0                                                                               | 9.0                                                                               | 9.0                                                                                 | 9.0                                                                                 |
| Total Split (s)      | 61.0                                                                              | 61.0                                                                              | 61.0                                                                              | 61.0                                                                              | 29.0                                                                              | 29.0                                                                              | 29.0                                                                                | 29.0                                                                                |
| Total Split (%)      | 67.8%                                                                             | 67.8%                                                                             | 67.8%                                                                             | 67.8%                                                                             | 32.2%                                                                             | 32.2%                                                                             | 32.2%                                                                               | 32.2%                                                                               |
| Yellow Time (s)      | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                                 | 3.0                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                                 | 2.0                                                                                 |
| Lost Time Adjust (s) |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                     | 0.0                                                                                 |
| Total Lost Time (s)  |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                     | 5.0                                                                                 |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| Recall Mode          | Max                                                                               | Max                                                                               | Max                                                                               | Max                                                                               | None                                                                              | None                                                                              | None                                                                                | None                                                                                |
| Act Effct Green (s)  |                                                                                   | 56.2                                                                              |                                                                                   | 56.2                                                                              |                                                                                   | 17.4                                                                              |                                                                                     | 17.4                                                                                |
| Actuated g/C Ratio   |                                                                                   | 0.67                                                                              |                                                                                   | 0.67                                                                              |                                                                                   | 0.21                                                                              |                                                                                     | 0.21                                                                                |
| v/c Ratio            |                                                                                   | 0.57                                                                              |                                                                                   | 0.48                                                                              |                                                                                   | 0.75                                                                              |                                                                                     | 0.38                                                                                |
| Control Delay        |                                                                                   | 10.5                                                                              |                                                                                   | 9.2                                                                               |                                                                                   | 44.7                                                                              |                                                                                     | 28.2                                                                                |
| Queue Delay          |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                     | 0.0                                                                                 |
| Total Delay          |                                                                                   | 10.5                                                                              |                                                                                   | 9.2                                                                               |                                                                                   | 44.7                                                                              |                                                                                     | 28.2                                                                                |
| LOS                  |                                                                                   | B                                                                                 |                                                                                   | A                                                                                 |                                                                                   | D                                                                                 |                                                                                     | C                                                                                   |
| Approach Delay       |                                                                                   | 10.5                                                                              |                                                                                   | 9.2                                                                               |                                                                                   | 44.7                                                                              |                                                                                     | 28.2                                                                                |
| Approach LOS         |                                                                                   | B                                                                                 |                                                                                   | A                                                                                 |                                                                                   | D                                                                                 |                                                                                     | C                                                                                   |

### Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 83.6

Natural Cycle: 55

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 16.0

Intersection LOS: B

Intersection Capacity Utilization 62.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 11: McDermott Ave/Maple Ave & E Main St

|                                                                                     |                                                                                       |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |
| 61 s                                                                                | 29 s                                                                                  |
|  |  |
| 61 s                                                                                | 29 s                                                                                  |

# HCM Unsignalized Intersection Capacity Analysis

## 12: Parking Lot/Union Ave & E Main St

Timing Plan: PM Peak Hour

|                        |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement               | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations    |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                     |                                                                                     |  |                                                                                     |
| Volume (veh/h)         | 22                                                                                | 660                                                                               | 23                                                                                | 23                                                                                | 510                                                                               | 23                                                                                | 9                                                                                 | 3                                                                                   | 22                                                                                  | 15                                                                                  | 2                                                                                   | 9                                                                                   |
| Sign Control           |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Stop                                                                                |                                                                                     |                                                                                     | Stop                                                                                |                                                                                     |
| Grade                  |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor       | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Hourly flow rate (vph) | 24                                                                                | 717                                                                               | 25                                                                                | 25                                                                                | 554                                                                               | 25                                                                                | 10                                                                                | 3                                                                                   | 24                                                                                  | 16                                                                                  | 2                                                                                   | 10                                                                                  |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type            |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median storage (veh)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (ft)   |                                                                                   | 285                                                                               |                                                                                   |                                                                                   | 1311                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked  |                                                                                   |                                                                                   |                                                                                   | 0.79                                                                              |                                                                                   |                                                                                   | 0.79                                                                              | 0.79                                                                                | 0.79                                                                                | 0.79                                                                                | 0.79                                                                                |                                                                                     |
| vC, conflicting volume | 579                                                                               |                                                                                   |                                                                                   | 742                                                                               |                                                                                   |                                                                                   | 1405                                                                              | 1407                                                                                | 730                                                                                 | 1420                                                                                | 1407                                                                                | 567                                                                                 |
| vC1, stage 1 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol     | 579                                                                               |                                                                                   |                                                                                   | 546                                                                               |                                                                                   |                                                                                   | 1381                                                                              | 1383                                                                                | 530                                                                                 | 1399                                                                                | 1383                                                                                | 567                                                                                 |
| tC, single (s)         | 4.1                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |                                                                                   | 7.1                                                                               | 6.5                                                                                 | 6.2                                                                                 | 7.1                                                                                 | 6.5                                                                                 | 6.2                                                                                 |
| tC, 2 stage (s)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                 | 2.2                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |                                                                                   | 3.5                                                                               | 4.0                                                                                 | 3.3                                                                                 | 3.5                                                                                 | 4.0                                                                                 | 3.3                                                                                 |
| p0 queue free %        | 98                                                                                |                                                                                   |                                                                                   | 97                                                                                |                                                                                   |                                                                                   | 89                                                                                | 97                                                                                  | 95                                                                                  | 81                                                                                  | 98                                                                                  | 98                                                                                  |
| cM capacity (veh/h)    | 1004                                                                              |                                                                                   |                                                                                   | 821                                                                               |                                                                                   |                                                                                   | 90                                                                                | 109                                                                                 | 439                                                                                 | 84                                                                                  | 109                                                                                 | 527                                                                                 |
| Direction, Lane #      | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total           | 766                                                                               | 604                                                                               | 37                                                                                | 28                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left            | 24                                                                                | 25                                                                                | 10                                                                                | 16                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right           | 25                                                                                | 25                                                                                | 24                                                                                | 10                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| cSH                    | 1004                                                                              | 821                                                                               | 192                                                                               | 121                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity     | 0.02                                                                              | 0.03                                                                              | 0.19                                                                              | 0.23                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft) | 2                                                                                 | 2                                                                                 | 17                                                                                | 21                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)      | 0.6                                                                               | 0.8                                                                               | 28.2                                                                              | 43.5                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS               | A                                                                                 | A                                                                                 | D                                                                                 | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)     | 0.6                                                                               | 0.8                                                                               | 28.2                                                                              | 43.5                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS           |                                                                                   |                                                                                   | D                                                                                 | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

### Intersection Summary

|                                   |       |                      |   |  |
|-----------------------------------|-------|----------------------|---|--|
| Average Delay                     | 2.3   |                      |   |  |
| Intersection Capacity Utilization | 54.3% | ICU Level of Service | A |  |
| Analysis Period (min)             | 15    |                      |   |  |

# HCM Unsignalized Intersection Capacity Analysis

## 13: E Main St & Ostrander Ave

Timing Plan: PM Peak Hour

|                        |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement               | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations    |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                     |                                                                                     |  |                                                                                     |
| Volume (veh/h)         | 40                                                                                | 642                                                                               | 12                                                                                | 5                                                                                 | 643                                                                               | 68                                                                                | 0                                                                                 | 0                                                                                   | 0                                                                                   | 38                                                                                  | 2                                                                                   | 66                                                                                  |
| Sign Control           |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Stop                                                                                |                                                                                     |                                                                                     | Stop                                                                                |                                                                                     |
| Grade                  |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor       | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.90                                                                              | 0.90                                                                              | 0.90                                                                              | 0.75                                                                              | 0.75                                                                                | 0.75                                                                                | 0.86                                                                                | 0.86                                                                                | 0.86                                                                                |
| Hourly flow rate (vph) | 44                                                                                | 705                                                                               | 13                                                                                | 6                                                                                 | 714                                                                               | 76                                                                                | 0                                                                                 | 0                                                                                   | 0                                                                                   | 44                                                                                  | 2                                                                                   | 77                                                                                  |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type            |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median storage (veh)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (ft)   |                                                                                   | 658                                                                               |                                                                                   |                                                                                   | 938                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked  | 0.95                                                                              |                                                                                   |                                                                                   | 0.81                                                                              |                                                                                   |                                                                                   | 0.84                                                                              | 0.84                                                                                | 0.81                                                                                | 0.84                                                                                | 0.84                                                                                | 0.95                                                                                |
| vC, conflicting volume | 790                                                                               |                                                                                   |                                                                                   | 719                                                                               |                                                                                   |                                                                                   | 1641                                                                              | 1601                                                                                | 712                                                                                 | 1563                                                                                | 1570                                                                                | 752                                                                                 |
| vC1, stage 1 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol     | 749                                                                               |                                                                                   |                                                                                   | 541                                                                               |                                                                                   |                                                                                   | 1522                                                                              | 1474                                                                                | 533                                                                                 | 1429                                                                                | 1437                                                                                | 709                                                                                 |
| tC, single (s)         | 4.1                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |                                                                                   | 7.1                                                                               | 6.5                                                                                 | 6.2                                                                                 | 7.1                                                                                 | 6.5                                                                                 | 6.2                                                                                 |
| tC, 2 stage (s)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                 | 2.2                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |                                                                                   | 3.5                                                                               | 4.0                                                                                 | 3.3                                                                                 | 3.5                                                                                 | 4.0                                                                                 | 3.3                                                                                 |
| p0 queue free %        | 95                                                                                |                                                                                   |                                                                                   | 99                                                                                |                                                                                   |                                                                                   | 100                                                                               | 100                                                                                 | 100                                                                                 | 52                                                                                  | 98                                                                                  | 81                                                                                  |
| cM capacity (veh/h)    | 809                                                                               |                                                                                   |                                                                                   | 845                                                                               |                                                                                   |                                                                                   | 63                                                                                | 101                                                                                 | 449                                                                                 | 91                                                                                  | 106                                                                                 | 414                                                                                 |
| Direction, Lane #      | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total           | 763                                                                               | 796                                                                               | 0                                                                                 | 123                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left            | 44                                                                                | 6                                                                                 | 0                                                                                 | 44                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right           | 13                                                                                | 76                                                                                | 0                                                                                 | 77                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| cSH                    | 809                                                                               | 845                                                                               | 1700                                                                              | 178                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity     | 0.05                                                                              | 0.01                                                                              | 0.00                                                                              | 0.69                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft) | 4                                                                                 | 0                                                                                 | 0                                                                                 | 105                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)      | 1.4                                                                               | 0.2                                                                               | 0.0                                                                               | 61.2                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS               | A                                                                                 | A                                                                                 | A                                                                                 | F                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)     | 1.4                                                                               | 0.2                                                                               | 0.0                                                                               | 61.2                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS           |                                                                                   |                                                                                   | A                                                                                 | F                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

### Intersection Summary

|                                   |       |                      |   |  |
|-----------------------------------|-------|----------------------|---|--|
| Average Delay                     | 5.2   |                      |   |  |
| Intersection Capacity Utilization | 74.9% | ICU Level of Service | D |  |
| Analysis Period (min)             | 15    |                      |   |  |

# Timings

## 14: E Main St & Riverside Dr

Timing Plan: PM Peak Hour

|                      | ↖     | ↗     | ↑     | ↘      | ↓    | ø4   |
|----------------------|-------|-------|-------|--------|------|------|
| Lane Group           | WBL   | WBR   | NBT   | SBL    | SBT  |      |
| Lane Configurations  | ↖     | ↗     | ↑     | ↘      | ↓    |      |
| Volume (vph)         | 71    | 169   | 534   | 261    | 555  |      |
| Turn Type            | NA    | Perm  | NA    | custom | NA   |      |
| Protected Phases     | 8     |       | 2     |        | 6 4  | 4    |
| Permitted Phases     |       | 8     |       | 6      |      |      |
| Detector Phase       | 8     | 8     | 2     | 6      | 6 4  |      |
| Switch Phase         |       |       |       |        |      |      |
| Minimum Initial (s)  | 5.0   | 5.0   | 20.0  | 20.0   |      | 5.0  |
| Minimum Split (s)    | 10.5  | 10.5  | 25.5  | 25.5   |      | 10.5 |
| Total Split (s)      | 14.8  | 14.8  | 74.7  | 74.7   |      | 10.5 |
| Total Split (%)      | 14.8% | 14.8% | 74.7% | 74.7%  |      | 11%  |
| Yellow Time (s)      | 3.5   | 3.5   | 3.5   | 3.5    |      | 3.5  |
| All-Red Time (s)     | 2.0   | 2.0   | 2.0   | 2.0    |      | 2.0  |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   |        |      |      |
| Total Lost Time (s)  | 5.5   | 5.5   | 5.5   |        |      |      |
| Lead/Lag             |       |       |       |        |      |      |
| Lead-Lag Optimize?   |       |       |       |        |      |      |
| Recall Mode          | None  | None  | Max   | Max    |      | None |
| Act Effct Green (s)  | 9.3   | 9.3   | 69.2  |        | 79.7 |      |
| Actuated g/C Ratio   | 0.09  | 0.09  | 0.69  |        | 0.80 |      |
| v/c Ratio            | 0.40  | 0.57  | 0.50  |        | 0.99 |      |
| Control Delay        | 50.0  | 14.6  | 8.7   |        | 32.9 |      |
| Queue Delay          | 0.0   | 1.6   | 0.1   |        | 20.1 |      |
| Total Delay          | 50.0  | 16.3  | 8.8   |        | 53.1 |      |
| LOS                  | D     | B     | A     |        | D    |      |
| Approach Delay       | 26.2  |       | 8.8   |        | 53.1 |      |
| Approach LOS         | C     |       | A     |        | D    |      |

### Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 32.8

Intersection Capacity Utilization 94.9%

Analysis Period (min) 15

Intersection LOS: C

ICU Level of Service F

### Splits and Phases: 14: E Main St & Riverside Dr

|        |        |
|--------|--------|
|        |        |
| 74.7 s | 10.5 s |
| 74.7 s | 14.8 s |

# Timings

15: E Main St & Fishel Ave

Timing Plan: PM Peak Hour

|                      |  |  |  |  |      |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Group           | EBL                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | ø8   |
| Lane Configurations  |  |                                                                                   |  |  |      |
| Volume (vph)         | 18                                                                                | 109                                                                               | 594                                                                               | 715                                                                               |      |
| Turn Type            | NA                                                                                | custom                                                                            | NA                                                                                | NA                                                                                |      |
| Protected Phases     | 4                                                                                 |                                                                                   | 2 8                                                                               | 6                                                                                 | 8    |
| Permitted Phases     |                                                                                   | 2                                                                                 |                                                                                   |                                                                                   |      |
| Detector Phase       | 4                                                                                 | 2                                                                                 | 2 8                                                                               | 6                                                                                 |      |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Minimum Initial (s)  | 5.0                                                                               | 20.0                                                                              |                                                                                   | 20.0                                                                              | 5.0  |
| Minimum Split (s)    | 10.5                                                                              | 25.5                                                                              |                                                                                   | 25.5                                                                              | 10.5 |
| Total Split (s)      | 10.5                                                                              | 74.7                                                                              |                                                                                   | 74.7                                                                              | 14.8 |
| Total Split (%)      | 10.5%                                                                             | 74.7%                                                                             |                                                                                   | 74.7%                                                                             | 15%  |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               |                                                                                   | 3.5                                                                               | 3.5  |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                               | 2.0  |
| Lost Time Adjust (s) | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |      |
| Total Lost Time (s)  | 5.5                                                                               |                                                                                   |                                                                                   | 5.5                                                                               |      |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Recall Mode          | None                                                                              | Max                                                                               |                                                                                   | Max                                                                               | None |
| Act Effct Green (s)  | 5.0                                                                               |                                                                                   | 84.0                                                                              | 69.2                                                                              |      |
| Actuated g/C Ratio   | 0.05                                                                              |                                                                                   | 0.84                                                                              | 0.69                                                                              |      |
| v/c Ratio            | 0.72                                                                              |                                                                                   | 0.73                                                                              | 0.70                                                                              |      |
| Control Delay        | 33.3                                                                              |                                                                                   | 6.4                                                                               | 12.8                                                                              |      |
| Queue Delay          | 1.7                                                                               |                                                                                   | 0.4                                                                               | 0.9                                                                               |      |
| Total Delay          | 35.0                                                                              |                                                                                   | 6.7                                                                               | 13.7                                                                              |      |
| LOS                  | C                                                                                 |                                                                                   | A                                                                                 | B                                                                                 |      |
| Approach Delay       | 35.0                                                                              |                                                                                   | 6.7                                                                               | 13.7                                                                              |      |
| Approach LOS         | C                                                                                 |                                                                                   | A                                                                                 | B                                                                                 |      |

## Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 12.2

Intersection Capacity Utilization 98.1%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service F

Splits and Phases: 15: E Main St & Fishel Ave

|                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  #14<br> #15<br> ø2<br>74.7 s |  #14<br> #15<br> ø4<br>10.5 s |  #14<br> #15<br> ø8<br>14.8 s |
|  #14<br> #15<br> ø6<br>74.7 s |                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                              |



# HCM Unsignalized Intersection Capacity Analysis 16: E Main St & Hubbard Ave

Timing Plan: PM Peak Hour

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |  |                                                                                   |  |                                                                                   |                                                                                   |  |
| Volume (veh/h)                    | 118                                                                               | 53                                                                                | 440                                                                               | 158                                                                               | 50                                                                                | 458                                                                               |
| Sign Control                      | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |
| Grade                             | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor                  | 0.96                                                                              | 0.96                                                                              | 0.92                                                                              | 0.92                                                                              | 0.86                                                                              | 0.86                                                                              |
| Hourly flow rate (vph)            | 123                                                                               | 55                                                                                | 478                                                                               | 172                                                                               | 58                                                                                | 533                                                                               |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 1213                                                                              | 564                                                                               |                                                                                   |                                                                                   | 650                                                                               |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 1213                                                                              | 564                                                                               |                                                                                   |                                                                                   | 650                                                                               |                                                                                   |
| tC, single (s)                    | 6.4                                                                               | 6.4                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.5                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |
| p0 queue free %                   | 34                                                                                | 89                                                                                |                                                                                   |                                                                                   | 94                                                                                |                                                                                   |
| cM capacity (veh/h)               | 187                                                                               | 491                                                                               |                                                                                   |                                                                                   | 936                                                                               |                                                                                   |
| Direction, Lane #                 | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 178                                                                               | 650                                                                               | 591                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 123                                                                               | 0                                                                                 | 58                                                                                |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 55                                                                                | 172                                                                               | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 232                                                                               | 1700                                                                              | 936                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.77                                                                              | 0.38                                                                              | 0.06                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 137                                                                               | 0                                                                                 | 5                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 58.3                                                                              | 0.0                                                                               | 1.6                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | F                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 58.3                                                                              | 0.0                                                                               | 1.6                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      | F                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   | 8.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   | 79.4%                                                                             | ICU Level of Service                                                              |                                                                                   | D                                                                                 |                                                                                   |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

## 17: Peconic Ave

Timing Plan: PM Peak Hour

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement               | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations    |                                                                                   |  |  |                                                                                   |                                                                                   |                                                                                   |
| Volume (veh/h)         | 0                                                                                 | 19                                                                                | 832                                                                               | 84                                                                                | 0                                                                                 | 0                                                                                 |
| Sign Control           | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |
| Grade                  | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor       | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Hourly flow rate (vph) | 0                                                                                 | 21                                                                                | 904                                                                               | 91                                                                                | 0                                                                                 | 0                                                                                 |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type            |                                                                                   |                                                                                   | TWLT                                                                              |                                                                                   |                                                                                   | None                                                                              |
| Median storage (veh)   |                                                                                   |                                                                                   | 2                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 280                                                                               |
| pX, platoon unblocked  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume | 950                                                                               | 498                                                                               |                                                                                   |                                                                                   | 996                                                                               |                                                                                   |
| vC1, stage 1 conf vol  | 950                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol  | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol     | 950                                                                               | 498                                                                               |                                                                                   |                                                                                   | 996                                                                               |                                                                                   |
| tC, single (s)         | 6.8                                                                               | 6.9                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |
| tC, 2 stage (s)        | 5.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                 | 3.5                                                                               | 3.3                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |
| p0 queue free %        | 100                                                                               | 96                                                                                |                                                                                   |                                                                                   | 100                                                                               |                                                                                   |
| cM capacity (veh/h)    | 328                                                                               | 518                                                                               |                                                                                   |                                                                                   | 691                                                                               |                                                                                   |

| Direction, Lane #      | WB 1 | NB 1 | NB 2 |
|------------------------|------|------|------|
| Volume Total           | 21   | 603  | 393  |
| Volume Left            | 0    | 0    | 0    |
| Volume Right           | 21   | 0    | 91   |
| cSH                    | 518  | 1700 | 1700 |
| Volume to Capacity     | 0.04 | 0.35 | 0.23 |
| Queue Length 95th (ft) | 3    | 0    | 0    |
| Control Delay (s)      | 12.2 | 0.0  | 0.0  |
| Lane LOS               | B    |      |      |
| Approach Delay (s)     | 12.2 | 0.0  |      |
| Approach LOS           | B    |      |      |

| Intersection Summary              |  |       |                      |
|-----------------------------------|--|-------|----------------------|
| Average Delay                     |  | 0.2   |                      |
| Intersection Capacity Utilization |  | 35.7% | ICU Level of Service |
| Analysis Period (min)             |  | 15    | A                    |

# HCM Unsignalized Intersection Capacity Analysis 18: Griffing Ave/Griffing St & Parking Lot/W 2nd St

Timing Plan: PM Peak Hour

|                        |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement               | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations    |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |
| Volume (veh/h)         | 8                                                                                 | 8                                                                                 | 2                                                                                 | 66                                                                                | 2                                                                                 | 112                                                                               | 0                                                                                  | 140                                                                                 | 14                                                                                  | 56                                                                                  | 9                                                                                   | 0                                                                                   |
| Sign Control           |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                    | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |
| Grade                  |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                    | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor       | 0.53                                                                              | 0.53                                                                              | 0.53                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.86                                                                                | 0.86                                                                                | 0.86                                                                                |
| Hourly flow rate (vph) | 15                                                                                | 15                                                                                | 4                                                                                 | 79                                                                                | 2                                                                                 | 133                                                                               | 0                                                                                  | 152                                                                                 | 15                                                                                  | 65                                                                                  | 10                                                                                  | 0                                                                                   |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    | None                                                                                |                                                                                     |                                                                                     | None                                                                                |                                                                                     |
| Median storage (veh)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (ft)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    | 517                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume | 435                                                                               | 308                                                                               | 10                                                                                | 312                                                                               | 300                                                                               | 160                                                                               | 10                                                                                 |                                                                                     |                                                                                     | 167                                                                                 |                                                                                     |                                                                                     |
| vC1, stage 1 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol     | 435                                                                               | 308                                                                               | 10                                                                                | 312                                                                               | 300                                                                               | 160                                                                               | 10                                                                                 |                                                                                     |                                                                                     | 167                                                                                 |                                                                                     |                                                                                     |
| tC, single (s)         | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 4.1                                                                                |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |                                                                                     |
| tC, 2 stage (s)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                 | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |                                                                                     |
| p0 queue free %        | 97                                                                                | 97                                                                                | 100                                                                               | 87                                                                                | 100                                                                               | 85                                                                                | 100                                                                                |                                                                                     |                                                                                     | 95                                                                                  |                                                                                     |                                                                                     |
| cM capacity (veh/h)    | 437                                                                               | 581                                                                               | 1077                                                                              | 607                                                                               | 587                                                                               | 883                                                                               | 1622                                                                               |                                                                                     |                                                                                     | 1398                                                                                |                                                                                     |                                                                                     |
| Direction, Lane #      | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total           | 34                                                                                | 214                                                                               | 167                                                                               | 76                                                                                |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left            | 15                                                                                | 79                                                                                | 0                                                                                 | 65                                                                                |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right           | 4                                                                                 | 133                                                                               | 15                                                                                | 0                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| cSH                    | 530                                                                               | 753                                                                               | 1622                                                                              | 1398                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity     | 0.06                                                                              | 0.28                                                                              | 0.00                                                                              | 0.05                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft) | 5                                                                                 | 29                                                                                | 0                                                                                 | 4                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)      | 12.3                                                                              | 11.7                                                                              | 0.0                                                                               | 6.7                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS               | B                                                                                 | B                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)     | 12.3                                                                              | 11.7                                                                              | 0.0                                                                               | 6.7                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS           | B                                                                                 | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Intersection Summary

|                                   |       |                      |   |
|-----------------------------------|-------|----------------------|---|
| Average Delay                     | 7.0   |                      |   |
| Intersection Capacity Utilization | 34.5% | ICU Level of Service | A |
| Analysis Period (min)             | 15    |                      |   |

# HCM Unsignalized Intersection Capacity Analysis

## 19: Griffing St/Griffing Ave & Court St

Timing Plan: PM Peak Hour

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |  |                                                                                   |                                                                                   |  |  |                                                                                   |
| Volume (veh/h)                    | 71                                                                                | 47                                                                                | 100                                                                               | 179                                                                               | 19                                                                                | 431                                                                               |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.86                                                                              | 0.86                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              |
| Hourly flow rate (vph)            | 83                                                                                | 55                                                                                | 119                                                                               | 213                                                                               | 23                                                                                | 513                                                                               |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | None                                                                              | None                                                                              |                                                                                   |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   | 996                                                                               |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 730                                                                               | 279                                                                               | 536                                                                               |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 730                                                                               | 279                                                                               | 536                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.5                                                                               | 6.2                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.6                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 75                                                                                | 93                                                                                | 89                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 337                                                                               | 760                                                                               | 1037                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | EB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 137                                                                               | 332                                                                               | 536                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 83                                                                                | 119                                                                               | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 55                                                                                | 0                                                                                 | 513                                                                               |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 433                                                                               | 1037                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.32                                                                              | 0.11                                                                              | 0.32                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 34                                                                                | 10                                                                                | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 17.1                                                                              | 3.9                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | C                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 17.1                                                                              | 3.9                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   | 3.6                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   | 59.4%                                                                             |                                                                                   | ICU Level of Service                                                              | B                                                                                 |                                                                                   |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis 20: Griffing Ave & Railroad St

Timing Plan: PM Peak Hour

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                     |                                                                                     |  |                                                                                     |
| Sign Control                      |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                                |                                                                                     |                                                                                     | Stop                                                                                |                                                                                     |
| Volume (vph)                      | 16                                                                                | 96                                                                                | 28                                                                                | 218                                                                               | 94                                                                                | 22                                                                                | 30                                                                                | 213                                                                                 | 7                                                                                   | 3                                                                                   | 207                                                                                 | 18                                                                                  |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Hourly flow rate (vph)            | 17                                                                                | 104                                                                               | 30                                                                                | 237                                                                               | 102                                                                               | 24                                                                                | 33                                                                                | 232                                                                                 | 8                                                                                   | 3                                                                                   | 225                                                                                 | 20                                                                                  |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total (vph)                | 152                                                                               | 363                                                                               | 272                                                                               | 248                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left (vph)                 | 17                                                                                | 237                                                                               | 33                                                                                | 3                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right (vph)                | 30                                                                                | 24                                                                                | 8                                                                                 | 20                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Hadj (s)                          | -0.06                                                                             | 0.13                                                                              | 0.04                                                                              | -0.01                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Departure Headway (s)             | 6.2                                                                               | 6.0                                                                               | 6.1                                                                               | 6.1                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Degree Utilization, x             | 0.26                                                                              | 0.60                                                                              | 0.46                                                                              | 0.42                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Capacity (veh/h)                  | 493                                                                               | 572                                                                               | 542                                                                               | 540                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)                 | 11.5                                                                              | 17.5                                                                              | 14.1                                                                              | 13.4                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 11.5                                                                              | 17.5                                                                              | 14.1                                                                              | 13.4                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | B                                                                                 | C                                                                                 | B                                                                                 | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Delay                             |                                                                                   |                                                                                   | 14.7                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Level of Service                  |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 64.8%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |



## Timings

21: Roanoke Ave & W 2nd St/E 2nd St

Timing Plan: PM Peak Hour

|                      |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | SBL                                                                                | SBT                                                                                 |
| Lane Configurations  |                                                                                   |  |                                                                                   |  |                                                                                   |  |                                                                                    |  |
| Volume (vph)         | 24                                                                                | 60                                                                                | 9                                                                                 | 104                                                                               | 19                                                                                | 318                                                                               | 66                                                                                 | 107                                                                                 |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                               | NA                                                                                  |
| Protected Phases     |                                                                                   | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 2                                                                                 |                                                                                    | 6                                                                                   |
| Permitted Phases     | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 2                                                                                 |                                                                                   | 6                                                                                  |                                                                                     |
| Detector Phase       | 4                                                                                 | 4                                                                                 | 8                                                                                 | 8                                                                                 | 2                                                                                 | 2                                                                                 | 6                                                                                  | 6                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Minimum Initial (s)  | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 5.5                                                                               | 5.5                                                                               | 5.5                                                                                | 5.5                                                                                 |
| Minimum Split (s)    | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 10.5                                                                              | 10.5                                                                              | 10.5                                                                               | 10.5                                                                                |
| Total Split (s)      | 19.0                                                                              | 19.0                                                                              | 19.0                                                                              | 19.0                                                                              | 36.0                                                                              | 36.0                                                                              | 36.0                                                                               | 36.0                                                                                |
| Total Split (%)      | 34.5%                                                                             | 34.5%                                                                             | 34.5%                                                                             | 34.5%                                                                             | 65.5%                                                                             | 65.5%                                                                             | 65.5%                                                                              | 65.5%                                                                               |
| Yellow Time (s)      | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                                | 3.0                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                                | 2.0                                                                                 |
| Lost Time Adjust (s) |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 |
| Total Lost Time (s)  |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                    | 5.0                                                                                 |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | Max                                                                               | Max                                                                               | Max                                                                                | Max                                                                                 |
| Act Effct Green (s)  |                                                                                   | 11.2                                                                              |                                                                                   | 11.2                                                                              |                                                                                   | 33.7                                                                              |                                                                                    | 33.7                                                                                |
| Actuated g/C Ratio   |                                                                                   | 0.22                                                                              |                                                                                   | 0.22                                                                              |                                                                                   | 0.67                                                                              |                                                                                    | 0.67                                                                                |
| v/c Ratio            |                                                                                   | 0.36                                                                              |                                                                                   | 0.47                                                                              |                                                                                   | 0.30                                                                              |                                                                                    | 0.21                                                                                |
| Control Delay        |                                                                                   | 18.0                                                                              |                                                                                   | 18.5                                                                              |                                                                                   | 6.2                                                                               |                                                                                    | 5.4                                                                                 |
| Queue Delay          |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 |
| Total Delay          |                                                                                   | 18.0                                                                              |                                                                                   | 18.5                                                                              |                                                                                   | 6.2                                                                               |                                                                                    | 5.4                                                                                 |
| LOS                  |                                                                                   | B                                                                                 |                                                                                   | B                                                                                 |                                                                                   | A                                                                                 |                                                                                    | A                                                                                   |
| Approach Delay       |                                                                                   | 18.0                                                                              |                                                                                   | 18.5                                                                              |                                                                                   | 6.2                                                                               |                                                                                    | 5.4                                                                                 |
| Approach LOS         |                                                                                   | B                                                                                 |                                                                                   | B                                                                                 |                                                                                   | A                                                                                 |                                                                                    | A                                                                                   |

### Intersection Summary

Cycle Length: 55

Actuated Cycle Length: 50

Natural Cycle: 40

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.47

Intersection Signal Delay: 10.4

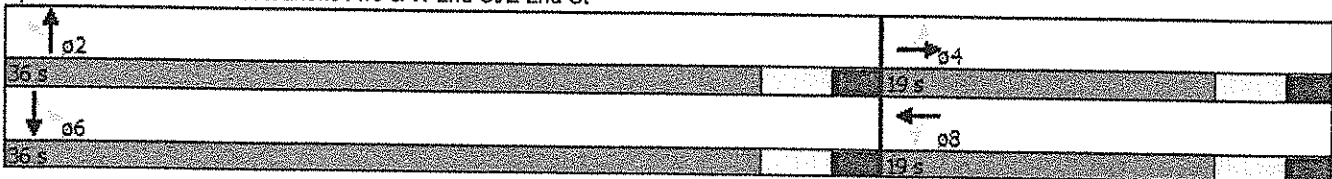
Intersection Capacity Utilization 55.1%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service B

Splits and Phases: 21: Roanoke Ave & W 2nd St/E 2nd St



# Timings

22: Roanoke Ave & Railroad St

Timing Plan: PM Peak Hour

|                      |  |  |  |  |      |      |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|------|
| Lane Group           | EBL                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | ø6   | ø8   |
| Lane Configurations  |  |                                                                                   |  |  |      |      |
| Volume (vph)         | 83                                                                                | 21                                                                                | 378                                                                               | 187                                                                               |      |      |
| Turn Type            | NA                                                                                | Perm                                                                              | NA                                                                                | NA                                                                                |      |      |
| Protected Phases     | 2                                                                                 |                                                                                   | 4                                                                                 | 8 6                                                                               | 6    | 8    |
| Permitted Phases     |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   |      |      |
| Detector Phase       | 2                                                                                 | 4                                                                                 | 4                                                                                 | 8 6                                                                               |      |      |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |      |
| Minimum Initial (s)  | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0  | 4.0  |
| Minimum Split (s)    | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               |                                                                                   | 9.0  | 9.0  |
| Total Split (s)      | 18.0                                                                              | 35.0                                                                              | 35.0                                                                              |                                                                                   | 27.0 | 35.0 |
| Total Split (%)      | 22.5%                                                                             | 43.8%                                                                             | 43.8%                                                                             |                                                                                   | 34%  | 44%  |
| Yellow Time (s)      | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0  | 3.0  |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0  | 2.0  |
| Lost Time Adjust (s) | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   |      |      |
| Total Lost Time (s)  | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   |      |      |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |      |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |      |
| Recall Mode          | None                                                                              | Max                                                                               | Max                                                                               |                                                                                   | Max  | Max  |
| Act Effct Green (s)  | 10.5                                                                              |                                                                                   | 30.0                                                                              | 57.0                                                                              |      |      |
| Actuated g/C Ratio   | 0.14                                                                              |                                                                                   | 0.39                                                                              | 0.74                                                                              |      |      |
| v/c Ratio            | 0.54                                                                              |                                                                                   | 0.61                                                                              | 0.38                                                                              |      |      |
| Control Delay        | 36.5                                                                              |                                                                                   | 24.2                                                                              | 0.8                                                                               |      |      |
| Queue Delay          | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.4                                                                               |      |      |
| Total Delay          | 36.5                                                                              |                                                                                   | 24.2                                                                              | 1.1                                                                               |      |      |
| LOS                  | D                                                                                 |                                                                                   | C                                                                                 | A                                                                                 |      |      |
| Approach Delay       | 36.5                                                                              |                                                                                   | 24.2                                                                              | 1.1                                                                               |      |      |
| Approach LOS         | D                                                                                 |                                                                                   | C                                                                                 | A                                                                                 |      |      |

## Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 77.5

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 14.7

Intersection Capacity Utilization 51.2%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service A

Splits and Phases: 22: Roanoke Ave & Railroad St

|                                                                                                                                                                                       |                                                                                                                                                                                       |                                                                                                                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #22 #23<br>  ø2 | #22 #23<br>  ø6 | #22 #23<br>  ø4 |
| 18 s                                                                                                                                                                                  | 27 s                                                                                                                                                                                  | 35 s                                                                                                                                                                                   |
|                                                                                                                                                                                       |                                                                                                                                                                                       | #22 #23<br>  ø8 |
|                                                                                                                                                                                       |                                                                                                                                                                                       | 35 s                                                                                                                                                                                   |

# Timings

## 23: Roanoke Ave & Northville Turnpike

Timing Plan: PM Peak Hour

|                      |  |  |  |  |  |      |      |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|------|
| Lane Group           | WBL                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               | ø2   | ø4   |
| Lane Configurations  |  |  |  |                                                                                   |  |      |      |
| Volume (vph)         | 186                                                                               | 338                                                                               | 123                                                                               | 28                                                                                | 315                                                                               |      |      |
| Turn Type            | NA                                                                                | NA                                                                                | pm+ov                                                                             | Perm                                                                              | NA                                                                                |      |      |
| Protected Phases     | 6                                                                                 | 4 2                                                                               | 6                                                                                 |                                                                                   | 8                                                                                 | 2    | 4    |
| Permitted Phases     |                                                                                   |                                                                                   | 4 2                                                                               | 8                                                                                 |                                                                                   |      |      |
| Detector Phase       | 6                                                                                 | 4 2                                                                               | 6                                                                                 | 8                                                                                 | 8                                                                                 |      |      |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |      |
| Minimum Initial (s)  | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0  | 4.0  |
| Minimum Split (s)    | 9.0                                                                               |                                                                                   | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0  | 9.0  |
| Total Split (s)      | 27.0                                                                              |                                                                                   | 27.0                                                                              | 35.0                                                                              | 35.0                                                                              | 18.0 | 35.0 |
| Total Split (%)      | 33.8%                                                                             |                                                                                   | 33.8%                                                                             | 43.8%                                                                             | 43.8%                                                                             | 23%  | 44%  |
| Yellow Time (s)      | 3.0                                                                               |                                                                                   | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0  | 3.0  |
| All-Red Time (s)     | 2.0                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0  | 2.0  |
| Lost Time Adjust (s) | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |      |      |
| Total Lost Time (s)  | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |      |      |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |      |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |      |
| Recall Mode          | Max                                                                               |                                                                                   | Max                                                                               | Max                                                                               | Max                                                                               | None | Max  |
| Act Effct Green (s)  | 22.0                                                                              | 45.5                                                                              | 77.5                                                                              |                                                                                   | 30.0                                                                              |      |      |
| Actuated g/C Ratio   | 0.28                                                                              | 0.59                                                                              | 1.00                                                                              |                                                                                   | 0.39                                                                              |      |      |
| v/c Ratio            | 0.45                                                                              | 0.33                                                                              | 0.08                                                                              |                                                                                   | 0.54                                                                              |      |      |
| Control Delay        | 26.0                                                                              | 1.1                                                                               | 0.1                                                                               |                                                                                   | 22.6                                                                              |      |      |
| Queue Delay          | 0.0                                                                               | 0.8                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               |      |      |
| Total Delay          | 26.0                                                                              | 1.8                                                                               | 0.1                                                                               |                                                                                   | 22.6                                                                              |      |      |
| LOS                  | C                                                                                 | A                                                                                 | A                                                                                 |                                                                                   | C                                                                                 |      |      |
| Approach Delay       | 26.0                                                                              | 1.4                                                                               |                                                                                   |                                                                                   | 22.6                                                                              |      |      |
| Approach LOS         | C                                                                                 | A                                                                                 |                                                                                   |                                                                                   | C                                                                                 |      |      |

### Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 77.5

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 13.8

Intersection Capacity Utilization 59.8%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service B

### Splits and Phases: 23: Roanoke Ave & Northville Turnpike

|                                                                                         |                                                                                         |                                                                                         |                                                                                         |                                                                                         |                                                                                         |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
|  #22 |  #23 |  #22 |  #23 |  #22 |  #23 |
| ø2                                                                                      |                                                                                         | ø6                                                                                      |                                                                                         | ø4                                                                                      |                                                                                         |
| 18 s                                                                                    |                                                                                         | 27 s                                                                                    |                                                                                         | 35 s                                                                                    |                                                                                         |
|                                                                                         |                                                                                         |                                                                                         |                                                                                         |  #22 |  #23 |
|                                                                                         |                                                                                         |                                                                                         |                                                                                         | ø8                                                                                      |                                                                                         |
|                                                                                         |                                                                                         |                                                                                         |                                                                                         | 35 s                                                                                    |                                                                                         |

# Timings

## 24: Osborn Ave/Osborn St & Court St

Timing Plan: PM Peak Hour

|                      |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | SBL                                                                                | SBT                                                                                 |
| Lane Configurations  |                                                                                   |  |                                                                                   |  |                                                                                   |  |                                                                                    |  |
| Volume (vph)         | 111                                                                               | 108                                                                               | 10                                                                                | 527                                                                               | 8                                                                                 | 55                                                                                | 3                                                                                  | 39                                                                                  |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                               | NA                                                                                  |
| Protected Phases     |                                                                                   | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 2                                                                                 |                                                                                    | 6                                                                                   |
| Permitted Phases     | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 2                                                                                 |                                                                                   | 6                                                                                  |                                                                                     |
| Detector Phase       | 4                                                                                 | 4                                                                                 | 8                                                                                 | 8                                                                                 | 2                                                                                 | 2                                                                                 | 6                                                                                  | 6                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Minimum Initial (s)  | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                | 4.0                                                                                 |
| Minimum Split (s)    | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0                                                                                | 9.0                                                                                 |
| Total Split (s)      | 35.0                                                                              | 35.0                                                                              | 35.0                                                                              | 35.0                                                                              | 25.0                                                                              | 25.0                                                                              | 25.0                                                                               | 25.0                                                                                |
| Total Split (%)      | 58.3%                                                                             | 58.3%                                                                             | 58.3%                                                                             | 58.3%                                                                             | 41.7%                                                                             | 41.7%                                                                             | 41.7%                                                                              | 41.7%                                                                               |
| Yellow Time (s)      | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                                | 3.0                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                                | 2.0                                                                                 |
| Lost Time Adjust (s) |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 |
| Total Lost Time (s)  |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                    | 5.0                                                                                 |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Recall Mode          | Max                                                                               | Max                                                                               | Max                                                                               | Max                                                                               | None                                                                              | None                                                                              | None                                                                               | None                                                                                |
| Act Effect Green (s) |                                                                                   | 30.2                                                                              |                                                                                   | 30.2                                                                              |                                                                                   | 8.9                                                                               |                                                                                    | 8.9                                                                                 |
| Actuated g/C Ratio   |                                                                                   | 0.62                                                                              |                                                                                   | 0.62                                                                              |                                                                                   | 0.18                                                                              |                                                                                    | 0.18                                                                                |
| v/c Ratio            |                                                                                   | 0.34                                                                              |                                                                                   | 0.52                                                                              |                                                                                   | 0.28                                                                              |                                                                                    | 0.64                                                                                |
| Control Delay        |                                                                                   | 7.1                                                                               |                                                                                   | 8.3                                                                               |                                                                                   | 16.4                                                                              |                                                                                    | 11.5                                                                                |
| Queue Delay          |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 |
| Total Delay          |                                                                                   | 7.1                                                                               |                                                                                   | 8.3                                                                               |                                                                                   | 16.4                                                                              |                                                                                    | 11.5                                                                                |
| LOS                  |                                                                                   | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   | B                                                                                 |                                                                                    | B                                                                                   |
| Approach Delay       |                                                                                   | 7.1                                                                               |                                                                                   | 8.3                                                                               |                                                                                   | 16.4                                                                              |                                                                                    | 11.5                                                                                |
| Approach LOS         |                                                                                   | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   | B                                                                                 |                                                                                    | B                                                                                   |

### Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 49.1

Natural Cycle: 40

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 9.4

Intersection Capacity Utilization 71.1%

Analysis Period (min) 15

Intersection LOS: A

ICU Level of Service C

### Splits and Phases: 24: Osborn Ave/Osborn St & Court St

|                                                                                        |                                                                                        |
|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
|  Ø2 |  Ø4 |
| 25 s                                                                                   | 35 s                                                                                   |
|  Ø6 |  Ø8 |
| 25 s                                                                                   | 35 s                                                                                   |

## Project: Riverhead BOA - Roundabout Analysis

Scheme name: PM Scenario 1 (Improved Roundabout w/ One Way Peconic)

### Control Data

| Option         | Setting          | Option       | Setting               |
|----------------|------------------|--------------|-----------------------|
| Capacity Model | Rodel-Win1       | Mode         | Mode2 - Full Geometry |
| Queue Model    | Rodel-Win1       | Delay Model  | Rodel-Win1            |
| Flows          | Peak Hour Factor | Time Slice   | 7.5 minutes           |
| Delay          | Queuing          | Light / Dark | Light                 |

### Geometry Data for Empirical Model

| Leg | Approach Geometry |         |   |        |    |
|-----|-------------------|---------|---|--------|----|
|     | Leg Name          | Bearing | G | V (ft) | nv |
| 1   | Peconic           | 0       | 0 | 12.00  | 1  |
| 2   | CR 94             | 90      | 0 | 12.00  | 1  |
| 3   | CR 63             | 180     | 0 | 12.00  | 1  |
| 4   | CR 104            | 220     | 0 | 12.00  | 1  |
| 5   | NYS 24            | 275     | 0 | 12.00  | 1  |

| Leg | Entry Geometry |    |         |        |       | Circ Geom |        |    |
|-----|----------------|----|---------|--------|-------|-----------|--------|----|
|     | E (ft)         | ne | L' (ft) | R (ft) | ?     | D (ft)    | C (ft) | nc |
| 1   | 20.00          | 2  | 125.00  | 60.00  | 25.00 | 170.00    | 28.50  | 2  |
| 2   | 20.00          | 2  | 125.00  | 60.00  | 25.00 | 170.00    | 28.50  | 2  |
| 3   | 14.20          | 1  | 75.00   | 60.00  | 25.00 | 220.00    | 28.50  | 2  |
| 4   | 20.00          | 2  | 100.00  | 60.00  | 25.00 | 170.00    | 28.50  | 2  |
| 5   | 20.00          | 2  | 125.00  | 60.00  | 25.00 | 220.00    | 28.50  | 2  |

| Leg | Exit Geometry |     |         |     |
|-----|---------------|-----|---------|-----|
|     | Ex (ft)       | nex | Vx (ft) | nvx |
| 1   | 15.00         | 1   | 12.00   | 1   |
| 2   | 24.00         | 2   | 12.00   | 1   |
| 3   | 15.00         | 1   | 12.00   | 1   |
| 4   | 15.00         | 1   | 12.00   | 1   |
| 5   | 24.00         | 2   | 12.00   | 1   |



| Leg | Entry Capacity Modifiers |            |                |
|-----|--------------------------|------------|----------------|
|     | -- Cap (v/h)             | Xwalk Fact | Conf Level (%) |
| 1   | 0                        | 1.000      | 50             |
| 2   | 0                        | 1.000      | 50             |
| 3   | 0                        | 1.000      | 50             |
| 4   | 0                        | 1.000      | 50             |
| 5   | 0                        | 1.000      | 50             |

## Flow Modifiers and Flow Data

| Leg | Leg Name | Flow Modifiers |        |
|-----|----------|----------------|--------|
|     |          | %Truck         | Factor |
| 1   | Peconic  | 2.0            | 1.00   |
| 2   | CR 94    | 2.0            | 1.00   |
| 3   | CR 63    | 2.0            | 1.00   |
| 4   | CR 104   | 2.0            | 1.00   |
| 5   | NYS 24   | 2.0            | 1.00   |

| Leg | Arrival Turning Flows (veh/hr) |        |        |        |        |        |
|-----|--------------------------------|--------|--------|--------|--------|--------|
|     | U-Turn                         | Exit-4 | Exit-3 | Exit-2 | Exit-1 | Bypass |
| 1   | 0                              | 0      | 0      | 0      | 0      | 0      |
| 2   | 4                              | 191    | 588    | 340    | 50     | 0      |
| 3   | 5                              | 62     | 309    | 140    | 21     | 0      |
| 4   | 3                              | 42     | 215    | 198    | 31     | 0      |
| 5   | 6                              | 9      | 112    | 316    | 288    | 0      |

| Leg | Arrival Volume Ratios |        |        | Arrival Volume Times (min) |       |       | PHF  |
|-----|-----------------------|--------|--------|----------------------------|-------|-------|------|
|     | Ratio1                | Ratio2 | Ratio3 | Time1                      | Time2 | Time3 |      |
| 1   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |
| 2   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |
| 3   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |
| 4   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |
| 5   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |

## Model Results

### Global performance

| Leg | Leg Name | Global Performance |         |         |          |       |
|-----|----------|--------------------|---------|---------|----------|-------|
|     |          | Parameter          | Units   | Entries | Bypasses | Total |
| 1   | Peconic  | Arrive Flows       | veh/hr  | 2930    |          | 2930  |
| 2   | CR 94    | Capacity           | veh/hr  | 4547    |          | 4547  |
| 3   | CR 63    | Average Delay      | sec/veh | 12.29   |          | 12.29 |
| 4   | CR 104   | L.O.S. (Signal)    | A – F   | B       |          | B     |
| 5   | NYS 24   | L.O.S. (Unsig)     | A – F   | B       |          | B     |

### Entry Flow and Capacity (60min)

| Leg | Bypass Type | Flow Rate (veh/hr) |        | Opp Rate (veh/hr) |        | Capacity (veh/hr) |        | Ave VCR |        |
|-----|-------------|--------------------|--------|-------------------|--------|-------------------|--------|---------|--------|
|     |             | Entry              | Bypass | Entry             | Bypass | Entry             | Bypass | Entry   | Bypass |
| 1   | None        | 0                  |        | 0                 |        | 0                 |        | 0.000   |        |
| 2   | None        | 1173               |        | 177               |        | 1602              |        | 0.752   |        |
| 3   | None        | 537                |        | 1140              |        | 886               |        | 0.620   |        |
| 4   | None        | 489                |        | 1304              |        | 893               |        | 0.563   |        |
| 5   | None        | 731                |        | 1028              |        | 1166              |        | 0.644   |        |

### Entry Queues and Delays (60min)

| Leg | Ave Del (sec/veh) |        |      | Max Del (sec/veh) |        | 95% Queue |        | LOS A-F |     |     |
|-----|-------------------|--------|------|-------------------|--------|-----------|--------|---------|-----|-----|
|     | Entry             | Bypass | Leg  | Entry             | Bypass | Entry     | Bypass | Entry   | Byp | Leg |
| 1   | 0.0               |        | 0.0  | 0.0               |        | 0.0       |        | A       |     | A   |
| 2   | 12.5              |        | 12.5 | 19.4              |        | 14.3      |        | B       |     | B   |
| 3   | 10.4              |        | 10.4 | 15.8              |        | 5.7       |        | B       |     | B   |
| 4   | 13.5              |        | 13.5 | 21.6              |        | 7.3       |        | B       |     | B   |
| 5   | 12.5              |        | 12.5 | 19.4              |        | 9.6       |        | B       |     | B   |

### Entry Slope and Intercept (60min)

| Leg | Bypass Type | Y Intercept (vehs/hr) |        | Slope (tangent) |        | X Intercept (vehs/hr) |        |
|-----|-------------|-----------------------|--------|-----------------|--------|-----------------------|--------|
|     |             | Entry                 | Bypass | Entry           | Bypass | Entry                 | Bypass |
| 1   | None        | 0                     |        | 0.0000          |        | 0                     |        |
| 2   | None        | 1710                  |        | 0.6121          |        | 2794                  |        |
| 3   | None        | 1285                  |        | 0.3507          |        | 3665                  |        |
| 4   | None        | 1685                  |        | 0.6074          |        | 2774                  |        |
| 5   | None        | 1710                  |        | 0.5296          |        | 3229                  |        |

### Entry Flow and Capacity (Peak 7.5min)

| Leg | Bypass Type | Flow Rate (veh/hr) |        | Opp Rate (veh/hr) |        | Capacity (veh/hr) |        | Ave VCR |        |
|-----|-------------|--------------------|--------|-------------------|--------|-------------------|--------|---------|--------|
|     |             | Entry              | Bypass | Entry             | Bypass | Entry             | Bypass | Entry   | Bypass |
| 1   | None        | 0                  |        | 0                 |        | 0                 |        | 1.0000  |        |
| 2   | None        | 1303               |        | 195               |        | 1591              |        | 0.8425  |        |
| 3   | None        | 597                |        | 1257              |        | 844               |        | 0.7232  |        |
| 4   | None        | 543                |        | 1439              |        | 811               |        | 0.6906  |        |
| 5   | None        | 812                |        | 1134              |        | 1110              |        | 0.7526  |        |

### Entry Queues and Delays (Peak 7.5min)

| Leg | Ave Del (sec/veh) |        |      | Max Del (sec/veh) |        | 95% Queue |        | LOS A-F |     |     |
|-----|-------------------|--------|------|-------------------|--------|-----------|--------|---------|-----|-----|
|     | Entry             | Bypass | Leg  | Entry             | Bypass | Entry     | Bypass | Entry   | Byp | Leg |
| 1   | 0.0               |        | 0.0  | 0.0               |        | 0.0       |        | A       |     | A   |
| 2   | 14.8              |        | 14.8 | 19.4              |        | 14.3      |        | B       |     | B   |
| 3   | 12.1              |        | 12.1 | 15.8              |        | 5.7       |        | B       |     | B   |
| 4   | 16.4              |        | 16.4 | 21.6              |        | 7.3       |        | C       |     | C   |
| 5   | 14.8              |        | 14.8 | 19.4              |        | 9.6       |        | B       |     | B   |

### Entry Slope and Intercept (Peak 7.5min)

| Leg | Bypass Type | Y Intercept (vehs/hr) |        | Slope (tangent) |        | X Intercept (vehs/hr) |        |
|-----|-------------|-----------------------|--------|-----------------|--------|-----------------------|--------|
|     |             | Entry                 | Bypass | Entry           | Bypass | Entry                 | Bypass |
| 1   | None        | 0                     |        | 0.0000          |        | 0                     |        |
| 2   | None        | 1710                  |        | 0.6121          |        | 2794                  |        |
| 3   | None        | 1285                  |        | 0.3507          |        | 3665                  |        |
| 4   | None        | 1685                  |        | 0.6074          |        | 2774                  |        |
| 5   | None        | 1710                  |        | 0.5296          |        | 3229                  |        |

---

## Scheme Notes

(none)

---

# Timings

## 5: Nugent St/Court St & W Main St

Timing Plan: Saturday Peak Ho

|                      |  |  |  |  |  |  |    |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |                                                                                     |
| Lane Configurations  |  |  |  |  |  |  |  |  |                                                                                     |  |                                                                                     |
| Volume (vph)         | 72                                                                                | 346                                                                               | 556                                                                               | 248                                                                               | 647                                                                               | 490                                                                               | 119                                                                                 | 103                                                                                 | 3                                                                                   | 474                                                                                 |                                                                                     |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | pm+pt                                                                             | NA                                                                                | pm+pt                                                                             | NA                                                                                  | Free                                                                                | Perm                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases     |                                                                                   | 2                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                 | 7                                                                                 | 4                                                                                   |                                                                                     |                                                                                     | 8                                                                                   |                                                                                     |
| Permitted Phases     | 2                                                                                 |                                                                                   | 2                                                                                 | 6                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                   | Free                                                                                | 8                                                                                   |                                                                                     |                                                                                     |
| Detector Phase       | 2                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 | 7                                                                                 | 4                                                                                   |                                                                                     | 8                                                                                   | 8                                                                                   |                                                                                     |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 4.0                                                                               | 15.0                                                                              | 3.0                                                                               | 5.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Minimum Split (s)    | 21.5                                                                              | 21.5                                                                              | 21.5                                                                              | 8.5                                                                               | 21.5                                                                              | 9.0                                                                               | 12.0                                                                                |                                                                                     | 11.8                                                                                | 11.8                                                                                |                                                                                     |
| Total Split (s)      | 33.0                                                                              | 33.0                                                                              | 33.0                                                                              | 11.0                                                                              | 44.0                                                                              | 24.0                                                                              | 46.0                                                                                |                                                                                     | 22.0                                                                                | 22.0                                                                                |                                                                                     |
| Total Split (%)      | 36.7%                                                                             | 36.7%                                                                             | 36.7%                                                                             | 12.2%                                                                             | 48.9%                                                                             | 26.7%                                                                             | 51.1%                                                                               |                                                                                     | 24.4%                                                                               | 24.4%                                                                               |                                                                                     |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.0                                                                               | 3.5                                                                               | 3.0                                                                               | 3.5                                                                                 |                                                                                     | 3.5                                                                                 | 3.5                                                                                 |                                                                                     |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 1.0                                                                               | 2.3                                                                               | 2.0                                                                               | 2.3                                                                                 |                                                                                     | 2.3                                                                                 | 2.3                                                                                 |                                                                                     |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Total Lost Time (s)  | 5.5                                                                               | 5.5                                                                               | 5.5                                                                               | 4.0                                                                               | 5.8                                                                               | 5.0                                                                               | 5.8                                                                                 |                                                                                     |                                                                                     | 5.8                                                                                 |                                                                                     |
| Lead/Lag             | Lag                                                                               | Lag                                                                               | Lag                                                                               | Lead                                                                              |                                                                                   | Lead                                                                              |                                                                                     |                                                                                     | Lag                                                                                 | Lag                                                                                 |                                                                                     |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                               |                                                                                     |                                                                                     | Yes                                                                                 | Yes                                                                                 |                                                                                     |
| Recall Mode          | Max                                                                               | Max                                                                               | Max                                                                               | None                                                                              | Max                                                                               | None                                                                              | None                                                                                |                                                                                     | None                                                                                | None                                                                                |                                                                                     |
| Act Effct Green (s)  | 27.5                                                                              | 27.5                                                                              | 27.5                                                                              | 40.0                                                                              | 38.2                                                                              | 40.9                                                                              | 40.1                                                                                | 89.9                                                                                |                                                                                     | 16.1                                                                                |                                                                                     |
| Actuated g/C Ratio   | 0.31                                                                              | 0.31                                                                              | 0.31                                                                              | 0.44                                                                              | 0.42                                                                              | 0.45                                                                              | 0.45                                                                                | 1.00                                                                                |                                                                                     | 0.18                                                                                |                                                                                     |
| v/c Ratio            | 0.63                                                                              | 0.67                                                                              | 0.71                                                                              | 0.80                                                                              | 0.88                                                                              | 1.19                                                                              | 0.17                                                                                | 0.07                                                                                |                                                                                     | 0.90                                                                                |                                                                                     |
| Control Delay        | 54.2                                                                              | 34.3                                                                              | 11.6                                                                              | 38.4                                                                              | 38.5                                                                              | 129.1                                                                             | 15.6                                                                                | 0.1                                                                                 |                                                                                     | 54.8                                                                                |                                                                                     |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 7.3                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 |                                                                                     |
| Total Delay          | 54.2                                                                              | 34.3                                                                              | 11.6                                                                              | 38.4                                                                              | 45.9                                                                              | 129.1                                                                             | 15.6                                                                                | 0.1                                                                                 |                                                                                     | 54.8                                                                                |                                                                                     |
| LOS                  | D                                                                                 | C                                                                                 | B                                                                                 | D                                                                                 | D                                                                                 | F                                                                                 | B                                                                                   | A                                                                                   |                                                                                     | D                                                                                   |                                                                                     |
| Approach Delay       |                                                                                   | 22.7                                                                              |                                                                                   |                                                                                   | 43.8                                                                              |                                                                                   | 90.9                                                                                |                                                                                     |                                                                                     | 54.8                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | C                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   | F                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |

### Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 89.9

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.19

Intersection Signal Delay: 50.1

Intersection Capacity Utilization 108.2%

Analysis Period (min) 15

Intersection LOS: D

ICU Level of Service G

### Splits and Phases: 5: Nugent St/Court St & W Main St

|                                                                                     |                                                                                     |                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |    |
| 11 s                                                                                | 33 s                                                                                | 46 s                                                                                  |
|  |  |  |
| 44 s                                                                                | 24 s                                                                                | 22 s                                                                                  |



# Timings

## 6: W Main St & Osborn Ave

Timing Plan: Saturday Peak Ho



| Lane Group           | EBL   | EBT   | WBT   | SBL   |
|----------------------|-------|-------|-------|-------|
| Lane Configurations  |       | ↔     | ↔     | ↔     |
| Volume (vph)         | 9     | 439   | 883   | 80    |
| Turn Type            | Perm  | NA    | NA    | NA    |
| Protected Phases     |       | 4     | 8     | 6     |
| Permitted Phases     | 4     |       |       |       |
| Detector Phase       | 4     | 4     | 8     | 6     |
| Switch Phase         |       |       |       |       |
| Minimum Initial (s)  | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)    | 11.3  | 11.3  | 11.3  | 11.2  |
| Total Split (s)      | 60.0  | 60.0  | 60.0  | 25.0  |
| Total Split (%)      | 70.6% | 70.6% | 70.6% | 29.4% |
| Yellow Time (s)      | 3.5   | 3.5   | 3.5   | 3.5   |
| All-Red Time (s)     | 2.8   | 2.8   | 2.8   | 2.7   |
| Lost Time Adjust (s) |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  |       | 6.3   | 6.3   | 6.2   |
| Lead/Lag             |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |
| Recall Mode          | Max   | Max   | Max   | None  |
| Act Effct Green (s)  |       | 58.1  | 58.1  | 9.8   |
| Actuated g/C Ratio   |       | 0.76  | 0.76  | 0.13  |
| v/c Ratio            |       | 0.33  | 0.75  | 0.49  |
| Control Delay        |       | 5.2   | 12.5  | 35.2  |
| Queue Delay          |       | 0.3   | 0.0   | 0.0   |
| Total Delay          |       | 5.5   | 12.5  | 35.2  |
| LOS                  |       | A     | B     | D     |
| Approach Delay       |       | 5.5   | 12.5  | 35.2  |
| Approach LOS         |       | A     | B     | D     |

### Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 76.6

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 12.1

Intersection Capacity Utilization 65.7%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service C

### Splits and Phases: 6: W Main St & Osborn Ave



# Timings

7: W Main St & Griffing Ave

Timing Plan: Saturday Peak Ho

|                      |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBT                                                                               | SBL                                                                               |
| Lane Configurations  |                                                                                   |  |  |  |
| Volume (vph)         | 22                                                                                | 531                                                                               | 920                                                                               | 22                                                                                |
| Turn Type            | Perm                                                                              | NA                                                                                | NA                                                                                | NA                                                                                |
| Protected Phases     |                                                                                   | 2                                                                                 | 6                                                                                 | 4                                                                                 |
| Permitted Phases     | 2                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Detector Phase       | 2                                                                                 | 2                                                                                 | 6                                                                                 | 4                                                                                 |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Minimum Initial (s)  | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 4.0                                                                               |
| Minimum Split (s)    | 15.8                                                                              | 15.8                                                                              | 15.8                                                                              | 20.0                                                                              |
| Total Split (s)      | 45.0                                                                              | 45.0                                                                              | 45.0                                                                              | 20.0                                                                              |
| Total Split (%)      | 69.2%                                                                             | 69.2%                                                                             | 69.2%                                                                             | 30.8%                                                                             |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               |
| All-Red Time (s)     | 2.3                                                                               | 2.3                                                                               | 2.3                                                                               | 0.5                                                                               |
| Lost Time Adjust (s) |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Lost Time (s)  |                                                                                   | 5.8                                                                               | 5.8                                                                               | 4.0                                                                               |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Recall Mode          | Max                                                                               | Max                                                                               | Max                                                                               | None                                                                              |
| Act Effct Green (s)  |                                                                                   | 43.3                                                                              | 43.3                                                                              | 6.9                                                                               |
| Actuated g/C Ratio   |                                                                                   | 0.76                                                                              | 0.76                                                                              | 0.12                                                                              |
| v/c Ratio            |                                                                                   | 0.39                                                                              | 0.36                                                                              | 0.35                                                                              |
| Control Delay        |                                                                                   | 4.3                                                                               | 3.5                                                                               | 14.4                                                                              |
| Queue Delay          |                                                                                   | 0.0                                                                               | 0.2                                                                               | 0.0                                                                               |
| Total Delay          |                                                                                   | 4.3                                                                               | 3.7                                                                               | 14.4                                                                              |
| LOS                  |                                                                                   | A                                                                                 | A                                                                                 | B                                                                                 |
| Approach Delay       |                                                                                   | 4.3                                                                               | 3.7                                                                               | 14.4                                                                              |
| Approach LOS         |                                                                                   | A                                                                                 | A                                                                                 | B                                                                                 |

## Intersection Summary

Cycle Length: 65  
 Actuated Cycle Length: 57.1  
 Natural Cycle: 45  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.39  
 Intersection Signal Delay: 4.5  
 Intersection Capacity Utilization 57.8%  
 Analysis Period (min) 15

Intersection LOS: A  
 ICU Level of Service B

## Splits and Phases: 7: W Main St & Griffing Ave

|                                                                                     |                                                                                       |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |
| σ2                                                                                  | σ4                                                                                    |
| 45 s                                                                                | 20 s                                                                                  |
|  |                                                                                       |
| σ6                                                                                  |                                                                                       |
| 45 s                                                                                |                                                                                       |

# Timings

8: Peconic Ave & W Main St/E Main St

Timing Plan: Saturday Peak Ho

|                      | →     | ←     | ↶     | ↷      |      |       |      |      |      |
|----------------------|-------|-------|-------|--------|------|-------|------|------|------|
| Lane Group           | EBT   | WBT   | NBL   | NBR    | ø3   | ø6    | ø8   | ø9   | ø13  |
| Lane Configurations  | ↑↑    | ↑↑    | ↶     | ↷      |      |       |      |      |      |
| Volume (vph)         | 470   | 749   | 266   | 677    |      |       |      |      |      |
| Turn Type            | NA    | NA    | NA    | custom |      |       |      |      |      |
| Protected Phases     | 2     | 6 3   | 4     | 3 13   | 3    | 6     | 8    | 9    | 13   |
| Permitted Phases     |       |       |       | 4 3    |      |       |      |      |      |
| Detector Phase       | 2     | 6 3   | 4     | 3 13   |      |       |      |      |      |
| Switch Phase         |       |       |       |        |      |       |      |      |      |
| Minimum Initial (s)  | 10.0  |       | 10.0  |        | 4.0  | 10.0  | 10.0 | 22.0 | 22.0 |
| Minimum Split (s)    | 15.9  |       | 15.9  |        | 9.9  | 28.0  | 15.0 | 25.0 | 25.0 |
| Total Split (s)      | 56.0  |       | 41.0  |        | 55.0 | 56.0  | 96.0 | 28.0 | 28.0 |
| Total Split (%)      | 31.1% |       | 22.8% |        | 31%  | 31%   | 53%  | 16%  | 16%  |
| Yellow Time (s)      | 3.5   |       | 3.5   |        | 3.5  | 3.5   | 3.0  | 2.0  | 2.0  |
| All-Red Time (s)     | 2.4   |       | 2.4   |        | 2.4  | 2.4   | 2.0  | 1.0  | 1.0  |
| Lost Time Adjust (s) | 0.0   |       | 0.0   |        |      |       |      |      |      |
| Total Lost Time (s)  | 5.9   |       | 5.9   |        |      |       |      |      |      |
| Lead/Lag             |       |       | Lead  |        | Lag  |       |      |      |      |
| Lead-Lag Optimize?   |       |       |       |        |      |       |      |      |      |
| Recall Mode          | C-Max |       | None  |        | None | C-Min | None | None | None |
| Act Effct Green (s)  | 55.8  | 105.1 | 32.2  | 112.4  |      |       |      |      |      |
| Actuated g/C Ratio   | 0.31  | 0.58  | 0.18  | 0.62   |      |       |      |      |      |
| v/c Ratio            | 0.47  | 0.43  | 0.90  | 0.71   |      |       |      |      |      |
| Control Delay        | 52.4  | 1.5   | 101.7 | 27.5   |      |       |      |      |      |
| Queue Delay          | 5.1   | 1.1   | 0.0   | 1.2    |      |       |      |      |      |
| Total Delay          | 57.5  | 2.5   | 101.7 | 28.7   |      |       |      |      |      |
| LOS                  | E     | A     | F     | C      |      |       |      |      |      |
| Approach Delay       | 57.5  | 2.5   | 49.3  |        |      |       |      |      |      |
| Approach LOS         | E     | A     | D     |        |      |       |      |      |      |

## Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 34.9

Intersection Capacity Utilization 64.7%

Analysis Period (min) 15

Intersection LOS: C

ICU Level of Service C

## Splits and Phases: 8: Peconic Ave & W Main St/E Main St

|                     |                 |                 |                  |
|---------------------|-----------------|-----------------|------------------|
| #8 → #9<br>→ ø2 (R) | #8 ↶ #9<br>↶ ø4 | #8 ↷ #9<br>↷ ø3 | #9 ↶ #8<br>↶ ø9  |
| 56 s                | 41 s            | 55 s            | 28 s             |
| #8 ← #9<br>← ø6 (R) | #9 → #8<br>→ ø8 |                 | #8 ↷ #9<br>↷ ø13 |
| 56 s                | 96 s            |                 | 28 s             |

# Timings

9: E Main St & Roanoke Ave

Timing Plan: Saturday Peak Ho

| Lane Group           | EBL   | EBT   | WBT   | SBR    | ø2    | ø3   | ø4   | ø8   | ø9   | ø13  |
|----------------------|-------|-------|-------|--------|-------|------|------|------|------|------|
| Lane Configurations  |       |       |       |        |       |      |      |      |      |      |
| Volume (vph)         | 327   | 778   | 647   | 123    |       |      |      |      |      |      |
| Turn Type            | Perm  | NA    | NA    | custom |       |      |      |      |      |      |
| Protected Phases     |       | 8 2   | 6     | 3 9    | 2     | 3    | 4    | 8    | 9    | 13   |
| Permitted Phases     | 8 2   |       |       |        |       |      |      |      |      |      |
| Detector Phase       | 8 2   | 8 2   | 6     | 3 9    |       |      |      |      |      |      |
| Switch Phase         |       |       |       |        |       |      |      |      |      |      |
| Minimum Initial (s)  |       |       | 10.0  |        | 10.0  | 4.0  | 10.0 | 10.0 | 22.0 | 22.0 |
| Minimum Split (s)    |       |       | 28.0  |        | 15.9  | 9.9  | 15.9 | 15.0 | 25.0 | 25.0 |
| Total Split (s)      |       |       | 56.0  |        | 56.0  | 55.0 | 41.0 | 96.0 | 28.0 | 28.0 |
| Total Split (%)      |       |       | 31.1% |        | 31%   | 31%  | 23%  | 53%  | 16%  | 16%  |
| Yellow Time (s)      |       |       | 3.5   |        | 3.5   | 3.5  | 3.5  | 3.0  | 2.0  | 2.0  |
| All-Red Time (s)     |       |       | 2.4   |        | 2.4   | 2.4  | 2.4  | 2.0  | 1.0  | 1.0  |
| Lost Time Adjust (s) |       |       | 0.0   |        |       |      |      |      |      |      |
| Total Lost Time (s)  |       |       | 5.9   |        |       |      |      |      |      |      |
| Lead/Lag             |       |       |       |        |       | Lag  | Lead |      |      |      |
| Lead-Lag Optimize?   |       |       |       |        |       |      |      |      |      |      |
| Recall Mode          |       |       | C-Min |        | C-Max | None | None | None | None | None |
| Act Effct Green (s)  | 150.0 | 150.0 | 55.8  | 74.3   |       |      |      |      |      |      |
| Actuated g/C Ratio   | 0.83  | 0.83  | 0.31  | 0.41   |       |      |      |      |      |      |
| v/c Ratio            | 0.74  | 0.46  | 0.74  | 0.20   |       |      |      |      |      |      |
| Control Delay        | 17.3  | 4.9   | 61.7  | 34.7   |       |      |      |      |      |      |
| Queue Delay          | 3.1   | 1.0   | 0.0   | 0.0    |       |      |      |      |      |      |
| Total Delay          | 20.4  | 5.9   | 61.7  | 34.7   |       |      |      |      |      |      |
| LOS                  | C     | A     | E     | C      |       |      |      |      |      |      |
| Approach Delay       |       | 10.2  | 61.7  |        |       |      |      |      |      |      |
| Approach LOS         |       | B     | E     |        |       |      |      |      |      |      |

## Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 30.9

Intersection LOS: C

Intersection Capacity Utilization 46.6%

ICU Level of Service A

Analysis Period (min) 15

## Splits and Phases: 9: E Main St & Roanoke Ave

|                           |                    |                       |                     |
|---------------------------|--------------------|-----------------------|---------------------|
| #8 #9<br>→ ø2 (R)<br>56 s | #8<br>← ø4<br>11 s | #8 #9<br>← ø3<br>55 s | #9<br>← ø9<br>28 s  |
| #8 #9<br>← ø6 (R)<br>56 s | #9<br>→ ø8<br>96 s |                       | #8<br>→ ø13<br>28 s |

# HCM Unsignalized Intersection Capacity Analysis 10: E Main St & East Ave

Timing Plan: Saturday Peak Ho

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement               | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR                                                                               | SBL                                                                               | SBR                                                                               |
| Lane Configurations    |                                                                                   |  |  |                                                                                   |  |                                                                                   |
| Volume (veh/h)         | 83                                                                                | 676                                                                               | 622                                                                               | 70                                                                                | 72                                                                                | 87                                                                                |
| Sign Control           |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   | Stop                                                                              |                                                                                   |
| Grade                  |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |
| Peak Hour Factor       | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Hourly flow rate (vph) | 90                                                                                | 735                                                                               | 676                                                                               | 76                                                                                | 78                                                                                | 95                                                                                |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type            |                                                                                   | None                                                                              | None                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Median storage (veh)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)   |                                                                                   | 768                                                                               | 275                                                                               |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked  | 0.82                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.90                                                                              | 0.82                                                                              |
| vC, conflicting volume | 752                                                                               |                                                                                   |                                                                                   |                                                                                   | 1629                                                                              | 714                                                                               |
| vC1, stage 1 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol     | 589                                                                               |                                                                                   |                                                                                   |                                                                                   | 1224                                                                              | 542                                                                               |
| tC, single (s)         | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   | 6.4                                                                               | 6.2                                                                               |
| tC, 2 stage (s)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                 | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   | 3.5                                                                               | 3.3                                                                               |
| p0 queue free %        | 89                                                                                |                                                                                   |                                                                                   |                                                                                   | 51                                                                                | 79                                                                                |
| cM capacity (veh/h)    | 818                                                                               |                                                                                   |                                                                                   |                                                                                   | 161                                                                               | 446                                                                               |
| Direction, Lane #      | EB 1                                                                              | WB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total           | 825                                                                               | 752                                                                               | 173                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left            | 90                                                                                | 0                                                                                 | 78                                                                                |                                                                                   |                                                                                   |                                                                                   |
| Volume Right           | 0                                                                                 | 76                                                                                | 95                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cSH                    | 818                                                                               | 1700                                                                              | 247                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity     | 0.11                                                                              | 0.44                                                                              | 0.70                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft) | 9                                                                                 | 0                                                                                 | 116                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)      | 2.8                                                                               | 0.0                                                                               | 47.6                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS               | A                                                                                 |                                                                                   | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)     | 2.8                                                                               | 0.0                                                                               | 47.6                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS           |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |

## Intersection Summary

|                                   |       |                        |
|-----------------------------------|-------|------------------------|
| Average Delay                     | 6.0   |                        |
| Intersection Capacity Utilization | 96.5% | ICU Level of Service F |
| Analysis Period (min)             | 15    |                        |



# Timings

11: McDermott Ave/Maple Ave & E Main St

Timing Plan: Saturday Peak Ho

|                      |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | SBL                                                                                | SBT                                                                                 |
| Lane Configurations  |                                                                                   |  |                                                                                   |  |                                                                                   |  |                                                                                    |  |
| Volume (vph)         | 26                                                                                | 697                                                                               | 46                                                                                | 495                                                                               | 166                                                                               | 18                                                                                | 54                                                                                 | 17                                                                                  |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                               | NA                                                                                  |
| Protected Phases     |                                                                                   | 2                                                                                 |                                                                                   | 6                                                                                 |                                                                                   | 4                                                                                 |                                                                                    | 8                                                                                   |
| Permitted Phases     | 2                                                                                 |                                                                                   | 6                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 8                                                                                  |                                                                                     |
| Detector Phase       | 2                                                                                 | 2                                                                                 | 6                                                                                 | 6                                                                                 | 4                                                                                 | 4                                                                                 | 8                                                                                  | 8                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Minimum Initial (s)  | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                | 4.0                                                                                 |
| Minimum Split (s)    | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 21.5                                                                              | 21.5                                                                              | 21.5                                                                               | 21.5                                                                                |
| Total Split (s)      | 58.0                                                                              | 58.0                                                                              | 58.0                                                                              | 58.0                                                                              | 32.0                                                                              | 32.0                                                                              | 32.0                                                                               | 32.0                                                                                |
| Total Split (%)      | 64.4%                                                                             | 64.4%                                                                             | 64.4%                                                                             | 64.4%                                                                             | 35.6%                                                                             | 35.6%                                                                             | 35.6%                                                                              | 35.6%                                                                               |
| Yellow Time (s)      | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                                | 3.5                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                                | 2.0                                                                                 |
| Lost Time Adjust (s) |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 |
| Total Lost Time (s)  |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.5                                                                               |                                                                                    | 5.5                                                                                 |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Recall Mode          | Max                                                                               | Max                                                                               | Max                                                                               | Max                                                                               | None                                                                              | None                                                                              | None                                                                               | None                                                                                |
| Act Effct Green (s)  |                                                                                   | 53.2                                                                              |                                                                                   | 53.2                                                                              |                                                                                   | 21.9                                                                              |                                                                                    | 21.9                                                                                |
| Actuated g/C Ratio   |                                                                                   | 0.62                                                                              |                                                                                   | 0.62                                                                              |                                                                                   | 0.26                                                                              |                                                                                    | 0.26                                                                                |
| v/c Ratio            |                                                                                   | 0.75                                                                              |                                                                                   | 0.59                                                                              |                                                                                   | 0.85                                                                              |                                                                                    | 0.33                                                                                |
| Control Delay        |                                                                                   | 18.0                                                                              |                                                                                   | 13.5                                                                              |                                                                                   | 48.1                                                                              |                                                                                    | 21.0                                                                                |
| Queue Delay          |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 |
| Total Delay          |                                                                                   | 18.0                                                                              |                                                                                   | 13.5                                                                              |                                                                                   | 48.1                                                                              |                                                                                    | 21.0                                                                                |
| LOS                  |                                                                                   | B                                                                                 |                                                                                   | B                                                                                 |                                                                                   | D                                                                                 |                                                                                    | C                                                                                   |
| Approach Delay       |                                                                                   | 18.0                                                                              |                                                                                   | 13.5                                                                              |                                                                                   | 48.1                                                                              |                                                                                    | 21.0                                                                                |
| Approach LOS         |                                                                                   | B                                                                                 |                                                                                   | B                                                                                 |                                                                                   | D                                                                                 |                                                                                    | C                                                                                   |

## Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 85.6

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 21.8

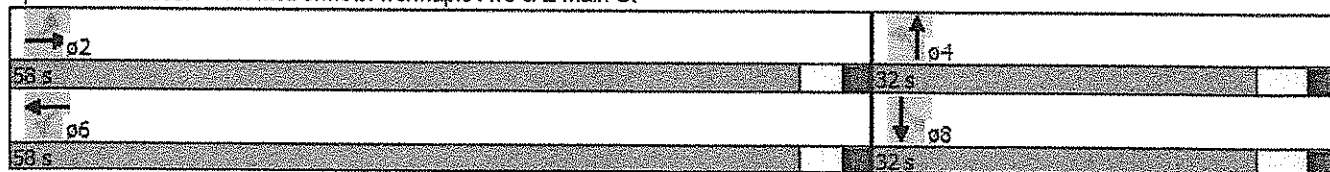
Intersection Capacity Utilization 78.2%

Analysis Period (min) 15

Intersection LOS: C

ICU Level of Service D

Splits and Phases: 11: McDermott Ave/Maple Ave & E Main St



# HCM Unsignalized Intersection Capacity Analysis 12: Parking Lot/Union Ave & E Main St/W Main St

Timing Plan: Saturday Peak Ho

|                        |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement               | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations    |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                     |                                                                                     |  |                                                                                     |
| Volume (veh/h)         | 23                                                                                | 808                                                                               | 25                                                                                | 19                                                                                | 539                                                                               | 31                                                                                | 2                                                                                 | 0                                                                                   | 13                                                                                  | 10                                                                                  | 1                                                                                   | 18                                                                                  |
| Sign Control           |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Stop                                                                                |                                                                                     |                                                                                     | Stop                                                                                |                                                                                     |
| Grade                  |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor       | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Hourly flow rate (vph) | 25                                                                                | 878                                                                               | 27                                                                                | 21                                                                                | 586                                                                               | 34                                                                                | 2                                                                                 | 0                                                                                   | 14                                                                                  | 11                                                                                  | 1                                                                                   | 20                                                                                  |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type            |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median storage veh     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (ft)   |                                                                                   | 278                                                                               |                                                                                   |                                                                                   | 1298                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked  |                                                                                   |                                                                                   |                                                                                   | 0.67                                                                              |                                                                                   |                                                                                   | 0.67                                                                              | 0.67                                                                                | 0.67                                                                                | 0.67                                                                                | 0.67                                                                                |                                                                                     |
| vC, conflicting volume | 620                                                                               |                                                                                   |                                                                                   | 905                                                                               |                                                                                   |                                                                                   | 1606                                                                              | 1603                                                                                | 892                                                                                 | 1600                                                                                | 1599                                                                                | 603                                                                                 |
| vC1, stage 1 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol     | 620                                                                               |                                                                                   |                                                                                   | 613                                                                               |                                                                                   |                                                                                   | 1658                                                                              | 1653                                                                                | 593                                                                                 | 1649                                                                                | 1648                                                                                | 603                                                                                 |
| tC, single (s)         | 4.1                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |                                                                                   | 7.1                                                                               | 6.5                                                                                 | 6.2                                                                                 | 7.1                                                                                 | 6.5                                                                                 | 6.2                                                                                 |
| tC, 2 stage (s)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                 | 2.2                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |                                                                                   | 3.5                                                                               | 4.0                                                                                 | 3.3                                                                                 | 3.5                                                                                 | 4.0                                                                                 | 3.3                                                                                 |
| p0 queue free %        | 97                                                                                |                                                                                   |                                                                                   | 97                                                                                |                                                                                   |                                                                                   | 95                                                                                | 100                                                                                 | 96                                                                                  | 78                                                                                  | 98                                                                                  | 96                                                                                  |
| cM capacity (veh/h)    | 971                                                                               |                                                                                   |                                                                                   | 654                                                                               |                                                                                   |                                                                                   | 48                                                                                | 63                                                                                  | 341                                                                                 | 49                                                                                  | 63                                                                                  | 503                                                                                 |
| Direction, Lane #      | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total           | 930                                                                               | 640                                                                               | 16                                                                                | 32                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left            | 25                                                                                | 21                                                                                | 2                                                                                 | 11                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right           | 27                                                                                | 34                                                                                | 14                                                                                | 20                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| cSH                    | 971                                                                               | 654                                                                               | 188                                                                               | 114                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity     | 0.03                                                                              | 0.03                                                                              | 0.09                                                                              | 0.28                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft) | 2                                                                                 | 2                                                                                 | 7                                                                                 | 26                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)      | 0.7                                                                               | 0.9                                                                               | 26.0                                                                              | 48.4                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS               | A                                                                                 | A                                                                                 | D                                                                                 | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)     | 0.7                                                                               | 0.9                                                                               | 26.0                                                                              | 48.4                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS           |                                                                                   |                                                                                   | D                                                                                 | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Intersection Summary

|                                   |       |                        |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-------|------------------------|--|--|--|--|--|--|--|--|--|--|
| Average Delay                     | 2.0   |                        |  |  |  |  |  |  |  |  |  |  |
| Intersection Capacity Utilization | 63.9% | ICU Level of Service B |  |  |  |  |  |  |  |  |  |  |
| Analysis Period (min)             | 15    |                        |  |  |  |  |  |  |  |  |  |  |

# HCM Unsignalized Intersection Capacity Analysis 13: W Main St & Ostrander Ave

Timing Plan: Saturday Peak Ho

|                        |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement               | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations    |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                     |                                                                                     |  |                                                                                     |
| Volume (veh/h)         | 85                                                                                | 647                                                                               | 14                                                                                | 7                                                                                 | 544                                                                               | 46                                                                                | 0                                                                                 | 0                                                                                   | 0                                                                                   | 36                                                                                  | 4                                                                                   | 101                                                                                 |
| Sign Control           |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Stop                                                                                |                                                                                     |                                                                                     | Stop                                                                                |                                                                                     |
| Grade                  |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor       | 0.98                                                                              | 0.98                                                                              | 0.98                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.75                                                                              | 0.75                                                                                | 0.75                                                                                | 0.77                                                                                | 0.77                                                                                | 0.77                                                                                |
| Hourly flow rate (vph) | 87                                                                                | 660                                                                               | 14                                                                                | 8                                                                                 | 618                                                                               | 52                                                                                | 0                                                                                 | 0                                                                                   | 0                                                                                   | 47                                                                                  | 5                                                                                   | 131                                                                                 |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type            |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median storage (veh)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (ft)   |                                                                                   | 641                                                                               |                                                                                   |                                                                                   | 935                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked  | 0.97                                                                              |                                                                                   |                                                                                   | 0.74                                                                              |                                                                                   |                                                                                   | 0.75                                                                              | 0.75                                                                                | 0.74                                                                                | 0.75                                                                                | 0.75                                                                                | 0.97                                                                                |
| vC, conflicting volume | 670                                                                               |                                                                                   |                                                                                   | 674                                                                               |                                                                                   |                                                                                   | 1635                                                                              | 1527                                                                                | 667                                                                                 | 1501                                                                                | 1508                                                                                | 644                                                                                 |
| vC1, stage 1 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol     | 648                                                                               |                                                                                   |                                                                                   | 383                                                                               |                                                                                   |                                                                                   | 1602                                                                              | 1459                                                                                | 373                                                                                 | 1424                                                                                | 1433                                                                                | 622                                                                                 |
| tC, single (s)         | 4.1                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |                                                                                   | 7.1                                                                               | 6.5                                                                                 | 6.2                                                                                 | 7.1                                                                                 | 6.5                                                                                 | 6.2                                                                                 |
| tC, 2 stage (s)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                 | 2.2                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |                                                                                   | 3.5                                                                               | 4.0                                                                                 | 3.3                                                                                 | 3.5                                                                                 | 4.0                                                                                 | 3.3                                                                                 |
| p0 queue free %        | 91                                                                                |                                                                                   |                                                                                   | 99                                                                                |                                                                                   |                                                                                   | 100                                                                               | 100                                                                                 | 100                                                                                 | 41                                                                                  | 94                                                                                  | 73                                                                                  |
| cM capacity (veh/h)    | 918                                                                               |                                                                                   |                                                                                   | 877                                                                               |                                                                                   |                                                                                   | 41                                                                                | 88                                                                                  | 500                                                                                 | 79                                                                                  | 91                                                                                  | 478                                                                                 |
| Direction, Lane #      | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total           | 761                                                                               | 678                                                                               | 0                                                                                 | 183                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left            | 87                                                                                | 8                                                                                 | 0                                                                                 | 47                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right           | 14                                                                                | 52                                                                                | 0                                                                                 | 131                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| cSH                    | 918                                                                               | 877                                                                               | 1700                                                                              | 199                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity     | 0.09                                                                              | 0.01                                                                              | 0.00                                                                              | 0.92                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft) | 8                                                                                 | 1                                                                                 | 0                                                                                 | 184                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)      | 2.4                                                                               | 0.2                                                                               | 0.0                                                                               | 93.5                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS               | A                                                                                 | A                                                                                 | A                                                                                 | F                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)     | 2.4                                                                               | 0.2                                                                               | 0.0                                                                               | 93.5                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS           |                                                                                   |                                                                                   | A                                                                                 | F                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Intersection Summary

|                                   |       |                      |   |
|-----------------------------------|-------|----------------------|---|
| Average Delay                     | 11.8  |                      |   |
| Intersection Capacity Utilization | 89.8% | ICU Level of Service | E |
| Analysis Period (min)             | 15    |                      |   |

# Timings

14: W Main St & Riverside Dr

Timing Plan: Saturday Peak Ho

|                      |  |  |  |  |  |      |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Group           | WBL                                                                               | WBR                                                                               | NBT                                                                               | SBL                                                                               | SBT                                                                               | ø4   |
| Lane Configurations  |  |  |  |  |  |      |
| Volume (vph)         | 41                                                                                | 102                                                                               | 588                                                                               | 157                                                                               | 504                                                                               |      |
| Turn Type            | NA                                                                                | Perm                                                                              | NA                                                                                | custom                                                                            | NA                                                                                |      |
| Protected Phases     | 8                                                                                 |                                                                                   | 2                                                                                 |                                                                                   | 6 4                                                                               | 4    |
| Permitted Phases     |                                                                                   | 8                                                                                 |                                                                                   | 6                                                                                 |                                                                                   |      |
| Detector Phase       | 8                                                                                 | 8                                                                                 | 2                                                                                 | 6                                                                                 | 6 4                                                                               |      |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                               | 20.0                                                                              | 20.0                                                                              |                                                                                   | 5.0  |
| Minimum Split (s)    | 10.5                                                                              | 10.5                                                                              | 25.5                                                                              | 25.5                                                                              |                                                                                   | 10.5 |
| Total Split (s)      | 10.5                                                                              | 10.5                                                                              | 79.0                                                                              | 79.0                                                                              |                                                                                   | 10.5 |
| Total Split (%)      | 10.5%                                                                             | 10.5%                                                                             | 79.0%                                                                             | 79.0%                                                                             |                                                                                   | 11%  |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               |                                                                                   | 3.5  |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0  |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |      |
| Total Lost Time (s)  | 5.5                                                                               | 5.5                                                                               | 5.5                                                                               |                                                                                   |                                                                                   |      |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Recall Mode          | None                                                                              | None                                                                              | Max                                                                               | Max                                                                               |                                                                                   | None |
| Act Effect Green (s) | 5.0                                                                               | 5.0                                                                               | 73.5                                                                              |                                                                                   | 84.0                                                                              |      |
| Actuated g/C Ratio   | 0.05                                                                              | 0.05                                                                              | 0.74                                                                              |                                                                                   | 0.84                                                                              |      |
| v/c Ratio            | 0.49                                                                              | 0.62                                                                              | 0.56                                                                              |                                                                                   | 0.83                                                                              |      |
| Control Delay        | 63.7                                                                              | 23.8                                                                              | 7.7                                                                               |                                                                                   | 13.5                                                                              |      |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 1.7                                                                               |      |
| Total Delay          | 63.7                                                                              | 23.8                                                                              | 7.7                                                                               |                                                                                   | 15.2                                                                              |      |
| LOS                  | E                                                                                 | C                                                                                 | A                                                                                 |                                                                                   | B                                                                                 |      |
| Approach Delay       | 35.3                                                                              |                                                                                   | 7.7                                                                               |                                                                                   | 15.2                                                                              |      |
| Approach LOS         | D                                                                                 |                                                                                   | A                                                                                 |                                                                                   | B                                                                                 |      |

## Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 13.9

Intersection LOS: B

Intersection Capacity Utilization 87.3%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 14: W Main St & Riverside Dr

|                                                                                                                                                                                          |                                                                                                                                                                                              |                                                                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #14 #15<br> <br>ø8 | #14 #15<br> <br>ø4 | #14 #15<br> <br>ø4 |
| 79 s                                                                                                                                                                                     | 10.5 s                                                                                                                                                                                       | 10.5 s                                                                                                                                                                                       |
| #14 #15<br> <br>ø6 |                                                                                                                                                                                              |                                                                                                                                                                                              |
| 79 s                                                                                                                                                                                     |                                                                                                                                                                                              |                                                                                                                                                                                              |

# Timings

15: W Main St & Fishel Ave

Timing Plan: Saturday Peak Ho

|                      |  |  |  |  |      |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Group           | EBL                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | ø8   |
| Lane Configurations  |  |                                                                                   |  |  |      |
| Volume (vph)         | 17                                                                                | 72                                                                                | 618                                                                               | 609                                                                               |      |
| Turn Type            | NA                                                                                | custom                                                                            | NA                                                                                | NA                                                                                |      |
| Protected Phases     | 4                                                                                 |                                                                                   | 2 8                                                                               | 6                                                                                 | 8    |
| Permitted Phases     |                                                                                   | 2                                                                                 |                                                                                   |                                                                                   |      |
| Detector Phase       | 4                                                                                 | 2                                                                                 | 2 8                                                                               | 6                                                                                 |      |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Minimum Initial (s)  | 5.0                                                                               | 20.0                                                                              |                                                                                   | 20.0                                                                              | 5.0  |
| Minimum Split (s)    | 10.5                                                                              | 25.5                                                                              |                                                                                   | 25.5                                                                              | 10.5 |
| Total Split (s)      | 10.5                                                                              | 79.0                                                                              |                                                                                   | 79.0                                                                              | 10.5 |
| Total Split (%)      | 10.5%                                                                             | 79.0%                                                                             |                                                                                   | 79.0%                                                                             | 11%  |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               |                                                                                   | 3.5                                                                               | 3.5  |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                               | 2.0  |
| Lost Time Adjust (s) | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |      |
| Total Lost Time (s)  | 5.5                                                                               |                                                                                   |                                                                                   | 5.5                                                                               |      |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Recall Mode          | None                                                                              | Max                                                                               |                                                                                   | Max                                                                               | None |
| Act Effct Green (s)  | 5.0                                                                               |                                                                                   | 84.0                                                                              | 73.5                                                                              |      |
| Actuated g/C Ratio   | 0.05                                                                              |                                                                                   | 0.84                                                                              | 0.74                                                                              |      |
| v/c Ratio            | 0.71                                                                              |                                                                                   | 0.60                                                                              | 0.54                                                                              |      |
| Control Delay        | 34.4                                                                              |                                                                                   | 2.9                                                                               | 7.6                                                                               |      |
| Queue Delay          | 1.1                                                                               |                                                                                   | 0.2                                                                               | 0.2                                                                               |      |
| Total Delay          | 35.5                                                                              |                                                                                   | 3.0                                                                               | 7.7                                                                               |      |
| LOS                  | D                                                                                 |                                                                                   | A                                                                                 | A                                                                                 |      |
| Approach Delay       | 35.5                                                                              |                                                                                   | 3.0                                                                               | 7.7                                                                               |      |
| Approach LOS         | D                                                                                 |                                                                                   | A                                                                                 | A                                                                                 |      |

## Intersection Summary

Cycle Length: 100  
 Actuated Cycle Length: 100  
 Natural Cycle: 90  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.83  
 Intersection Signal Delay: 7.7  
 Intersection Capacity Utilization 89.8%  
 Analysis Period (min) 15

Intersection LOS: A  
 ICU Level of Service E

Splits and Phases: 15: W Main St & Fishel Ave

|                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  #14<br> #15<br> #2<br>79 s |  #14<br> #15<br> #4<br>10.5 s |  #14<br> #15<br> #6<br>10.5 s |
|  #14<br> #15<br> #6<br>79 s |                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                              |



# HCM Unsignalized Intersection Capacity Analysis

## 16: W Main St & Hubbard Ave

Timing Plan: Saturday Peak Ho

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement               | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations    |  |                                                                                   |  |                                                                                   |                                                                                   |  |
| Volume (veh/h)         | 130                                                                               | 47                                                                                | 478                                                                               | 97                                                                                | 53                                                                                | 425                                                                               |
| Sign Control           | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |
| Grade                  | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor       | 0.85                                                                              | 0.85                                                                              | 0.82                                                                              | 0.82                                                                              | 0.81                                                                              | 0.81                                                                              |
| Hourly flow rate (vph) | 153                                                                               | 55                                                                                | 583                                                                               | 118                                                                               | 65                                                                                | 525                                                                               |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type            |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |
| Median storage (veh)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume | 1298                                                                              | 642                                                                               |                                                                                   |                                                                                   | 701                                                                               |                                                                                   |
| vC1, stage 1 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol     | 1298                                                                              | 642                                                                               |                                                                                   |                                                                                   | 701                                                                               |                                                                                   |
| tC, single (s)         | 6.4                                                                               | 6.2                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |
| tC, 2 stage (s)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                 | 3.5                                                                               | 3.3                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |
| p0 queue free %        | 7                                                                                 | 88                                                                                |                                                                                   |                                                                                   | 93                                                                                |                                                                                   |
| cM capacity (veh/h)    | 165                                                                               | 478                                                                               |                                                                                   |                                                                                   | 905                                                                               |                                                                                   |

| Direction, Lane #      | WB 1  | NB 1 | SB 1 |
|------------------------|-------|------|------|
| Volume Total           | 208   | 701  | 590  |
| Volume Left            | 153   | 0    | 65   |
| Volume Right           | 55    | 118  | 0    |
| cSH                    | 199   | 1700 | 905  |
| Volume to Capacity     | 1.04  | 0.41 | 0.07 |
| Queue Length 95th (ft) | 235   | 0    | 6    |
| Control Delay (s)      | 125.5 | 0.0  | 1.9  |
| Lane LOS               | F     |      | A    |
| Approach Delay (s)     | 125.5 | 0.0  | 1.9  |
| Approach LOS           | F     |      |      |

| Intersection Summary              |  |       |                      |
|-----------------------------------|--|-------|----------------------|
| Average Delay                     |  | 18.2  |                      |
| Intersection Capacity Utilization |  | 76.4% | ICU Level of Service |
| Analysis Period (min)             |  | 15    | D                    |

# HCM Unsignalized Intersection Capacity Analysis 17: Peconic Ave & Parking Lot Access

Timing Plan: Saturday Peak Ho

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement               | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations    |                                                                                   |  |  |                                                                                   |                                                                                   |                                                                                   |
| Volume (veh/h)         | 0                                                                                 | 32                                                                                | 938                                                                               | 96                                                                                | 0                                                                                 | 0                                                                                 |
| Sign Control           | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |
| Grade                  | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor       | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Hourly flow rate (vph) | 0                                                                                 | 35                                                                                | 1020                                                                              | 104                                                                               | 0                                                                                 | 0                                                                                 |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type            |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |
| Median storage (veh)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 316                                                                               |
| pX, platoon unblocked  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume | 1072                                                                              | 562                                                                               |                                                                                   |                                                                                   | 1124                                                                              |                                                                                   |
| vC1, stage 1 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol     | 1072                                                                              | 562                                                                               |                                                                                   |                                                                                   | 1124                                                                              |                                                                                   |
| tC, single (s)         | 6.8                                                                               | 6.9                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |
| tC, 2 stage (s)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                 | 3.5                                                                               | 3.3                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |
| p0 queue free %        | 100                                                                               | 93                                                                                |                                                                                   |                                                                                   | 100                                                                               |                                                                                   |
| cM capacity (veh/h)    | 215                                                                               | 470                                                                               |                                                                                   |                                                                                   | 617                                                                               |                                                                                   |

| Direction, Lane #      | WB 1 | NB 1 | NB 2 |
|------------------------|------|------|------|
| Volume Total           | 35   | 680  | 444  |
| Volume Left            | 0    | 0    | 0    |
| Volume Right           | 35   | 0    | 104  |
| cSH                    | 470  | 1700 | 1700 |
| Volume to Capacity     | 0.07 | 0.40 | 0.26 |
| Queue Length 95th (ft) | 6    | 0    | 0    |
| Control Delay (s)      | 13.3 | 0.0  | 0.0  |
| Lane LOS               | B    |      |      |
| Approach Delay (s)     | 13.3 | 0.0  |      |
| Approach LOS           | B    |      |      |

| Intersection Summary              |  |       |                        |
|-----------------------------------|--|-------|------------------------|
| Average Delay                     |  | 0.4   |                        |
| Intersection Capacity Utilization |  | 39.0% | ICU Level of Service A |
| Analysis Period (min)             |  | 15    |                        |

# HCM Unsignalized Intersection Capacity Analysis 18: Griffing Ave/Griffing St & PARKING Lot/W 2nd St

Timing Plan: Saturday Peak Ho

|                        |  |  |  |  |  |  |  |   |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement               | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations    |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                     |                                                                                     |  |                                                                                     |
| Volume (veh/h)         | 2                                                                                 | 3                                                                                 | 0                                                                                 | 30                                                                                | 0                                                                                 | 49                                                                                | 0                                                                                 | 123                                                                                 | 14                                                                                  | 36                                                                                  | 31                                                                                  | 0                                                                                   |
| Sign Control           |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |
| Grade                  |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor       | 0.73                                                                              | 0.73                                                                              | 0.73                                                                              | 0.83                                                                              | 0.83                                                                              | 0.83                                                                              | 0.96                                                                              | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                |
| Hourly flow rate (vph) | 3                                                                                 | 4                                                                                 | 0                                                                                 | 36                                                                                | 0                                                                                 | 59                                                                                | 0                                                                                 | 128                                                                                 | 15                                                                                  | 38                                                                                  | 32                                                                                  | 0                                                                                   |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | None                                                                                |                                                                                     |                                                                                     | None                                                                                |                                                                                     |
| Median storage (veh)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (ft)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 559                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume | 302                                                                               | 250                                                                               | 32                                                                                | 245                                                                               | 243                                                                               | 135                                                                               | 32                                                                                |                                                                                     |                                                                                     | 143                                                                                 |                                                                                     |                                                                                     |
| vC1, stage 1 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol     | 302                                                                               | 250                                                                               | 32                                                                                | 245                                                                               | 243                                                                               | 135                                                                               | 32                                                                                |                                                                                     |                                                                                     | 143                                                                                 |                                                                                     |                                                                                     |
| tC, single (s)         | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 4.1                                                                               |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |                                                                                     |
| tC, 2 stage (s)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                 | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |                                                                                     |
| p0 queue free %        | 100                                                                               | 99                                                                                | 100                                                                               | 95                                                                                | 100                                                                               | 94                                                                                | 100                                                                               |                                                                                     |                                                                                     | 97                                                                                  |                                                                                     |                                                                                     |
| cM capacity (veh/h)    | 600                                                                               | 639                                                                               | 1047                                                                              | 695                                                                               | 638                                                                               | 919                                                                               | 1593                                                                              |                                                                                     |                                                                                     | 1422                                                                                |                                                                                     |                                                                                     |
| Direction, Lane #      | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total           | 7                                                                                 | 95                                                                                | 143                                                                               | 70                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left            | 3                                                                                 | 36                                                                                | 0                                                                                 | 38                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right           | 0                                                                                 | 59                                                                                | 15                                                                                | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| cSH                    | 623                                                                               | 819                                                                               | 1593                                                                              | 1422                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity     | 0.01                                                                              | 0.12                                                                              | 0.00                                                                              | 0.03                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft) | 1                                                                                 | 10                                                                                | 0                                                                                 | 2                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)      | 10.8                                                                              | 10.0                                                                              | 0.0                                                                               | 4.2                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS               | B                                                                                 | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)     | 10.8                                                                              | 10.0                                                                              | 0.0                                                                               | 4.2                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS           | B                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Intersection Summary

|                                   |       |                      |   |  |
|-----------------------------------|-------|----------------------|---|--|
| Average Delay                     | 4.2   |                      |   |  |
| Intersection Capacity Utilization | 26.9% | ICU Level of Service | A |  |
| Analysis Period (min)             | 15    |                      |   |  |

# HCM Unsignalized Intersection Capacity Analysis 19: Griffing St/Griffing Ave & Court St

Timing Plan: Saturday Peak Ho

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |  |                                                                                   |                                                                                   |  |  |                                                                                   |
| Volume (veh/h)                    | 52                                                                                | 47                                                                                | 33                                                                                | 133                                                                               | 13                                                                                | 327                                                                               |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.80                                                                              | 0.80                                                                              | 0.80                                                                              | 0.80                                                                              | 0.71                                                                              | 0.71                                                                              |
| Hourly flow rate (vph)            | 65                                                                                | 59                                                                                | 41                                                                                | 166                                                                               | 18                                                                                | 461                                                                               |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | None                                                                              | None                                                                              |                                                                                   |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   | 1010                                                                              |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 497                                                                               | 249                                                                               | 479                                                                               |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 497                                                                               | 249                                                                               | 479                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.4                                                                               | 6.2                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 87                                                                                | 93                                                                                | 96                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 512                                                                               | 795                                                                               | 1094                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | EB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 124                                                                               | 208                                                                               | 479                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 65                                                                                | 41                                                                                | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 59                                                                                | 0                                                                                 | 461                                                                               |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 616                                                                               | 1094                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.20                                                                              | 0.04                                                                              | 0.28                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 19                                                                                | 3                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 12.3                                                                              | 2.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | B                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 12.3                                                                              | 2.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 2.4                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 45.5%                                                                             | ICU Level of Service                                                              | A                                                                                 |                                                                                   |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

20: Griffing Ave & Railroad St

Timing Plan: Saturday Peak Ho

|                        |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement               | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations    |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |
| Sign Control           |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                    | Stop                                                                                |                                                                                     |                                                                                     | Stop                                                                                |                                                                                     |
| Volume (vph)           | 14                                                                                | 50                                                                                | 23                                                                                | 223                                                                               | 39                                                                                | 22                                                                                | 12                                                                                 | 159                                                                                 | 12                                                                                  | 12                                                                                  | 113                                                                                 | 16                                                                                  |
| Peak Hour Factor       | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Hourly flow rate (vph) | 15                                                                                | 54                                                                                | 25                                                                                | 242                                                                               | 42                                                                                | 24                                                                                | 13                                                                                 | 173                                                                                 | 13                                                                                  | 13                                                                                  | 123                                                                                 | 17                                                                                  |
| Direction, Lane #      | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total (vph)     | 95                                                                                | 309                                                                               | 199                                                                               | 153                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left (vph)      | 15                                                                                | 242                                                                               | 13                                                                                | 13                                                                                |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right (vph)     | 25                                                                                | 24                                                                                | 13                                                                                | 17                                                                                |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Hadj (s)               | -0.09                                                                             | 0.14                                                                              | 0.01                                                                              | -0.02                                                                             |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Departure Headway (s)  | 5.2                                                                               | 5.1                                                                               | 5.2                                                                               | 5.3                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Degree Utilization, x  | 0.14                                                                              | 0.44                                                                              | 0.29                                                                              | 0.23                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Capacity (veh/h)       | 617                                                                               | 662                                                                               | 637                                                                               | 621                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)      | 9.1                                                                               | 12.2                                                                              | 10.4                                                                              | 9.8                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)     | 9.1                                                                               | 12.2                                                                              | 10.4                                                                              | 9.8                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS           | A                                                                                 | B                                                                                 | B                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

### Intersection Summary

|                                   |       |                      |   |
|-----------------------------------|-------|----------------------|---|
| Delay                             | 10.8  |                      |   |
| Level of Service                  | B     |                      |   |
| Intersection Capacity Utilization | 41.1% | ICU Level of Service | A |
| Analysis Period (min)             | 15    |                      |   |

# Timings

21: Roanoke Ave & W 2nd St/E 2nd St

Timing Plan: Saturday Peak Ho

|                      |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | SBL                                                                                | SBT                                                                                 |
| Lane Configurations  |                                                                                   |  |                                                                                   |  |                                                                                   |  |                                                                                    |  |
| Volume (vph)         | 16                                                                                | 35                                                                                | 17                                                                                | 51                                                                                | 14                                                                                | 329                                                                               | 46                                                                                 | 81                                                                                  |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                               | NA                                                                                  |
| Protected Phases     |                                                                                   | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 2                                                                                 |                                                                                    | 6                                                                                   |
| Permitted Phases     | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 2                                                                                 |                                                                                   | 6                                                                                  |                                                                                     |
| Detector Phase       | 4                                                                                 | 4                                                                                 | 8                                                                                 | 8                                                                                 | 2                                                                                 | 2                                                                                 | 6                                                                                  | 6                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Minimum Initial (s)  | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 5.5                                                                               | 5.5                                                                               | 5.5                                                                                | 5.5                                                                                 |
| Minimum Split (s)    | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 10.5                                                                              | 10.5                                                                              | 10.5                                                                               | 10.5                                                                                |
| Total Split (s)      | 19.0                                                                              | 19.0                                                                              | 19.0                                                                              | 19.0                                                                              | 36.0                                                                              | 36.0                                                                              | 36.0                                                                               | 36.0                                                                                |
| Total Split (%)      | 34.5%                                                                             | 34.5%                                                                             | 34.5%                                                                             | 34.5%                                                                             | 65.5%                                                                             | 65.5%                                                                             | 65.5%                                                                              | 65.5%                                                                               |
| Yellow Time (s)      | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                                | 3.0                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                                | 2.0                                                                                 |
| Lost Time Adjust (s) |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 |
| Total Lost Time (s)  |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                    | 5.0                                                                                 |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | Max                                                                               | Max                                                                               | Max                                                                                | Max                                                                                 |
| Act Effct Green (s)  |                                                                                   | 10.3                                                                              |                                                                                   | 10.3                                                                              |                                                                                   | 35.0                                                                              |                                                                                    | 35.0                                                                                |
| Actuated g/C Ratio   |                                                                                   | 0.20                                                                              |                                                                                   | 0.20                                                                              |                                                                                   | 0.68                                                                              |                                                                                    | 0.68                                                                                |
| v/c Ratio            |                                                                                   | 0.24                                                                              |                                                                                   | 0.36                                                                              |                                                                                   | 0.29                                                                              |                                                                                    | 0.14                                                                                |
| Control Delay        |                                                                                   | 16.8                                                                              |                                                                                   | 14.8                                                                              |                                                                                   | 5.5                                                                               |                                                                                    | 4.4                                                                                 |
| Queue Delay          |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 |
| Total Delay          |                                                                                   | 16.8                                                                              |                                                                                   | 14.8                                                                              |                                                                                   | 5.5                                                                               |                                                                                    | 4.4                                                                                 |
| LOS                  |                                                                                   | B                                                                                 |                                                                                   | B                                                                                 |                                                                                   | A                                                                                 |                                                                                    | A                                                                                   |
| Approach Delay       |                                                                                   | 16.8                                                                              |                                                                                   | 14.8                                                                              |                                                                                   | 5.5                                                                               |                                                                                    | 4.4                                                                                 |
| Approach LOS         |                                                                                   | B                                                                                 |                                                                                   | B                                                                                 |                                                                                   | A                                                                                 |                                                                                    | A                                                                                   |

## Intersection Summary

Cycle Length: 55  
 Actuated Cycle Length: 51.3  
 Natural Cycle: 40  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.36  
 Intersection Signal Delay: 8.2  
 Intersection Capacity Utilization 43.7%  
 Analysis Period (min) 15

Intersection LOS: A  
 ICU Level of Service A

Splits and Phases: 21: Roanoke Ave & W 2nd St/E 2nd St

|                                                                                     |                                                                                       |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |
| 36 s                                                                                | 19 s                                                                                  |
|  |  |
| 36 s                                                                                | 19 s                                                                                  |



# Timings

## 22: Roanoke Ave & Railroad St

Timing Plan: Saturday Peak Ho

|                      | EBL   | NBL   | NBT   | SBT  | ø6   | ø8   |
|----------------------|-------|-------|-------|------|------|------|
| Lane Group           | EBL   | NBL   | NBT   | SBT  | ø6   | ø8   |
| Lane Configurations  | ↖ ↗   |       | ↖ ↗   | ↖ ↗  |      |      |
| Volume (vph)         | 59    | 14    | 388   | 168  |      |      |
| Turn Type            | NA    | Perm  | NA    | NA   |      |      |
| Protected Phases     | 2     |       | 4     | 8 6  | 6    | 8    |
| Permitted Phases     |       | 4     |       |      |      |      |
| Detector Phase       | 2     | 4     | 4     | 8 6  |      |      |
| Switch Phase         |       |       |       |      |      |      |
| Minimum Initial (s)  | 4.0   | 4.0   | 4.0   |      | 4.0  | 4.0  |
| Minimum Split (s)    | 9.0   | 9.0   | 9.0   |      | 9.0  | 9.0  |
| Total Split (s)      | 18.0  | 35.0  | 35.0  |      | 27.0 | 35.0 |
| Total Split (%)      | 22.5% | 43.8% | 43.8% |      | 34%  | 44%  |
| Yellow Time (s)      | 3.0   | 3.0   | 3.0   |      | 3.0  | 3.0  |
| All-Red Time (s)     | 2.0   | 2.0   | 2.0   |      | 2.0  | 2.0  |
| Lost Time Adjust (s) | 0.0   |       | 0.0   |      |      |      |
| Total Lost Time (s)  | 5.0   |       | 5.0   |      |      |      |
| Lead/Lag             |       |       |       |      |      |      |
| Lead-Lag Optimize?   |       |       |       |      |      |      |
| Recall Mode          | None  | Max   | Max   |      | Max  | Max  |
| Act Effect Green (s) | 8.9   |       | 30.0  | 57.0 |      |      |
| Actuated g/C Ratio   | 0.12  |       | 0.39  | 0.75 |      |      |
| v/c Ratio            | 0.36  |       | 0.68  | 0.38 |      |      |
| Control Delay        | 33.3  |       | 25.2  | 0.8  |      |      |
| Queue Delay          | 0.0   |       | 0.0   | 0.0  |      |      |
| Total Delay          | 33.3  |       | 25.2  | 0.8  |      |      |
| LOS                  | C     |       | C     | A    |      |      |
| Approach Delay       | 33.3  |       | 25.2  | 0.8  |      |      |
| Approach LOS         | C     |       | C     | A    |      |      |

### Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 76

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 14.0

Intersection Capacity Utilization 43.8%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service A

Splits and Phases: 22: Roanoke Ave & Railroad St

|                           |                           |                           |
|---------------------------|---------------------------|---------------------------|
| #22 #23<br>↖ ↗ ø2<br>18 s | #22 #23<br>↖ ↗ ø6<br>27 s | #22 #23<br>↖ ↗ ø4<br>35 s |
|                           |                           | #22 #23<br>↖ ↗ ø8<br>35 s |

# Timings

## 23: Roanoke Ave & Northville Turnpike

Timing Plan: Saturday Peak Ho

|                      | ↖     | ↑    | ↗     | ↘     | ↓     |      |      |
|----------------------|-------|------|-------|-------|-------|------|------|
| Lane Group           | WBL   | NBT  | NBR   | SBL   | SBT   | ø2   | ø4   |
| Lane Configurations  | ↖     | ↑    | ↗     |       | ↘     |      |      |
| Volume (vph)         | 148   | 331  | 122   | 17    | 290   |      |      |
| Turn Type            | NA    | NA   | pm+ov | Perm  | NA    |      |      |
| Protected Phases     | 6     | 4 2  | 6     |       | 8     | 2    | 4    |
| Permitted Phases     |       |      | 4 2   | 8     |       |      |      |
| Detector Phase       | 6     | 4 2  | 6     | 8     | 8     |      |      |
| Switch Phase         |       |      |       |       |       |      |      |
| Minimum Initial (s)  | 4.0   |      | 4.0   | 4.0   | 4.0   | 4.0  | 4.0  |
| Minimum Split (s)    | 9.0   |      | 9.0   | 9.0   | 9.0   | 9.0  | 9.0  |
| Total Split (s)      | 27.0  |      | 27.0  | 35.0  | 35.0  | 18.0 | 35.0 |
| Total Split (%)      | 33.8% |      | 33.8% | 43.8% | 43.8% | 23%  | 44%  |
| Yellow Time (s)      | 3.0   |      | 3.0   | 3.0   | 3.0   | 3.0  | 3.0  |
| All-Red Time (s)     | 2.0   |      | 2.0   | 2.0   | 2.0   | 2.0  | 2.0  |
| Lost Time Adjust (s) | 0.0   |      | 0.0   |       | 0.0   |      |      |
| Total Lost Time (s)  | 5.0   |      | 5.0   |       | 5.0   |      |      |
| Lead/Lag             |       |      |       |       |       |      |      |
| Lead-Lag Optimize?   |       |      |       |       |       |      |      |
| Recall Mode          | Max   |      | Max   | Max   | Max   | None | Max  |
| Act Effct Green (s)  | 22.0  | 44.0 | 76.0  |       | 30.0  |      |      |
| Actuated g/C Ratio   | 0.29  | 0.58 | 1.00  |       | 0.39  |      |      |
| v/c Ratio            | 0.36  | 0.35 | 0.09  |       | 0.55  |      |      |
| Control Delay        | 23.6  | 0.9  | 0.1   |       | 22.0  |      |      |
| Queue Delay          | 0.0   | 0.0  | 0.0   |       | 0.0   |      |      |
| Total Delay          | 23.6  | 0.9  | 0.1   |       | 22.0  |      |      |
| LOS                  | C     | A    | A     |       | C     |      |      |
| Approach Delay       | 23.6  | 0.7  |       |       | 22.0  |      |      |
| Approach LOS         | C     | A    |       |       | C     |      |      |

### Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 76

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 12.3

Intersection Capacity Utilization 46.8%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service A

### Splits and Phases: 23: Roanoke Ave & Northville Turnpike

|                      |                      |                      |
|----------------------|----------------------|----------------------|
| #22 #23<br>↖ ↗<br>ø2 | #22 #23<br>↓ ↗<br>ø6 | #22 #23<br>↑ ↗<br>ø4 |
| 18 s                 | 27 s                 | 35 s                 |
|                      |                      | #22 #23<br>↓ ↓<br>ø8 |
|                      |                      | 35 s                 |

# Timings

## 24: Osborn Ave/Osborn St & Court St

Timing Plan: Saturday Peak Ho

|                      |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | SBL                                                                               | SBT                                                                                 |
| Lane Configurations  |                                                                                   |  |                                                                                   |  |                                                                                   |  |                                                                                   |  |
| Volume (vph)         | 112                                                                               | 83                                                                                | 18                                                                                | 349                                                                               | 3                                                                                 | 56                                                                                | 9                                                                                 | 73                                                                                  |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                  |
| Protected Phases     |                                                                                   | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 2                                                                                 |                                                                                   | 6                                                                                   |
| Permitted Phases     | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 2                                                                                 |                                                                                   | 6                                                                                 |                                                                                     |
| Detector Phase       | 4                                                                                 | 4                                                                                 | 8                                                                                 | 8                                                                                 | 2                                                                                 | 2                                                                                 | 6                                                                                 | 6                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |
| Minimum Initial (s)  | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                 |
| Minimum Split (s)    | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0                                                                                 |
| Total Split (s)      | 35.0                                                                              | 35.0                                                                              | 35.0                                                                              | 35.0                                                                              | 25.0                                                                              | 25.0                                                                              | 25.0                                                                              | 25.0                                                                                |
| Total Split (%)      | 58.3%                                                                             | 58.3%                                                                             | 58.3%                                                                             | 58.3%                                                                             | 41.7%                                                                             | 41.7%                                                                             | 41.7%                                                                             | 41.7%                                                                               |
| Yellow Time (s)      | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                                 |
| Lost Time Adjust (s) |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                                 |
| Total Lost Time (s)  |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                                 |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |
| Recall Mode          | Max                                                                               | Max                                                                               | Max                                                                               | Max                                                                               | None                                                                              | None                                                                              | None                                                                              | None                                                                                |
| Act Effect Green (s) |                                                                                   | 30.1                                                                              |                                                                                   | 30.1                                                                              |                                                                                   | 8.8                                                                               |                                                                                   | 8.8                                                                                 |
| Actuated g/C Ratio   |                                                                                   | 0.61                                                                              |                                                                                   | 0.61                                                                              |                                                                                   | 0.18                                                                              |                                                                                   | 0.18                                                                                |
| v/c Ratio            |                                                                                   | 0.29                                                                              |                                                                                   | 0.36                                                                              |                                                                                   | 0.22                                                                              |                                                                                   | 0.63                                                                                |
| Control Delay        |                                                                                   | 6.4                                                                               |                                                                                   | 6.5                                                                               |                                                                                   | 16.4                                                                              |                                                                                   | 12.9                                                                                |
| Queue Delay          |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                                 |
| Total Delay          |                                                                                   | 6.4                                                                               |                                                                                   | 6.5                                                                               |                                                                                   | 16.4                                                                              |                                                                                   | 12.9                                                                                |
| LOS                  |                                                                                   | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   | B                                                                                 |                                                                                   | B                                                                                   |
| Approach Delay       |                                                                                   | 6.4                                                                               |                                                                                   | 6.5                                                                               |                                                                                   | 16.4                                                                              |                                                                                   | 12.9                                                                                |
| Approach LOS         |                                                                                   | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   | B                                                                                 |                                                                                   | B                                                                                   |

### Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 49

Natural Cycle: 40

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 9.1

Intersection Capacity Utilization 62.2%

Analysis Period (min) 15

Intersection LOS: A

ICU Level of Service B

### Splits and Phases: 24: Osborn Ave/Osborn St & Court St

|                                                                                        |                                                                                        |
|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
|  02 |  04 |
| 25 s                                                                                   | 35 s                                                                                   |
|  06 |  08 |
| 25 s                                                                                   | 35 s                                                                                   |

---

## Project: Riverhead BOA - Roundabout Analysis

Scheme name: Saturday Scenario 1 (Improved Roundabout w/ One Way Peconic)

---

### Control Data

| Option         | Setting          | Option       | Setting               |
|----------------|------------------|--------------|-----------------------|
| Capacity Model | Rodel-Win1       | Mode         | Mode2 - Full Geometry |
| Queue Model    | Rodel-Win1       | Delay Model  | Rodel-Win1            |
| Flows          | Peak Hour Factor | Time Slice   | 7.5 minutes           |
| Delay          | Queuing          | Light / Dark | Light                 |

### Geometry Data for Empirical Model

| Leg | Approach Geometry |         |   |        |    |
|-----|-------------------|---------|---|--------|----|
|     | Leg Name          | Bearing | G | V (ft) | nv |
| 1   | Peconic           | 0       | 0 | 12.00  | 1  |
| 2   | CR 94             | 90      | 0 | 12.00  | 1  |
| 3   | CR 63             | 180     | 0 | 12.00  | 1  |
| 4   | CR 104            | 220     | 0 | 12.00  | 1  |
| 5   | NYS 24            | 275     | 0 | 12.00  | 1  |

| Leg | Entry Geometry |    |         |        |       | Circ Geom |        |    |
|-----|----------------|----|---------|--------|-------|-----------|--------|----|
|     | E (ft)         | ne | L' (ft) | R (ft) | ?     | D (ft)    | C (ft) | nc |
| 1   | 20.00          | 2  | 125.00  | 60.00  | 25.00 | 170.00    | 28.50  | 2  |
| 2   | 20.00          | 2  | 125.00  | 60.00  | 25.00 | 170.00    | 28.50  | 2  |
| 3   | 14.20          | 1  | 75.00   | 60.00  | 25.00 | 220.00    | 28.50  | 2  |
| 4   | 20.00          | 2  | 100.00  | 60.00  | 25.00 | 170.00    | 28.50  | 2  |
| 5   | 20.00          | 2  | 125.00  | 60.00  | 25.00 | 220.00    | 28.50  | 2  |

| Leg | Exit Geometry |     |         |     |
|-----|---------------|-----|---------|-----|
|     | Ex (ft)       | nex | Vx (ft) | nvx |
| 1   | 15.00         | 1   | 12.00   | 1   |
| 2   | 24.00         | 2   | 12.00   | 1   |
| 3   | 15.00         | 1   | 12.00   | 1   |
| 4   | 15.00         | 1   | 12.00   | 1   |
| 5   | 24.00         | 2   | 12.00   | 1   |

| Leg | Entry Capacity Modifiers |            |                |
|-----|--------------------------|------------|----------------|
|     | → Cap (v/h)              | Xwalk Fact | Conf Level (%) |
| 1   | 0                        | 1.000      | 50             |
| 2   | 0                        | 1.000      | 50             |
| 3   | 0                        | 1.000      | 50             |
| 4   | 0                        | 1.000      | 50             |
| 5   | 0                        | 1.000      | 50             |

## Flow Modifiers and Flow Data

| Leg | Leg Name | Flow Modifiers |        |
|-----|----------|----------------|--------|
|     |          | %Truck         | Factor |
| 1   | Peconic  | 2.0            | 1.00   |
| 2   | CR 94    | 2.0            | 1.00   |
| 3   | CR 63    | 2.0            | 1.00   |
| 4   | CR 104   | 2.0            | 1.00   |
| 5   | NYS 24   | 2.0            | 1.00   |

| Leg | Arrival Turning Flows (veh/hr) |        |        |        |        |        |
|-----|--------------------------------|--------|--------|--------|--------|--------|
|     | U-Turn                         | Exit-4 | Exit-3 | Exit-2 | Exit-1 | Bypass |
| 1   | 0                              | 0      | 0      | 0      | 0      | 0      |
| 2   | 4                              | 331    | 341    | 393    | 138    | 0      |
| 3   | 5                              | 58     | 179    | 88     | 39     | 0      |
| 4   | 3                              | 87     | 107    | 186    | 39     | 0      |
| 5   | 6                              | 102    | 160    | 250    | 316    | 0      |

| Leg | Arrival Volume Ratios |        |        | Arrival Volume Times (min) |       |       | PHF  |
|-----|-----------------------|--------|--------|----------------------------|-------|-------|------|
|     | Ratio1                | Ratio2 | Ratio3 | Time1                      | Time2 | Time3 |      |
| 1   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |
| 2   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |
| 3   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |
| 4   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |
| 5   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |

## Model Results

### Global performance

| Leg | Leg Name | Global Performance |         |         |          |       |
|-----|----------|--------------------|---------|---------|----------|-------|
|     |          | Parameter          | Units   | Entries | Bypasses | Total |
| 1   | Peconic  | Arrive Flows       | veh/hr  | 2832    |          | 2832  |
| 2   | CR 94    | Capacity           | veh/hr  | 4635    |          | 4635  |
| 3   | CR 63    | Average Delay      | sec/veh | 14.76   |          | 14.76 |
| 4   | CR 104   | L.O.S. (Signal)    | A – F   | B       |          | B     |
| 5   | NYS 24   | L.O.S. (Unsig)     | A – F   | B       |          | B     |

### Entry Flow and Capacity (60min)

| Leg | Bypass Type | Flow Rate (veh/hr) |        | Opp Rate (veh/hr) |        | Capacity (veh/hr) |        | Ave VCR |        |
|-----|-------------|--------------------|--------|-------------------|--------|-------------------|--------|---------|--------|
|     |             | Entry              | Bypass | Entry             | Bypass | Entry             | Bypass | Entry   | Bypass |
| 1   | None        | 0                  |        | 0                 |        | 0                 |        | 0.000   |        |
| 2   | None        | 1207               |        | 363               |        | 1488              |        | 0.845   |        |
| 3   | None        | 369                |        | 1178              |        | 872               |        | 0.430   |        |
| 4   | None        | 422                |        | 1010              |        | 1072              |        | 0.401   |        |
| 5   | None        | 834                |        | 959               |        | 1203              |        | 0.716   |        |

### Entry Queues and Delays (60min)

| Leg | Ave Del (sec/veh) |        |      | Max Del (sec/veh) |        | 95% Queue |        | LOS A-F |     |     |
|-----|-------------------|--------|------|-------------------|--------|-----------|--------|---------|-----|-----|
|     | Entry             | Bypass | Leg  | Entry             | Bypass | Entry     | Bypass | Entry   | Byp | Leg |
| 1   | 0.0               |        | 0.0  | 0.0               |        | 0.0       |        | A       |     | A   |
| 2   | 19.3              |        | 19.3 | 34.8              |        | 21.5      |        | C       |     | C   |
| 3   | 7.1               |        | 7.1  | 9.6               |        | 2.7       |        | A       |     | A   |
| 4   | 8.2               |        | 8.2  | 11.2              |        | 3.6       |        | A       |     | A   |
| 5   | 14.8              |        | 14.8 | 24.4              |        | 12.6      |        | B       |     | B   |



### Entry Slope and Intercept (60min)

| Leg | Bypass Type | Y Intercept (vehs/hr) |        | Slope (tangent) |        | X Intercept (vehs/hr) |        |
|-----|-------------|-----------------------|--------|-----------------|--------|-----------------------|--------|
|     |             | Entry                 | Bypass | Entry           | Bypass | Entry                 | Bypass |
| 1   | None        | 0                     |        | 0.0000          |        | 0                     |        |
| 2   | None        | 1710                  |        | 0.6122          |        | 2794                  |        |
| 3   | None        | 1285                  |        | 0.3508          |        | 3665                  |        |
| 4   | None        | 1686                  |        | 0.6074          |        | 2775                  |        |
| 5   | None        | 1710                  |        | 0.5296          |        | 3229                  |        |

### Entry Flow and Capacity (Peak 7.5min)

| Leg | Bypass Type | Flow Rate (veh/hr) |        | Opp Rate (veh/hr) |        | Capacity (veh/hr) |        | Ave VCR |        |
|-----|-------------|--------------------|--------|-------------------|--------|-------------------|--------|---------|--------|
|     |             | Entry              | Bypass | Entry             | Bypass | Entry             | Bypass | Entry   | Bypass |
| 1   | None        | 0                  |        | 0                 |        | 0                 |        | 1.0000  |        |
| 2   | None        | 1341               |        | 399               |        | 1466              |        | 0.9555  |        |
| 3   | None        | 410                |        | 1286              |        | 834               |        | 0.4990  |        |
| 4   | None        | 469                |        | 1108              |        | 1012              |        | 0.4715  |        |
| 5   | None        | 927                |        | 1057              |        | 1151              |        | 0.8328  |        |

### Entry Queues and Delays (Peak 7.5min)

| Leg | Ave Del (sec/veh) |        |      | Max Del (sec/veh) |        | 95% Queue |        | LOS A-F |     |     |
|-----|-------------------|--------|------|-------------------|--------|-----------|--------|---------|-----|-----|
|     | Entry             | Bypass | Leg  | Entry             | Bypass | Entry     | Bypass | Entry   | Byp | Leg |
| 1   | 0.0               |        | 0.0  | 0.0               |        | 0.0       |        | A       |     | A   |
| 2   | 25.0              |        | 25.0 | 34.8              |        | 21.5      |        | C       |     | C   |
| 3   | 7.6               |        | 7.6  | 9.6               |        | 2.7       |        | A       |     | A   |
| 4   | 8.9               |        | 8.9  | 11.2              |        | 3.6       |        | A       |     | A   |
| 5   | 18.2              |        | 18.2 | 24.4              |        | 12.6      |        | C       |     | C   |

### Entry Slope and Intercept (Peak 7.5min)

| Leg | Bypass Type | Y Intercept (vehs/hr) |        | Slope (tangent) |        | X Intercept (vehs/hr) |        |
|-----|-------------|-----------------------|--------|-----------------|--------|-----------------------|--------|
|     |             | Entry                 | Bypass | Entry           | Bypass | Entry                 | Bypass |
| 1   | None        | 0                     |        | 0.0000          |        | 0                     |        |
| 2   | None        | 1710                  |        | 0.6122          |        | 2794                  |        |
| 3   | None        | 1285                  |        | 0.3508          |        | 3665                  |        |
| 4   | None        | 1686                  |        | 0.6074          |        | 2775                  |        |
| 5   | None        | 1710                  |        | 0.5296          |        | 3229                  |        |

---

## Scheme Notes

(none)

---

## **Base Condition Mitigation 2 - Capacity Analyses**

# Timings

## 5: Nugent St/Court St & W Main St

Timing Plan: PM Peak Hour

|                      |  |  |  |  |  |  |   |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |                                                                                     |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |  |
| Volume (vph)         | 60                                                                                | 276                                                                               | 503                                                                               | 436                                                                               | 530                                                                               | 396                                                                               | 167                                                                                 | 72                                                                                  | 2                                                                                   | 668                                                                                 |                                                                                     |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | pm+pt                                                                             | NA                                                                                | pm+pt                                                                             | NA                                                                                  | Free                                                                                | Perm                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases     |                                                                                   | 2                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                 | 7                                                                                 | 4                                                                                   |                                                                                     |                                                                                     | 8                                                                                   |                                                                                     |
| Permitted Phases     | 2                                                                                 |                                                                                   | 2                                                                                 | 6                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                   | Free                                                                                | 8                                                                                   |                                                                                     |                                                                                     |
| Detector Phase       | 2                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 | 7                                                                                 | 4                                                                                   |                                                                                     | 8                                                                                   | 8                                                                                   |                                                                                     |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 4.0                                                                               | 15.0                                                                              | 3.0                                                                               | 5.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Minimum Split (s)    | 21.5                                                                              | 21.5                                                                              | 21.5                                                                              | 8.0                                                                               | 21.5                                                                              | 9.0                                                                               | 12.0                                                                                |                                                                                     | 11.8                                                                                | 11.8                                                                                |                                                                                     |
| Total Split (s)      | 26.0                                                                              | 26.0                                                                              | 26.0                                                                              | 15.0                                                                              | 41.0                                                                              | 22.0                                                                              | 49.0                                                                                |                                                                                     | 27.0                                                                                | 27.0                                                                                |                                                                                     |
| Total Split (%)      | 28.9%                                                                             | 28.9%                                                                             | 28.9%                                                                             | 16.7%                                                                             | 45.6%                                                                             | 24.4%                                                                             | 54.4%                                                                               |                                                                                     | 30.0%                                                                               | 30.0%                                                                               |                                                                                     |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.0                                                                               | 3.5                                                                                 |                                                                                     | 3.5                                                                                 | 3.5                                                                                 |                                                                                     |
| All-Red Time (s)     | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 0.5                                                                               | 3.0                                                                               | 2.0                                                                               | 2.3                                                                                 |                                                                                     | 2.3                                                                                 | 2.3                                                                                 |                                                                                     |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Total Lost Time (s)  | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 4.0                                                                               | 6.5                                                                               | 5.0                                                                               | 5.8                                                                                 |                                                                                     |                                                                                     | 5.8                                                                                 |                                                                                     |
| Lead/Lag             | Lag                                                                               | Lag                                                                               | Lag                                                                               | Lead                                                                              |                                                                                   | Lead                                                                              |                                                                                     |                                                                                     | Lag                                                                                 | Lag                                                                                 |                                                                                     |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                               |                                                                                     |                                                                                     | Yes                                                                                 | Yes                                                                                 |                                                                                     |
| Recall Mode          | Max                                                                               | Max                                                                               | Max                                                                               | None                                                                              | None                                                                              | None                                                                              | None                                                                                |                                                                                     | None                                                                                | None                                                                                |                                                                                     |
| Act Effct Green (s)  | 19.5                                                                              | 19.5                                                                              | 19.5                                                                              | 37.0                                                                              | 34.5                                                                              | 43.7                                                                              | 42.9                                                                                | 89.7                                                                                |                                                                                     | 20.9                                                                                |                                                                                     |
| Actuated g/C Ratio   | 0.22                                                                              | 0.22                                                                              | 0.22                                                                              | 0.41                                                                              | 0.38                                                                              | 0.49                                                                              | 0.48                                                                                | 1.00                                                                                |                                                                                     | 0.23                                                                                |                                                                                     |
| v/c Ratio            | 0.42                                                                              | 0.75                                                                              | 0.79                                                                              | 1.20                                                                              | 0.77                                                                              | 1.09                                                                              | 0.22                                                                                | 0.05                                                                                |                                                                                     | 0.89                                                                                |                                                                                     |
| Control Delay        | 40.4                                                                              | 46.6                                                                              | 19.0                                                                              | 135.4                                                                             | 32.9                                                                              | 97.0                                                                              | 14.5                                                                                | 0.1                                                                                 |                                                                                     | 46.3                                                                                |                                                                                     |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 2.1                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 4.2                                                                                 |                                                                                     |
| Total Delay          | 40.4                                                                              | 46.6                                                                              | 19.0                                                                              | 135.4                                                                             | 35.1                                                                              | 97.0                                                                              | 14.5                                                                                | 0.1                                                                                 |                                                                                     | 50.5                                                                                |                                                                                     |
| LOS                  | D                                                                                 | D                                                                                 | B                                                                                 | F                                                                                 | D                                                                                 | F                                                                                 | B                                                                                   | A                                                                                   |                                                                                     | D                                                                                   |                                                                                     |
| Approach Delay       |                                                                                   | 29.6                                                                              |                                                                                   |                                                                                   | 80.2                                                                              |                                                                                   | 64.3                                                                                |                                                                                     |                                                                                     | 50.5                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | C                                                                                 |                                                                                   |                                                                                   | F                                                                                 |                                                                                   | E                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |

### Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 89.7

Natural Cycle: 100

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.20

Intersection Signal Delay: 56.5

Intersection Capacity Utilization 104.8%

Analysis Period (min) 15

Intersection LOS: E

ICU Level of Service G

### Splits and Phases: 5: Nugent St/Court St & W Main St

|                                                                                     |                                                                                     |                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |    |
| 15 s                                                                                | 26 s                                                                                | 49 s                                                                                  |
|  |  |  |
| 41 s                                                                                | 27 s                                                                                | 27 s                                                                                  |

# Timings

6: W Main St & Osborn Ave

Timing Plan: PM Peak Hour

|                      | EBL   | EBT   | WBT   | SBL   |
|----------------------|-------|-------|-------|-------|
| Lane Group           | EBL   | EBT   | WBT   | SBL   |
| Lane Configurations  |       | ↶     | ↷     | ↶     |
| Volume (vph)         | 7     | 346   | 976   | 61    |
| Turn Type            | Perm  | NA    | NA    | NA    |
| Protected Phases     |       | 4     | 8     | 6     |
| Permitted Phases     | 4     |       |       |       |
| Detector Phase       | 4     | 4     | 8     | 6     |
| Switch Phase         |       |       |       |       |
| Minimum Initial (s)  | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)    | 11.3  | 11.3  | 11.3  | 11.2  |
| Total Split (s)      | 60.0  | 60.0  | 60.0  | 25.0  |
| Total Split (%)      | 70.6% | 70.6% | 70.6% | 29.4% |
| Yellow Time (s)      | 3.5   | 3.5   | 3.5   | 3.5   |
| All-Red Time (s)     | 2.8   | 2.8   | 2.8   | 2.7   |
| Lost Time Adjust (s) |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  |       | 6.3   | 6.3   | 6.2   |
| Lead/Lag             |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |
| Recall Mode          | Max   | Max   | Max   | None  |
| Act Effct Green (s)  |       | 58.0  | 58.0  | 8.6   |
| Actuated g/C Ratio   |       | 0.77  | 0.77  | 0.11  |
| v/c Ratio            |       | 0.30  | 0.91  | 0.41  |
| Control Delay        |       | 4.6   | 22.2  | 33.2  |
| Queue Delay          |       | 0.0   | 0.0   | 0.0   |
| Total Delay          |       | 4.6   | 22.2  | 33.2  |
| LOS                  |       | A     | C     | C     |
| Approach Delay       |       | 4.6   | 22.2  | 33.2  |
| Approach LOS         |       | A     | C     | C     |

## Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 75.5

Natural Cycle: 80

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 18.8

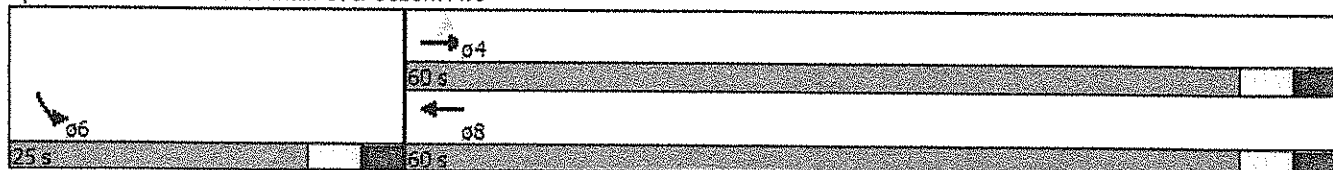
Intersection Capacity Utilization 70.2%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service C

Splits and Phases: 6: W Main St & Osborn Ave



# Timings

## 7: W Main St & Griffing Ave

Timing Plan: PM Peak Hour

|                      |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBT                                                                               | SBL                                                                               |
| Lane Configurations  |                                                                                   |  |  |  |
| Volume (vph)         | 32                                                                                | 392                                                                               | 939                                                                               | 26                                                                                |
| Turn Type            | Perm                                                                              | NA                                                                                | NA                                                                                | NA                                                                                |
| Protected Phases     |                                                                                   | 2                                                                                 | 6                                                                                 | 4                                                                                 |
| Permitted Phases     | 2                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Detector Phase       | 2                                                                                 | 2                                                                                 | 6                                                                                 | 4                                                                                 |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Minimum Initial (s)  | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 5.0                                                                               |
| Minimum Split (s)    | 15.8                                                                              | 15.8                                                                              | 15.8                                                                              | 10.5                                                                              |
| Total Split (s)      | 44.5                                                                              | 44.5                                                                              | 44.5                                                                              | 10.5                                                                              |
| Total Split (%)      | 80.9%                                                                             | 80.9%                                                                             | 80.9%                                                                             | 19.1%                                                                             |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               |
| All-Red Time (s)     | 2.3                                                                               | 2.3                                                                               | 2.3                                                                               | 2.0                                                                               |
| Lost Time Adjust (s) |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Lost Time (s)  |                                                                                   | 5.8                                                                               | 5.8                                                                               | 5.5                                                                               |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Recall Mode          | Max                                                                               | Max                                                                               | Max                                                                               | None                                                                              |
| Act Effct Green (s)  |                                                                                   | 42.6                                                                              | 42.6                                                                              | 5.0                                                                               |
| Actuated g/C Ratio   |                                                                                   | 0.76                                                                              | 0.76                                                                              | 0.09                                                                              |
| v/c Ratio            |                                                                                   | 0.37                                                                              | 0.76                                                                              | 0.45                                                                              |
| Control Delay        |                                                                                   | 4.1                                                                               | 10.2                                                                              | 17.7                                                                              |
| Queue Delay          |                                                                                   | 0.0                                                                               | 2.6                                                                               | 0.0                                                                               |
| Total Delay          |                                                                                   | 4.1                                                                               | 12.8                                                                              | 17.7                                                                              |
| LOS                  |                                                                                   | A                                                                                 | B                                                                                 | B                                                                                 |
| Approach Delay       |                                                                                   | 4.1                                                                               | 12.8                                                                              | 17.7                                                                              |
| Approach LOS         |                                                                                   | A                                                                                 | B                                                                                 | B                                                                                 |

### Intersection Summary

Cycle Length: 55

Actuated Cycle Length: 55.9

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 10.7

Intersection Capacity Utilization 71.3%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service C

### Splits and Phases: 7: W Main St & Griffing Ave

|                                                                                     |    |  |  |  |  |                                                                                       |    |
|-------------------------------------------------------------------------------------|----|--|--|--|--|---------------------------------------------------------------------------------------|----|
|  | ø2 |  |  |  |  |  | ø4 |
| 44.5 s                                                                              |    |  |  |  |  | 10.5 s                                                                                |    |
|  | ø6 |  |  |  |  |                                                                                       |    |
| 44.5 s                                                                              |    |  |  |  |  |                                                                                       |    |



# Timings

## 8: Peconic Ave & W Main St

Timing Plan: PM Peak Hour

| Lane Group           | EBT   | WBT   | NBL   | NBR    | ø3   | ø6    | ø8   | ø9   | ø13  |
|----------------------|-------|-------|-------|--------|------|-------|------|------|------|
| Lane Configurations  | ↑↑    | ↑↑    | ↙     | ↘      |      |       |      |      |      |
| Volume (vph)         | 367   | 841   | 207   | 645    |      |       |      |      |      |
| Turn Type            | NA    | NA    | NA    | custom |      |       |      |      |      |
| Protected Phases     | 2     | 6 3   | 4     | 3 13   | 3    | 6     | 8    | 9    | 13   |
| Permitted Phases     |       |       |       | 4 3    |      |       |      |      |      |
| Detector Phase       | 2     | 6 3   | 4     | 3 13   |      |       |      |      |      |
| Switch Phase         |       |       |       |        |      |       |      |      |      |
| Minimum Initial (s)  | 10.0  |       | 10.0  |        | 4.0  | 10.0  | 10.0 | 22.0 | 22.0 |
| Minimum Split (s)    | 15.9  |       | 15.9  |        | 9.9  | 28.0  | 15.0 | 25.0 | 25.0 |
| Total Split (s)      | 56.0  |       | 41.0  |        | 55.0 | 56.0  | 96.0 | 28.0 | 28.0 |
| Total Split (%)      | 31.1% |       | 22.8% |        | 31%  | 31%   | 53%  | 16%  | 16%  |
| Yellow Time (s)      | 3.5   |       | 3.5   |        | 3.5  | 3.5   | 3.0  | 2.0  | 2.0  |
| All-Red Time (s)     | 2.4   |       | 2.4   |        | 2.4  | 2.4   | 2.0  | 1.0  | 1.0  |
| Lost Time Adjust (s) | 0.0   |       | 0.0   |        |      |       |      |      |      |
| Total Lost Time (s)  | 5.9   |       | 5.9   |        |      |       |      |      |      |
| Lead/Lag             |       |       | Lead  |        | Lag  |       |      |      |      |
| Lead-Lag Optimize?   |       |       |       |        |      |       |      |      |      |
| Recall Mode          | C-Min |       | None  |        | None | C-Min | None | None | None |
| Act Effct Green (s)  | 56.6  | 108.6 | 28.7  | 111.6  |      |       |      |      |      |
| Actuated g/C Ratio   | 0.31  | 0.60  | 0.16  | 0.62   |      |       |      |      |      |
| v/c Ratio            | 0.36  | 0.44  | 0.83  | 0.72   |      |       |      |      |      |
| Control Delay        | 49.8  | 1.8   | 98.0  | 28.2   |      |       |      |      |      |
| Queue Delay          | 1.7   | 0.9   | 0.0   | 0.7    |      |       |      |      |      |
| Total Delay          | 51.5  | 2.6   | 98.0  | 28.9   |      |       |      |      |      |
| LOS                  | D     | A     | F     | C      |      |       |      |      |      |
| Approach Delay       | 51.5  | 2.6   | 45.7  |        |      |       |      |      |      |
| Approach LOS         | D     | A     | D     |        |      |       |      |      |      |

### Intersection Summary

Cycle Length: 180  
 Actuated Cycle Length: 180  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.83  
 Intersection Signal Delay: 29.9  
 Intersection Capacity Utilization 59.9%  
 Analysis Period (min) 15

Intersection LOS: C  
 ICU Level of Service B

### Splits and Phases: 8: Peconic Ave & W Main St

|                           |                       |                        |                    |
|---------------------------|-----------------------|------------------------|--------------------|
| #8 #9<br>→ ø2 (R)<br>56 s | #8 #9<br>↙ ø4<br>41 s | #8 #9<br>↘ ø3<br>55 s  | #9<br>↘ ø9<br>28 s |
| #8 #9<br>← ø6 (R)<br>56 s | #9<br>→ ø8<br>96 s    | #8 #9<br>↘ ø13<br>28 s |                    |

# Timings

9: W Main St/E Main St & Roanoke Ave

Timing Plan: PM Peak Hour

| Lane Group           | EBL    | EBT   | WBT   | SBR    | ø2    | ø3   | ø4   | ø8   | ø9   | ø13  |
|----------------------|--------|-------|-------|--------|-------|------|------|------|------|------|
| Lane Configurations  |        |       |       |        |       |      |      |      |      |      |
| Volume (vph)         | 345    | 658   | 700   | 131    |       |      |      |      |      |      |
| Turn Type            | custom | NA    | NA    | custom |       |      |      |      |      |      |
| Protected Phases     | 4 13   | 8 2   | 6     | 3 9    | 2     | 3    | 4    | 8    | 9    | 13   |
| Permitted Phases     | 8      |       |       |        |       |      |      |      |      |      |
| Detector Phase       | 4 13   | 8 2   | 6     | 3 9    |       |      |      |      |      |      |
| Switch Phase         |        |       |       |        |       |      |      |      |      |      |
| Minimum Initial (s)  |        |       | 10.0  |        | 10.0  | 4.0  | 10.0 | 10.0 | 22.0 | 22.0 |
| Minimum Split (s)    |        |       | 28.0  |        | 15.9  | 9.9  | 15.9 | 15.0 | 25.0 | 25.0 |
| Total Split (s)      |        |       | 56.0  |        | 56.0  | 55.0 | 41.0 | 96.0 | 28.0 | 28.0 |
| Total Split (%)      |        |       | 31.1% |        | 31%   | 31%  | 23%  | 53%  | 16%  | 16%  |
| Yellow Time (s)      |        |       | 3.5   |        | 3.5   | 3.5  | 3.5  | 3.0  | 2.0  | 2.0  |
| All-Red Time (s)     |        |       | 2.4   |        | 2.4   | 2.4  | 2.4  | 2.0  | 1.0  | 1.0  |
| Lost Time Adjust (s) |        |       | 0.0   |        |       |      |      |      |      |      |
| Total Lost Time (s)  |        |       | 5.9   |        |       |      |      |      |      |      |
| Lead/Lag             |        |       |       |        |       | Lag  | Lead |      |      |      |
| Lead-Lag Optimize?   |        |       |       |        |       |      |      |      |      |      |
| Recall Mode          |        |       | C-Min |        | C-Min | None | None | None | None | None |
| Act Effct Green (s)  | 105.7  | 150.0 | 56.6  | 77.0   |       |      |      |      |      |      |
| Actuated g/C Ratio   | 0.59   | 0.83  | 0.31  | 0.43   |       |      |      |      |      |      |
| v/c Ratio            | 0.52   | 0.44  | 0.68  | 0.21   |       |      |      |      |      |      |
| Control Delay        | 7.1    | 5.3   | 58.2  | 33.5   |       |      |      |      |      |      |
| Queue Delay          | 2.2    | 1.0   | 0.0   | 0.0    |       |      |      |      |      |      |
| Total Delay          | 9.2    | 6.3   | 58.2  | 33.5   |       |      |      |      |      |      |
| LOS                  | A      | A     | E     | C      |       |      |      |      |      |      |
| Approach Delay       |        | 7.3   | 58.2  |        |       |      |      |      |      |      |
| Approach LOS         |        | A     | E     |        |       |      |      |      |      |      |

## Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 29.1

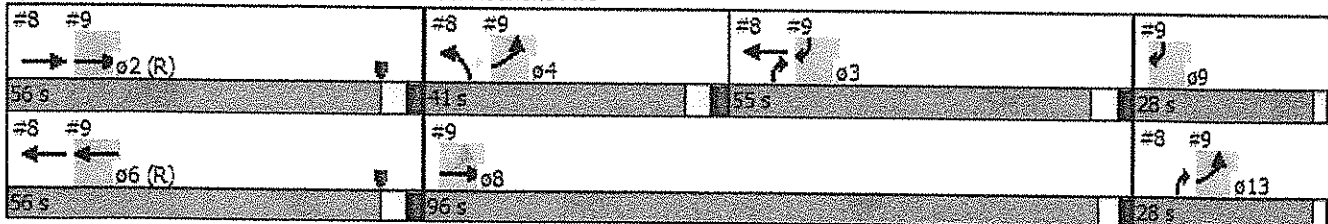
Intersection Capacity Utilization 49.5%

Analysis Period (min) 15

Intersection LOS: C

ICU Level of Service A

## Splits and Phases: 9: W Main St/E Main St & Roanoke Ave



# HCM Unsignalized Intersection Capacity Analysis

10: E Main St & East Ave

Timing Plan: PM Peak Hour

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR                                                                               | SBL                                                                               | SBR                                                                               |
| Lane Configurations               |                                                                                   |  |  |                                                                                   |  |                                                                                   |
| Volume (veh/h)                    | 88                                                                                | 538                                                                               | 663                                                                               | 51                                                                                | 56                                                                                | 75                                                                                |
| Sign Control                      |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   | Stop                                                                              |                                                                                   |
| Grade                             |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Hourly flow rate (vph)            | 96                                                                                | 585                                                                               | 721                                                                               | 55                                                                                | 61                                                                                | 82                                                                                |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   | None                                                                              | None                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   | 763                                                                               | 275                                                                               |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             | 0.82                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.88                                                                              | 0.82                                                                              |
| vC, conflicting volume            | 776                                                                               |                                                                                   |                                                                                   |                                                                                   | 1524                                                                              | 748                                                                               |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 614                                                                               |                                                                                   |                                                                                   |                                                                                   | 1191                                                                              | 580                                                                               |
| tC, single (s)                    | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   | 6.4                                                                               | 6.2                                                                               |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   | 3.5                                                                               | 3.3                                                                               |
| p0 queue free %                   | 88                                                                                |                                                                                   |                                                                                   |                                                                                   | 62                                                                                | 81                                                                                |
| cM capacity (veh/h)               | 797                                                                               |                                                                                   |                                                                                   |                                                                                   | 162                                                                               | 423                                                                               |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 680                                                                               | 776                                                                               | 142                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 96                                                                                | 0                                                                                 | 61                                                                                |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 55                                                                                | 82                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 797                                                                               | 1700                                                                              | 251                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.12                                                                              | 0.46                                                                              | 0.57                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 10                                                                                | 0                                                                                 | 80                                                                                |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 3.0                                                                               | 0.0                                                                               | 36.7                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 |                                                                                   | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 3.0                                                                               | 0.0                                                                               | 36.7                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   | 4.6                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   | 88.9%                                                                             |                                                                                   | ICU Level of Service                                                              | E                                                                                 |                                                                                   |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

# Timings

## 11: McDermott Ave/Maple Ave & E Main St

Timing Plan: PM Peak Hour

|                      |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | SBL                                                                                | SBT                                                                                 |
| Lane Configurations  |                                                                                   |  |                                                                                   |  |                                                                                   |  |                                                                                    |  |
| Volume (vph)         | 14                                                                                | 587                                                                               | 27                                                                                | 564                                                                               | 141                                                                               | 13                                                                                | 67                                                                                 | 14                                                                                  |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                               | NA                                                                                  |
| Protected Phases     |                                                                                   | 2                                                                                 |                                                                                   | 6                                                                                 |                                                                                   | 4                                                                                 |                                                                                    | 8                                                                                   |
| Permitted Phases     | 2                                                                                 |                                                                                   | 6                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 8                                                                                  |                                                                                     |
| Detector Phase       | 2                                                                                 | 2                                                                                 | 6                                                                                 | 6                                                                                 | 4                                                                                 | 4                                                                                 | 8                                                                                  | 8                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Minimum Initial (s)  | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                | 4.0                                                                                 |
| Minimum Split (s)    | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 9.0                                                                               | 9.0                                                                               | 9.0                                                                                | 9.0                                                                                 |
| Total Split (s)      | 61.0                                                                              | 61.0                                                                              | 61.0                                                                              | 61.0                                                                              | 29.0                                                                              | 29.0                                                                              | 29.0                                                                               | 29.0                                                                                |
| Total Split (%)      | 67.8%                                                                             | 67.8%                                                                             | 67.8%                                                                             | 67.8%                                                                             | 32.2%                                                                             | 32.2%                                                                             | 32.2%                                                                              | 32.2%                                                                               |
| Yellow Time (s)      | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                                | 3.0                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                                | 2.0                                                                                 |
| Lost Time Adjust (s) |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 |
| Total Lost Time (s)  |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                    | 5.0                                                                                 |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Recall Mode          | Max                                                                               | Max                                                                               | Max                                                                               | Max                                                                               | None                                                                              | None                                                                              | None                                                                               | None                                                                                |
| Act Effct Green (s)  |                                                                                   | 56.2                                                                              |                                                                                   | 56.2                                                                              |                                                                                   | 17.4                                                                              |                                                                                    | 17.4                                                                                |
| Actuated g/C Ratio   |                                                                                   | 0.67                                                                              |                                                                                   | 0.67                                                                              |                                                                                   | 0.21                                                                              |                                                                                    | 0.21                                                                                |
| v/c Ratio            |                                                                                   | 0.57                                                                              |                                                                                   | 0.55                                                                              |                                                                                   | 0.75                                                                              |                                                                                    | 0.38                                                                                |
| Control Delay        |                                                                                   | 10.5                                                                              |                                                                                   | 10.2                                                                              |                                                                                   | 44.7                                                                              |                                                                                    | 28.2                                                                                |
| Queue Delay          |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 |
| Total Delay          |                                                                                   | 10.5                                                                              |                                                                                   | 10.2                                                                              |                                                                                   | 44.7                                                                              |                                                                                    | 28.2                                                                                |
| LOS                  |                                                                                   | B                                                                                 |                                                                                   | B                                                                                 |                                                                                   | D                                                                                 |                                                                                    | C                                                                                   |
| Approach Delay       |                                                                                   | 10.5                                                                              |                                                                                   | 10.2                                                                              |                                                                                   | 44.7                                                                              |                                                                                    | 28.2                                                                                |
| Approach LOS         |                                                                                   | B                                                                                 |                                                                                   | B                                                                                 |                                                                                   | D                                                                                 |                                                                                    | C                                                                                   |

### Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 83.6

Natural Cycle: 55

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 16.1

Intersection Capacity Utilization 66.1%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service C

### Splits and Phases: 11: McDermott Ave/Maple Ave & E Main St

|                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |
| 61 s                                                                                | 61 s                                                                                | 29 s                                                                                | 29 s                                                                                |
|  |  |  |  |
| 61 s                                                                                | 61 s                                                                                | 29 s                                                                                | 29 s                                                                                |

# HCM Unsignalized Intersection Capacity Analysis 12: Parking Lot/Union Ave & E Main St

Timing Plan: PM Peak Hour

|                        |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement               | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations    |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                     |  |                                                                                     |                                                                                     |  |                                                                                     |
| Volume (veh/h)         | 22                                                                                | 660                                                                               | 23                                                                                | 23                                                                                | 611                                                                               | 23                                                                                | 9                                                                                   | 3                                                                                   | 22                                                                                  | 15                                                                                  | 2                                                                                   | 9                                                                                   |
| Sign Control           |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |                                                                                     | Stop                                                                                |                                                                                     |                                                                                     | Stop                                                                                |                                                                                     |
| Grade                  |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor       | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Hourly flow rate (vph) | 24                                                                                | 717                                                                               | 25                                                                                | 25                                                                                | 664                                                                               | 25                                                                                | 10                                                                                  | 3                                                                                   | 24                                                                                  | 16                                                                                  | 2                                                                                   | 10                                                                                  |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type            |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median storage (veh)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (ft)   |                                                                                   | 285                                                                               |                                                                                   |                                                                                   | 373                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked  | 0.70                                                                              |                                                                                   |                                                                                   | 0.79                                                                              |                                                                                   |                                                                                   | 0.81                                                                                | 0.81                                                                                | 0.79                                                                                | 0.81                                                                                | 0.81                                                                                | 0.70                                                                                |
| vC, conflicting volume | 689                                                                               |                                                                                   |                                                                                   | 742                                                                               |                                                                                   |                                                                                   | 1515                                                                                | 1517                                                                                | 730                                                                                 | 1530                                                                                | 1517                                                                                | 677                                                                                 |
| vC1, stage 1 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol     | 347                                                                               |                                                                                   |                                                                                   | 546                                                                               |                                                                                   |                                                                                   | 944                                                                                 | 946                                                                                 | 530                                                                                 | 962                                                                                 | 946                                                                                 | 330                                                                                 |
| tC, single (s)         | 4.1                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |                                                                                   | 7.1                                                                                 | 6.5                                                                                 | 6.2                                                                                 | 7.1                                                                                 | 6.5                                                                                 | 6.2                                                                                 |
| tC, 2 stage (s)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                 | 2.2                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |                                                                                   | 3.5                                                                                 | 4.0                                                                                 | 3.3                                                                                 | 3.5                                                                                 | 4.0                                                                                 | 3.3                                                                                 |
| p0 queue free %        | 97                                                                                |                                                                                   |                                                                                   | 97                                                                                |                                                                                   |                                                                                   | 95                                                                                  | 98                                                                                  | 95                                                                                  | 90                                                                                  | 99                                                                                  | 98                                                                                  |
| cM capacity (veh/h)    | 860                                                                               |                                                                                   |                                                                                   | 821                                                                               |                                                                                   |                                                                                   | 183                                                                                 | 200                                                                                 | 439                                                                                 | 171                                                                                 | 200                                                                                 | 504                                                                                 |
| Direction, Lane #      | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total           | 766                                                                               | 714                                                                               | 37                                                                                | 28                                                                                |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left            | 24                                                                                | 25                                                                                | 10                                                                                | 16                                                                                |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right           | 25                                                                                | 25                                                                                | 24                                                                                | 10                                                                                |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| cSH                    | 860                                                                               | 821                                                                               | 298                                                                               | 225                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity     | 0.03                                                                              | 0.03                                                                              | 0.12                                                                              | 0.13                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft) | 2                                                                                 | 2                                                                                 | 11                                                                                | 11                                                                                |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)      | 0.7                                                                               | 0.8                                                                               | 18.8                                                                              | 23.3                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS               | A                                                                                 | A                                                                                 | C                                                                                 | C                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)     | 0.7                                                                               | 0.8                                                                               | 18.8                                                                              | 23.3                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS           |                                                                                   |                                                                                   | C                                                                                 | C                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Intersection Summary

|                                   |       |  |  |  |                      |  |  |  |   |  |  |  |
|-----------------------------------|-------|--|--|--|----------------------|--|--|--|---|--|--|--|
| Average Delay                     | 1.6   |  |  |  |                      |  |  |  |   |  |  |  |
| Intersection Capacity Utilization | 55.0% |  |  |  | ICU Level of Service |  |  |  | A |  |  |  |
| Analysis Period (min)             | 15    |  |  |  |                      |  |  |  |   |  |  |  |

# Timings

13: E Main St & Ostrander Ave

Timing Plan: PM Peak Hour

|                      |  |  |  |  |  |  |      |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | SBL                                                                               | SBT                                                                               | ø2   |
| Lane Configurations  |                                                                                   |  |                                                                                   |  |                                                                                   |  |      |
| Volume (vph)         | 40                                                                                | 642                                                                               | 5                                                                                 | 718                                                                               | 93                                                                                | 2                                                                                 |      |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                |      |
| Protected Phases     |                                                                                   | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 6                                                                                 | 2    |
| Permitted Phases     | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 6                                                                                 |                                                                                   |      |
| Detector Phase       | 4                                                                                 | 4                                                                                 | 8                                                                                 | 8                                                                                 | 6                                                                                 | 6                                                                                 |      |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Minimum Initial (s)  | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 4.0                                                                               | 4.0                                                                               | 4.0  |
| Minimum Split (s)    | 21.5                                                                              | 21.5                                                                              | 21.5                                                                              | 21.5                                                                              | 21.5                                                                              | 21.5                                                                              | 21.5 |
| Total Split (s)      | 40.0                                                                              | 40.0                                                                              | 40.0                                                                              | 40.0                                                                              | 21.5                                                                              | 21.5                                                                              | 21.5 |
| Total Split (%)      | 65.0%                                                                             | 65.0%                                                                             | 65.0%                                                                             | 65.0%                                                                             | 35.0%                                                                             | 35.0%                                                                             | 35%  |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5  |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0  |
| Lost Time Adjust (s) |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |      |
| Total Lost Time (s)  |                                                                                   | 5.5                                                                               |                                                                                   | 5.5                                                                               |                                                                                   | 5.5                                                                               |      |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Recall Mode          | Max                                                                               | Max                                                                               | Max                                                                               | Max                                                                               | None                                                                              | None                                                                              | None |
| Act Effect Green (s) |                                                                                   | 38.6                                                                              |                                                                                   | 38.6                                                                              |                                                                                   | 10.7                                                                              |      |
| Actuated g/C Ratio   |                                                                                   | 0.64                                                                              |                                                                                   | 0.64                                                                              |                                                                                   | 0.18                                                                              |      |
| v/c Ratio            |                                                                                   | 0.69                                                                              |                                                                                   | 0.75                                                                              |                                                                                   | 0.61                                                                              |      |
| Control Delay        |                                                                                   | 13.1                                                                              |                                                                                   | 14.8                                                                              |                                                                                   | 23.6                                                                              |      |
| Queue Delay          |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |      |
| Total Delay          |                                                                                   | 13.1                                                                              |                                                                                   | 14.8                                                                              |                                                                                   | 23.6                                                                              |      |
| LOS                  |                                                                                   | B                                                                                 |                                                                                   | B                                                                                 |                                                                                   | C                                                                                 |      |
| Approach Delay       |                                                                                   | 13.1                                                                              |                                                                                   | 14.8                                                                              |                                                                                   | 23.6                                                                              |      |
| Approach LOS         |                                                                                   | B                                                                                 |                                                                                   | B                                                                                 |                                                                                   | C                                                                                 |      |

## Intersection Summary

Cycle Length: 61.5

Actuated Cycle Length: 60.4

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 15.0

Intersection LOS: B

Intersection Capacity Utilization 80.8%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 13: E Main St & Ostrander Ave

|                                                                                     |    |                                                                                     |    |
|-------------------------------------------------------------------------------------|----|-------------------------------------------------------------------------------------|----|
|  | ø2 |  | ø4 |
| 21.5 s                                                                              |    | 40 s                                                                                |    |
|  | ø6 |  | ø8 |
| 21.5 s                                                                              |    | 40 s                                                                                |    |



# HCM Unsignalized Intersection Capacity Analysis 14: E Main St & Riverside Dr

Timing Plan: PM Peak Hour

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement               | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations    | XX                                                                                |                                                                                   | ↑                                                                                 |                                                                                   |                                                                                   | ↑                                                                                 |
| Volume (veh/h)         | 71                                                                                | 169                                                                               | 534                                                                               | 142                                                                               | 0                                                                                 | 630                                                                               |
| Sign Control           | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |
| Grade                  | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor       | 0.98                                                                              | 0.90                                                                              | 0.98                                                                              | 0.98                                                                              | 0.98                                                                              | 0.98                                                                              |
| Hourly flow rate (vph) | 72                                                                                | 188                                                                               | 545                                                                               | 145                                                                               | 0                                                                                 | 643                                                                               |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type            |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |
| Median storage (veh)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)   |                                                                                   |                                                                                   | 938                                                                               |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked  | 0.84                                                                              | 0.84                                                                              |                                                                                   |                                                                                   | 0.84                                                                              |                                                                                   |
| vC, conflicting volume | 1260                                                                              | 617                                                                               |                                                                                   |                                                                                   | 690                                                                               |                                                                                   |
| vC1, stage 1 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol     | 1215                                                                              | 452                                                                               |                                                                                   |                                                                                   | 538                                                                               |                                                                                   |
| tC, single (s)         | *6.4                                                                              | *6.2                                                                              |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |
| tC, 2 stage (s)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                 | 3.5                                                                               | 3.3                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |
| p0 queue free %        | 57                                                                                | 63                                                                                |                                                                                   |                                                                                   | 100                                                                               |                                                                                   |
| cM capacity (veh/h)    | 170                                                                               | 514                                                                               |                                                                                   |                                                                                   | 876                                                                               |                                                                                   |
| Direction, Lane #      | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total           | 260                                                                               | 690                                                                               | 643                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left            | 72                                                                                | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right           | 188                                                                               | 145                                                                               | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| cSH                    | 328                                                                               | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity     | 0.79                                                                              | 0.41                                                                              | 0.38                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft) | 163                                                                               | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)      | 47.3                                                                              | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS               | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)     | 47.3                                                                              | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS           | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

## Intersection Summary

|                                   |       |                      |   |
|-----------------------------------|-------|----------------------|---|
| Average Delay                     | 7.7   |                      |   |
| Intersection Capacity Utilization | 57.7% | ICU Level of Service | B |
| Analysis Period (min)             | 15    |                      |   |

\* User Entered Value

# HCM Unsignalized Intersection Capacity Analysis

## 15: E Main St & Fishel Ave

Timing Plan: PM Peak Hour

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |  |                                                                                   |                                                                                   |  |  |                                                                                   |
| Volume (veh/h)                    | 18                                                                                | 10                                                                                | 109                                                                               | 594                                                                               | 620                                                                               | 37                                                                                |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              |
| Hourly flow rate (vph)            | 21                                                                                | 12                                                                                | 130                                                                               | 707                                                                               | 738                                                                               | 44                                                                                |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | None                                                                              | None                                                                              |                                                                                   |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   | 1086                                                                              |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 1727                                                                              | 760                                                                               | 782                                                                               |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 1727                                                                              | 760                                                                               | 782                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.4                                                                               | 6.2                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 74                                                                                | 97                                                                                | 85                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 83                                                                                | 409                                                                               | 845                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | EB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 33                                                                                | 837                                                                               | 782                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 21                                                                                | 130                                                                               | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 12                                                                                | 0                                                                                 | 44                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 117                                                                               | 845                                                                               | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.29                                                                              | 0.15                                                                              | 0.46                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 27                                                                                | 14                                                                                | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 47.8                                                                              | 3.8                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | E                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 47.8                                                                              | 3.8                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 2.9                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 85.5%                                                                             | ICU Level of Service                                                              | E                                                                                 |                                                                                   |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis 16: E Main St & Hubbard Ave

Timing Plan: PM Peak Hour

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |  |                                                                                   |  |                                                                                   |                                                                                   |  |
| Volume (veh/h)                    | 118                                                                               | 53                                                                                | 440                                                                               | 158                                                                               | 92                                                                                | 363                                                                               |
| Sign Control                      | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |
| Grade                             | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor                  | 0.96                                                                              | 0.96                                                                              | 0.92                                                                              | 0.92                                                                              | 0.86                                                                              | 0.86                                                                              |
| Hourly flow rate (vph)            | 123                                                                               | 55                                                                                | 478                                                                               | 172                                                                               | 107                                                                               | 422                                                                               |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 1200                                                                              | 564                                                                               |                                                                                   |                                                                                   | 650                                                                               |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 1200                                                                              | 564                                                                               |                                                                                   |                                                                                   | 650                                                                               |                                                                                   |
| tC, single (s)                    | 6.4                                                                               | 6.4                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.5                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |
| p0 queue free %                   | 32                                                                                | 89                                                                                |                                                                                   |                                                                                   | 89                                                                                |                                                                                   |
| cM capacity (veh/h)               | 180                                                                               | 491                                                                               |                                                                                   |                                                                                   | 936                                                                               |                                                                                   |
| Direction, Lane #                 | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 178                                                                               | 650                                                                               | 529                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 123                                                                               | 0                                                                                 | 107                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 55                                                                                | 172                                                                               | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 224                                                                               | 1700                                                                              | 936                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.79                                                                              | 0.38                                                                              | 0.11                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 145                                                                               | 0                                                                                 | 10                                                                                |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 63.6                                                                              | 0.0                                                                               | 3.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | F                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 63.6                                                                              | 0.0                                                                               | 3.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      | F                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   | 9.5                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   | 76.7%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   | D                                                                                 |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

## 17: Peconic Ave

Timing Plan: PM Peak Hour

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |                                                                                   |  |  |                                                                                   |                                                                                   |                                                                                   |
| Volume (veh/h)                    | 0                                                                                 | 19                                                                                | 832                                                                               | 84                                                                                | 0                                                                                 | 0                                                                                 |
| Sign Control                      | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |
| Grade                             | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 21                                                                                | 904                                                                               | 91                                                                                | 0                                                                                 | 0                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   | TWLT                                                                              |                                                                                   |                                                                                   | None                                                                              |
| Median storage (veh)              |                                                                                   |                                                                                   | 2                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 280                                                                               |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 950                                                                               | 498                                                                               |                                                                                   |                                                                                   | 996                                                                               |                                                                                   |
| vC1, stage 1 conf vol             | 950                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 950                                                                               | 498                                                                               |                                                                                   |                                                                                   | 996                                                                               |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |
| tC, 2 stage (s)                   | 5.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |
| p0 queue free %                   | 100                                                                               | 96                                                                                |                                                                                   |                                                                                   | 100                                                                               |                                                                                   |
| cM capacity (veh/h)               | 328                                                                               | 518                                                                               |                                                                                   |                                                                                   | 691                                                                               |                                                                                   |
| Direction, Lane #                 | WB 1                                                                              | NB 1                                                                              | NB 2                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 21                                                                                | 603                                                                               | 393                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 21                                                                                | 0                                                                                 | 91                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 518                                                                               | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.04                                                                              | 0.35                                                                              | 0.23                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 3                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 12.2                                                                              | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 12.2                                                                              | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   | 0.2                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   | 35.7%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   | A                                                                                 |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis 18: Griffing Ave/Griffing St & Parking Lot/W 2nd St

Timing Plan: PM Peak Hour

|                        |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement               | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations    |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                     |                                                                                     |  |                                                                                     |
| Volume (veh/h)         | 8                                                                                 | 8                                                                                 | 2                                                                                 | 66                                                                                | 2                                                                                 | 112                                                                               | 0                                                                                 | 140                                                                                 | 14                                                                                  | 56                                                                                  | 9                                                                                   | 0                                                                                   |
| Sign Control           |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |
| Grade                  |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor       | 0.53                                                                              | 0.53                                                                              | 0.53                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.86                                                                                | 0.86                                                                                | 0.86                                                                                |
| Hourly flow rate (vph) | 15                                                                                | 15                                                                                | 4                                                                                 | 79                                                                                | 2                                                                                 | 133                                                                               | 0                                                                                 | 152                                                                                 | 15                                                                                  | 65                                                                                  | 10                                                                                  | 0                                                                                   |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | None                                                                                |                                                                                     |                                                                                     | None                                                                                |                                                                                     |
| Median storage (veh)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (ft)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 517                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume | 435                                                                               | 308                                                                               | 10                                                                                | 312                                                                               | 300                                                                               | 160                                                                               | 10                                                                                |                                                                                     |                                                                                     | 167                                                                                 |                                                                                     |                                                                                     |
| vC1, stage 1 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol     | 435                                                                               | 308                                                                               | 10                                                                                | 312                                                                               | 300                                                                               | 160                                                                               | 10                                                                                |                                                                                     |                                                                                     | 167                                                                                 |                                                                                     |                                                                                     |
| tC, single (s)         | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 4.1                                                                               |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |                                                                                     |
| tC, 2 stage (s)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                 | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |                                                                                     |
| p0 queue free %        | 97                                                                                | 97                                                                                | 100                                                                               | 87                                                                                | 100                                                                               | 85                                                                                | 100                                                                               |                                                                                     |                                                                                     | 95                                                                                  |                                                                                     |                                                                                     |
| cM capacity (veh/h)    | 437                                                                               | 581                                                                               | 1077                                                                              | 607                                                                               | 587                                                                               | 883                                                                               | 1622                                                                              |                                                                                     |                                                                                     | 1398                                                                                |                                                                                     |                                                                                     |

| Direction, Lane #      | EB 1 | WB 1 | NB 1 | SB 1 |
|------------------------|------|------|------|------|
| Volume Total           | 34   | 214  | 167  | 76   |
| Volume Left            | 15   | 79   | 0    | 65   |
| Volume Right           | 4    | 133  | 15   | 0    |
| cSH                    | 530  | 753  | 1622 | 1398 |
| Volume to Capacity     | 0.06 | 0.28 | 0.00 | 0.05 |
| Queue Length 95th (ft) | 5    | 29   | 0    | 4    |
| Control Delay (s)      | 12.3 | 11.7 | 0.0  | 6.7  |
| Lane LOS               | B    | B    |      | A    |
| Approach Delay (s)     | 12.3 | 11.7 | 0.0  | 6.7  |
| Approach LOS           | B    | B    |      |      |

| Intersection Summary              |  |       |                      |
|-----------------------------------|--|-------|----------------------|
| Average Delay                     |  | 7.0   |                      |
| Intersection Capacity Utilization |  | 34.5% | ICU Level of Service |
| Analysis Period (min)             |  | 15    | A                    |

# HCM Unsignalized Intersection Capacity Analysis

19: Griffing St/Griffing Ave & Court St

Timing Plan: PM Peak Hour

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               | YT                                                                                |                                                                                   |                                                                                   | LT                                                                                | LT                                                                                |                                                                                   |
| Volume (veh/h)                    | 71                                                                                | 47                                                                                | 100                                                                               | 179                                                                               | 19                                                                                | 431                                                                               |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.86                                                                              | 0.86                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              |
| Hourly flow rate (vph)            | 83                                                                                | 55                                                                                | 119                                                                               | 213                                                                               | 23                                                                                | 513                                                                               |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | None                                                                              | None                                                                              |                                                                                   |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   | 996                                                                               |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 730                                                                               | 279                                                                               | 536                                                                               |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 730                                                                               | 279                                                                               | 536                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.5                                                                               | 6.2                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.6                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 75                                                                                | 93                                                                                | 89                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 337                                                                               | 760                                                                               | 1037                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | EB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 137                                                                               | 332                                                                               | 536                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 83                                                                                | 119                                                                               | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 55                                                                                | 0                                                                                 | 513                                                                               |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 433                                                                               | 1037                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.32                                                                              | 0.11                                                                              | 0.32                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 34                                                                                | 10                                                                                | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 17.1                                                                              | 3.9                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | C                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 17.1                                                                              | 3.9                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   | 3.6                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   | 59.4%                                                                             |                                                                                   | ICU Level of Service                                                              | B                                                                                 |                                                                                   |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |



# HCM Unsignalized Intersection Capacity Analysis 20: Griffing Ave & Railroad St

Timing Plan: PM Peak Hour

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                     |                                                                                     |  |                                                                                     |
| Sign Control                      |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                                |                                                                                     |                                                                                     | Stop                                                                                |                                                                                     |
| Volume (vph)                      | 16                                                                                | 96                                                                                | 28                                                                                | 218                                                                               | 94                                                                                | 22                                                                                | 30                                                                                | 213                                                                                 | 7                                                                                   | 3                                                                                   | 207                                                                                 | 18                                                                                  |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Hourly flow rate (vph)            | 17                                                                                | 104                                                                               | 30                                                                                | 237                                                                               | 102                                                                               | 24                                                                                | 33                                                                                | 232                                                                                 | 8                                                                                   | 3                                                                                   | 225                                                                                 | 20                                                                                  |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total (vph)                | 152                                                                               | 363                                                                               | 272                                                                               | 248                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left (vph)                 | 17                                                                                | 237                                                                               | 33                                                                                | 3                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right (vph)                | 30                                                                                | 24                                                                                | 8                                                                                 | 20                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Hadj (s)                          | -0.06                                                                             | 0.13                                                                              | 0.04                                                                              | -0.01                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Departure Headway (s)             | 6.2                                                                               | 6.0                                                                               | 6.1                                                                               | 6.1                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Degree Utilization, x             | 0.26                                                                              | 0.60                                                                              | 0.46                                                                              | 0.42                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Capacity (veh/h)                  | 493                                                                               | 572                                                                               | 542                                                                               | 540                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)                 | 11.5                                                                              | 17.5                                                                              | 14.1                                                                              | 13.4                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 11.5                                                                              | 17.5                                                                              | 14.1                                                                              | 13.4                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | B                                                                                 | C                                                                                 | B                                                                                 | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Delay                             |                                                                                   |                                                                                   | 14.7                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Level of Service                  |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 64.8%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

## 21: Roanoke Ave & W 2nd St/E 2nd St

Timing Plan: PM Peak Hour

|                      |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | SBL                                                                                | SBT                                                                                 |
| Lane Configurations  |                                                                                   |  |                                                                                   |  |                                                                                   |  |                                                                                    |  |
| Volume (vph)         | 24                                                                                | 60                                                                                | 9                                                                                 | 104                                                                               | 19                                                                                | 318                                                                               | 66                                                                                 | 107                                                                                 |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                               | NA                                                                                  |
| Protected Phases     |                                                                                   | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 2                                                                                 |                                                                                    | 6                                                                                   |
| Permitted Phases     | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 2                                                                                 |                                                                                   | 6                                                                                  |                                                                                     |
| Detector Phase       | 4                                                                                 | 4                                                                                 | 8                                                                                 | 8                                                                                 | 2                                                                                 | 2                                                                                 | 6                                                                                  | 6                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Minimum Initial (s)  | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 5.5                                                                               | 5.5                                                                               | 5.5                                                                                | 5.5                                                                                 |
| Minimum Split (s)    | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 10.5                                                                              | 10.5                                                                              | 10.5                                                                               | 10.5                                                                                |
| Total Split (s)      | 19.0                                                                              | 19.0                                                                              | 19.0                                                                              | 19.0                                                                              | 36.0                                                                              | 36.0                                                                              | 36.0                                                                               | 36.0                                                                                |
| Total Split (%)      | 34.5%                                                                             | 34.5%                                                                             | 34.5%                                                                             | 34.5%                                                                             | 65.5%                                                                             | 65.5%                                                                             | 65.5%                                                                              | 65.5%                                                                               |
| Yellow Time (s)      | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                                | 3.0                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                                | 2.0                                                                                 |
| Lost Time Adjust (s) |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 |
| Total Lost Time (s)  |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                    | 5.0                                                                                 |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | Max                                                                               | Max                                                                               | Max                                                                                | Max                                                                                 |
| Act Effect Green (s) |                                                                                   | 11.2                                                                              |                                                                                   | 11.2                                                                              |                                                                                   | 33.7                                                                              |                                                                                    | 33.7                                                                                |
| Actuated g/C Ratio   |                                                                                   | 0.22                                                                              |                                                                                   | 0.22                                                                              |                                                                                   | 0.67                                                                              |                                                                                    | 0.67                                                                                |
| v/c Ratio            |                                                                                   | 0.36                                                                              |                                                                                   | 0.47                                                                              |                                                                                   | 0.30                                                                              |                                                                                    | 0.21                                                                                |
| Control Delay        |                                                                                   | 18.0                                                                              |                                                                                   | 18.5                                                                              |                                                                                   | 6.2                                                                               |                                                                                    | 5.4                                                                                 |
| Queue Delay          |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 |
| Total Delay          |                                                                                   | 18.0                                                                              |                                                                                   | 18.5                                                                              |                                                                                   | 6.2                                                                               |                                                                                    | 5.4                                                                                 |
| LOS                  |                                                                                   | B                                                                                 |                                                                                   | B                                                                                 |                                                                                   | A                                                                                 |                                                                                    | A                                                                                   |
| Approach Delay       |                                                                                   | 18.0                                                                              |                                                                                   | 18.5                                                                              |                                                                                   | 6.2                                                                               |                                                                                    | 5.4                                                                                 |
| Approach LOS         |                                                                                   | B                                                                                 |                                                                                   | B                                                                                 |                                                                                   | A                                                                                 |                                                                                    | A                                                                                   |

### Intersection Summary

Cycle Length: 55

Actuated Cycle Length: 50

Natural Cycle: 40

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.47

Intersection Signal Delay: 10.4

Intersection Capacity Utilization 55.1%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service B

### Splits and Phases: 21: Roanoke Ave & W 2nd St/E 2nd St

|                                                                                     |                                                                                      |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  |  |
| ø2                                                                                  | ø4                                                                                   |
| 36 s                                                                                | 19 s                                                                                 |
|  |  |
| ø6                                                                                  | ø8                                                                                   |
| 36 s                                                                                | 19 s                                                                                 |

# Timings

## 22: Roanoke Ave & Railroad St

Timing Plan: PM Peak Hour

|                      |  |  |  |  |      |      |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|------|
| Lane Group           | EBL                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | ø6   | ø8   |
| Lane Configurations  |  |                                                                                   |  |  |      |      |
| Volume (vph)         | 83                                                                                | 21                                                                                | 378                                                                               | 187                                                                               |      |      |
| Turn Type            | NA                                                                                | Perm                                                                              | NA                                                                                | NA                                                                                |      |      |
| Protected Phases     | 2                                                                                 |                                                                                   | 4                                                                                 | 8 6                                                                               | 6    | 8    |
| Permitted Phases     |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   |      |      |
| Detector Phase       | 2                                                                                 | 4                                                                                 | 4                                                                                 | 8 6                                                                               |      |      |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |      |
| Minimum Initial (s)  | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0  | 4.0  |
| Minimum Split (s)    | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               |                                                                                   | 9.0  | 9.0  |
| Total Split (s)      | 18.0                                                                              | 35.0                                                                              | 35.0                                                                              |                                                                                   | 27.0 | 35.0 |
| Total Split (%)      | 22.5%                                                                             | 43.8%                                                                             | 43.8%                                                                             |                                                                                   | 34%  | 44%  |
| Yellow Time (s)      | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0  | 3.0  |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0  | 2.0  |
| Lost Time Adjust (s) | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   |      |      |
| Total Lost Time (s)  | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   |      |      |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |      |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |      |
| Recall Mode          | None                                                                              | Max                                                                               | Max                                                                               |                                                                                   | Max  | Max  |
| Act Effct Green (s)  | 10.5                                                                              |                                                                                   | 30.0                                                                              | 57.0                                                                              |      |      |
| Actuated g/C Ratio   | 0.14                                                                              |                                                                                   | 0.39                                                                              | 0.74                                                                              |      |      |
| v/c Ratio            | 0.54                                                                              |                                                                                   | 0.61                                                                              | 0.38                                                                              |      |      |
| Control Delay        | 36.5                                                                              |                                                                                   | 24.2                                                                              | 0.8                                                                               |      |      |
| Queue Delay          | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.4                                                                               |      |      |
| Total Delay          | 36.5                                                                              |                                                                                   | 24.2                                                                              | 1.1                                                                               |      |      |
| LOS                  | D                                                                                 |                                                                                   | C                                                                                 | A                                                                                 |      |      |
| Approach Delay       | 36.5                                                                              |                                                                                   | 24.2                                                                              | 1.1                                                                               |      |      |
| Approach LOS         | D                                                                                 |                                                                                   | C                                                                                 | A                                                                                 |      |      |

### Intersection Summary

Cycle Length: 80  
 Actuated Cycle Length: 77.5  
 Natural Cycle: 50  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.61  
 Intersection Signal Delay: 14.7  
 Intersection Capacity Utilization 51.2%  
 Analysis Period (min) 15

Intersection LOS: B  
 ICU Level of Service A

### Splits and Phases: 22: Roanoke Ave & Railroad St

|                                                                                                      |                                                                                                      |                                                                                                      |
|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| #22 #23<br><br>ø2 | #22 #23<br><br>ø6 | #22 #23<br><br>ø4 |
| 18 s                                                                                                 | 27 s                                                                                                 | 35 s                                                                                                 |
|                                                                                                      |                                                                                                      | #22 #23<br><br>ø8 |
|                                                                                                      |                                                                                                      | 35 s                                                                                                 |

# Timings

## 23: Roanoke Ave & Northville Turnpike

Timing Plan: PM Peak Hour

|                      | ↖     | ↑    | ↗     | ↘     | ↓     | ø2   | ø4   |
|----------------------|-------|------|-------|-------|-------|------|------|
| Lane Group           | WBL   | NBT  | NBR   | SBL   | SBT   | ø2   | ø4   |
| Lane Configurations  | ↖     | ↑    | ↗     |       | ↓     |      |      |
| Volume (vph)         | 186   | 338  | 123   | 28    | 315   |      |      |
| Turn Type            | NA    | NA   | pm+ov | Perm  | NA    |      |      |
| Protected Phases     | 6     | 4 2  | 6     |       | 8     | 2    | 4    |
| Permitted Phases     |       |      | 4 2   | 8     |       |      |      |
| Detector Phase       | 6     | 4 2  | 6     | 8     | 8     |      |      |
| Switch Phase         |       |      |       |       |       |      |      |
| Minimum Initial (s)  | 4.0   |      | 4.0   | 4.0   | 4.0   | 4.0  | 4.0  |
| Minimum Split (s)    | 9.0   |      | 9.0   | 9.0   | 9.0   | 9.0  | 9.0  |
| Total Split (s)      | 27.0  |      | 27.0  | 35.0  | 35.0  | 18.0 | 35.0 |
| Total Split (%)      | 33.8% |      | 33.8% | 43.8% | 43.8% | 23%  | 44%  |
| Yellow Time (s)      | 3.0   |      | 3.0   | 3.0   | 3.0   | 3.0  | 3.0  |
| All-Red Time (s)     | 2.0   |      | 2.0   | 2.0   | 2.0   | 2.0  | 2.0  |
| Lost Time Adjust (s) | 0.0   |      | 0.0   |       | 0.0   |      |      |
| Total Lost Time (s)  | 5.0   |      | 5.0   |       | 5.0   |      |      |
| Lead/Lag             |       |      |       |       |       |      |      |
| Lead-Lag Optimize?   |       |      |       |       |       |      |      |
| Recall Mode          | Max   |      | Max   | Max   | Max   | None | Max  |
| Act Effect Green (s) | 22.0  | 45.5 | 77.5  |       | 30.0  |      |      |
| Actuated g/C Ratio   | 0.28  | 0.59 | 1.00  |       | 0.39  |      |      |
| v/c Ratio            | 0.45  | 0.33 | 0.08  |       | 0.54  |      |      |
| Control Delay        | 26.0  | 1.1  | 0.1   |       | 22.6  |      |      |
| Queue Delay          | 0.0   | 0.8  | 0.0   |       | 0.0   |      |      |
| Total Delay          | 26.0  | 1.8  | 0.1   |       | 22.6  |      |      |
| LOS                  | C     | A    | A     |       | C     |      |      |
| Approach Delay       | 26.0  | 1.4  |       |       | 22.6  |      |      |
| Approach LOS         | C     | A    |       |       | C     |      |      |

### Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 77.5

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 13.8

Intersection Capacity Utilization 59.8%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service B

### Splits and Phases: 23: Roanoke Ave & Northville Turnpike

|                      |                      |                      |
|----------------------|----------------------|----------------------|
| #22 #23<br>↖ ↗<br>ø2 | #22 #23<br>↓ ↗<br>ø6 | #22 #23<br>↑ ↗<br>ø4 |
| 18 s                 | 27 s                 | 35 s                 |
|                      |                      | #22 #23<br>↓ ↓<br>ø8 |
|                      |                      | 35 s                 |

# Timings

## 24: Osborn Ave/Osborn St & Court St

Timing Plan: PM Peak Hour

|                      |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | SBL                                                                                | SBT                                                                                 |
| Lane Configurations  |                                                                                   |  |                                                                                   |  |                                                                                   |  |                                                                                    |  |
| Volume (vph)         | 111                                                                               | 108                                                                               | 10                                                                                | 527                                                                               | 8                                                                                 | 55                                                                                | 3                                                                                  | 39                                                                                  |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                               | NA                                                                                  |
| Protected Phases     |                                                                                   | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 2                                                                                 |                                                                                    | 6                                                                                   |
| Permitted Phases     | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 2                                                                                 |                                                                                   | 6                                                                                  |                                                                                     |
| Detector Phase       | 4                                                                                 | 4                                                                                 | 8                                                                                 | 8                                                                                 | 2                                                                                 | 2                                                                                 | 6                                                                                  | 6                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Minimum Initial (s)  | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                | 4.0                                                                                 |
| Minimum Split (s)    | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0                                                                                | 9.0                                                                                 |
| Total Split (s)      | 35.0                                                                              | 35.0                                                                              | 35.0                                                                              | 35.0                                                                              | 25.0                                                                              | 25.0                                                                              | 25.0                                                                               | 25.0                                                                                |
| Total Split (%)      | 58.3%                                                                             | 58.3%                                                                             | 58.3%                                                                             | 58.3%                                                                             | 41.7%                                                                             | 41.7%                                                                             | 41.7%                                                                              | 41.7%                                                                               |
| Yellow Time (s)      | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                                | 3.0                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                                | 2.0                                                                                 |
| Lost Time Adjust (s) |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 |
| Total Lost Time (s)  |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                    | 5.0                                                                                 |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Recall Mode          | Max                                                                               | Max                                                                               | Max                                                                               | Max                                                                               | None                                                                              | None                                                                              | None                                                                               | None                                                                                |
| Act Effect Green (s) |                                                                                   | 30.2                                                                              |                                                                                   | 30.2                                                                              |                                                                                   | 8.9                                                                               |                                                                                    | 8.9                                                                                 |
| Actuated g/C Ratio   |                                                                                   | 0.62                                                                              |                                                                                   | 0.62                                                                              |                                                                                   | 0.18                                                                              |                                                                                    | 0.18                                                                                |
| v/c Ratio            |                                                                                   | 0.34                                                                              |                                                                                   | 0.52                                                                              |                                                                                   | 0.28                                                                              |                                                                                    | 0.64                                                                                |
| Control Delay        |                                                                                   | 7.1                                                                               |                                                                                   | 8.3                                                                               |                                                                                   | 16.4                                                                              |                                                                                    | 11.5                                                                                |
| Queue Delay          |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 |
| Total Delay          |                                                                                   | 7.1                                                                               |                                                                                   | 8.3                                                                               |                                                                                   | 16.4                                                                              |                                                                                    | 11.5                                                                                |
| LOS                  |                                                                                   | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   | B                                                                                 |                                                                                    | B                                                                                   |
| Approach Delay       |                                                                                   | 7.1                                                                               |                                                                                   | 8.3                                                                               |                                                                                   | 16.4                                                                              |                                                                                    | 11.5                                                                                |
| Approach LOS         |                                                                                   | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   | B                                                                                 |                                                                                    | B                                                                                   |

### Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 49.1

Natural Cycle: 40

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 9.4

Intersection Capacity Utilization 71.1%

Analysis Period (min) 15

Intersection LOS: A

ICU Level of Service C

### Splits and Phases: 24: Osborn Ave/Osborn St & Court St

|                                                                                        |                                                                                        |
|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
|  ø2 |  ø4 |
| 25 s                                                                                   | 35 s                                                                                   |
|  ø6 |  ø8 |
| 25 s                                                                                   | 35 s                                                                                   |

## Project: Riverhead BOA - Roundabout Analysis

Scheme name: PM Scenario 2 (Improved Roundabout w/ One Way Peconic)

### Control Data

| Option         | Setting          | Option       | Setting               |
|----------------|------------------|--------------|-----------------------|
| Capacity Model | Rodel-Win1       | Mode         | Mode2 - Full Geometry |
| Queue Model    | Rodel-Win1       | Delay Model  | Rodel-Win1            |
| Flows          | Peak Hour Factor | Time Slice   | 7.5 minutes           |
| Delay          | Queuing          | Light / Dark | Light                 |

### Geometry Data for Empirical Model

| Leg | Approach Geometry |         |   |        |    |
|-----|-------------------|---------|---|--------|----|
|     | Leg Name          | Bearing | G | V (ft) | nv |
| 1   | Peconic           | 0       | 0 | 12.00  | 1  |
| 2   | CR 94             | 90      | 0 | 12.00  | 1  |
| 3   | CR 63             | 180     | 0 | 12.00  | 1  |
| 4   | CR 104            | 220     | 0 | 12.00  | 1  |
| 5   | NYS 24            | 275     | 0 | 12.00  | 1  |

| Leg | Entry Geometry |    |         |        |       | Circ Geom |        |    |
|-----|----------------|----|---------|--------|-------|-----------|--------|----|
|     | E (ft)         | ne | L' (ft) | R (ft) | ?     | D (ft)    | C (ft) | nc |
| 1   | 20.00          | 2  | 125.00  | 60.00  | 25.00 | 170.00    | 28.50  | 2  |
| 2   | 20.00          | 2  | 125.00  | 60.00  | 25.00 | 170.00    | 28.50  | 2  |
| 3   | 14.20          | 1  | 75.00   | 60.00  | 25.00 | 220.00    | 28.50  | 2  |
| 4   | 20.00          | 2  | 100.00  | 60.00  | 25.00 | 170.00    | 28.50  | 2  |
| 5   | 20.00          | 2  | 125.00  | 60.00  | 25.00 | 220.00    | 28.50  | 2  |

| Leg | Exit Geometry |     |         |     |
|-----|---------------|-----|---------|-----|
|     | Ex (ft)       | nex | Vx (ft) | nvx |
| 1   | 15.00         | 1   | 12.00   | 1   |
| 2   | 24.00         | 2   | 12.00   | 1   |
| 3   | 15.00         | 1   | 12.00   | 1   |
| 4   | 15.00         | 1   | 12.00   | 1   |
| 5   | 24.00         | 2   | 12.00   | 1   |



| Leg | Entry Capacity Modifiers |            |                |
|-----|--------------------------|------------|----------------|
|     | → Cap (v/h)              | Xwalk Fact | Conf Level (%) |
| 1   | 0                        | 1.000      | 50             |
| 2   | 0                        | 1.000      | 50             |
| 3   | 0                        | 1.000      | 50             |
| 4   | 0                        | 1.000      | 50             |
| 5   | 0                        | 1.000      | 50             |

## Flow Modifiers and Flow Data

| Leg | Leg Name | Flow Modifiers |        |
|-----|----------|----------------|--------|
|     |          | %Truck         | Factor |
| 1   | Peconic  | 2.0            | 1.00   |
| 2   | CR 94    | 2.0            | 1.00   |
| 3   | CR 63    | 2.0            | 1.00   |
| 4   | CR 104   | 2.0            | 1.00   |
| 5   | NYS 24   | 2.0            | 1.00   |

| Leg | Arrival Turning Flows (veh/hr) |        |        |        |        |        |
|-----|--------------------------------|--------|--------|--------|--------|--------|
|     | U-Turn                         | Exit-4 | Exit-3 | Exit-2 | Exit-1 | Bypass |
| 1   | 0                              | 0      | 0      | 0      | 0      | 0      |
| 2   | 4                              | 191    | 614    | 340    | 50     | 0      |
| 3   | 5                              | 62     | 309    | 140    | 21     | 0      |
| 4   | 3                              | 42     | 215    | 198    | 31     | 0      |
| 5   | 6                              | 9      | 112    | 316    | 288    | 0      |

| Leg | Arrival Volume Ratios |        |        | Arrival Volume Times (min) |       |       | PHF  |
|-----|-----------------------|--------|--------|----------------------------|-------|-------|------|
|     | Ratio1                | Ratio2 | Ratio3 | Time1                      | Time2 | Time3 |      |
| 1   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |
| 2   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |
| 3   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |
| 4   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |
| 5   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |

## Model Results

### Global performance

| Leg | Leg Name | Global Performance |         |         |          |       |
|-----|----------|--------------------|---------|---------|----------|-------|
|     |          | Parameter          | Units   | Entries | Bypasses | Total |
| 1   | Peconic  | Arrive Flows       | veh/hr  | 2956    |          | 2956  |
| 2   | CR 94    | Capacity           | veh/hr  | 4523    |          | 4523  |
| 3   | CR 63    | Average Delay      | sec/veh | 12.77   |          | 12.77 |
| 4   | CR 104   | L.O.S. (Signal)    | A - F   | B       |          | B     |
| 5   | NYS 24   | L.O.S. (Unsig)     | A - F   | B       |          | B     |

### Entry Flow and Capacity (60min)

| Leg | Bypass Type | Flow Rate (veh/hr) |        | Opp Rate (veh/hr) |        | Capacity (veh/hr) |        | Ave VCR |        |
|-----|-------------|--------------------|--------|-------------------|--------|-------------------|--------|---------|--------|
|     |             | Entry              | Bypass | Entry             | Bypass | Entry             | Bypass | Entry   | Bypass |
| 1   | None        | 0                  |        | 0                 |        | 0                 |        | 0.000   |        |
| 2   | None        | 1199               |        | 177               |        | 1602              |        | 0.770   |        |
| 3   | None        | 537                |        | 1165              |        | 877               |        | 0.627   |        |
| 4   | None        | 489                |        | 1329              |        | 878               |        | 0.574   |        |
| 5   | None        | 731                |        | 1028              |        | 1166              |        | 0.644   |        |

### Entry Queues and Delays (60min)

| Leg | Ave Del (sec/veh) |        |      | Max Del (sec/veh) |        | 95% Queue |        | LOS A-F |     |     |
|-----|-------------------|--------|------|-------------------|--------|-----------|--------|---------|-----|-----|
|     | Entry             | Bypass | Leg  | Entry             | Bypass | Entry     | Bypass | Entry   | Byp | Leg |
| 1   | 0.0               |        | 0.0  | 0.0               |        | 0.0       |        | A       |     | A   |
| 2   | 13.4              |        | 13.4 | 21.1              |        | 15.5      |        | B       |     | B   |
| 3   | 10.7              |        | 10.7 | 16.4              |        | 5.9       |        | B       |     | B   |
| 4   | 14.1              |        | 14.1 | 22.9              |        | 7.6       |        | B       |     | B   |
| 5   | 12.5              |        | 12.5 | 19.3              |        | 9.5       |        | B       |     | B   |

### Entry Slope and Intercept (60min)

| Leg | Bypass Type | Y Intercept (vehs/hr) |        | Slope (tangent) |        | X Intercept (vehs/hr) |        |
|-----|-------------|-----------------------|--------|-----------------|--------|-----------------------|--------|
|     |             | Entry                 | Bypass | Entry           | Bypass | Entry                 | Bypass |
| 1   | None        | 0                     |        | 0.0000          |        | 0                     |        |
| 2   | None        | 1710                  |        | 0.6122          |        | 2794                  |        |
| 3   | None        | 1285                  |        | 0.3508          |        | 3665                  |        |
| 4   | None        | 1686                  |        | 0.6074          |        | 2775                  |        |
| 5   | None        | 1710                  |        | 0.5296          |        | 3229                  |        |

### Entry Flow and Capacity (Peak 7.5min)

| Leg | Bypass Type | Flow Rate (veh/hr) |        | Opp Rate (veh/hr) |        | Capacity (veh/hr) |        | Ave VCR |        |
|-----|-------------|--------------------|--------|-------------------|--------|-------------------|--------|---------|--------|
|     |             | Entry              | Bypass | Entry             | Bypass | Entry             | Bypass | Entry   | Bypass |
| 1   | None        | 0                  |        | 0                 |        | 0                 |        | 1.0000  |        |
| 2   | None        | 1332               |        | 195               |        | 1591              |        | 0.8627  |        |
| 3   | None        | 597                |        | 1284              |        | 835               |        | 0.7319  |        |
| 4   | None        | 543                |        | 1466              |        | 795               |        | 0.7058  |        |
| 5   | None        | 812                |        | 1133              |        | 1110              |        | 0.7521  |        |

### Entry Queues and Delays (Peak 7.5min)

| Leg | Ave Del (sec/veh) |        |      | Max Del (sec/veh) |        | 95% Queue |        | LOS A-F |     |     |
|-----|-------------------|--------|------|-------------------|--------|-----------|--------|---------|-----|-----|
|     | Entry             | Bypass | Leg  | Entry             | Bypass | Entry     | Bypass | Entry   | Byp | Leg |
| 1   | 0.0               |        | 0.0  | 0.0               |        | 0.0       |        | A       |     | A   |
| 2   | 15.9              |        | 15.9 | 21.1              |        | 15.5      |        | C       |     | C   |
| 3   | 12.5              |        | 12.5 | 16.4              |        | 5.9       |        | B       |     | B   |
| 4   | 17.3              |        | 17.3 | 22.9              |        | 7.6       |        | C       |     | C   |
| 5   | 14.7              |        | 14.7 | 19.3              |        | 9.5       |        | B       |     | B   |

### Entry Slope and Intercept (Peak 7.5min)

| Leg | Bypass Type | Y Intercept (vehs/hr) |        | Slope (tangent) |        | X Intercept (vehs/hr) |        |
|-----|-------------|-----------------------|--------|-----------------|--------|-----------------------|--------|
|     |             | Entry                 | Bypass | Entry           | Bypass | Entry                 | Bypass |
| 1   | None        | 0                     |        | 0.0000          |        | 0                     |        |
| 2   | None        | 1710                  |        | 0.6122          |        | 2794                  |        |
| 3   | None        | 1285                  |        | 0.3508          |        | 3665                  |        |
| 4   | None        | 1686                  |        | 0.6074          |        | 2775                  |        |
| 5   | None        | 1710                  |        | 0.5296          |        | 3229                  |        |

---

## Scheme Notes

(none)

---

# Timings

## 5: Nugent St/Court St & W Main St

Timing Plan: Saturday Peak Ho

|                      |  |  |  |  |  |  |    |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |                                                                                     |
| Lane Configurations  |  |  |  |  |  |  |  |  |                                                                                     |  |  |
| Volume (vph)         | 72                                                                                | 346                                                                               | 556                                                                               | 290                                                                               | 647                                                                               | 490                                                                               | 119                                                                                 | 103                                                                                 | 3                                                                                   | 474                                                                                 |                                                                                     |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | pm+pt                                                                             | NA                                                                                | pm+pt                                                                             | NA                                                                                  | Free                                                                                | Perm                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases     |                                                                                   | 2                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                 | 7                                                                                 | 4                                                                                   |                                                                                     |                                                                                     | 8                                                                                   |                                                                                     |
| Permitted Phases     | 2                                                                                 |                                                                                   | 2                                                                                 | 6                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                   | Free                                                                                | 8                                                                                   |                                                                                     |                                                                                     |
| Detector Phase       | 2                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 | 7                                                                                 | 4                                                                                   |                                                                                     | 8                                                                                   | 8                                                                                   |                                                                                     |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 4.0                                                                               | 15.0                                                                              | 3.0                                                                               | 5.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Minimum Split (s)    | 21.5                                                                              | 21.5                                                                              | 21.5                                                                              | 8.5                                                                               | 21.5                                                                              | 9.0                                                                               | 12.0                                                                                |                                                                                     | 11.8                                                                                | 11.8                                                                                |                                                                                     |
| Total Split (s)      | 33.0                                                                              | 33.0                                                                              | 33.0                                                                              | 11.0                                                                              | 44.0                                                                              | 24.0                                                                              | 46.0                                                                                |                                                                                     | 22.0                                                                                | 22.0                                                                                |                                                                                     |
| Total Split (%)      | 36.7%                                                                             | 36.7%                                                                             | 36.7%                                                                             | 12.2%                                                                             | 48.9%                                                                             | 26.7%                                                                             | 51.1%                                                                               |                                                                                     | 24.4%                                                                               | 24.4%                                                                               |                                                                                     |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.0                                                                               | 3.5                                                                               | 3.0                                                                               | 3.5                                                                                 |                                                                                     | 3.5                                                                                 | 3.5                                                                                 |                                                                                     |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 1.0                                                                               | 2.3                                                                               | 2.0                                                                               | 2.3                                                                                 |                                                                                     | 2.3                                                                                 | 2.3                                                                                 |                                                                                     |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Total Lost Time (s)  | 5.5                                                                               | 5.5                                                                               | 5.5                                                                               | 4.0                                                                               | 5.8                                                                               | 5.0                                                                               | 5.8                                                                                 |                                                                                     |                                                                                     | 5.8                                                                                 |                                                                                     |
| Lead/Lag             | Lag                                                                               | Lag                                                                               | Lag                                                                               | Lead                                                                              |                                                                                   | Lead                                                                              |                                                                                     |                                                                                     | Lag                                                                                 | Lag                                                                                 |                                                                                     |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                               |                                                                                     |                                                                                     | Yes                                                                                 | Yes                                                                                 |                                                                                     |
| Recall Mode          | Max                                                                               | Max                                                                               | Max                                                                               | None                                                                              | Max                                                                               | None                                                                              | None                                                                                |                                                                                     | None                                                                                | None                                                                                |                                                                                     |
| Act Effct Green (s)  | 27.5                                                                              | 27.5                                                                              | 27.5                                                                              | 40.0                                                                              | 38.2                                                                              | 40.9                                                                              | 40.1                                                                                | 89.9                                                                                |                                                                                     | 16.1                                                                                |                                                                                     |
| Actuated g/C Ratio   | 0.31                                                                              | 0.31                                                                              | 0.31                                                                              | 0.44                                                                              | 0.42                                                                              | 0.45                                                                              | 0.45                                                                                | 1.00                                                                                |                                                                                     | 0.18                                                                                |                                                                                     |
| v/c Ratio            | 0.63                                                                              | 0.67                                                                              | 0.71                                                                              | 0.93                                                                              | 0.88                                                                              | 1.19                                                                              | 0.17                                                                                | 0.07                                                                                |                                                                                     | 0.90                                                                                |                                                                                     |
| Control Delay        | 54.2                                                                              | 34.3                                                                              | 11.6                                                                              | 58.2                                                                              | 38.5                                                                              | 129.1                                                                             | 15.6                                                                                | 0.1                                                                                 |                                                                                     | 54.8                                                                                |                                                                                     |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 7.3                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 |                                                                                     |
| Total Delay          | 54.2                                                                              | 34.3                                                                              | 11.6                                                                              | 58.2                                                                              | 45.9                                                                              | 129.1                                                                             | 15.6                                                                                | 0.1                                                                                 |                                                                                     | 54.8                                                                                |                                                                                     |
| LOS                  | D                                                                                 | C                                                                                 | B                                                                                 | E                                                                                 | D                                                                                 | F                                                                                 | B                                                                                   | A                                                                                   |                                                                                     | D                                                                                   |                                                                                     |
| Approach Delay       |                                                                                   | 22.7                                                                              |                                                                                   |                                                                                   | 49.7                                                                              |                                                                                   | 90.9                                                                                |                                                                                     |                                                                                     | 54.8                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | C                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   | F                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |

### Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 89.9

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.19

Intersection Signal Delay: 51.7

Intersection Capacity Utilization 108.2%

Analysis Period (min) 15

Intersection LOS: D

ICU Level of Service G

### Splits and Phases: 5: Nugent St/Court St & W Main St

|                                                                                     |                                                                                     |                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |    |
| 11 s                                                                                | 33 s                                                                                | 46 s                                                                                  |
|  |  |  |
| 11 s                                                                                | 24 s                                                                                | 22 s                                                                                  |

# Timings

6: W Main St & Osborn Ave

Timing Plan: Saturday Peak Ho

|                      | EBL   | EBT   | WBT   | SBL   |
|----------------------|-------|-------|-------|-------|
| Lane Group           |       |       |       |       |
| Lane Configurations  |       | ↰     | ↱     | ↶     |
| Volume (vph)         | 9     | 439   | 925   | 80    |
| Turn Type            | Perm  | NA    | NA    | NA    |
| Protected Phases     |       | 4     | 8     | 6     |
| Permitted Phases     | 4     |       |       |       |
| Detector Phase       | 4     | 4     | 8     | 6     |
| Switch Phase         |       |       |       |       |
| Minimum Initial (s)  | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)    | 11.3  | 11.3  | 11.3  | 11.2  |
| Total Split (s)      | 60.0  | 60.0  | 60.0  | 25.0  |
| Total Split (%)      | 70.6% | 70.6% | 70.6% | 29.4% |
| Yellow Time (s)      | 3.5   | 3.5   | 3.5   | 3.5   |
| All-Red Time (s)     | 2.8   | 2.8   | 2.8   | 2.7   |
| Lost Time Adjust (s) |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  |       | 6.3   | 6.3   | 6.2   |
| Lead/Lag             |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |
| Recall Mode          | Max   | Max   | Max   | None  |
| Act Effect Green (s) |       | 58.1  | 58.1  | 9.8   |
| Actuated g/C Ratio   |       | 0.76  | 0.76  | 0.13  |
| v/c Ratio            |       | 0.33  | 0.78  | 0.49  |
| Control Delay        |       | 5.2   | 13.9  | 35.2  |
| Queue Delay          |       | 0.3   | 0.0   | 0.0   |
| Total Delay          |       | 5.5   | 13.9  | 35.2  |
| LOS                  |       | A     | B     | D     |
| Approach Delay       |       | 5.5   | 13.9  | 35.2  |
| Approach LOS         |       | A     | B     | D     |

## Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 76.6

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 13.0

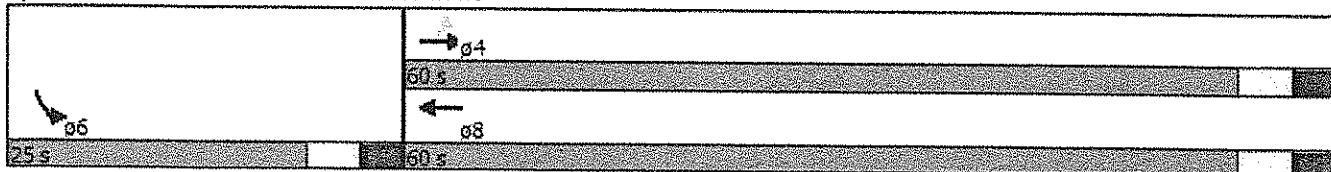
Intersection Capacity Utilization 67.9%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service C

Splits and Phases: 6: W Main St & Osborn Ave

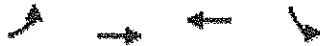




# Timings

## 7: W Main St & Griffing Ave

Timing Plan: Saturday Peak Ho



| Lane Group           | EBL   | EBT   | WBT   | SBL   |
|----------------------|-------|-------|-------|-------|
| Lane Configurations  |       | ↰     | ↰↱    | ↰↱    |
| Volume (vph)         | 22    | 531   | 962   | 22    |
| Turn Type            | Perm  | NA    | NA    | NA    |
| Protected Phases     |       | 2     | 6     | 4     |
| Permitted Phases     | 2     |       |       |       |
| Detector Phase       | 2     | 2     | 6     | 4     |
| Switch Phase         |       |       |       |       |
| Minimum Initial (s)  | 10.0  | 10.0  | 10.0  | 4.0   |
| Minimum Split (s)    | 15.8  | 15.8  | 15.8  | 20.0  |
| Total Split (s)      | 45.0  | 45.0  | 45.0  | 20.0  |
| Total Split (%)      | 69.2% | 69.2% | 69.2% | 30.8% |
| Yellow Time (s)      | 3.5   | 3.5   | 3.5   | 3.5   |
| All-Red Time (s)     | 2.3   | 2.3   | 2.3   | 0.5   |
| Lost Time Adjust (s) |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  |       | 5.8   | 5.8   | 4.0   |
| Lead/Lag             |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |
| Recall Mode          | Max   | Max   | Max   | None  |
| Act Effct Green (s)  |       | 43.3  | 43.3  | 6.9   |
| Actuated g/C Ratio   |       | 0.76  | 0.76  | 0.12  |
| v/c Ratio            |       | 0.39  | 0.38  | 0.35  |
| Control Delay        |       | 4.4   | 3.6   | 14.4  |
| Queue Delay          |       | 0.0   | 0.2   | 0.0   |
| Total Delay          |       | 4.4   | 3.8   | 14.4  |
| LOS                  |       | A     | A     | B     |
| Approach Delay       |       | 4.4   | 3.8   | 14.4  |
| Approach LOS         |       | A     | A     | B     |

### Intersection Summary

Cycle Length: 65

Actuated Cycle Length: 57.1

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.39

Intersection Signal Delay: 4.5

Intersection Capacity Utilization 57.8%

Analysis Period (min) 15

Intersection LOS: A

ICU Level of Service B

### Splits and Phases: 7: W Main St & Griffing Ave

|              |              |
|--------------|--------------|
| <br><br>45 s | <br><br>20 s |
| <br><br>45 s |              |

# Timings

## 8: Peconic Ave & W Main St/E Main St

Timing Plan: Saturday Peak Ho

| Lane Group           | EBT   | WBT   | NBL   | NBR    | ø3   | ø6    | ø8   | ø9   | ø13  |
|----------------------|-------|-------|-------|--------|------|-------|------|------|------|
| Lane Configurations  | ↑↑    | ↑↑    | ↰     | ↱      |      |       |      |      |      |
| Volume (vph)         | 470   | 791   | 266   | 677    |      |       |      |      |      |
| Turn Type            | NA    | NA    | NA    | custom |      |       |      |      |      |
| Protected Phases     | 2     | 6 3   | 4     | 3 13   | 3    | 6     | 8    | 9    | 13   |
| Permitted Phases     |       |       |       | 4 3    |      |       |      |      |      |
| Detector Phase       | 2     | 6 3   | 4     | 3 13   |      |       |      |      |      |
| Switch Phase         |       |       |       |        |      |       |      |      |      |
| Minimum Initial (s)  | 10.0  |       | 10.0  |        | 4.0  | 10.0  | 10.0 | 22.0 | 22.0 |
| Minimum Split (s)    | 15.9  |       | 15.9  |        | 9.9  | 28.0  | 15.0 | 25.0 | 25.0 |
| Total Split (s)      | 56.0  |       | 41.0  |        | 55.0 | 56.0  | 96.0 | 28.0 | 28.0 |
| Total Split (%)      | 31.1% |       | 22.8% |        | 31%  | 31%   | 53%  | 16%  | 16%  |
| Yellow Time (s)      | 3.5   |       | 3.5   |        | 3.5  | 3.5   | 3.0  | 2.0  | 2.0  |
| All-Red Time (s)     | 2.4   |       | 2.4   |        | 2.4  | 2.4   | 2.0  | 1.0  | 1.0  |
| Lost Time Adjust (s) | 0.0   |       | 0.0   |        |      |       |      |      |      |
| Total Lost Time (s)  | 5.9   |       | 5.9   |        |      |       |      |      |      |
| Lead/Lag             |       |       | Lead  |        | Lag  |       |      |      |      |
| Lead-Lag Optimize?   |       |       |       |        |      |       |      |      |      |
| Recall Mode          | C-Max |       | None  |        | None | C-Min | None | None | None |
| Act Effct Green (s)  | 55.9  | 105.1 | 32.2  | 112.3  |      |       |      |      |      |
| Actuated g/C Ratio   | 0.31  | 0.58  | 0.18  | 0.62   |      |       |      |      |      |
| v/c Ratio            | 0.46  | 0.45  | 0.90  | 0.72   |      |       |      |      |      |
| Control Delay        | 52.3  | 1.7   | 101.7 | 27.6   |      |       |      |      |      |
| Queue Delay          | 4.9   | 1.3   | 0.0   | 1.6    |      |       |      |      |      |
| Total Delay          | 57.2  | 3.1   | 101.7 | 29.1   |      |       |      |      |      |
| LOS                  | E     | A     | F     | C      |      |       |      |      |      |
| Approach Delay       | 57.2  | 3.1   | 49.6  |        |      |       |      |      |      |
| Approach LOS         | E     | A     | D     |        |      |       |      |      |      |

### Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 34.6

Intersection LOS: C

Intersection Capacity Utilization 64.7%

ICU Level of Service C

Analysis Period (min) 15

### Splits and Phases: 8: Peconic Ave & W Main St/E Main St

|                             |                    |                         |                     |
|-----------------------------|--------------------|-------------------------|---------------------|
| #8 #9<br>→ → ø2 (R)<br>56 s | #8<br>↰ ø4<br>41 s | #8 #9<br>↰ ↱ ø3<br>55 s | #9<br>↱ ø9<br>28 s  |
| #8 #9<br>← ← ø6 (R)<br>56 s | #9<br>→ ø8<br>96 s |                         | #8<br>↱ ø13<br>28 s |

# Timings

9: E Main St & Roanoke Ave

Timing Plan: Saturday Peak Ho

| Lane Group           | EBL   | EBT   | WBT   | SBR    | ø2    | ø3   | ø4   | ø8   | ø9   | ø13  |
|----------------------|-------|-------|-------|--------|-------|------|------|------|------|------|
| Lane Configurations  |       |       |       |        |       |      |      |      |      |      |
| Volume (vph)         | 327   | 778   | 689   | 123    |       |      |      |      |      |      |
| Turn Type            | Perm  | NA    | NA    | custom |       |      |      |      |      |      |
| Protected Phases     |       | 8 2   | 6     | 3 9    | 2     | 3    | 4    | 8    | 9    | 13   |
| Permitted Phases     | 8 2   |       |       |        |       |      |      |      |      |      |
| Detector Phase       | 8 2   | 8 2   | 6     | 3 9    |       |      |      |      |      |      |
| Switch Phase         |       |       |       |        |       |      |      |      |      |      |
| Minimum Initial (s)  |       |       | 10.0  |        | 10.0  | 4.0  | 10.0 | 10.0 | 22.0 | 22.0 |
| Minimum Split (s)    |       |       | 28.0  |        | 15.9  | 9.9  | 15.9 | 15.0 | 25.0 | 25.0 |
| Total Split (s)      |       |       | 56.0  |        | 56.0  | 55.0 | 41.0 | 96.0 | 28.0 | 28.0 |
| Total Split (%)      |       |       | 31.1% |        | 31%   | 31%  | 23%  | 53%  | 16%  | 16%  |
| Yellow Time (s)      |       |       | 3.5   |        | 3.5   | 3.5  | 3.5  | 3.0  | 2.0  | 2.0  |
| All-Red Time (s)     |       |       | 2.4   |        | 2.4   | 2.4  | 2.4  | 2.0  | 1.0  | 1.0  |
| Lost Time Adjust (s) |       |       | 0.0   |        |       |      |      |      |      |      |
| Total Lost Time (s)  |       |       | 5.9   |        |       |      |      |      |      |      |
| Lead/Lag             |       |       |       |        | Lag   | Lead |      |      |      |      |
| Lead-Lag Optimize?   |       |       |       |        |       |      |      |      |      |      |
| Recall Mode          |       |       | C-Min |        | C-Max | None | None | None | None | None |
| Act Effct Green (s)  | 150.0 | 150.0 | 55.9  | 74.2   |       |      |      |      |      |      |
| Actuated g/C Ratio   | 0.83  | 0.83  | 0.31  | 0.41   |       |      |      |      |      |      |
| v/c Ratio            | 0.79  | 0.46  | 0.79  | 0.20   |       |      |      |      |      |      |
| Control Delay        | 23.3  | 4.9   | 63.9  | 34.8   |       |      |      |      |      |      |
| Queue Delay          | 4.2   | 1.0   | 0.0   | 0.0    |       |      |      |      |      |      |
| Total Delay          | 27.5  | 5.9   | 63.9  | 34.8   |       |      |      |      |      |      |
| LOS                  | C     | A     | E     | C      |       |      |      |      |      |      |
| Approach Delay       |       | 12.3  | 63.9  |        |       |      |      |      |      |      |
| Approach LOS         |       | B     | E     |        |       |      |      |      |      |      |

## Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 33.6

Intersection LOS: C

Intersection Capacity Utilization 47.7%

ICU Level of Service A

Analysis Period (min) 15

## Splits and Phases: 9: E Main St & Roanoke Ave

|                           |                    |                       |                     |
|---------------------------|--------------------|-----------------------|---------------------|
| #3 #9<br>→ ø2 (R)<br>56 s | #8<br>← ø4<br>41 s | #8 #9<br>← ø3<br>55 s | #9<br>← ø9<br>28 s  |
| #8 #9<br>← ø6 (R)<br>56 s | #9<br>→ ø8<br>96 s |                       | #8<br>→ ø13<br>28 s |

# HCM Unsignalized Intersection Capacity Analysis

10: E Main St & East Ave

Timing Plan: Saturday Peak Ho

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR                                                                               | SBL                                                                               | SBR                                                                               |
| Lane Configurations               |                                                                                   |  |  |                                                                                   |  |                                                                                   |
| Volume (veh/h)                    | 83                                                                                | 676                                                                               | 664                                                                               | 70                                                                                | 72                                                                                | 87                                                                                |
| Sign Control                      |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   | Stop                                                                              |                                                                                   |
| Grade                             |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Hourly flow rate (vph)            | 90                                                                                | 735                                                                               | 722                                                                               | 76                                                                                | 78                                                                                | 95                                                                                |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   | None                                                                              | None                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   | 768                                                                               | 275                                                                               |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             | 0.80                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.88                                                                              | 0.80                                                                              |
| vC, conflicting volume            | 798                                                                               |                                                                                   |                                                                                   |                                                                                   | 1675                                                                              | 760                                                                               |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 618                                                                               |                                                                                   |                                                                                   |                                                                                   | 1269                                                                              | 570                                                                               |
| tC, single (s)                    | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   | 6.4                                                                               | 6.2                                                                               |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   | 3.5                                                                               | 3.3                                                                               |
| p0 queue free %                   | 88                                                                                |                                                                                   |                                                                                   |                                                                                   | 46                                                                                | 77                                                                                |
| cM capacity (veh/h)               | 774                                                                               |                                                                                   |                                                                                   |                                                                                   | 146                                                                               | 418                                                                               |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 825                                                                               | 798                                                                               | 173                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 90                                                                                | 0                                                                                 | 78                                                                                |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 76                                                                                | 95                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 774                                                                               | 1700                                                                              | 227                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.12                                                                              | 0.47                                                                              | 0.76                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 10                                                                                | 0                                                                                 | 134                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 3.0                                                                               | 0.0                                                                               | 58.6                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 |                                                                                   | F                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 3.0                                                                               | 0.0                                                                               | 58.6                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   | F                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 7.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 98.7%                                                                             | ICU Level of Service                                                              |                                                                                   | F                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

# Timings

11: McDermott Ave/Maple Ave & E Main St

Timing Plan: Saturday Peak Ho

|                      |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | SBL                                                                                | SBT                                                                                 |
| Lane Configurations  |                                                                                   |  |                                                                                   |  |                                                                                   |  |                                                                                    |  |
| Volume (vph)         | 26                                                                                | 697                                                                               | 46                                                                                | 537                                                                               | 166                                                                               | 18                                                                                | 54                                                                                 | 17                                                                                  |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                               | NA                                                                                  |
| Protected Phases     |                                                                                   | 2                                                                                 |                                                                                   | 6                                                                                 |                                                                                   | 4                                                                                 |                                                                                    | 8                                                                                   |
| Permitted Phases     | 2                                                                                 |                                                                                   | 6                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 8                                                                                  |                                                                                     |
| Detector Phase       | 2                                                                                 | 2                                                                                 | 6                                                                                 | 6                                                                                 | 4                                                                                 | 4                                                                                 | 8                                                                                  | 8                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Minimum Initial (s)  | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                | 4.0                                                                                 |
| Minimum Split (s)    | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 21.5                                                                              | 21.5                                                                              | 21.5                                                                               | 21.5                                                                                |
| Total Split (s)      | 58.0                                                                              | 58.0                                                                              | 58.0                                                                              | 58.0                                                                              | 32.0                                                                              | 32.0                                                                              | 32.0                                                                               | 32.0                                                                                |
| Total Split (%)      | 64.4%                                                                             | 64.4%                                                                             | 64.4%                                                                             | 64.4%                                                                             | 35.6%                                                                             | 35.6%                                                                             | 35.6%                                                                              | 35.6%                                                                               |
| Yellow Time (s)      | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                                | 3.5                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                                | 2.0                                                                                 |
| Lost Time Adjust (s) |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 |
| Total Lost Time (s)  |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.5                                                                               |                                                                                    | 5.5                                                                                 |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Recall Mode          | Max                                                                               | Max                                                                               | Max                                                                               | Max                                                                               | None                                                                              | None                                                                              | None                                                                               | None                                                                                |
| Act Effct Green (s)  |                                                                                   | 53.2                                                                              |                                                                                   | 53.2                                                                              |                                                                                   | 21.9                                                                              |                                                                                    | 21.9                                                                                |
| Actuated g/C Ratio   |                                                                                   | 0.62                                                                              |                                                                                   | 0.62                                                                              |                                                                                   | 0.26                                                                              |                                                                                    | 0.26                                                                                |
| v/c Ratio            |                                                                                   | 0.75                                                                              |                                                                                   | 0.63                                                                              |                                                                                   | 0.85                                                                              |                                                                                    | 0.33                                                                                |
| Control Delay        |                                                                                   | 18.1                                                                              |                                                                                   | 14.4                                                                              |                                                                                   | 48.1                                                                              |                                                                                    | 21.0                                                                                |
| Queue Delay          |                                                                                   | 0.0                                                                               |                                                                                   | 0.2                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 |
| Total Delay          |                                                                                   | 18.1                                                                              |                                                                                   | 14.6                                                                              |                                                                                   | 48.1                                                                              |                                                                                    | 21.0                                                                                |
| LOS                  |                                                                                   | B                                                                                 |                                                                                   | B                                                                                 |                                                                                   | D                                                                                 |                                                                                    | C                                                                                   |
| Approach Delay       |                                                                                   | 18.1                                                                              |                                                                                   | 14.6                                                                              |                                                                                   | 48.1                                                                              |                                                                                    | 21.0                                                                                |
| Approach LOS         |                                                                                   | B                                                                                 |                                                                                   | B                                                                                 |                                                                                   | D                                                                                 |                                                                                    | C                                                                                   |

## Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 85.6

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 22.0

Intersection LOS: C

Intersection Capacity Utilization 80.3%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 11: McDermott Ave/Maple Ave & E Main St

|                                                                                     |                                                                                      |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  |  |
| 58 s                                                                                | 32 s                                                                                 |
|  |  |
| 58 s                                                                                | 32 s                                                                                 |

# HCM Unsignalized Intersection Capacity Analysis 12: Parking Lot/Union Ave & E Main St/W Main St

Timing Plan: Saturday Peak Ho

|                        |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement               | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations    |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |
| Volume (veh/h)         | 23                                                                                | 808                                                                               | 25                                                                                | 19                                                                                | 581                                                                               | 31                                                                                | 2                                                                                  | 0                                                                                   | 13                                                                                  | 10                                                                                  | 1                                                                                   | 18                                                                                  |
| Sign Control           |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |                                                                                    | Stop                                                                                |                                                                                     |                                                                                     | Stop                                                                                |                                                                                     |
| Grade                  |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                    | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor       | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Hourly flow rate (vph) | 25                                                                                | 878                                                                               | 27                                                                                | 21                                                                                | 632                                                                               | 34                                                                                | 2                                                                                  | 0                                                                                   | 14                                                                                  | 11                                                                                  | 1                                                                                   | 20                                                                                  |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type            |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median storage (veh)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (ft)   |                                                                                   | 278                                                                               |                                                                                   |                                                                                   | 363                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked  | 0.81                                                                              |                                                                                   |                                                                                   | 0.67                                                                              |                                                                                   |                                                                                   | 0.76                                                                               | 0.76                                                                                | 0.67                                                                                | 0.76                                                                                | 0.76                                                                                | 0.81                                                                                |
| vC, conflicting volume | 665                                                                               |                                                                                   |                                                                                   | 905                                                                               |                                                                                   |                                                                                   | 1652                                                                               | 1648                                                                                | 892                                                                                 | 1646                                                                                | 1645                                                                                | 648                                                                                 |
| vC1, stage 1 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol     | 475                                                                               |                                                                                   |                                                                                   | 613                                                                               |                                                                                   |                                                                                   | 1153                                                                               | 1148                                                                                | 593                                                                                 | 1145                                                                                | 1144                                                                                | 455                                                                                 |
| tC, single (s)         | 4.1                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |                                                                                   | 7.1                                                                                | 6.5                                                                                 | 6.2                                                                                 | 7.1                                                                                 | 6.5                                                                                 | 6.2                                                                                 |
| tC, 2 stage (s)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                 | 2.2                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |                                                                                   | 3.5                                                                                | 4.0                                                                                 | 3.3                                                                                 | 3.5                                                                                 | 4.0                                                                                 | 3.3                                                                                 |
| p0 queue free %        | 97                                                                                |                                                                                   |                                                                                   | 97                                                                                |                                                                                   |                                                                                   | 98                                                                                 | 100                                                                                 | 96                                                                                  | 91                                                                                  | 99                                                                                  | 96                                                                                  |
| cM capacity (veh/h)    | 894                                                                               |                                                                                   |                                                                                   | 654                                                                               |                                                                                   |                                                                                   | 123                                                                                | 144                                                                                 | 341                                                                                 | 125                                                                                 | 145                                                                                 | 497                                                                                 |
| Direction, Lane #      | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total           | 930                                                                               | 686                                                                               | 16                                                                                | 32                                                                                |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left            | 25                                                                                | 21                                                                                | 2                                                                                 | 11                                                                                |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right           | 27                                                                                | 34                                                                                | 14                                                                                | 20                                                                                |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| cSH                    | 894                                                                               | 654                                                                               | 276                                                                               | 235                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity     | 0.03                                                                              | 0.03                                                                              | 0.06                                                                              | 0.13                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft) | 2                                                                                 | 2                                                                                 | 5                                                                                 | 11                                                                                |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)      | 0.8                                                                               | 0.9                                                                               | 18.9                                                                              | 22.7                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS               | A                                                                                 | A                                                                                 | C                                                                                 | C                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)     | 0.8                                                                               | 0.9                                                                               | 18.9                                                                              | 22.7                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS           |                                                                                   |                                                                                   | C                                                                                 | C                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Intersection Summary

|                                   |       |                      |   |  |
|-----------------------------------|-------|----------------------|---|--|
| Average Delay                     | 1.4   |                      |   |  |
| Intersection Capacity Utilization | 64.2% | ICU Level of Service | C |  |
| Analysis Period (min)             | 15    |                      |   |  |



# Timings

13: W Main St & Ostrander Ave

Timing Plan: Saturday Peak Ho

|                      |  |  |  |  |  |  |      |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | SBL                                                                               | SBT                                                                               | ø2   |
| Lane Configurations  |                                                                                   |  |                                                                                   |  |                                                                                   |  |      |
| Volume (vph)         | 85                                                                                | 647                                                                               | 7                                                                                 | 586                                                                               | 79                                                                                | 4                                                                                 |      |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                |      |
| Protected Phases     |                                                                                   | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 6                                                                                 | 2    |
| Permitted Phases     | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 6                                                                                 |                                                                                   |      |
| Detector Phase       | 4                                                                                 | 4                                                                                 | 8                                                                                 | 8                                                                                 | 6                                                                                 | 6                                                                                 |      |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Minimum Initial (s)  | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 4.0                                                                               | 4.0                                                                               | 4.0  |
| Minimum Split (s)    | 21.5                                                                              | 21.5                                                                              | 21.5                                                                              | 21.5                                                                              | 21.5                                                                              | 21.5                                                                              | 21.5 |
| Total Split (s)      | 59.0                                                                              | 59.0                                                                              | 59.0                                                                              | 59.0                                                                              | 31.0                                                                              | 31.0                                                                              | 31.0 |
| Total Split (%)      | 65.6%                                                                             | 65.6%                                                                             | 65.6%                                                                             | 65.6%                                                                             | 34.4%                                                                             | 34.4%                                                                             | 34%  |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5  |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0  |
| Lost Time Adjust (s) |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |      |
| Total Lost Time (s)  |                                                                                   | 5.5                                                                               |                                                                                   | 5.5                                                                               |                                                                                   | 5.5                                                                               |      |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Recall Mode          | Max                                                                               | Max                                                                               | Max                                                                               | Max                                                                               | None                                                                              | None                                                                              | None |
| Act Effct Green (s)  |                                                                                   | 55.5                                                                              |                                                                                   | 55.5                                                                              |                                                                                   | 14.7                                                                              |      |
| Actuated g/C Ratio   |                                                                                   | 0.68                                                                              |                                                                                   | 0.68                                                                              |                                                                                   | 0.18                                                                              |      |
| v/c Ratio            |                                                                                   | 0.69                                                                              |                                                                                   | 0.57                                                                              |                                                                                   | 0.73                                                                              |      |
| Control Delay        |                                                                                   | 13.4                                                                              |                                                                                   | 9.9                                                                               |                                                                                   | 34.6                                                                              |      |
| Queue Delay          |                                                                                   | 0.2                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |      |
| Total Delay          |                                                                                   | 13.6                                                                              |                                                                                   | 9.9                                                                               |                                                                                   | 34.6                                                                              |      |
| LOS                  |                                                                                   | B                                                                                 |                                                                                   | A                                                                                 |                                                                                   | C                                                                                 |      |
| Approach Delay       |                                                                                   | 13.6                                                                              |                                                                                   | 9.9                                                                               |                                                                                   | 34.6                                                                              |      |
| Approach LOS         |                                                                                   | B                                                                                 |                                                                                   | A                                                                                 |                                                                                   | C                                                                                 |      |

## Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 81.2

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 15.0

Intersection Capacity Utilization 98.2%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service F

## Splits and Phases: 13: W Main St & Ostrander Ave

|                                                                                     |                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |
| ø2                                                                                  | ø4                                                                                  |
| 31 s                                                                                | 59 s                                                                                |
|  |  |
| ø6                                                                                  | ø8                                                                                  |
| 21 s                                                                                | 59 s                                                                                |

# HCM Unsignalized Intersection Capacity Analysis 14: W Main St & Riverside Dr

Timing Plan: Saturday Peak Ho

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |  |                                                                                   |  |                                                                                   |                                                                                   |  |
| Volume (veh/h)                    | 41                                                                                | 102                                                                               | 588                                                                               | 96                                                                                | 0                                                                                 | 546                                                                               |
| Sign Control                      | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |
| Grade                             | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor                  | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.86                                                                              | 0.86                                                                              |
| Hourly flow rate (vph)            | 49                                                                                | 121                                                                               | 700                                                                               | 114                                                                               | 0                                                                                 | 635                                                                               |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   | 935                                                                               |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             | 0.80                                                                              | 0.80                                                                              |                                                                                   |                                                                                   | 0.80                                                                              |                                                                                   |
| vC, conflicting volume            | 1392                                                                              | 757                                                                               |                                                                                   |                                                                                   | 814                                                                               |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 1364                                                                              | 566                                                                               |                                                                                   |                                                                                   | 638                                                                               |                                                                                   |
| tC, single (s)                    | 6.4                                                                               | 6.2                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |
| p0 queue free %                   | 63                                                                                | 71                                                                                |                                                                                   |                                                                                   | 100                                                                               |                                                                                   |
| cM capacity (veh/h)               | 131                                                                               | 417                                                                               |                                                                                   |                                                                                   | 741                                                                               |                                                                                   |
| Direction, Lane #                 | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 170                                                                               | 814                                                                               | 635                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 49                                                                                | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 121                                                                               | 114                                                                               | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 256                                                                               | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.67                                                                              | 0.48                                                                              | 0.37                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 107                                                                               | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 43.2                                                                              | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 43.2                                                                              | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 4.5                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 52.0%                                                                             | ICU Level of Service                                                              |                                                                                   | A                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis15: W Main St & Fishel Ave

Timing Plan: Saturday Peak Ho

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               | WT                                                                                |                                                                                   |                                                                                   | LT                                                                                | RT                                                                                |                                                                                   |
| Volume (veh/h)                    | 17                                                                                | 12                                                                                | 72                                                                                | 618                                                                               | 534                                                                               | 24                                                                                |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.74                                                                              | 0.74                                                                              | 0.84                                                                              | 0.84                                                                              | 0.86                                                                              | 0.86                                                                              |
| Hourly flow rate (vph)            | 23                                                                                | 16                                                                                | 86                                                                                | 736                                                                               | 621                                                                               | 28                                                                                |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | None                                                                              | None                                                                              |                                                                                   |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   | 1082                                                                              |                                                                                   |                                                                                   |
| pX, platoon unblocked             | 0.89                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 1542                                                                              | 635                                                                               | 649                                                                               |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 1547                                                                              | 635                                                                               | 649                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.4                                                                               | 6.2                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 78                                                                                | 97                                                                                | 91                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 102                                                                               | 482                                                                               | 947                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | EB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 39                                                                                | 821                                                                               | 649                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 23                                                                                | 86                                                                                | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 16                                                                                | 0                                                                                 | 28                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 152                                                                               | 947                                                                               | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.26                                                                              | 0.09                                                                              | 0.38                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 24                                                                                | 7                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 36.8                                                                              | 2.3                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | E                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 36.8                                                                              | 2.3                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   | 79.4%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   | D                                                                                 |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis 16: W Main St & Hubbard Ave

Timing Plan: Saturday Peak Ho

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement               | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations    |  |                                                                                   |  |                                                                                   |                                                                                   |  |
| Volume (veh/h)         | 130                                                                               | 47                                                                                | 478                                                                               | 97                                                                                | 77                                                                                | 380                                                                               |
| Sign Control           | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |
| Grade                  | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor       | 0.85                                                                              | 0.85                                                                              | 0.82                                                                              | 0.82                                                                              | 0.81                                                                              | 0.81                                                                              |
| Hourly flow rate (vph) | 153                                                                               | 55                                                                                | 583                                                                               | 118                                                                               | 95                                                                                | 469                                                                               |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type            |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |
| Median storage (veh)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume | 1301                                                                              | 642                                                                               |                                                                                   |                                                                                   | 701                                                                               |                                                                                   |
| vC1, stage 1 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol     | 1301                                                                              | 642                                                                               |                                                                                   |                                                                                   | 701                                                                               |                                                                                   |
| tC, single (s)         | 6.4                                                                               | 6.2                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |
| tC, 2 stage (s)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                 | 3.5                                                                               | 3.3                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |
| p0 queue free %        | 3                                                                                 | 88                                                                                |                                                                                   |                                                                                   | 89                                                                                |                                                                                   |
| cM capacity (veh/h)    | 158                                                                               | 478                                                                               |                                                                                   |                                                                                   | 905                                                                               |                                                                                   |

| Direction, Lane #      | WB 1  | NB 1 | SB 1 |
|------------------------|-------|------|------|
| Volume Total           | 208   | 701  | 564  |
| Volume Left            | 153   | 0    | 95   |
| Volume Right           | 55    | 118  | 0    |
| cSH                    | 192   | 1700 | 905  |
| Volume to Capacity     | 1.08  | 0.41 | 0.11 |
| Queue Length 95th (ft) | 247   | 0    | 9    |
| Control Delay (s)      | 139.6 | 0.0  | 2.7  |
| Lane LOS               | F     |      | A    |
| Approach Delay (s)     | 139.6 | 0.0  | 2.7  |
| Approach LOS           | F     |      |      |

| Intersection Summary              |  |       |                        |
|-----------------------------------|--|-------|------------------------|
| Average Delay                     |  | 20.8  |                        |
| Intersection Capacity Utilization |  | 75.4% | ICU Level of Service D |
| Analysis Period (min)             |  | 15    |                        |

# HCM Unsignalized Intersection Capacity Analysis

## 17: Peconic Ave & Parking Lot Access

Timing Plan: Saturday Peak Ho

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement               | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations    |                                                                                   |  |  |                                                                                   |                                                                                   |                                                                                   |
| Volume (veh/h)         | 0                                                                                 | 32                                                                                | 938                                                                               | 96                                                                                | 0                                                                                 | 0                                                                                 |
| Sign Control           | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |
| Grade                  | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor       | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Hourly flow rate (vph) | 0                                                                                 | 35                                                                                | 1020                                                                              | 104                                                                               | 0                                                                                 | 0                                                                                 |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type            |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |
| Median storage (veh)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 316                                                                               |
| pX, platoon unblocked  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume | 1072                                                                              | 562                                                                               |                                                                                   |                                                                                   | 1124                                                                              |                                                                                   |
| vC1, stage 1 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol     | 1072                                                                              | 562                                                                               |                                                                                   |                                                                                   | 1124                                                                              |                                                                                   |
| tC, single (s)         | 6.8                                                                               | 6.9                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |
| tC, 2 stage (s)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                 | 3.5                                                                               | 3.3                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |
| p0 queue free %        | 100                                                                               | 93                                                                                |                                                                                   |                                                                                   | 100                                                                               |                                                                                   |
| cM capacity (veh/h)    | 215                                                                               | 470                                                                               |                                                                                   |                                                                                   | 617                                                                               |                                                                                   |

| Direction, Lane #      | WB 1 | NB 1 | NB 2 |
|------------------------|------|------|------|
| Volume Total           | 35   | 680  | 444  |
| Volume Left            | 0    | 0    | 0    |
| Volume Right           | 35   | 0    | 104  |
| cSH                    | 470  | 1700 | 1700 |
| Volume to Capacity     | 0.07 | 0.40 | 0.26 |
| Queue Length 95th (ft) | 6    | 0    | 0    |
| Control Delay (s)      | 13.3 | 0.0  | 0.0  |
| Lane LOS               | B    |      |      |
| Approach Delay (s)     | 13.3 | 0.0  |      |
| Approach LOS           | B    |      |      |

| Intersection Summary              |       |                      |   |
|-----------------------------------|-------|----------------------|---|
| Average Delay                     |       | 0.4                  |   |
| Intersection Capacity Utilization | 39.0% | ICU Level of Service | A |
| Analysis Period (min)             | 15    |                      |   |

# HCM Unsignalized Intersection Capacity Analysis 18: Griffing Ave/Griffing St & Parking Lot/W 2nd St

Timing Plan: Saturday Peak Ho

|                        |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement               | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations    |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |
| Volume (veh/h)         | 2                                                                                 | 3                                                                                 | 0                                                                                 | 30                                                                                | 0                                                                                 | 49                                                                                | 0                                                                                  | 123                                                                                 | 14                                                                                  | 36                                                                                  | 31                                                                                  | 0                                                                                   |
| Sign Control           |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                    | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |
| Grade                  |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                    | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor       | 0.73                                                                              | 0.73                                                                              | 0.73                                                                              | 0.83                                                                              | 0.83                                                                              | 0.83                                                                              | 0.96                                                                               | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                |
| Hourly flow rate (vph) | 3                                                                                 | 4                                                                                 | 0                                                                                 | 36                                                                                | 0                                                                                 | 59                                                                                | 0                                                                                  | 128                                                                                 | 15                                                                                  | 38                                                                                  | 32                                                                                  | 0                                                                                   |
| Pedestrians            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    | None                                                                                |                                                                                     |                                                                                     | None                                                                                |                                                                                     |
| Median storage (veh)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (ft)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    | 559                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume | 302                                                                               | 250                                                                               | 32                                                                                | 245                                                                               | 243                                                                               | 135                                                                               | 32                                                                                 |                                                                                     |                                                                                     | 143                                                                                 |                                                                                     |                                                                                     |
| vC1, stage 1 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol     | 302                                                                               | 250                                                                               | 32                                                                                | 245                                                                               | 243                                                                               | 135                                                                               | 32                                                                                 |                                                                                     |                                                                                     | 143                                                                                 |                                                                                     |                                                                                     |
| tC, single (s)         | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 4.1                                                                                |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |                                                                                     |
| tC, 2 stage (s)        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                 | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |                                                                                     |
| p0 queue free %        | 100                                                                               | 99                                                                                | 100                                                                               | 95                                                                                | 100                                                                               | 94                                                                                | 100                                                                                |                                                                                     |                                                                                     | 97                                                                                  |                                                                                     |                                                                                     |
| cM capacity (veh/h)    | 600                                                                               | 639                                                                               | 1047                                                                              | 695                                                                               | 638                                                                               | 919                                                                               | 1593                                                                               |                                                                                     |                                                                                     | 1422                                                                                |                                                                                     |                                                                                     |
| Direction, Lane #      | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total           | 7                                                                                 | 95                                                                                | 143                                                                               | 70                                                                                |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left            | 3                                                                                 | 36                                                                                | 0                                                                                 | 38                                                                                |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right           | 0                                                                                 | 59                                                                                | 15                                                                                | 0                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| cSH                    | 623                                                                               | 819                                                                               | 1593                                                                              | 1422                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity     | 0.01                                                                              | 0.12                                                                              | 0.00                                                                              | 0.03                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft) | 1                                                                                 | 10                                                                                | 0                                                                                 | 2                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)      | 10.8                                                                              | 10.0                                                                              | 0.0                                                                               | 4.2                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS               | B                                                                                 | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)     | 10.8                                                                              | 10.0                                                                              | 0.0                                                                               | 4.2                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS           | B                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Intersection Summary

|                                   |       |                      |   |
|-----------------------------------|-------|----------------------|---|
| Average Delay                     | 4.2   |                      |   |
| Intersection Capacity Utilization | 26.9% | ICU Level of Service | A |
| Analysis Period (min)             | 15    |                      |   |



# HCM Unsignalized Intersection Capacity Analysis

19: Griffing St/Griffing Ave & Court St

Timing Plan: Saturday Peak Ho

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |  |                                                                                   |                                                                                   |  |  |                                                                                   |
| Volume (veh/h)                    | 52                                                                                | 47                                                                                | 33                                                                                | 133                                                                               | 13                                                                                | 327                                                                               |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.80                                                                              | 0.80                                                                              | 0.80                                                                              | 0.80                                                                              | 0.71                                                                              | 0.71                                                                              |
| Hourly flow rate (vph)            | 65                                                                                | 59                                                                                | 41                                                                                | 166                                                                               | 18                                                                                | 461                                                                               |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | None                                                                              | None                                                                              |                                                                                   |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   | 1010                                                                              |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 497                                                                               | 249                                                                               | 479                                                                               |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 497                                                                               | 249                                                                               | 479                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.4                                                                               | 6.2                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 87                                                                                | 93                                                                                | 96                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 512                                                                               | 795                                                                               | 1094                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | EB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 124                                                                               | 208                                                                               | 479                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 65                                                                                | 41                                                                                | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 59                                                                                | 0                                                                                 | 461                                                                               |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 616                                                                               | 1094                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.20                                                                              | 0.04                                                                              | 0.28                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 19                                                                                | 3                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 12.3                                                                              | 2.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | B                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 12.3                                                                              | 2.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   | 2.4                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   | 45.5%                                                                             |                                                                                   | ICU Level of Service                                                              | A                                                                                 |                                                                                   |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis 20: Griffing Ave & Railroad St

Timing Plan: Saturday Peak Ho

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                     |                                                                                     |  |                                                                                     |
| Sign Control                      |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                                |                                                                                     |                                                                                     | Stop                                                                                |                                                                                     |
| Volume (vph)                      | 14                                                                                | 50                                                                                | 23                                                                                | 223                                                                               | 39                                                                                | 22                                                                                | 12                                                                                | 159                                                                                 | 12                                                                                  | 12                                                                                  | 113                                                                                 | 16                                                                                  |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Hourly flow rate (vph)            | 15                                                                                | 54                                                                                | 25                                                                                | 242                                                                               | 42                                                                                | 24                                                                                | 13                                                                                | 173                                                                                 | 13                                                                                  | 13                                                                                  | 123                                                                                 | 17                                                                                  |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total (vph)                | 95                                                                                | 309                                                                               | 199                                                                               | 153                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left (vph)                 | 15                                                                                | 242                                                                               | 13                                                                                | 13                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right (vph)                | 25                                                                                | 24                                                                                | 13                                                                                | 17                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Hadj (s)                          | -0.09                                                                             | 0.14                                                                              | 0.01                                                                              | -0.02                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Departure Headway (s)             | 5.2                                                                               | 5.1                                                                               | 5.2                                                                               | 5.3                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Degree Utilization, x             | 0.14                                                                              | 0.44                                                                              | 0.29                                                                              | 0.23                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Capacity (veh/h)                  | 617                                                                               | 662                                                                               | 637                                                                               | 621                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)                 | 9.1                                                                               | 12.2                                                                              | 10.4                                                                              | 9.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 9.1                                                                               | 12.2                                                                              | 10.4                                                                              | 9.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | A                                                                                 | B                                                                                 | B                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Delay                             |                                                                                   |                                                                                   | 10.8                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Level of Service                  |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 41.1%                                                                             | ICU Level of Service                                                              |                                                                                   | A                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

21: Roanoke Ave & W 2nd St/E 2nd St

Timing Plan: Saturday Peak Ho

|                      |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | SBL                                                                               | SBT                                                                                 |
| Lane Configurations  |                                                                                   |  |                                                                                   |  |                                                                                   |  |                                                                                   |  |
| Volume (vph)         | 16                                                                                | 35                                                                                | 17                                                                                | 51                                                                                | 14                                                                                | 329                                                                               | 46                                                                                | 81                                                                                  |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                  |
| Protected Phases     |                                                                                   | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 2                                                                                 |                                                                                   | 6                                                                                   |
| Permitted Phases     | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 2                                                                                 |                                                                                   | 6                                                                                 |                                                                                     |
| Detector Phase       | 4                                                                                 | 4                                                                                 | 8                                                                                 | 8                                                                                 | 2                                                                                 | 2                                                                                 | 6                                                                                 | 6                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |
| Minimum Initial (s)  | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 5.5                                                                               | 5.5                                                                               | 5.5                                                                               | 5.5                                                                                 |
| Minimum Split (s)    | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 15.0                                                                              | 10.5                                                                              | 10.5                                                                              | 10.5                                                                              | 10.5                                                                                |
| Total Split (s)      | 19.0                                                                              | 19.0                                                                              | 19.0                                                                              | 19.0                                                                              | 36.0                                                                              | 36.0                                                                              | 36.0                                                                              | 36.0                                                                                |
| Total Split (%)      | 34.5%                                                                             | 34.5%                                                                             | 34.5%                                                                             | 34.5%                                                                             | 65.5%                                                                             | 65.5%                                                                             | 65.5%                                                                             | 65.5%                                                                               |
| Yellow Time (s)      | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                                 |
| Lost Time Adjust (s) |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                                 |
| Total Lost Time (s)  |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                                 |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | Max                                                                               | Max                                                                               | Max                                                                               | Max                                                                                 |
| Act Effct Green (s)  |                                                                                   | 10.3                                                                              |                                                                                   | 10.3                                                                              |                                                                                   | 35.0                                                                              |                                                                                   | 35.0                                                                                |
| Actuated g/C Ratio   |                                                                                   | 0.20                                                                              |                                                                                   | 0.20                                                                              |                                                                                   | 0.68                                                                              |                                                                                   | 0.68                                                                                |
| v/c Ratio            |                                                                                   | 0.24                                                                              |                                                                                   | 0.36                                                                              |                                                                                   | 0.29                                                                              |                                                                                   | 0.14                                                                                |
| Control Delay        |                                                                                   | 16.8                                                                              |                                                                                   | 14.8                                                                              |                                                                                   | 5.5                                                                               |                                                                                   | 4.4                                                                                 |
| Queue Delay          |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                                 |
| Total Delay          |                                                                                   | 16.8                                                                              |                                                                                   | 14.8                                                                              |                                                                                   | 5.5                                                                               |                                                                                   | 4.4                                                                                 |
| LOS                  |                                                                                   | B                                                                                 |                                                                                   | B                                                                                 |                                                                                   | A                                                                                 |                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 16.8                                                                              |                                                                                   | 14.8                                                                              |                                                                                   | 5.5                                                                               |                                                                                   | 4.4                                                                                 |
| Approach LOS         |                                                                                   | B                                                                                 |                                                                                   | B                                                                                 |                                                                                   | A                                                                                 |                                                                                   | A                                                                                   |

## Intersection Summary

Cycle Length: 55

Actuated Cycle Length: 51.3

Natural Cycle: 40

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.36

Intersection Signal Delay: 8.2

Intersection Capacity Utilization 43.7%

Analysis Period (min) 15

Intersection LOS: A

ICU Level of Service A

Splits and Phases: 21: Roanoke Ave & W 2nd St/E 2nd St

|                                                                                        |                                                                                         |
|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
|  Ø2 |  Ø4 |
| 36 s                                                                                   | 19 s                                                                                    |
|  Ø6 |  Ø8 |
| 36 s                                                                                   | 19 s                                                                                    |

# Timings

## 22: Roanoke Ave & Railroad St

Timing Plan: Saturday Peak Ho

|                      |  |  |  |  |      |      |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|------|
| Lane Group           | EBL                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | ø6   | ø8   |
| Lane Configurations  |  |                                                                                   |  |  |      |      |
| Volume (vph)         | 59                                                                                | 14                                                                                | 388                                                                               | 168                                                                               |      |      |
| Turn Type            | NA                                                                                | Perm                                                                              | NA                                                                                | NA                                                                                |      |      |
| Protected Phases     | 2                                                                                 |                                                                                   | 4                                                                                 | 8 6                                                                               | 6    | 8    |
| Permitted Phases     |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   |      |      |
| Detector Phase       | 2                                                                                 | 4                                                                                 | 4                                                                                 | 8 6                                                                               |      |      |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |      |
| Minimum Initial (s)  | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0  | 4.0  |
| Minimum Split (s)    | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               |                                                                                   | 9.0  | 9.0  |
| Total Split (s)      | 18.0                                                                              | 35.0                                                                              | 35.0                                                                              |                                                                                   | 27.0 | 35.0 |
| Total Split (%)      | 22.5%                                                                             | 43.8%                                                                             | 43.8%                                                                             |                                                                                   | 34%  | 44%  |
| Yellow Time (s)      | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0  | 3.0  |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0  | 2.0  |
| Lost Time Adjust (s) | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   |      |      |
| Total Lost Time (s)  | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   |      |      |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |      |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |      |
| Recall Mode          | None                                                                              | Max                                                                               | Max                                                                               |                                                                                   | Max  | Max  |
| Act Effct Green (s)  | 8.9                                                                               |                                                                                   | 30.0                                                                              | 57.0                                                                              |      |      |
| Actuated g/C Ratio   | 0.12                                                                              |                                                                                   | 0.39                                                                              | 0.75                                                                              |      |      |
| v/c Ratio            | 0.36                                                                              |                                                                                   | 0.68                                                                              | 0.38                                                                              |      |      |
| Control Delay        | 33.3                                                                              |                                                                                   | 25.2                                                                              | 0.8                                                                               |      |      |
| Queue Delay          | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               |      |      |
| Total Delay          | 33.3                                                                              |                                                                                   | 25.2                                                                              | 0.8                                                                               |      |      |
| LOS                  | C                                                                                 |                                                                                   | C                                                                                 | A                                                                                 |      |      |
| Approach Delay       | 33.3                                                                              |                                                                                   | 25.2                                                                              | 0.8                                                                               |      |      |
| Approach LOS         | C                                                                                 |                                                                                   | C                                                                                 | A                                                                                 |      |      |

### Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 76

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 14.0

Intersection Capacity Utilization 43.8%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service A

### Splits and Phases: 22: Roanoke Ave & Railroad St

|                                                                                                                                                                                       |                                                                                                                                                                                       |                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #22 #23<br>  ø2 | #22 #23<br>  ø6 | #22 #23<br>  ø4 |
| 18 s                                                                                                                                                                                  | 27 s                                                                                                                                                                                  | 35 s                                                                                                                                                                                  |
|                                                                                                                                                                                       |                                                                                                                                                                                       | #22 #23<br>  ø8 |
|                                                                                                                                                                                       |                                                                                                                                                                                       | 35 s                                                                                                                                                                                  |

# Timings

## 23: Roanoke Ave & Northville Turnpike

Timing Plan: Saturday Peak Ho

|                      |  |  |  |  |  |      |      |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|------|
| Lane Group           | WBL                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               | ø2   | ø4   |
| Lane Configurations  |  |  |  |  |  |      |      |
| Volume (vph)         | 148                                                                               | 331                                                                               | 122                                                                               | 17                                                                                | 290                                                                               |      |      |
| Turn Type            | NA                                                                                | NA                                                                                | pm+ov                                                                             | Perm                                                                              | NA                                                                                |      |      |
| Protected Phases     | 6                                                                                 | 4 2                                                                               | 6                                                                                 |                                                                                   | 8                                                                                 | 2    | 4    |
| Permitted Phases     |                                                                                   |                                                                                   | 4 2                                                                               | 8                                                                                 |                                                                                   |      |      |
| Detector Phase       | 6                                                                                 | 4 2                                                                               | 6                                                                                 | 8                                                                                 | 8                                                                                 |      |      |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |      |
| Minimum Initial (s)  | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0  | 4.0  |
| Minimum Split (s)    | 9.0                                                                               |                                                                                   | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0  | 9.0  |
| Total Split (s)      | 27.0                                                                              |                                                                                   | 27.0                                                                              | 35.0                                                                              | 35.0                                                                              | 18.0 | 35.0 |
| Total Split (%)      | 33.8%                                                                             |                                                                                   | 33.8%                                                                             | 43.8%                                                                             | 43.8%                                                                             | 23%  | 44%  |
| Yellow Time (s)      | 3.0                                                                               |                                                                                   | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0  | 3.0  |
| All-Red Time (s)     | 2.0                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0  | 2.0  |
| Lost Time Adjust (s) | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |      |      |
| Total Lost Time (s)  | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |      |      |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |      |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |      |
| Recall Mode          | Max                                                                               |                                                                                   | Max                                                                               | Max                                                                               | Max                                                                               | None | Max  |
| Act Effect Green (s) | 22.0                                                                              | 44.0                                                                              | 76.0                                                                              |                                                                                   | 30.0                                                                              |      |      |
| Actuated g/C Ratio   | 0.29                                                                              | 0.58                                                                              | 1.00                                                                              |                                                                                   | 0.39                                                                              |      |      |
| v/c Ratio            | 0.36                                                                              | 0.35                                                                              | 0.09                                                                              |                                                                                   | 0.55                                                                              |      |      |
| Control Delay        | 23.6                                                                              | 0.9                                                                               | 0.1                                                                               |                                                                                   | 22.0                                                                              |      |      |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               |      |      |
| Total Delay          | 23.6                                                                              | 0.9                                                                               | 0.1                                                                               |                                                                                   | 22.0                                                                              |      |      |
| LOS                  | C                                                                                 | A                                                                                 | A                                                                                 |                                                                                   | C                                                                                 |      |      |
| Approach Delay       | 23.6                                                                              | 0.7                                                                               |                                                                                   |                                                                                   | 22.0                                                                              |      |      |
| Approach LOS         | C                                                                                 | A                                                                                 |                                                                                   |                                                                                   | C                                                                                 |      |      |

### Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 76

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 12.3

Intersection Capacity Utilization 46.8%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service A

Splits and Phases: 23: Roanoke Ave & Northville Turnpike

|                                                                                         |                                                                                         |                                                                                         |                                                                                         |                                                                                         |                                                                                         |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
|  #22 |  #23 |  #22 |  #23 |  #22 |  #23 |
|  ø2  |                                                                                         |  ø6  |                                                                                         |  ø4  |                                                                                         |
| 18 s                                                                                    |                                                                                         | 27 s                                                                                    |                                                                                         | 35 s                                                                                    |                                                                                         |
|                                                                                         |                                                                                         |                                                                                         |                                                                                         |  #22 |  #23 |
|                                                                                         |                                                                                         |                                                                                         |                                                                                         |  ø8  |                                                                                         |
|                                                                                         |                                                                                         |                                                                                         |                                                                                         | 35 s                                                                                    |                                                                                         |

# Timings

## 24: Osborn Ave/Osborn St & Court St

Timing Plan: Saturday Peak Ho

|                      |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | SBL                                                                                | SBT                                                                                 |
| Lane Configurations  |                                                                                   |  |                                                                                   |  |                                                                                   |  |                                                                                    |  |
| Volume (vph)         | 112                                                                               | 83                                                                                | 18                                                                                | 349                                                                               | 3                                                                                 | 56                                                                                | 9                                                                                  | 73                                                                                  |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Perm                                                                               | NA                                                                                  |
| Protected Phases     |                                                                                   | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 2                                                                                 |                                                                                    | 6                                                                                   |
| Permitted Phases     | 4                                                                                 |                                                                                   | 8                                                                                 |                                                                                   | 2                                                                                 |                                                                                   | 6                                                                                  |                                                                                     |
| Detector Phase       | 4                                                                                 | 4                                                                                 | 8                                                                                 | 8                                                                                 | 2                                                                                 | 2                                                                                 | 6                                                                                  | 6                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Minimum Initial (s)  | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                | 4.0                                                                                 |
| Minimum Split (s)    | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0                                                                               | 9.0                                                                                | 9.0                                                                                 |
| Total Split (s)      | 35.0                                                                              | 35.0                                                                              | 35.0                                                                              | 35.0                                                                              | 25.0                                                                              | 25.0                                                                              | 25.0                                                                               | 25.0                                                                                |
| Total Split (%)      | 58.3%                                                                             | 58.3%                                                                             | 58.3%                                                                             | 58.3%                                                                             | 41.7%                                                                             | 41.7%                                                                             | 41.7%                                                                              | 41.7%                                                                               |
| Yellow Time (s)      | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                                | 3.0                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                                | 2.0                                                                                 |
| Lost Time Adjust (s) |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 |
| Total Lost Time (s)  |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                    | 5.0                                                                                 |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Recall Mode          | Max                                                                               | Max                                                                               | Max                                                                               | Max                                                                               | None                                                                              | None                                                                              | None                                                                               | None                                                                                |
| Act Effect Green (s) |                                                                                   | 30.1                                                                              |                                                                                   | 30.1                                                                              |                                                                                   | 8.8                                                                               |                                                                                    | 8.8                                                                                 |
| Actuated g/C Ratio   |                                                                                   | 0.61                                                                              |                                                                                   | 0.61                                                                              |                                                                                   | 0.18                                                                              |                                                                                    | 0.18                                                                                |
| v/c Ratio            |                                                                                   | 0.29                                                                              |                                                                                   | 0.36                                                                              |                                                                                   | 0.22                                                                              |                                                                                    | 0.63                                                                                |
| Control Delay        |                                                                                   | 6.4                                                                               |                                                                                   | 6.5                                                                               |                                                                                   | 16.4                                                                              |                                                                                    | 12.9                                                                                |
| Queue Delay          |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 |
| Total Delay          |                                                                                   | 6.4                                                                               |                                                                                   | 6.5                                                                               |                                                                                   | 16.4                                                                              |                                                                                    | 12.9                                                                                |
| LOS                  |                                                                                   | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   | B                                                                                 |                                                                                    | B                                                                                   |
| Approach Delay       |                                                                                   | 6.4                                                                               |                                                                                   | 6.5                                                                               |                                                                                   | 16.4                                                                              |                                                                                    | 12.9                                                                                |
| Approach LOS         |                                                                                   | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   | B                                                                                 |                                                                                    | B                                                                                   |

### Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 49

Natural Cycle: 40

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 9.1

Intersection Capacity Utilization 62.2%

Analysis Period (min) 15

Intersection LOS: A

ICU Level of Service B

Splits and Phases: 24: Osborn Ave/Osborn St & Court St

|                                                                                        |                                                                                        |
|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
|  02 |  04 |
| 25 s                                                                                   | 35 s                                                                                   |
|  06 |  08 |
| 25 s                                                                                   | 35 s                                                                                   |



---

## Project: Riverhead BOA - Roundabout Analysis

Scheme name: Saturday Scenario 2 (Improved Roundabout w/ One Way Peconic)

---

### Control Data

| Option         | Setting          | Option       | Setting               |
|----------------|------------------|--------------|-----------------------|
| Capacity Model | Rodel-Win1       | Mode         | Mode2 - Full Geometry |
| Queue Model    | Rodel-Win1       | Delay Model  | Rodel-Win1            |
| Flows          | Peak Hour Factor | Time Slice   | 7.5 minutes           |
| Delay          | Queuing          | Light / Dark | Light                 |

### Geometry Data for Empirical Model

| Leg | Approach Geometry |         |   |        |    |
|-----|-------------------|---------|---|--------|----|
|     | Leg Name          | Bearing | G | V (ft) | nv |
| 1   | Peconic           | 0       | 0 | 12.00  | 1  |
| 2   | CR 94             | 90      | 0 | 12.00  | 1  |
| 3   | CR 63             | 180     | 0 | 12.00  | 1  |
| 4   | CR 104            | 220     | 0 | 12.00  | 1  |
| 5   | NYS 24            | 275     | 0 | 12.00  | 1  |

| Leg | Entry Geometry |    |         |        |       | Circ Geom |        |    |
|-----|----------------|----|---------|--------|-------|-----------|--------|----|
|     | E (ft)         | ne | L' (ft) | R (ft) | ?     | D (ft)    | C (ft) | nc |
| 1   | 20.00          | 2  | 125.00  | 60.00  | 25.00 | 170.00    | 28.50  | 2  |
| 2   | 20.00          | 2  | 125.00  | 60.00  | 25.00 | 170.00    | 28.50  | 2  |
| 3   | 14.20          | 1  | 75.00   | 60.00  | 25.00 | 220.00    | 28.50  | 2  |
| 4   | 20.00          | 2  | 100.00  | 60.00  | 25.00 | 170.00    | 28.50  | 2  |
| 5   | 20.00          | 2  | 125.00  | 60.00  | 25.00 | 220.00    | 28.50  | 2  |

| Leg | Exit Geometry |     |         |     |
|-----|---------------|-----|---------|-----|
|     | Ex (ft)       | nex | Vx (ft) | nvx |
| 1   | 15.00         | 1   | 12.00   | 1   |
| 2   | 24.00         | 2   | 12.00   | 1   |
| 3   | 15.00         | 1   | 12.00   | 1   |
| 4   | 15.00         | 1   | 12.00   | 1   |
| 5   | 24.00         | 2   | 12.00   | 1   |

| Leg | Entry Capacity Modifiers |            |                |
|-----|--------------------------|------------|----------------|
|     | + Cap (v/h)              | Xwalk Fact | Conf Level (%) |
| 1   | 0                        | 1.000      | 50             |
| 2   | 0                        | 1.000      | 50             |
| 3   | 0                        | 1.000      | 50             |
| 4   | 0                        | 1.000      | 50             |
| 5   | 0                        | 1.000      | 50             |

## Flow Modifiers and Flow Data

| Leg | Leg Name | Flow Modifiers |        |
|-----|----------|----------------|--------|
|     |          | %Truck         | Factor |
| 1   | Peconic  | 2.0            | 1.00   |
| 2   | CR 94    | 2.0            | 1.00   |
| 3   | CR 63    | 2.0            | 1.00   |
| 4   | CR 104   | 2.0            | 1.00   |
| 5   | NYS 24   | 2.0            | 1.00   |

| Leg | Arrival Turning Flows (veh/hr) |        |        |        |        |        |
|-----|--------------------------------|--------|--------|--------|--------|--------|
|     | U-Turn                         | Exit-4 | Exit-3 | Exit-2 | Exit-1 | Bypass |
| 1   | 0                              | 0      | 0      | 0      | 0      | 0      |
| 2   | 4                              | 331    | 378    | 393    | 138    | 0      |
| 3   | 5                              | 58     | 179    | 88     | 39     | 0      |
| 4   | 3                              | 87     | 107    | 186    | 39     | 0      |
| 5   | 6                              | 102    | 160    | 250    | 316    | 0      |

| Leg | Arrival Volume Ratios |        |        | Arrival Volume Times (min) |       |       | PHF  |
|-----|-----------------------|--------|--------|----------------------------|-------|-------|------|
|     | Ratio1                | Ratio2 | Ratio3 | Time1                      | Time2 | Time3 |      |
| 1   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |
| 2   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |
| 3   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |
| 4   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |
| 5   | 0.750                 | 1.125  | 0.750  | 0                          | 30    | 60    | 0.90 |

## Model Results

### Global performance

| Leg | Leg Name | Global Performance |         |         |          |       |
|-----|----------|--------------------|---------|---------|----------|-------|
|     |          | Parameter          | Units   | Entries | Bypasses | Total |
| 1   | Peconic  | Arrive Flows       | veh/hr  | 2869    |          | 2869  |
| 2   | CR 94    | Capacity           | veh/hr  | 4600    |          | 4600  |
| 3   | CR 63    | Average Delay      | sec/veh | 16.14   |          | 16.14 |
| 4   | CR 104   | L.O.S. (Signal)    | A – F   | B       |          | B     |
| 5   | NYS 24   | L.O.S. (Unsig)     | A – F   | C       |          | C     |

### Entry Flow and Capacity (60min)

| Leg | Bypass Type | Flow Rate (veh/hr) |        | Opp Rate (veh/hr) |        | Capacity (veh/hr) |        | Ave VCR |        |
|-----|-------------|--------------------|--------|-------------------|--------|-------------------|--------|---------|--------|
|     |             | Entry              | Bypass | Entry             | Bypass | Entry             | Bypass | Entry   | Bypass |
| 1   | None        | 0                  |        | 0                 |        | 0                 |        | 0.000   |        |
| 2   | None        | 1244               |        | 363               |        | 1488              |        | 0.876   |        |
| 3   | None        | 369                |        | 1214              |        | 860               |        | 0.436   |        |
| 4   | None        | 422                |        | 1047              |        | 1050              |        | 0.410   |        |
| 5   | None        | 834                |        | 959               |        | 1203              |        | 0.716   |        |

### Entry Queues and Delays (60min)

| Leg | Ave Del (sec/veh) |        |      | Max Del (sec/veh) |        | 95% Queue |        | LOS A-F |     |     |
|-----|-------------------|--------|------|-------------------|--------|-----------|--------|---------|-----|-----|
|     | Entry             | Bypass | Leg  | Entry             | Bypass | Entry     | Bypass | Entry   | Byp | Leg |
| 1   | 0.0               |        | 0.0  | 0.0               |        | 0.0       |        | A       |     | A   |
| 2   | 22.2              |        | 22.2 | 41.9              |        | 24.9      |        | C       |     | C   |
| 3   | 7.3               |        | 7.3  | 9.9               |        | 2.8       |        | A       |     | A   |
| 4   | 8.5               |        | 8.5  | 11.7              |        | 3.8       |        | A       |     | A   |
| 5   | 14.8              |        | 14.8 | 24.3              |        | 12.6      |        | B       |     | B   |

### Entry Slope and Intercept (60min)

| Leg | Bypass Type | Y Intercept (vehs/hr) |        | Slope (tangent) |        | X Intercept (vehs/hr) |        |
|-----|-------------|-----------------------|--------|-----------------|--------|-----------------------|--------|
|     |             | Entry                 | Bypass | Entry           | Bypass | Entry                 | Bypass |
| 1   | None        | 0                     |        | 0.0000          |        | 0                     |        |
| 2   | None        | 1710                  |        | 0.6122          |        | 2794                  |        |
| 3   | None        | 1285                  |        | 0.3508          |        | 3665                  |        |
| 4   | None        | 1686                  |        | 0.6074          |        | 2775                  |        |
| 5   | None        | 1710                  |        | 0.5296          |        | 3229                  |        |

### Entry Flow and Capacity (Peak 7.5min)

| Leg | Bypass Type | Flow Rate (veh/hr) |        | Opp Rate (veh/hr) |        | Capacity (veh/hr) |        | Ave VCR |        |
|-----|-------------|--------------------|--------|-------------------|--------|-------------------|--------|---------|--------|
|     |             | Entry              | Bypass | Entry             | Bypass | Entry             | Bypass | Entry   | Bypass |
| 1   | None        | 0                  |        | 0                 |        | 0                 |        | 1.0000  |        |
| 2   | None        | 1382               |        | 399               |        | 1466              |        | 0.9909  |        |
| 3   | None        | 410                |        | 1319              |        | 823               |        | 0.5062  |        |
| 4   | None        | 469                |        | 1144              |        | 991               |        | 0.4821  |        |
| 5   | None        | 927                |        | 1055              |        | 1152              |        | 0.8318  |        |

### Entry Queues and Delays (Peak 7.5min)

| Leg | Ave Del (sec/veh) |        |      | Max Del (sec/veh) |        | 95% Queue |        | LOS A-F |     |     |
|-----|-------------------|--------|------|-------------------|--------|-----------|--------|---------|-----|-----|
|     | Entry             | Bypass | Leg  | Entry             | Bypass | Entry     | Bypass | Entry   | Byp | Leg |
| 1   | 0.0               |        | 0.0  | 0.0               |        | 0.0       |        | A       |     | A   |
| 2   | 29.5              |        | 29.5 | 41.9              |        | 24.9      |        | D       |     | D   |
| 3   | 7.8               |        | 7.8  | 9.9               |        | 2.8       |        | A       |     | A   |
| 4   | 9.3               |        | 9.3  | 11.7              |        | 3.8       |        | A       |     | A   |
| 5   | 18.2              |        | 18.2 | 24.3              |        | 12.6      |        | C       |     | C   |

### Entry Slope and Intercept (Peak 7.5min)

| Leg | Bypass Type | Y Intercept (vehs/hr) |        | Slope (tangent) |        | X Intercept (vehs/hr) |        |
|-----|-------------|-----------------------|--------|-----------------|--------|-----------------------|--------|
|     |             | Entry                 | Bypass | Entry           | Bypass | Entry                 | Bypass |
| 1   | None        | 0                     |        | 0.0000          |        | 0                     |        |
| 2   | None        | 1710                  |        | 0.6122          |        | 2794                  |        |
| 3   | None        | 1285                  |        | 0.3508          |        | 3665                  |        |
| 4   | None        | 1686                  |        | 0.6074          |        | 2775                  |        |
| 5   | None        | 1710                  |        | 0.5296          |        | 3229                  |        |

---

## Scheme Notes

(none)

---