

November 18, 2024

**VIA ELECTRONIC MAIL AND FEDERAL EXPRESS**

Supervisor Timothy Hubbard and Councilmembers  
Town of Riverhead  
200 Howell Avenue  
Riverhead, New York 11901  
Attn.: Matt Charters, Planner, Planning Department

2024 NOV 19 A  
FILED IN OFFICE OF  
JAMES M. WOOD, JR.  
TOWN CLERK

Re: Application (the “Application”) by the Wading River Fire District (“FD”), Elite Towers, L.P. (“Elite”) and New York SMSA Limited Partnership d/b/a-Verizon Wireless (“Verizon Wireless”) to the Town of Riverhead (“Town”) Town Board in connection with the proposed public utility wireless communication facility (the “Communication Facility”) to be located at 1503 North Country Road, Wading River, New York, designated as Suffolk County Tax Map No.: District 600, Section 54, Block 1, Lot 28.4 (the “Property”)

Elite / Wading River FD / Our File No.: 151-010

**PUBLIC HEARING DATE: November 7, 2024, at 2:00 p.m.**

Dear Supervisor Hubbard and Councilmembers:

In connection with the FD’s, Elite’s and Verizon Wireless’s Application for the proposed Communication Facility to be located at the Property, and following up on public comments during the Town Board hearing on November 7<sup>th</sup>, herein are the co-applicants’ responses to certain subjects raised. In particular, herein we will address: (1) a report and court case involving radio frequency (“RF”) emissions and the Federal Communications Commission (“FCC”), (2) the co-applicants’ investigation of alternative locations and (3) the potential impact on property values caused by the Communication Facility. In short, and as set forth below, we believe none of the foregoing issues rise to the level of necessitating further zoning review as part of the Application.

**FCC Emissions**

In connection with RF emissions, initially we note and reiterate what was explained at the public hearing, i.e. that the FCC, in consultation with other federal agencies, conducts a rolling review of any peer-reviewed, scientific studies involving RF emissions. Under the National



Environmental Policy Act, as well as the Telecommunications Act of 1996, the FCC is charged to set standards in connection with, among other things, wireless communications facilities such as the one proposed in this instance. While the standards for wireless facilities have not changed since 1996, the FCC continues to monitor whether there are any potential concerns regarding these facilities. In 2013, the FCC had issued a “notice of inquiry” to formally re-evaluate the adequacy of its standards. This inquiry was split into various types of reviews, including for wireless facilities. After a six-year investigation, the FCC declined to change its standards. It is from this determination that the court case cited by the community arose.

The standards themselves were adopted pursuant to the FCC Office of Engineering and Technology Bulletin 65, which was originally adopted in 1996. Generally, once the designated emissions standard is proven to be met, no further inquiry is permitted by localities. (See Section 704(a) of the Telecommunications Act of 1996.) In this case, the co-applicants submitted its Antenna Site FCC RF Compliance Assessment and Report, prepared by Pinnacle Telecom Group, and dated October 2, 2023. This Report confirmed that the maximum anticipated emissions from the Communication Facility at ground level will be less than ½ of one percent of the permitted standard. In addition, the calculation at the nearest residence was performed, and that figure was at 0.03 percent of the overall standard. Moreover, the standard itself is very conservative, on the order of fifty (50) times below recommended safety levels. We direct attention to enclosed Appendix A of the Pinnacle Report which explains the foregoing in further detail. As such, with this conservative methodology for the standard, this ensures maximum protection for residents.

Both the study of firefighters in California referenced by residents and the cited court case arise from an advocacy group called the Environmental Health Trust, an organization that has a varying track record in releasing scientifically-based information. In connection with the firefighters study, it purported to evaluate over a five-year period six firefighters from fire houses that had cell facilities on-site. In all six examples, “brain abnormalities” were found. It is unclear if these firefighters were hand-picked after noting issues with their cognitive skills. It is also not clear whether any other firefighters in these locations without such “abnormalities” were excluded from the study. Further, it is not explained if the study implies causation. (An account of the report is enclosed.) Finally, it should be noted that the account of this “study” was written in 2020, but the study itself apparently was completed in 2004. Without any supporting back-up to the article, it is impossible to assess the value of this “pilot study”.

As for the cited court case, *Environmental Health Trust v. Federal Communications Commission*, 9 F.4<sup>th</sup> 893 (D.C. Cir. 2021)(enclosed is a copy for reference), the appeals court remanded the case back to the FCC, mandating the FCC to further review issues raised by the petitioners (including the Environmental Health Trust) regarding RF emissions. **However, most critically, the court found that the FCC’s response to concerns expressed regarding whether cell facilities cause cancer was sufficient. (Therein, the FCC found no evidence of such a connection.)** Instead, the FCC must respond to unrelated issues. Therefore, if the community’s questions about emissions relates to this question of its connection with cancer cases, the cited court case does not support their concerns. As with any complex issue, and in the context of federal

agency rulemaking, the consideration of the other purported issues takes time (evidenced by the prior six-year review), and therefore it is not unusual that new rules have not been released regarding them.

### **Alternative Sites**

Another recurring point raised by members of the community was the questioning of investigations into the co-applicants' review of alternative locations that were argued would be more appropriate in terms of aesthetics and community character. Such locations included the site formerly used as the Shoreham Nuclear Power Plant, as well as the Wading River Cemetery. Initially, we reiterate the point made at the public hearing, which is that the foremost purpose in constructing the Communication Facility is for the installation of the FD's communication equipment on the proposed pole. As noted, the administration of the FD's communication system is significantly more efficient by having the equipment located on property owned by the FD. In terms of access and operations, having the Communication Facility on-site allows for the FD to have 24-hour access to the site for everyday maintenance and use. Also, utilizing the FD's Property allows for the FD to make the stated arrangement with Elite including Elite's construction of the Communication Facility, allowing for a massive costs savings to the FD. Further, the FD will be able to utilize the modest revenue from the wireless carrier leases to pay for the maintenance and future upgrade of its communications equipment.

Notwithstanding the initial benefits noted, an extensive review of potential alternative locations and designs was explored by the co-applicants. As set forth within Elite's Alternative Sites Affidavit, dated September 11, 2023 (the "Affidavit"), and enclosed herewith for reference even though it is already in the record, efforts have been made to investigate the non-residential properties within the vicinity. Within the Affidavit, the overall process that must be undertaken to find a suitable location is arduous, and must weigh a number of factors, including the location of the neighboring wireless locations in relation to the site, the size, topography and tree cover on the site as well as the surrounding uses. Once these issues have been considered, one of the most critical criteria is whether the owner is interested in entering a lease agreement. The signer of the Affidavit, Tanya Negron, has extensive experience in the industry, which aids in her selection of suitable sites. In some instances, such as here, Ms. Negron will exclude sites based on her experience, knowing that despite some positive factors suggesting a location could be a good one, she understands that the hurdles involved in siting a wireless installation on the site are insurmountable. For instance, the regulatory steps that would be needed to locate on either the nuclear plant or cemetery sites are great. In the nuclear plant context, the location of a facility on a decommissioned site would create procedural difficulties in terms of negotiation of a deal, building construction limitations, regulatory approvals and access issues in the event a facility could even be built. As for the cemetery locations, any type of development thereon would likely need approval from the New York State Cemetery Board. This added step creates added time and cost, and would require compliance with State regulations which may not be feasible to meet at these locations.

As set forth in the Affidavit, Elite directly communicated with local property owners to determine if they would be interested in entering a lease agreement for a wireless facility. Elite cites

to three (3) locations, to which certified letters had been sent. The letters reflective in the Affidavit were only the most recent tries to secure interest from the owners of these properties (i.e., the St. John the Baptist Church, The Rock Golf Club and The Shoppes at East Wind). As discussed during the public hearing, efforts have been made for approximately twenty (20) years to locate a wireless facility in the Wading River community, with no success. (For instance, an attempt had been made to locate at the St. John the Baptist Church, which failed due to community opposition.) Elite's efforts date back several years, with the Affidavit not including the countless hours of legwork to try to identify an appropriate site with a willing owner.

Much of the basis for this inability to find a suitable location is the zoning within the area. Generally, the zoning within the vicinity of the Property, as well as the Property itself, prohibits wireless facilities. What this means is that one of two onerous zoning processes must be pursued, either a change of zone, which is a legislative decision and can be difficult to achieve without it being deemed "spot zoning", or a use variance, which is difficult based on the high level of proof that must be demonstrated. (In particular, an applicant must show through "dollars and cents proof" that there is no other economically viable use of the parcel.) In this context, the location of a wireless facility at the Wading River Cemetery (or even the Olive Hill Cemetery, just down the road) would be more challenging from a zoning perspective, since both are completely surrounded by single family homes. This is not the case at the FD's Property, as there are two churches, one to the north and one to the south, which are either adjacent or across the street from the same.

Aside from the foregoing, there are RF considerations that go into identifying an appropriate site location. As discussed during the public hearing, the challenges due to topography and tree cover demonstrate that achieving sufficient communications in the area is not easy. The suggested locations at the cemeteries or the nuclear plant would not remove the need for the requisite height to clear the hills and trees. As indicated on the enclosed topographical map, which was used by Verizon Wireless' RF expert at the public hearing, both cemeteries are in the same hollow in which the Property is located. Therefore, a pole of a similar height would be required at those parcels as well, noting the fact both are surrounded by residences. As for the nuclear plant, and as described during the public hearing, the transmission range is not very wide for these facilities. Using again an exhibit from the Verizon Wireless's RF expert, the enclosed propagation map shows that there is already a facility located just south of the nuclear plant. Further, by situating the Communication Facility on the plant parcel, the ability of the FD to achieve its coverage needs would be greatly diminished, as the existing gap in coverage is in the area where the Property is precisely in the center.

For all of the stated reasons, it is asserted that a comprehensive review of alternative sites was undertaken as part of this Application, resulting in the Property being the ideal location for the Communication Facility.

### **Property Values**

Finally, a few of the members of the community had suggested that surrounding property values would be negatively impacted on account of the installation of the Communication Facility. It



does not appear that these residents, including one claiming to be a real estate broker, have submitted anything in writing in support. Notwithstanding the same, the co-applicants submit the enclosed Real Estate Consulting Report from Lynch Appraisal, Ltd., dated November 13, 2024, to demonstrate that, by using comparable real-world examples in the vicinity of the Property, wireless facilities such as the Communication Facility will not have an adverse impact on subsequent property values. Instead, such parcels in the vicinity of facilities often experience similar value appreciations as those for parcels not located near wireless installations.

Upon your review, if you should have any questions, please feel free to contact me. Otherwise, we look forward to the Town Board scheduling the Application for a vote. Thank you for your continuing attention to this Application.

Very truly yours,

A handwritten signature in black ink that appears to read "Gregory R. Alvarez".

Gregory R. Alvarez

Enclosures

## APPENDIX A. BACKGROUND ON THE FCC MPE LIMIT

### *FCC Rules and Regulations*

As directed by the Telecommunications Act of 1996, the FCC has established limits for maximum continuous human exposure to RF fields.

The FCC maximum permissible exposure (MPE) limits represent the consensus of federal agencies and independent experts responsible for RF safety matters. Those agencies include the National Council on Radiation Protection and Measurements (NCRP), the Occupational Safety and Health Administration (OSHA), the National Institute for Occupational Safety and Health (NIOSH), the American National Standards Institute (ANSI), the Environmental Protection Agency (EPA), and the Food and Drug Administration (FDA). In formulating its guidelines, the FCC also considered input from the public and technical community – notably the Institute of Electrical and Electronics Engineers (IEEE).

The FCC's RF exposure guidelines are incorporated in Section 1.301 et seq of its Rules and Regulations (47 CFR 1.1301-1.1310). Those guidelines specify MPE limits for both occupational and general population exposure.

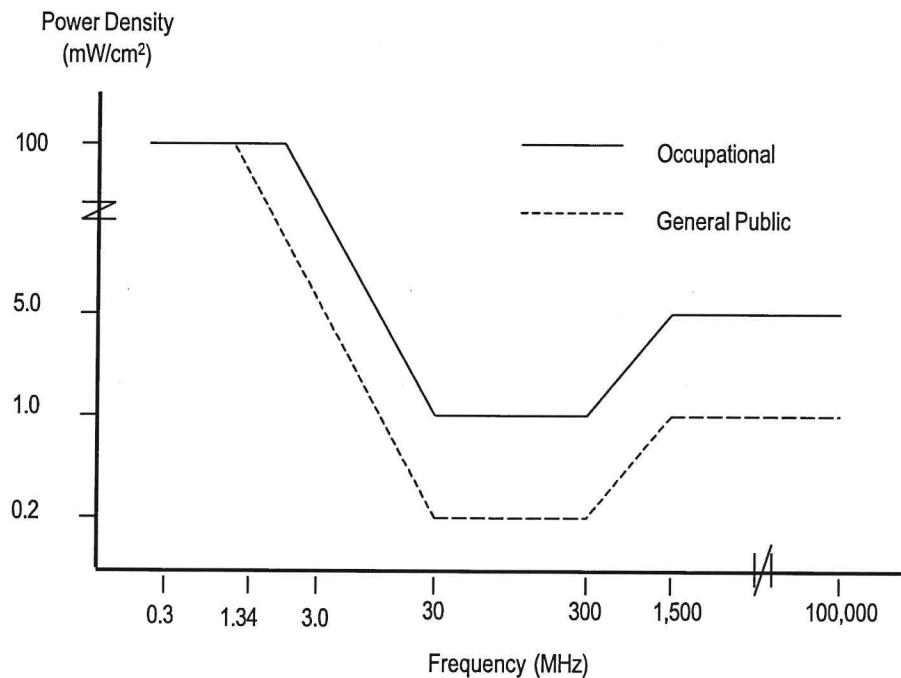
The specified continuous exposure MPE limits are based on known variation of human body susceptibility in different frequency ranges, and a Specific Absorption Rate (SAR) of 4 watts per kilogram, which is universally considered to accurately represent human capacity to dissipate incident RF energy (in the form of heat). The occupational MPE guidelines incorporate a safety factor of 10 or greater with respect to RF levels known to represent a health hazard, and an additional safety factor of five is applied to the MPE limits for general population exposure. Thus, the general population MPE limit has a built-in safety factor of 50. The limits were constructed to appropriately protect humans of both sexes and all ages and sizes and under all conditions – and continuous exposure at levels equal to or below the applicable MPE limits is considered to result in no adverse health effects or even health risk.

The reason for two tiers of MPE limits is based on an understanding and assumption that members of the general public are unlikely to have had appropriate RF safety training and may not be aware of the exposures they receive; occupational exposure in controlled environments, on the other hand, is assumed to involve individuals who have had such training, are aware of the exposures, and know how to maintain a safe personal work environment.

The FCC's RF exposure limits are expressed in two equivalent forms, using alternative units of field strength (expressed in volts per meter, or V/m), and power density (expressed in milliwatts per square centimeter, or mW/cm<sup>2</sup>). The table on the next page lists the FCC limits for both occupational and general population exposures, using the mW/cm<sup>2</sup> reference, for the different radio frequency ranges.

| Frequency Range (F)<br>(MHz) | Occupational Exposure<br>(mW/cm <sup>2</sup> ) | General Public Exposure<br>(mW/cm <sup>2</sup> ) |
|------------------------------|--|--|
| 0.3 - 1.34                   | 100  | 100  |
| 1.34 - 3.0                   | 100  | $180 / F^2$                                      |
| 3.0 - 30                     | $900 / F^2$                                    | $180 / F^2$                                      |
| 30 - 300                     | 1.0  | 0.2  |
| 300 - 1,500                  | $F / 300$                                      | $F / 1500$                                       |
| 1,500 - 100,000              | 5.0  | 1.0  |

The diagram below provides a graphical illustration of both the FCC's occupational and general population MPE limits.



Because the FCC's MPE limits are frequency-shaped, the exact MPE limits applicable to the instant situation depend on the frequency range used by the systems of interest.

The most appropriate method of determining RF compliance is to calculate the RF power density attributable to a particular system and compare that to the MPE limit applicable to the operating frequency in question. The result is usually expressed as a percentage of the MPE limit.

For potential exposure from multiple systems, the respective percentages of the MPE limits are added, and the total percentage compared to 100 (percent of the

limit). If the result is less than 100, the total exposure is in compliance; if it is more than 100, exposure mitigation measures are necessary to achieve compliance.

Note that the FCC “categorically excludes” all “non-building-mounted” wireless antenna operations whose mounting heights are more than 10 meters (32.8 feet) from the routine requirement to demonstrate compliance with the MPE limit, because such operations “are deemed, individually and cumulatively, to have no significant effect on the human environment”. The categorical exclusion also applies to all point-to-point antenna operations, regardless of the type of structure they’re mounted on. Note that the FCC considers any facility qualifying for the categorical exclusion to be automatically in compliance.

In addition, FCC Rules and Regulations Section 1.1307(b)(3) describes a provision known in the industry as “the 5% rule”. It describes that when a specific location – like a spot on a rooftop – is subject to an overall exposure level exceeding the applicable MPE limit, operators with antennas whose MPE% contributions at the point of interest are less than 5% are exempted from the obligation otherwise shared by all operators to bring the site into compliance, and those antennas are automatically deemed by the FCC to satisfy the rooftop compliance requirement.

#### ***FCC References on RF Compliance***

47 CFR, FCC Rules and Regulations, Part 1 (Practice and Procedure), Section 1.1310 (Radiofrequency radiation exposure limits).

FCC Second Memorandum Opinion and Order and Notice of Proposed Rulemaking (FCC 97-303), In the Matter of Procedures for Reviewing Requests for Relief From State and Local Regulations Pursuant to Section 332(c)(7)(B)(v) of the Communications Act of 1934 (WT Docket 97-192), Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation (ET Docket 93-62), and Petition for Rulemaking of the Cellular Telecommunications Industry Association Concerning Amendment of the Commission's Rules to Preempt State and Local Regulation of Commercial Mobile Radio Service Transmitting Facilities, released August 25, 1997.

FCC First Memorandum Opinion and Order, ET Docket 93-62, In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation, released December 24, 1996.

FCC Report and Order, ET Docket 93-62, In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation, released August 1, 1996.

FCC Report and Order, Notice of Proposed Rulemaking, Memorandum Opinion and Order (FCC 19-126), Proposed Changes in the Commission's Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields; Reassessment of Federal Communications Commission Radiofrequency Exposure Limits and Policies, released December 4, 2019.

FCC Office of Engineering and Technology (OET) Bulletin 65, “Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields”, Edition 97-01, August 1997.

FCC Office of Engineering and Technology (OET) Bulletin 56, "Questions and Answers About Biological Effects and Potential Hazards of RF Radiation", edition 4, August 1999.



Select Page



# A CAUTIONARY TALE FROM THE FIREFIGHTERS OF CALIFORNIA FIGHTING CELL TOWERS ON STATIONS

Nov 11, 2020





Brain Damage v4

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## A Cautionary Tale from Firefighters of California by Susan Foster

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The firefighters of California have a cautionary tale to share. They have spent 15 years and millions of dollars **fighting cell towers on their stations**. They have done so because they know they are among the strongest of the strong when it comes to professionals among us. Yet they have suffered harm living and working in the presence of cell towers, and they know they cannot carry out their duties to protect the general public as they should if they are indeed impaired. Furthermore, they know that those they protect are often more vulnerable than they are. Logic tells the firefighters, as it tells us, that if the strongest of the strong are harmed, the weakest and most vulnerable among us are at even greater risk.

Firefighters go through rigorous physical and cognitive testing before being hired by any California fire department. So when cell towers placed on or adjacent to fire stations cause harm to the minds and bodies of our firefighters, something is obviously wrong. There is a lesson to be heeded. This is happening

in California, and anecdotally, it is happening across the country. It is not happening at every station, but it is certainly happening at many station  EN the cell tower radiation is beamed across the living quarters of the firefighters.

It is hard to believe that firefighters have become our society's "canaries in a coal mine", but that is exactly what I am about to describe to you.

As you read the results of a small pilot study we conducted of California firefighters exposed to cell towers on their stations for five years, understand that this brain damage occurred to the strongest of the strong among us after a five-year exposure to 2G from a tower that was measured at  $1/1000^{\text{th}}$  of the FCC allowable limit of RF radiation. That was three generations of wireless ago, so the question must be asked: **What is going to happen to when 5G cell towers are built out in nearly every neighborhood, next to every school, daycare center, nursing home, hospital, place of work and place of worship – in other words, in every corner of our lives 24/7?**

In 2001 I was asked by San Diego, California firefighters to write an appeal when cell towers were permitted for their station. I began hearing more and more stories of firefighters who literally could not function in the job that establishes firefighters as the guardians of society. Once cell towers were activated on or adjacent to their stations, many firefighters could no longer function due to severe headache, inability to sleep, and foggy thinking. These are not symptoms we wish to see in our First Responders.

In 2004 I organized a SPECT brain scan pilot study of firefighters who had been exposed to a cell tower on their station for over five years. The study was conducted Gunnar Heuser, M.D., PhD. We found brain abnormalities in all six firefighters tested.

The symptoms experienced by the firefighters who participated in the SPECT brain scan study were similar to firefighters in other stations who live in the shadow of cell towers. Yet specific to the men we studied, it is important to note all the men had passed rigorous physical and cognitive exams prior to being hired by the fire department. Their symptoms included:

- headaches
- extreme fatigue

- cognitive impairment
- anesthesia-like sleep where the men woke up for 911 calls “as if they’re drugged”
- inability to sleep
- depression
- anxiety
- unexplained anger
- immune-suppression manifest in frequent colds and flu-like symptoms



EN

Real life examples of these symptoms are best briefly characterized by:

- Firefighters got lost on 911 calls in the town they grew up on several occasions.
- In one instance, four firefighters sat in the rig in a stupor with the alarm sounding in the background, unable to remember how to start the engine.
- A medic with 20 years of experience who had never made a mistake forgot basic CPR while resuscitating a coronary victim.

The brain scans of these six men revealed two things: Parts of the brain showed reduced blood flow known as hypoperfusion, suggesting compromised function in these particular areas. Other parts of the brain showed a pervasive, hyper-excitability of the neurons suggesting exposure to RF radiation was causing the neurons to continually fire in these areas without benefit of rest. When neurons (brain cells) cannot rest, they ultimately die.

Therefore, what is the risk going to be for every unborn baby, every child, every elderly person, everyone with a chronic illness, people with allergies and chemical sensitivities, as well as healthy women and men, when 4G or 5G towers beam untested millimeter waves 24/7 through the walls of homes into living rooms and second-story bedrooms where children sleep?

In an ironic twist, even though the firefighters become First Responders in order to protect and save our lives, there is nothing they can do to advocate for themselves. It is usually the fire chiefs who make the deals with telecom to site towers on fire station property, and firefighters who fight these towers outside union-sanctioned activities can lose their jobs. The chief gets credit for bringing in revenue from cell tower leases, and along with that goes job security. Many chiefs are persuaded by unjustifiable promises of safety from telecom reps.

Therefore, it falls to those of us in the public to become aware of when cell towers are permitted for fire stations and to speak up at the local level  EN advocate on behalf of the firefighters. And even though the rank-and-file firefighters and union members have advocated for us by fighting telecom where they can, we need to fight for ourselves. There are multiple ways to do this.

There is an old saying that all politics are **local**. Find like-minded people and educate yourselves and your community leaders through letters, films, and requests for town halls. Most local leaders are shocked to learn the telecommunications industry has not done any **safety studies** on 5G, yet this 4G/5G technology and infrastructure is still being forced upon municipalities and therefore upon all of us. Look at the successes from **other groups at the local and state level**. For example, in New Hampshire House Bill 522 created a Commission to investigate the environmental and human health impacts of 5G before it could be rolled out in the state. On November 1, 2020 the **NH Commission reported their findings with 15 recommendations**.

Fact-based letters of concern about the wireless buildout to legislators at every level – **local, state, and federal** – will add to a growing chorus from **scientists and physicians** around the world.

## About Susan Foster

Susan Foster is a writer, medical social worker, US Adviser to the UK's EM Radiation Research Trust and Honorary Firefighter with the San Diego Fire Department. The last two decades she has advocated for firefighters who have been neurologically and immunologically harmed due to the presence of cell towers on their stations. In 2004 Foster organized a SPECT brain scan study of 6 California firefighters who had lived with a 2G cell tower on their station for 5 years. She conducted the study with Gunnar Heuser, MD, PhD. They found brain abnormalities in all 6 firefighters tested in this first-of-its-kind pilot study. Based on the study results, Foster was the original co-author of Resolution 15 calling for further study on fire stations across the US and Canada. This was passed at the International Association of Firefighters (IAFF) in 2004. The same study helped spur Los Angeles firefighter & sheriff unions to join forces in 2015 and protest their stations being used as base stations for the powerful wireless

FirstNET deployment. The study was also used as a basis for California firefighters fighting for the first-ever health exemption to 5G towers in ,  EN SB 649 in California (2017/18). Foster's articles have appeared in *Glamour*, *Seventeen*, *Army Magazine*, *Catholic Digest*, *American Way*, *Woman's World*, *Your Health*, *Dynamic Years*, *Teenage*, *AAA World*, *The Health Professional*, *Radiation Research Trust*, *Citizens for Safe Technology* and *Children's Health Defense*. Susan Foster continues to advocate for firefighters in their efforts to keep 5G towers off their stations and is currently writing a book on firefighters, the strongest of the strong among us, who have lost their health due to living and working in the shadow of cell towers. Foster holds a master's degree in Social Work from the University of Michigan.

Watch

## **CBS BAY AREA INVESTIGATIVE REPORT: CONSUMERWATCH: 5G CELLPHONE TOWERS SIGNAL RENEWED CONCERN OVER IMPACTS ON HEALTH (WITH FIREFIGHTER INTERVIEW)**

ConsumerWatch: 5G Cellphone Towers Signal Renewed Concer...



**International Association of Fire Fighters Official Position Against Cell Towers  
on Fire Stations**

Press Release on the Firefighter Resolution and Research Study that found  
Neurological Damage



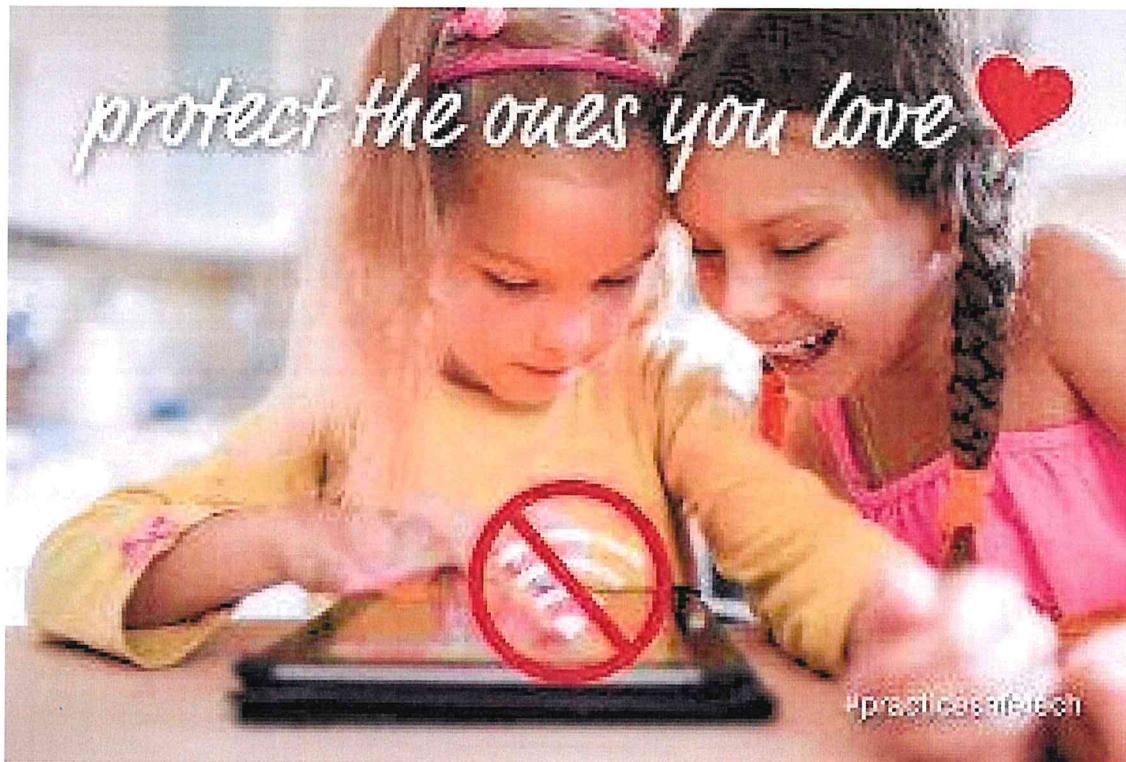
**Affidavit of Susan Foster detailing the study**

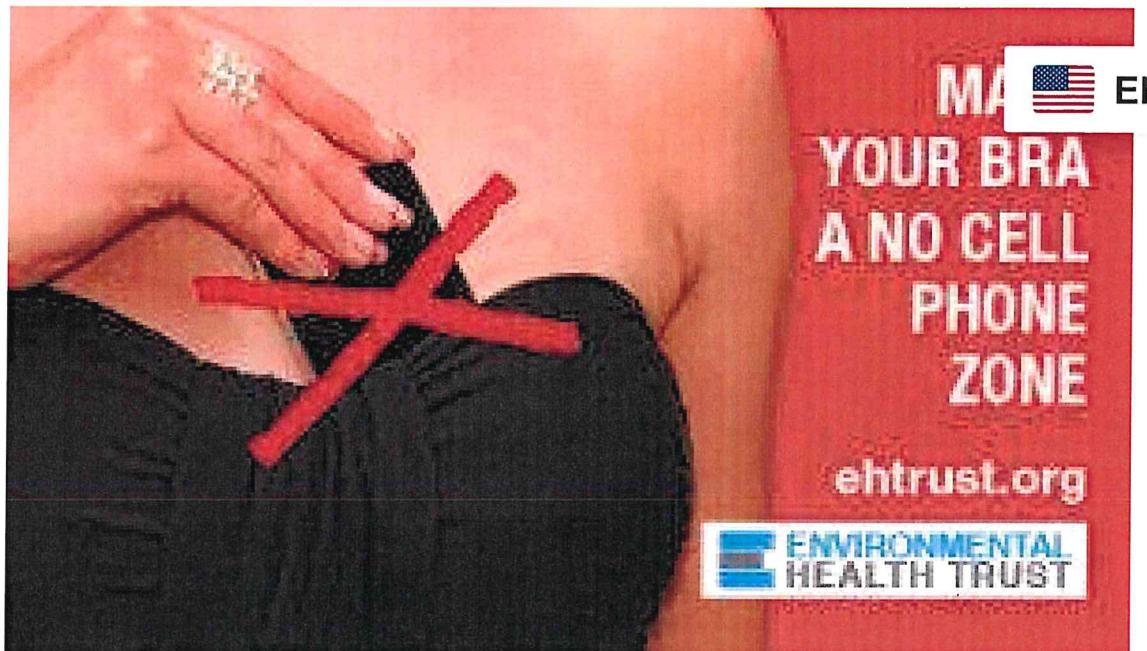
**Letter From Dr. Hardell to Los Angeles Firefighters Local 1014**

**L.A. County Firefighters Local 1014 Webpage Opposed to Cell Antennas on  
Fire Stations**

**Local 1014 Documentation of Research on Biological Effects of Cell Tower  
Radiation**

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## DETAILS



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9 F.4th 893  
United States Court of Appeals, District of Columbia  
Circuit.

ENVIRONMENTAL HEALTH TRUST, et al.,  
Petitioners

v.

FEDERAL COMMUNICATIONS COMMISSION  
and United States of America, Respondents

No. 20-1025 Consolidated with 20-1138

Argued January 25, 2021

Decided August 13, 2021

[6] FCC adequately responded to record evidence that exposure to RF radiation at levels below current limits could cause cancer; and

[7] FCC did not violate NEPA by not issuing environmental assessment (EA) or environmental impact statement (EIS).

Petitions granted in part and remanded.

Henderson, Circuit Judge, filed opinion dissenting in part.

**Procedural Posture(s):** Review of Administrative Decision.

#### Synopsis

**Background:** Environmental advocacy organization, consumer protection organizations, and individuals petitioned for review of order of Federal Communications Commission (FCC),  2019 WL 6681944, terminating notice of inquiry requesting comment on whether rulemaking should be initiated to modify FCC's guidelines for exposure to radiofrequency (RF) radiation, allegedly in violation of Administrative Procedure Act (APA) and National Environmental Policy Act (NEPA).

**Holdings:** The Court of Appeals, Wilkins, Circuit Judge, held that:

[1] FCC's order arbitrarily and capriciously determined that guidelines adequately protected against harmful effects of exposure to RF radiation unrelated to cancer.

[2] FCC's conclusions regarding adequacy of its testing procedures were arbitrary and capricious;

[3] FCC's conclusions regarding impact of RF radiation on children were arbitrary and capricious;

[4] FCC's conclusions regarding long-term exposure to RF radiation, pulsation, or modulation, and implications of recent technological developments were arbitrary and capricious;

[5] FCC's complete failure to respond to comments concerning environmental harm caused by RF radiation was arbitrary and capricious; but

#### West Headnotes (35)

[1] **Environmental Law**  Duty of government bodies to consider environment in general

NEPA and its implementing regulations require federal agencies to establish procedures to account for the environmental effects of their proposed actions. National Environmental Policy Act of 1969 § 102,  42 U.S.C.A. § 4332(C); 40 C.F.R. §§ 1500.4(a), 1501.4(a), 1501.5(a), 1501.5(c)(1).

[2] **Environmental Law**  Major government action

Under NEPA, not every agency action requires the preparation of a full environmental impact statement (EIS). National Environmental Policy Act of 1969 § 102,  42 U.S.C.A. § 4332(C).

[3] **Environmental Law**  Necessity

If it is unclear whether a proposed federal action

will significantly affect the quality of the human environment, as would require an agency to prepare an environmental impact statement (EIS), the responsible agency may prepare a more limited environmental assessment (EA). National Environmental Policy Act of 1969 § 102, 42 U.S.C.A. § 4332(C); 40 C.F.R. § 1501.5(a).

for exposure to radiofrequency (RF) radiation by declining to undertake any changes contemplated in notice of inquiry, was entitled to high degree of deference on petition for judicial review of order, under Administrative Procedure Act (APA), since final order was akin to refusal to initiate rulemaking, and it concerned highly technical determinations of kind that courts were ill-equipped to second-guess. 5 U.S.C.A. § 706(2)(A); Communications Act of 1934 § 301, 47 U.S.C.A. §§ 301, 302a(a).

[4] **Environmental Law**—Particular Projects

To fulfill its obligations under NEPA, the Federal Communications Commission (FCC) has promulgated guidelines for human exposure to radiofrequency (RF) radiation. National Environmental Policy Act of 1969 § 102, 42 U.S.C.A. § 4332(C); Communications Act of 1934 § 301, 47 U.S.C.A. §§ 301, 302a(a); 40 C.F.R. § 1501.5(a); 47 C.F.R. § 1.1307(b).

[7] **Environmental Law**—Administrative agencies and proceedings  
**Telecommunications**—Rules, regulations, and other policymaking  
**Telecommunications**—Telecommunications services

The Federal Communications Commission's (FCC) decision to terminate its notice of inquiry, requesting comment on whether rulemaking should be initiated to modify FCC's guidelines for exposure to radiofrequency (RF) radiation, must be reasoned if it is to survive arbitrary and capricious review under the Administrative Procedure Act (APA). 5 U.S.C.A. § 706(2)(A); Communications Act of 1934 § 301, 47 U.S.C.A. §§ 301, 302a(a).

1 Case that cites this headnote

[5] **Administrative Law and Procedure**—Deference given to agency in general

The arbitrary and capricious standard of the Administrative Procedure Act (APA) encompasses a range of levels of deference to the agency. 5 U.S.C.A. § 706(2)(A).

[8] **Telecommunications**—Standard and Scope of Review

As with other agency decisions not to engage in rulemaking, under the Administrative Procedure Act (APA), Court of Appeals will overturn the Federal Communications Commission's (FCC) decision if there is compelling cause, such as plain error of law or a fundamental change in the factual premises previously considered by the

[6] **Environmental Law**—Radiation and nuclear materials  
**Telecommunications**—Standard and Scope of Review

Federal Communications Commission's (FCC) final order, resolving its notice of inquiry requesting comment on whether rulemaking should be initiated to modify FCC's guidelines

agency.  5 U.S.C.A. § 706(2)(A).

 47 U.S.C.A. §§ 301,  302a(a).

[9] **Telecommunications**  Findings and conclusions

When an agency in the Federal Communications Commission's (FCC) position is confronted with evidence that its current regulations are inadequate or the factual premises underlying its prior judgment have eroded, the FCC must offer more to justify its decision to retain its regulations than mere conclusory statements; rather, the agency must provide assurance that it considered the relevant factors, and it must provide analysis that follows a discernable path to which the Court of Appeals may defer.

1 Case that cites this headnote

[10] **Environmental Law**  Administrative agencies and proceedings

**Telecommunications**  Rules, regulations, and other policymaking

**Telecommunications**  Findings and conclusions

Federal Communications Commission's (FCC) final order, resolving its notice of inquiry requesting comment on whether rulemaking should be initiated to modify its guidelines for exposure to radiofrequency (RF) radiation by declining to undertake any changes contemplated in notice of inquiry, was arbitrary and capricious in failing to respond to record evidence that exposure to RF radiation at levels below FCC's current limits could cause negative health effects unrelated to cancer; FCC supported order by merely conclusory statements from Food and Drug Administration (FDA), without articulating underlying factual bases for those conclusions as to why RF guidelines remained accurate, despite contrary suggestions in studies, reports, and comments cited in administrative record.  5 U.S.C.A. § 706(2)(A); Communications Act of 1934 § 301,

[11] **Environmental Law**  Other particular radiation sources

**Telecommunications**  Powers and duties

It is the Federal Communications Commission's (FCC) responsibility to regulate radio communications and devices that emit radiofrequency (RF) radiation and interfere with radio communications, and to do so in the public interest, including in regard to public health. Communications Act of 1934 § 301,  47 U.S.C.A. §§ 301,  302a(a).

[12] **Telecommunications**  Findings and conclusions

**Telecommunications**  Telecommunications services

The Administrative Procedure Act (APA) requires that Federal Communications Commission's (FCC) decisions concerning the regulation of radio communications and devices be reasoned.  5 U.S.C.A. § 706(2)(A); Communications Act of 1934 § 301,  47 U.S.C.A. §§ 301,  302a(a).

[13] **Environmental Law**  Administrative agencies and proceedings

**Telecommunications**  Rules, regulations, and other policymaking

**Telecommunications**  Telecommunications services

Federal Communications Commission (FCC) may turn to the Food and Drug Administration (FDA) to provide an explanation concerning

FCC's responsibility to regulate radio communications and devices that emit radiofrequency (RF) radiation and interfere with radio communications, and to do so in the public interest, including in regard to public health, but if the FDA fails to do so, the FCC must turn elsewhere or provide its own explanation; were the Administrative Procedure Act (APA) to require less, Court of Appeals' very deferential review of the FCC's order would become nothing more than a rubber stamp.  5 U.S.C.A. § 706(2)(A); Communications Act of 1934 § 301,  47 U.S.C.A. §§ 301,  302a(a).

Communications Act of 1934 § 301,  47 U.S.C.A. §§ 301,  302a(a).

[16] **Administrative Law and Procedure**  Administrative Powers and Proceedings

Federal agencies can be expected to respect the views of such other agencies as to those problems for which those other agencies are more directly responsible and more competent.

[14] **Environmental Law**  Administrative agencies and proceedings

**Telecommunications**  Findings and conclusions

**Telecommunications**  Telecommunications services

The silence of other expert agencies does not constitute a reasoned explanation for a decision of the Federal Communications Commission (FCC) concerning its responsibility to regulate radio communications and devices that emit radiofrequency (RF) radiation and interfere with radio communications, and to do so in the public interest, including in regard to public health. Communications Act of 1934 § 301,  47 U.S.C.A. §§ 301,  302a(a).

[17] **Environmental Law**  Administrative agencies and proceedings

**Telecommunications**  Rules, regulations, and other policymaking

**Telecommunications**  Findings and conclusions

Federal Communications Commission (FCC) may not rely on an outside expert's silence or conclusory statements in lieu of some reasoned explanation for its decision whether to initiate a rulemaking to modify its radiofrequency (RF) radiation guidelines. Communications Act of 1934 § 301,  47 U.S.C.A. §§ 301,  302a(a).

[15] **Environmental Law**  Administrative agencies and proceedings

**Telecommunications**  Rules, regulations, and other policymaking

**Telecommunications**  Telecommunications services

Federal Communications Commission (FCC) may credit outside experts in deciding whether to initiate a rulemaking to modify its radiofrequency (RF) radiation guidelines.

[18] **Administrative Law and Procedure**  Agency Considerations in General

While it is certainly true that an agency's decision not to initiate a rulemaking at a time when other agencies see no compelling case for action may represent the sort of priority-setting in the use of agency resources that is least subject to second-guessing by courts, the same is true of most agency decisions not to initiate a rulemaking.

1 Case that cites this headnote

**[19] Administrative Law and Procedure**—Duty to Make; Policymaking Mechanisms

An agency's decision not to initiate a rulemaking must have some reasoned basis, and an agency cannot simply ignore evidence suggesting that a major factual predicate of its position may no longer be accurate.

1 Case that cites this headnote

**[20] Administrative Law and Procedure**—Procedure; notice and comment

With respect to a decision to initiate rulemaking to modify guidelines, agency is not obliged to respond to every comment, only those that can be thought to challenge a fundamental premise of the agency's decision.

1 Case that cites this headnote

**[21] Environmental Law**—Administrative agencies and proceedings

**Telecommunications**—Rules, regulations, and other policymaking

**Telecommunications**—Findings and conclusions

Federal Communications Commission's (FCC) explanation, in order terminating notice of inquiry requesting comment on whether rulemaking should be initiated to modify guidelines for exposure to radiofrequency (RF) radiation, for refusing to modify its testing procedures to determine whether cell phones and other portable electronic devices complied with RF limits, was rendered arbitrary and capricious by FCC's failure to provide reasoned explanation for determining that exposure to RF radiation at levels below its current limits did

not cause negative health effects unrelated to cancer, since FCC's refusal to modify testing procedures depended on premise that RF radiation did not cause harmful effects at levels below its current limits, which FCC had not adequately explained.  5 U.S.C.A. § 706(2)(A); Communications Act of 1934 § 301,  47 U.S.C.A. §§ 301,  302a(a).

3 Cases that cite this headnote

**[22] Environmental Law**—Administrative agencies and proceedings

**Telecommunications**—Rules, regulations, and other policymaking

**Telecommunications**—Findings and conclusions

Federal Communications Commission's (FCC) explanation, in order terminating notice of inquiry requesting comment on whether rulemaking should be initiated to modify its guidelines for exposure to radiofrequency (RF) radiation, for brushing off record evidence addressing non-cancer-related health effects arising from impact of RF radiation on children, was rendered arbitrary and capricious by FCC's failure to provide reasoned explanation for determining that exposure to RF radiation at levels below its current limits did not cause negative health effects unrelated to cancer; FCC's failure to adequately address impact of RF radiation on children depended on premise that RF radiation did not cause harmful effects at levels below its current limits, which FCC had not adequately explained.  5 U.S.C.A. § 706(2)(A); Communications Act of 1934 § 301,  47 U.S.C.A. §§ 301,  302a(a).

3 Cases that cite this headnote

**[23] Environmental Law**—Administrative agencies and proceedings

**Telecommunications**—Rules, regulations, and other policymaking

**Telecommunications**—Findings and

conclusions

Federal Communications Commission's (FCC) explanation, in order terminating notice of inquiry requesting comment on whether rulemaking should be initiated to modify guidelines for exposure to radiofrequency (RF) radiation, for failing to discuss implications of long-term exposure to RF radiation, pulsation, or modulation and recent technological developments including ubiquity of wireless devices and Wi-Fi, as well as emerging 5G technology, was rendered arbitrary and capricious by FCC's failure to provide reasoned explanation for determining that exposure to RF radiation at levels below its current limits did not cause negative health effects unrelated to cancer, since FCC's explanation depended on premise as to health effects unrelated to cancer that FCC, in turn, inadequately explained.  5 U.S.C.A. § 706(2)(A); Communications Act of 1934 § 301,  47 U.S.C.A. §§ 301,  302a(a).

2 Cases that cite this headnote

[24] **Environmental Law**—Administrative agencies and proceedings  
**Telecommunications**—Rules, regulations, and other policymaking  
**Telecommunications**—Findings and conclusions

Federal Communications Commission's (FCC) order, terminating notice of inquiry requesting comment on whether rulemaking should be initiated to modify guidelines for exposure to radiofrequency (RF) radiation, arbitrarily and capriciously completely failed even to acknowledge, let alone respond to, comments concerning impact of RF radiation on environment, since record contained substantive evidence of potential environmental harms, including letter from Department of Interior (DOI) voicing concern about impact of RF radiation from communication towers on migratory birds.  5 U.S.C.A. § 706(2)(A); Communications Act of 1934 § 301,  47 U.S.C.A. §§ 301,  302a(a).

1 Case that cites this headnote

[25] **Administrative Law and Procedure**—Theory and Grounds of Decision on Review

Just as post hoc rationales offered by counsel cannot fill in the holes left by an agency in its decision, neither can a dissenting opinion.

[26] **Administrative Law and Procedure**—Review for arbitrary, capricious, unreasonable, or illegal actions in general

While imitation may be the highest form of flattery, it does not meet even the low threshold of reasoned analysis required by the Administrative Procedure Act (APA) under the deferential arbitrary and capricious standard of review; thus, one agency's unexplained adoption of an unreasoned analysis just compounds rather than vitiates the analytical void, in other words, two wrongs do not make a right.  5 U.S.C.A. § 706(2)(A).

1 Case that cites this headnote

[27] **Environmental Law**—Administrative agencies and proceedings  
**Telecommunications**—Rules, regulations, and other policymaking  
**Telecommunications**—Findings and conclusions

Federal Communications Commission's (FCC) response, in order terminating notice of inquiry requesting comment on whether rulemaking should be initiated to modify guidelines for exposure to radiofrequency (RF) radiation, adequately explained record evidence indicating that exposure to RF radiation at levels below current limits could cause cancer, and thus, FCC's response was not arbitrary and

capricious, since FCC explained why results of one study could not be extrapolated to humans, and FCC cited response published by international commission that provided detailed explanation of various inconsistencies and limitations in two other studies. 5 U.S.C.A. § 706(2)(A); Communications Act of 1934 § 301, 47 U.S.C.A. §§ 301, 302a(a).

[28] **Telecommunications**—Presentation and reservation of grounds of review

Under the Communications Act, Court of Appeals will only consider a question raised before it if a reasonable Federal Communications Commission (FCC) necessarily would have seen the question as part of the case presented to it. Communications Act of 1934 § 405, 47 U.S.C.A. § 405(a).

[29] **Environmental Law**—Preservation of error in administrative proceeding  
**Telecommunications**—Presentation and reservation of grounds of review

Petitioners' arguments, that Federal Communications Commission (FCC) impermissibly failed to respond to various additional legal considerations, were not reviewable, in FCC's order terminating notice of inquiry requesting comment on whether rulemaking should be initiated to modify guidelines for exposure to radiofrequency (RF) radiation, where petitioners failed to submit to FCC petition for reconsideration of arguments, and they pointed to no comments raising their additional legal considerations in such manner as to necessarily indicate to FCC that they were part of case presented to it, so FCC did not have opportunity to pass on those arguments. Communications Act of 1934 §§ 301, 405, 47 U.S.C.A. §§ 301, 302a(a), 405(a).

[30] **Environmental Law**—Particular Projects

Federal Communications Commission's (FCC) order, terminating notice of inquiry requesting comment on whether rulemaking should be initiated to modify guidelines for exposure to radiofrequency (RF) radiation, did not require FCC to issue environmental assessment (EA) or environmental impact statement (EIS), under NEPA, since there was no ongoing federal action regarding RF limits, as FCC had already published assessment of its existing RF limits that functionally satisfied NEPA's requirements in form and substance. National Environmental Policy Act of 1969 § 102, 42 U.S.C.A. § 4332(c); Communications Act of 1934 § 301, 47 U.S.C.A. §§ 301, 302a(a); 40 C.F.R. § 1502.5.

[31] **Environmental Law**—Major government action

NEPA obligations attach only to proposals for major federal action. National Environmental Policy Act of 1969 § 102, 42 U.S.C.A. § 4332(c); 40 C.F.R. § 1502.5.

[32] **Environmental Law**—Updated or supplemental statements; recirculation

Once an agency has satisfied NEPA's requirements, it is only required to issue a supplemental assessment when there remains major federal action to occur. National Environmental Policy Act of 1969 § 102, 42 U.S.C.A. § 4332(C); 40 C.F.R. § 1501.5(a).

**[33] Administrative Law and Procedure**—Operation and Effect  
**Environmental Law**—Updated or supplemental statements; recirculation

An agency's promulgation of regulations constitutes a final agency action that is not ongoing; thus, once an agency promulgates a regulation and complies with NEPA's requirements regarding that regulation, it is not required to conduct any supplemental environmental assessment, even if its original assessment is outdated. National Environmental Policy Act of 1969 § 102,  42 U.S.C.A. § 4332(C); 40 C.F.R. § 1501.5(a).

**[34] Environmental Law**—Major government action

The mere contemplation of certain action is not sufficient to require an environmental impact statement (EIS), under NEPA, because the contemplation of a project and the accompanying study thereof do not necessarily result in a proposal for major federal action. National Environmental Policy Act of 1969 § 102,  42 U.S.C.A. § 4332(C).

**[35] Administrative Law and Procedure**—Theory or grounds not provided or relied upon by agency

Court of Appeals cannot supply reasoning in the agency's stead.

\*899 On Petitions for Review of an Order of the Federal Communications Commission

#### Attorneys and Law Firms

W. Scott McCollough argued the cause for petitioners. With him on the joint briefs were Edward B. Myers and Robert F. Kennedy, Jr.

Sharon Buccino was on the brief for amici curiae Natural Resources Defense Council and Local Elected Officials in support of petitioners.

Dan Kleiber and Catherine Kleiber, pro se, were on the brief for amici curiae Dan and Catherine Kleiber in support of petitioners.

James S. Turner was on the brief for amicus curiae Building Biology Institute in support of petitioners.

Stephen L. Goodman was on the brief for amicus curiae Joseph Sandri in support of petitioners.

Ashley S. Boizelle, Deputy General Counsel, Federal Communications Commission, argued the cause for respondents. With her on the brief were Jonathan D. Brightbill, Principal Deputy Assistant Attorney General at the time the brief was filed, U.S. Department of Justice, Eric Grant, Deputy Assistant Attorney General at the time the brief was filed, Jeffrey Beelaert and Justin Heminger, Attorneys, Thomas M. Johnson, Jr., General Counsel at the time the brief was filed, Federal Communications Commission, Jacob M. Lewis, Associate General Counsel, and William J. Scher and Rachel Proctor May, Counsel. Richard K. Welch, Deputy Associate General Counsel, entered an appearance.

Before: HENDERSON, MILLETT and WILKINS, Circuit Judges.

#### Opinion

Opinion dissenting in part filed by Circuit Judge Henderson.

Wilkins, Circuit Judge:

\*900 \*\*84 Environmental Health Trust and several other groups and individuals petition for review of an order of the Federal Communications Commission ("the Commission") terminating a notice of inquiry regarding the adequacy of the Commission's guidelines for exposure to radiofrequency radiation. The notice of inquiry requested comment on whether the Commission should initiate a rulemaking to modify its guidelines. The

Commission concluded that no rulemaking was necessary. Petitioners argue that the Commission violated the requirements of the Administrative Procedure Act by failing to respond to significant comments. Petitioners also argue that the National Environmental Policy Act required the Commission to issue an environmental assessment or environmental impact statement regarding its decision to terminate its notice of inquiry.

We grant the petitions in part and remand to the Commission. The Commission failed to provide a reasoned explanation for its determination that its guidelines adequately protect against the harmful effects of exposure to radiofrequency radiation unrelated to cancer.

## I.

The Federal Communications Commission regulates various facilities and devices that transmit radio waves and microwaves, including cell phones and facilities for radio, TV, and cell phone communications. 47 U.S.C. §§ 301, 302a(a); see *EMR Network v. FCC*, 391 F.3d 269, 271 (D.C. Cir. 2004). Radio waves and microwaves are forms of electromagnetic energy that are collectively described by the term “radiofrequency” (“RF”). Office of Eng’g & Tech., Fed. Commc’n Comm’n, *OET Bulletin No. 56, Questions and Answers about Biological Effects and Potential Hazards of Radiofrequency Electromagnetic Fields* 1 (4th ed. Aug. 1999). The phenomenon of radio waves and microwaves moving through space is described as “RF radiation.” *Id.*

We often associate the term “radiation” with the term “radioactivity.” “Radioactivity,” however, refers only to the emission of radiation with enough energy to strip electrons from atoms. *Id.* at 5. That kind of radiation is called “ionizing radiation.” *Id.* It can produce molecular changes and damage biological tissue and DNA. *Id.* Fortunately, RF radiation is “non-ionizing,” meaning that it is not sufficiently energetic to strip electrons from atoms. *Id.* It can, however, heat certain kinds of materials, like food in your microwave oven or, at sufficiently high levels, human body tissue. *Id.* at 6–7. Biological effects that result from the heating of body tissue by RF energy are referred to as “thermal” effects, and are known to be harmful. *Id.* Exposure to lower levels of RF radiation might also cause other, “non-thermal” biological effects. *Id.* at 8. Whether it does, and whether such effects are harmful, are subjects of debate. *Id.*

[1] [2] [3] The National Environmental Policy Act (“NEPA”) and its implementing regulations require federal agencies to “establish procedures to account for the environmental effects of [their] proposed actions.” *Am. Bird Conservancy, Inc. v. FCC*, 516 F.3d 1027, 1032 (D.C. Cir. 2008) (per curiam). If an agency proposes a “major Federal action[ ]” that stands to “significantly affect[ ] the quality of the human environment,” the agency must prepare an environmental impact statement (“EIS”) that examines the adverse environmental effects of the proposed action and potential alternatives. 42 U.S.C. § 4332(C). Not every agency action, however, requires the preparation of a full EIS. *Theodore Roosevelt Conservation P’ship v. Salazar*, 616 F.3d 497, 503 (D.C. Cir. 2010). If it is unclear whether a proposed action will \*901 \*\*\*85 “significantly affect[ ] the quality of the human environment,” 42 U.S.C. § 4332(C), the responsible agency may prepare a more limited environmental assessment (“EA”). See 40 C.F.R. § 1501.5(a). An EA serves to “[b]riefly provide sufficient evidence and analysis for determining whether to prepare an [EIS] or a finding of no significant impact.” 40 C.F.R. § 1501.5(c)(1). Additionally, an agency may use “categorical exclusions” to “define categories of actions that normally do not have a significant effect on the human environment and therefore do not require preparation of an environmental impact statement.” 40 C.F.R. § 1500.4(a); *see also* 40 C.F.R. § 1501.4(a).

[4] To fulfill its obligations under NEPA, the Commission has promulgated guidelines for human exposure to RF radiation. *Cellular Phone Taskforce v. FCC*, 205 F.3d 82, 87 (2d Cir. 2000). The guidelines set limits for RF exposure. Before the Commission authorizes the construction or use of any wireless facility or device, the applicant for authorization must determine whether the facility or device is likely to expose people to RF radiation in excess of the limits set by the guidelines. 47 C.F.R. § 1.1307(b). If the answer is yes, the applicant must prepare an EA regarding the likely effects of the Commission’s authorization of the facility or device.

[5] *Id.* Depending on the contents of the EA, the Commission may require the preparation of an EIS, and may subject approval of the application to a full vote by the Commission. Office of Eng’g & Tech., Fed. Commc’n Comm’n, *OET Bulletin No. 65, Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields* 6 (ed. 97-01, Aug. 1997). If the answer is no, the applicant is generally not required to prepare an EA. 47 C.F.R. § 1.1306(a).

The Commission last updated its limits for RF exposure

in 1996.  *Resolution of Notice of Inquiry, Second Report and Order, Notice of Proposed Rulemaking, and Memorandum Opinion and Order*, 34 FCC Rcd. 11,687, 11,689–90 (2019) (“2019 Order”); *see also* Telecommunications Act of 1996, Pub. L. No. 104-104, § 704(b), 110 Stat. 56, 152 (directing the Commission to “prescribe and make effective rules regarding the environmental effects of radio frequency emissions” within 180 days). The limits are based on standards for RF exposure issued by the American National Standards Institute Committee (“ANSI”), the Institute of Electrical and Electronic Engineers, Inc. (“IEEE”), and the National Council on Radiation Protection and Measurements (“NCRP”).  *In re Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, 11 FCC Rcd. 15,123, 15,134–35, 15,146–47 (1996). The limits are designed to protect against “thermal effects” of exposure to RF radiation, but not “non-thermal” effects.

 *EMR Network*, 391 F.3d at 271.

In March 2013, the Commission issued a notice of inquiry regarding the adequacy of its 1996 guidelines. *See Reassessment of Radiofrequency Exposure Limits & Policies, Notice of Inquiry*, 28 FCC Rcd. 3,498 (2013) (“2013 Notice of Inquiry”). The Commission divided its notice of inquiry into five sections. In the first section, it sought comment on the propriety of its exposure limits for RF radiation, particularly as they relate to device use by children. *Id.* at 3,575–80. In the second section, the Commission sought comment on how to better provide information to consumers and the public about exposure to RF radiation and methods for reducing exposure. *Id.* at 3,580–82. In the third section, the Commission sought comment on whether it should impose additional precautionary restrictions on devices and facilities that are unlikely to expose people to RF radiation in excess of the limits set by the Commission’s guidelines. \*902 \*\*86 *Id.* at 3,582–85. In the fourth and fifth sections, the Commission sought comment on whether it should change its methods for determining whether devices and facilities comply with the Commission’s guidelines. *Id.* at 3,585–89.

The Commission explained that it was issuing the notice of inquiry in response to changes in the ubiquity of wireless devices and in scientific standards and research since 1996. *Id.* at 3,570. Specifically, the Commission noted that the IEEE had “published a major revision to its RF exposure standard in 2006.” *Id.* at 3,572. The Commission also noted that the International Commission on Non-Ionizing Radiation Protection had published RF exposure guidelines in 1998 that differed somewhat from the Commission’s 1996 guidelines, and was likely to release a revision of those guidelines “in the near future.”

*Id.* at 3,573. And the Commission noted that the International Agency for Research on Cancer (“IARC”) had classified RF radiation as possibly carcinogenic to humans, and was likely to release a detailed monograph regarding that classification prior to the resolution of the notice of inquiry. *Id.* at 3,575 & n.385. The Commission invited public comment on all of these developments, but underscored that it would “work closely with and rely heavily—but not exclusively—on the guidance of other federal agencies with expertise in the health field.” *Id.* at 3,571.

In December 2019, the Commission issued a final order resolving its 2013 notice of inquiry by declining to undertake any of the changes contemplated in the notice of inquiry. *See*  *2019 Order*, 34 FCC Rcd. at 11,692–97.

In January 2020, Petitioners Environmental Health Trust, Consumers for Safe Cell Phones, Elizabeth Barris, and Theodora Scarato timely petitioned this Court for review of the Commission’s 2019 final order. In February 2020, Petitioners Children’s Health Defense, Michele Hertz, Petra Brokken, Dr. David O. Carpenter, Dr. Paul Dart, Dr. Toril H. Jelter, Dr. Ann Lee, Virginia Farver, Jennifer Baran, and Paul Stanley, M.Ed., timely petitioned the Ninth Circuit for review of the same order, and the Ninth Circuit transferred their petition to this Court pursuant to 28 U.S.C. § 2112. This Court consolidated the petitions. We have jurisdiction under 47 U.S.C. § 402(a) and  28 U.S.C. § 2342(1).

## II.

Petitioners challenge the 2019 final order under NEPA and the Administrative Procedure Act (“APA”). We begin with the APA.

### A.

Petitioners argue that the order is arbitrary and capricious and therefore must be set aside under  5 U.S.C. § 706(2)(A) for the following reasons: (1) the order fails to acknowledge evidence of negative health effects caused by exposure to RF radiation at levels below the limits set by the Commission’s 1996 guidelines, including evidence of cancer, radiation sickness, and adverse effects on sleep, memory, learning, perception, motor abilities, prenatal

and reproductive health, and children's health; (2) the order fails to respond to comments concerning environmental harm caused by RF radiation; (3) the order fails to discuss the implications of long-term exposure to RF radiation, exposure to RF pulsation or modulation (two methods of imbuing radio waves with information), and the implications of technological developments that have occurred since 1996, including the ubiquity of wireless devices and Wi-Fi, and the emergence of "5G" technology; (4) the order fails to adequately explain the Commission's refusal to modify its procedures for determining whether cell phones comply with its RF limits; and (5) the order \*903 \*\*87 fails to respond to various "additional legal considerations," Pet'rs' Br. at 84.

[§] [6] [7] [8] [9] Before discussing these arguments, and the Commission's responses to them, we clarify our standard of review. The arbitrary and capricious standard of the Administrative Procedure Act "encompasses a range of levels of deference to the agency." *Am. Horse Prot. Ass'n v. Lyng*, 812 F.2d 1, 4 (D.C. Cir. 1987). We completely agree with the dissenting opinion that the Commission's order is entitled to a high degree of deference, both because it is akin to a refusal to initiate a rulemaking, *see* *id.* at 4–5, and because it concerns highly technical determinations of the kind courts are ill-equipped to second-guess, *see* *Am. Radio Relay League, Inc., v. FCC*, 524 F.3d 227, 233 (D.C. Cir. 2008). So as to the governing law, the dissenting opinion and we are on the same page. Nevertheless, the Commission's decision to terminate its notice of inquiry must be "reasoned" if it is to survive arbitrary and capricious review. *See* *Am. Horse*, 812 F.2d at 5; *Am. Radio*, 524 F.3d at 241. As with other agency decisions not to engage in rulemaking, we will overturn the Commission's decision if there is "compelling cause, such as plain error of law or a fundamental change in the factual premises previously considered by the agency[.]" *Flyers Rights Educ. Fund, Inc. v. Fed. Aviation Admin.*, 864 F.3d 738, 743 (D.C. Cir. 2017) (quoting *WildEarth Guardians v. EPA*, 751 F.3d 649, 653 (D.C. Cir. 2014)). When an agency in the Commission's position is confronted with evidence that its current regulations are inadequate or the factual premises underlying its prior judgment have eroded, it must offer more to justify its decision to retain its regulations than mere conclusory statements. *See* *Am. Horse*, 812 F.2d at 6; *Am. Radio*, 524 F.3d at 241. Rather, the agency must provide "assurance that [it] considered the relevant factors," and it must provide analysis that follows "a discernable path to which the court may defer." *Am. Radio*, 524 F.3d at 241.

i.

[¶] Under this highly deferential standard of review, we find the Commission's order arbitrary and capricious in its failure to respond to record evidence that exposure to RF radiation at levels below the Commission's current limits may cause negative health effects unrelated to cancer. (As we explain below, we find that the Commission offered an adequate explanation for its determination that exposure to RF radiation at levels below the Commission's current limits does not cause cancer.) That failure undermines the Commission's conclusions regarding the adequacy of its testing procedures, particularly as they relate to children, and its conclusions regarding the implications of long-term exposure to RF radiation, exposure to RF pulsation or modulation, and the implications of technological developments that have occurred since 1996, all of which depend on the premise that exposure to RF radiation at levels below its current limits causes no negative health effects. Accordingly, we find those conclusions arbitrary and capricious as well. Finally, we find the Commission's order arbitrary and capricious in its complete failure to respond to comments concerning environmental harm caused by RF radiation.

Petitioners point to multiple studies and reports, which were published after 1996 and are in the administrative record, purporting to show that RF radiation at levels below the Commission's current limits causes negative health effects unrelated to cancer, such as reproductive problems and neurological problems that span from effects on memory to motor abilities. *See, e.g.*, J.A. 3,068 (BIOINITIATIVE WORKING GROUP, BIOINITIATIVE REPORT (Cindy Sage & David O. Carpenter eds., 2012) (describing \*904 \*\*88 evidence that human sperm and their DNA are damaged by low levels of RF radiation)); J.A. 5,243 (Igor Yakymenko et al., *Oxidative Mechanisms of Biological Activity of Low-Intensity Radiofrequency Radiation*, ELECTROMAGNETIC BIOLOGY & MED., EARLY ONLINE, 1–16 (2015)); J.A. 5,259–69 (Henrietta Nittby et al., *Increased Blood-Brain Barrier Permeability in Mammalian Brain 7 Days After Exposure to the Radiation from a GSM-900 Mobile Phone*, 16 PATHOPHYSIOLOGY 103 (2009)); J.A. 5,320–68 (Henry Lai, *A Summary of Recent Literature on Neurobiological Effects of Radiofrequency Radiation, in MOBILE COMMUNICATIONS AND PUBLIC HEALTH* 187–222 (M. Markov ed., 2018)); J.A. 5,994–6,007 (Milena Forster et al., *A Prospective Cohort*

*Study of Adolescents' Memory Performance and Individual Brain Dose of Microwave Radiation from Wireless Communication*, 126 ENV'T HEALTH PERSPS. 077007 (July 2018)). Petitioners also point to approximately 200 comments submitted by individuals who advised the Commission that either they or their family members suffer from radiation sickness, “a constellation of mainly neurological symptoms that manifest as a result of RF[ ] exposure.” Pet’rs’ Br. at 30–31, 30 n.99.

The Commission argues that its order adequately responded to this evidence by citing the Food and Drug Administration (“FDA”)’s determination that exposure to RF radiation at levels below the Commission’s current limits does not cause negative health effects. The order cites three statements from the FDA. First, the order cites an FDA webpage titled “Do cell phones pose a health hazard?” that, as of December 4, 2017, stated that “[t]he weight of scientific evidence has not linked cell phones with any health problems.”  2019 Order, 34 FCC Rcd. at 11,692–93, 11,693 n.31. Second, the order cites a February 2018 statement from the Director of the FDA’s Center for Devices and Radiological Health advising the public that

As part of our commitment to protecting the public health, the FDA has reviewed, and will continue to review, many sources of scientific and medical evidence related to the possibility of adverse health effects from radiofrequency energy exposure in both humans and animals and will continue to do so as new scientific data are published. Based on our ongoing evaluation of the issue, the totality of the available scientific evidence continues to not support adverse health effects in humans caused by exposures at or under the current radiofrequency energy exposure limits.

 *Id.* at 11,695 n.42. Third, the order cites an April 2019 letter from the Director of the FDA’s Center for Devices and Radiological Health that does not discuss non-cancer-related health effects but instead addresses a 2018 study by the National Toxicology Program that found that exposure to RF radiation emitted by cell

phones may cause cancer in rodents. *2019 Order*, 34 FCC Rcd. at 11,692 & n.28. The letter explains that “[a]s a part of our ongoing monitoring activities, we have reviewed the results and conclusions of the recently published rodent study from the National Toxicology Program in the context of all available scientific information, including epidemiological studies, and concluded that no changes to the current standards are warranted at this time.” Letter from Jeffrey Shuren, M.D., J.D., Dir., Ctr. for Devices & Radiological Health, Food & Drug Admin., Dep’t of Health & Hum. Servs., to Julius Knapp, Chief, Off. Of Eng’g & Tech., FCC (April 24, 2019).

We do not agree that these statements provide a reasoned explanation for the Commission’s decision to terminate its notice of inquiry. Rather, we find them to be of the conclusory variety that we have  \*905 \*\*89 previously rejected as insufficient to sustain an agency’s refusal to initiate a rulemaking. In  *American Horse*, this Court considered whether the Secretary of Agriculture had offered a satisfactory explanation under the APA of his refusal to institute rulemaking proceedings regarding the practice of deliberately injuring show horses by fastening heavy chains or similar equipment—referred to as “action devices”—to the horses’ front limbs.  812 F.2d at 2. In response to the argument that a certain study presented facts that merited a new rulemaking, the Secretary offered the following two-sentence explanation:

6. I have reviewed studies and other materials, relating to action devices, presented by humane groups, Walking Horse industry groups, and independent institutions, including the study referred to in the Complaint.
7. On the basis of this information, I believe that the most effective method of enforcing the Act is to continue the current regulations.

 *Id.* at 5. This Court found these “two conclusory sentences ... insufficient to assure a reviewing court that the agency’s refusal to act was the product of reasoned decisionmaking.”  *Id.* at 6.  *American Horse* explained that the study at issue “may or may not remove a ‘significant factual predicate’ of the original rules’ gaps[,]” and remanded to the Secretary to make that determination.  *Id.* at 7.

Similarly, in  *American Radio*, this Court considered whether the Commission had offered a satisfactory explanation for its decision to retain in its regulations a particular “extrapolation factor”—an estimate of the projected rate at which radio frequency strength decreases

from a radiation-emitting source—despite studies submitted in a petition for reconsideration indicating that a different extrapolation factor would be more appropriate.  524 F.3d at 240–41. The Commission explained its decision by asserting that “[n]o new information has been submitted that would provide a convincing argument for modifying the extrapolation factor ... at this time.”  *Id.* (internal alterations omitted). We rejected that explanation as conclusory and unreasoned.  *Id.*

The statements from the FDA on which the Commission’s order relies are practically identical to the Secretary’s statement in  *American Horse* and the Commission’s statement in  *American Radio*. They explain that the FDA has reviewed certain information—here, “all,” “the weight,” or “the totality” of “scientific evidence.” And they state the FDA’s conclusion that, in light of that information, exposure to RF radiation at levels below the Commission’s current limits does not cause harmful health effects. But they offer “no articulation of the factual ... bases” for the FDA’s conclusion.  *Am. Horse*, 812 F.2d at 6 (internal quotation marks omitted). In other words, they do not explain why the FDA determined, despite the studies and comments that Petitioners cite, that exposure to RF radiation at levels below the Commission’s current limits does not cause harmful health effects. Such conclusory statements “cannot substitute for a reasoned explanation,” for they provide “neither assurance that the [FDA] considered the relevant factors nor [do they reveal] a discernable path to which the court may defer.”  *Am. Radio*, 524 F.3d at 241. They instead represent a failure by the FDA to address the implication of Petitioners’ studies: The factual premise—the non-existence of non-thermal biological effects—underlying the current RF guidelines may no longer be accurate.

[11] [12] [13] When repeated by the Commission, the FDA’s conclusory statements still do not substitute for the reasoned explanation that the APA requires. It is the Commission’s responsibility to regulate \*906 \*\*90 radio communications,  47 U.S.C. § 301, and devices that emit RF radiation and interfere with radio communications, *id.* § 302a(a), and to do so in the public interest, including in regard to public health,  *Banzhaf v. FCC*, 405 F.2d 1082, 1096 (D.C. Cir. 1968). Even the Commission itself recognizes this. See *2019 Order*, 34 FCC Rcd. at 11,689 (“The Commission has the responsibility to set standards for RF emissions”); *2013 Notice of Inquiry*, 28 FCC Rcd. at 3,571 (explaining that the Commission opened the notice of inquiry “to ensure

[it] [was] meeting [its] regulatory responsibilities” and that it would “work closely with and rely heavily—but not exclusively—on the guidance of other federal agencies with expertise in the health field” in order to “fully discharge[ ] [its] regulatory responsibility”) (emphasis added). And the APA requires that Commission’s decisions concerning the regulation of radio communications and devices be reasoned. The Commission’s purported reasoning in this case is that it chose to rely on the FDA’s evaluation of the studies in the record. Absent explanation from the FDA as to how and why it reached its conclusions regarding those studies, however, we have no basis on which to review the reasonableness of the Commission’s decision to adopt the FDA’s conclusions. Ultimately, the Commission’s order remains bereft of any explanation as to *why*, in light of the studies in the record, its guidelines remain adequate. The Commission may turn to the FDA to provide such an explanation, but if the FDA fails to do so, as it did in this case, the Commission must turn elsewhere or provide its own explanation. Were the APA to require less, our very deferential review would become nothing more than a rubber stamp.

[14] The Commission also argues that its order provided a reasoned explanation for its decision to terminate the notice of inquiry, despite Petitioners’ evidence, by observing that “no expert health agency expressed concern about the Commission’s RF exposure limits,” and that “no evidence has moved our sister health and safety agencies to issue substantive policy recommendations for strengthening RF exposure regulation.” *2019 Order*, 34 FCC Rcd. at 11,692. The silence of other expert agencies, however, does not constitute a reasoned explanation for the Commission’s decision to terminate its notice of inquiry for the same reason that the FDA’s conclusory statements do not constitute a reasoned explanation: silence does not indicate why the expert agencies determined, in light of evidence suggesting to the contrary, that exposure to RF radiation at levels below the Commission’s current limits does not cause negative health effects unrelated to cancer. Silence does not even indicate whether the expert agencies made any such determination, or whether they considered any of the evidence in the record.

[15] [16] [17] [18] [19] Our decision in  *EMR Network* is not to the contrary. There, we rejected the argument that the Commission improperly delegated its NEPA duties by relying on input from other government agencies and non-governmental expert organizations in deciding whether to initiate a rulemaking to modify its RF radiation guidelines. 391 F.3d at 273. We found the Commission “not to have abdicated its responsibilities,

but rather to have properly credited outside experts,” and noted that “the FCC’s decision not to leap in, at a time when the EPA (and other agencies) saw no compelling case for action, appears to represent the sort of priority-setting in the use of agency resources that is least subject to second-guessing by courts.”  *Id.* (citing  *Am. Horse*, 812 F.2d at 4). We agree with the dissenting opinion that the Commission may credit outside experts in deciding whether to initiate a rulemaking to modify its RF radiation guidelines. To **\*907 \*\*91** be sure, “[a]gencies can be expected to respect the views of such other agencies as to those problems for which those other agencies are more directly responsible and more competent.”  *City of Boston Delegation v. FERC*, 897 F.3d 241, 255 (D.C. Cir. 2018) (internal alteration and quotation marks omitted). What the Commission may not do, however, is rely on an outside expert’s silence or conclusory statements in lieu of some reasoned explanation for its decision. And while it is certainly true that an agency’s decision not to initiate a rulemaking at a time when other agencies see no compelling case for action may represent “the sort of priority-setting in the use of agency resources that is least subject to second-guessing by courts,”  *EMR Network*, 391 F.3d at 273, the same is true of most agency decisions not to initiate a rulemaking, *see*  *Am. Horse*, 812 F.2d at 4–5. Nevertheless, an agency’s decision not to initiate a rulemaking must have some reasoned basis, and an agency cannot simply ignore evidence suggesting that a major factual predicate of its position may no longer be accurate.  *Id.* at 5.

Nor does  *Cellular Phone Taskforce* help the Commission. There, the Second Circuit rejected the argument that the Commission was required to consult with the Environmental Protection Agency (“EPA”) or other outside agencies before declining to modify its RF radiation guidelines in the face of new evidence regarding non-thermal effects caused by RF radiation. 205 F.3d at 90–91. In so holding, the Second Circuit found that “[i]t was fully reasonable for the FCC to expect the agency with primacy in evaluating environmental impacts to monitor all relevant scientific input into the FCC’s reconsideration, particularly because the EPA had been assigned the lead role in RF radiation health effects since 1970,” and that the Commission was not required to “supply the new evidence to the other federal agencies with expertise in the area.”  *Id.* at 91. But the Second Circuit did not hold that the Commission could rely solely on the silence or unexplained conclusions of other federal agencies to justify its own inaction. It merely held that the Commission was not required to consult with outside

agencies before declining to modify its RF radiation guidelines. No party before us today questions the propriety of that holding.

**[20]**Finally, the Commission argues that the Commission itself addressed the major studies in the record in its order terminating the notice of inquiry. Specifically, the Commission points to its statement that “[t]he vast majority of filings were unscientific.” *2019 Order*, 34 FCC Rcd. at 11,694. Elsewhere, however, the order acknowledges that “the record include[d] some research information” and “filings that sought to present scientific evidence.” *Id.* The order dismisses that research and evidence as “fail[ing] to make a persuasive case for revisiting our existing RF limits,” *id.*, but again, such a conclusory statement cannot substitute for the minimal reasoning required at this stage,  *Am. Radio*, 524 F.3d at 241. And while “[a]n agency is not obliged to respond to every comment, only those that can be thought to challenge a fundamental premise,”  *MCI WorldCom, Inc. v. FCC*, 209 F.3d 760, 765 (D.C. Cir. 2000), the studies in the record to which Petitioners point *do* challenge a fundamental premise of the Commission’s decision to terminate its notice of inquiry—namely, the premise that exposure to RF radiation at levels below the Commission’s current limits does not cause negative health effects. But the Commission said nothing at all in its order about any specific health effects unrelated to cancer.

The Commission also points to its statement that “the record [does not] include actionable alternatives or modifications to the current RF limits supported by scientifically **\*908 \*\*92** rigorous data or analysis.” *2019 Order*, 34 FCC Rcd. at 11,692; *see also* *id.* at 11,694. Had the notice of inquiry focused exclusively on whether the Commission should modify its RF exposure limits, we might agree that the failure of any commenter to propose actionable modifications to the RF limits would have justified the Commission’s decision to terminate the notice of inquiry. But the notice of inquiry did not focus exclusively on whether the Commission should modify its RF exposure limits. Instead, it also sought comment on how to better provide information to consumers and the public about exposure to RF radiation and methods for reducing exposure, and whether the Commission should impose additional precautionary restrictions on devices and facilities that are unlikely to expose people to RF radiation in excess of the Commission’s limits. The Commission needed no actionable alternative to its current limits in order to provide additional information to the public or to impose precautionary restrictions in addition to its current limits. The failure of any commenter to propose actionable modifications to the

Commission's RF exposure limits therefore does not justify the Commission's decision to terminate the notice of inquiry.

ii.

[21] The Commission's failure to provide a reasoned explanation \*\*93 for its determination that exposure to RF radiation at levels below its current limits does not cause negative health effects unrelated to cancer renders the order arbitrary and capricious in three additional respects. First, it undermines the Commission's explanation for retaining its procedures for determining whether cell phones and other portable electronic devices comply with its RF limits. These procedures consist of testing the device against the head of a specialized mannequin, 2013 Notice of Inquiry, 28 FCC Rcd. at 3,586 n.434, and no more than 2.5 centimeters away from the body of the mannequin, *id.* at 3,588 n.447. Petitioners claim that the testing is inaccurate because of the space between the device and the mannequin's body. On this point, the Commission's order cites the "large safety margin" incorporated in its existing RF exposure limits as a justification for its refusal to modify these procedures to include testing against the body. 2019 Order, 34 FCC Rcd. at 11,696. Because the Commission's existing RF limits are overprotective, the order explains, the Commission need not worry about whether its testing procedures accurately detect devices that are likely to expose people to RF emissions in excess of the Commission's limits. *See id.* ("[E]ven if certified or otherwise authorized devices produce RF exposure levels in excess of Commission limits under normal use, such exposure would still be well below levels considered to be dangerous, and therefore phones legally sold in the United States pose no health risks."). As the Commission itself recognizes, this explanation depends on the premise that RF radiation does not cause harmful effects at levels below its current limits. *See id.* at 11,696 n.49 ("We note that any claim as to the adequacy of the FCC required testing, certification, and authorization regime is no different than a challenge to the adequacy of the federal RF exposure limits themselves. Both types of claims would undermine the FCC's substantive policy determinations."). The Commission's failure to provide a reasoned explanation for its determination that exposure to RF radiation at levels below its current limits does not cause negative health effects therefore renders inadequate the Commission's explanation for its refusal to modify its testing procedures.

[22] Second, the Commission equally failed to provide a

reasoned explanation \*909 for brushing off record evidence addressing non-cancer-related health effects arising from the impact of RF radiation on children. Many commenters, including the American Academy of Pediatrics, urged the Commission to adopt limits that account for the use of RF-emitting devices by vulnerable children and pregnant women. *See, e.g.*, J.A. 4,533–34. In dismissing those concerns, the Commission again relied on a conclusory statement from the FDA that "[t]he scientific evidence does not show a danger to any users of cell phones from RF exposure, including children and teenagers." 2019 Order, 34 FCC Rcd. at 11,696. But, as we have already explained, such a conclusory and unexplained statement is not the "reasoned" explanation required by the APA. In addition, the Commission noted that the testing to determine compliance with its limits "represents a conservative case" for both adults and children.  *Id.* at 11,696 n.50. Whether the testing of compliance with existing limits was conservative is not the point. The unanswered question remains whether low levels of RF radiation allowed by those existing limits cause negative health effects. So once again, the Commission's failure to provide a reasoned or even relevant explanation of its position that RF radiation below the current limits does not cause health problems unrelated to cancer renders its explanation as to the effect of RF radiation on children arbitrary and capricious.

[23] Third, the Commission's failure to provide a reasoned explanation for its determination that exposure to RF radiation at levels below its current limits does not cause negative health effects unrelated to cancer renders inadequate the Commission's explanation for its failure to discuss the implications of long-term exposure to RF radiation, exposure to RF pulsation or modulation, or the implications of technological developments that have occurred since 1996, including the ubiquity of wireless devices and Wi-Fi, and the emergence of "5G" technology. In its brief, the Commission responds that it was not required to address these topics in its order because it "rationally concluded that the weight of scientific evidence does not support the existence of adverse health effects from radiofrequency exposure below the FCC's limits, regardless of the service or equipment at issue." Resp't's Br. at 45–46. (The Commission points out that "5G" cell towers, unlike traditional cell towers, are subject to its RF exposure limits.) Again, this explanation depends on the premise that RF radiation does not cause harmful health effects at levels below the Commission's current limits, and will not suffice absent a reasoned explanation for the Commission's determination that that premise is correct.

iii.

[24] In addition to the Commission's inadequate response to the non-cancer-related effects of RF radiation on human health, the Commission also completely failed even to acknowledge, let alone respond to, comments concerning the impact of RF radiation on the environment. That utter lack of a response does not meet the Commission's obligation to provide a reasoned explanation for terminating the notice of inquiry. The record contains substantive evidence of potential environmental harms. Most relevantly, the record included a letter from the Department of the Interior voicing concern about the impact of RF radiation from communication towers on migratory birds, *see* J.A. 8,379, 8,383–86. In the Department of the Interior's expert view, the Commission's RF radiation limits "continue to be based on thermal heating, a criterion now nearly 30 years out of date and inapplicable today." J.A. 8,383. "The [current environmental] problem," according to the Department of the \*910 \*\*94 Interior, "appears to focus on very low-level, non-thermal electromagnetic radiation." *Id.* Although the Commission has repeatedly claimed that it considered "inputs from [its] sister federal agencies[,"] 2019 Order, 34 FCC Rcd. at 11,689, the Commission entirely failed to address the environmental harm concerns raised by the Department of the Interior. To be sure, the Commission could conclude that the link between RF radiation and environmental harms is too weak to warrant an amendment to its RF radiation limits. All we hold now is that the Commission should have said something about its sister agency's view rather than ignore it altogether. That lack of any reasoned explanation as to environmental harms does not satisfy the requirements of the APA.

iv.

The dissenting opinion portrays this case as about the Commission's disregard of just five articles and one Department of Interior letter. Not so. The record contained substantial information and material from, for example, the American Academy of Pediatrics, J.A. 4,533; the Council of Europe, J.A. 4,242–44, 4,247–57; the Cities of Boston and Philadelphia, J.A. 4,592–99; medical associations, *see, e.g.*, J.A. 4,536–40 (California Medical Association); thousands of physicians and scientists from around the world, *see, e.g.*, J.A. 4,197–4,206 (letter to United Nations); J.A. 4,208–17 (letter to European Union); J.A. 5,173–86 (Frieburger Appeal by over one thousand German physicians); and hundreds of people who were themselves or who had

loved ones suffering from the alleged effects of RF radiation, *see, e.g.*, J.A. 8,774–9,940; *see also* J.A. 4,218–39 (collecting statements from physicians and health organizations expressing concern about health effects of RF radiation).

[25] The dissenting opinion then offers its own explanation as to why those select sources were not worth being addressed by the agency. This in-the-weeds assessment of scientific studies and assessments falls "outside our bailiwick[.]" Dissenting Op. at 920. More to the point, the Commission said none of what the dissenting opinion does. If it had and if those six sources fairly represented the credible record evidence seeking a change in Commission policy, that discussion likely would have sufficed. But just as *post hoc* rationales offered by counsel cannot fill in the holes left by an agency in its decision, neither can a dissenting opinion. *See*  *Grace v. Barr*, 965 F.3d 883, 903 (D.C. Cir. 2020) ("[W]hen 'assessing the reasonableness of [an agency's action], we look only to what the agency said at the time of the [action]—not to its lawyers' post-hoc rationalizations.'") (second and third alterations in original) (quoting  *Good Fortune Shipping SA v. Commissioner*, 897 F.3d 256, 263 (D.C. Cir. 2018)).

Instead, the Commission chose to hitch its wagon to the FDA's unexplained disinterest in some similar information. Importantly, the dissenting opinion does not dispute that the FDA's conclusory dismissal of that evidence ran afoul of our precedent in  *American Horse* and  *American Radio*. It just says that the deficiency in the FDA's analysis cannot be imputed to a second agency, and so the dissenting opinion would hold dispositive "the fact that the Commission and the FDA are, to state the obvious, distinct agencies." Dissenting Op. at 917.

[26] They certainly are. But that does not amount to a legal difference here. While imitation may be the highest form of flattery, it does not meet even the low threshold of reasoned analysis required by the APA under the deferential standard of review that governs here. One agency's unexplained adoption of an unreasoned analysis just compounds rather than vitiates \*911 \*\*95 the analytical void. Said another way, two wrongs do not make a right. *Compare*  *City of Tacoma v. FERC*, 460 F.3d 53, 76 (D.C. Cir. 2006) ("[T]he action agency must not blindly adopt the conclusions of the consultant agency, citing that agency's expertise. Rather, the ultimate responsibility for compliance with the [Endangered Species Act] falls on the action agency."), and  *Ergon-West Virginia, Inc. v. EPA*, 896 F.3d 600,

612 (4th Cir. 2018) (“Although the EPA is statutorily required to consider the [Department of Energy]’s recommendation, it may not turn a blind eye to errors and omissions apparent on the face of the report, which [petitioner] pointed out and the EPA did not address in any meaningful way. In doing so, the EPA ‘ignore[d] important aspects of the problem.’ ”) (internal citations omitted), with  *Bellion Spirits, LLC v. United States*, No. 19-5252, 7 F.4th 1201, 1210–11 (D.C. Cir. Aug. 6, 2021) (approving consultation by the Alcohol and Tobacco Tax and Trade Bureau (“TTB”) with the FDA where the TTB “did not rubberstamp FDA’s analysis of the scientific evidence or delegate final decisionmaking authority to FDA,” but instead “systematically evaluated and explained its reasons for agreeing with FDA’s analysis of each scientific study” and “then made its own determinations” about the claims at hand).

## B.

Petitioners’ remaining challenges under the APA are unavailing.

<sup>127</sup>Petitioners first argue that the Commission failed to respond to record evidence that exposure to RF radiation at levels below the Commission’s current limits may cause cancer. Specifically, Petitioners argue the Commission failed to mention the IARC’s classification of RF radiation as possibly carcinogenic to humans, and its 2013 monograph regarding that classification, on which the Commission’s notice of inquiry specifically sought comment. Petitioners also argue that the Commission failed to adequately respond to two 2018 studies—the National Toxicology Program (“NTP”) study and the Ramazzini Institute study—that found increases in the incidences of certain types of cancer in rodents exposed to RF radiation. Had these 2018 studies been available prior to the IARC’s publication of its monograph, Petitioners assert, the IARC would have likely classified RF radiation as “probably carcinogenic,” rather than “possibly carcinogenic.” This is so, according to Petitioners, because the IARC will classify an agent as “possibly carcinogenic” if there is “limited evidence” that it causes cancer in humans and animals, and as “probably carcinogenic” if there is “limited evidence” that it causes cancer in humans and “sufficient evidence” that it causes cancer in animals. In its 2013 monograph, the IARC found “limited evidence” that RF radiation causes cancer in humans and animals, and therefore classified RF radiation as “possibly carcinogenic.” Int’l Agency for Rsch. on Cancer, *Non-Ionizing Radiation, Part 2: Radiofrequency Electromagnetic Fields*, 102 IARC

MONOGRAPHS ON THE EVALUATION OF CARCINOGENIC RISKS TO HUMANS 419 (2013) (emphases omitted). Petitioners assert that the NTP and Ramazzini Institute studies provide “sufficient evidence” that RF radiation causes cancer in animals. Therefore, according to Petitioners, had those studies been available prior to the IARC’s publication of its monograph, the IARC would have found “limited evidence” that RF radiation causes cancer in humans and “sufficient evidence” that it causes cancer in animals, and would have accordingly classified RF radiation as “probably carcinogenic.”

Although the Commission’s failure to make any mention of the IARC monograph <sup>912</sup> <sup>\*\*96</sup> does not epitomize reasoned decision making, we find that the Commission’s order adequately responds to the record evidence that exposure to RF radiation at levels below the Commission’s current limits may cause cancer. In contrast to its silence regarding non-cancerous effects, the order provides a reasoned response to the NTP and Ramazzini Institute studies. It explains that the results of the NTP study “cannot be extrapolated to humans because (1) the rats and mice received RF radiation across their whole bodies; (2) the exposure levels were higher than what people receive under the current rules; (3) the duration of exposure was longer than what people receive; and (4) the studies were based on 2G and 3G phones and did not study WiFi or 5G.”  *2019 Order*, 34 FCC Rcd. at 11,693 n.33. And the order cites a response to both studies published by the International Commission on Non-Ionizing Radiation Protection that provides a detailed explanation of various inconsistencies and limitations in the studies and concludes that “consideration of their findings does not provide evidence that radiofrequency EMF is carcinogenic.” INT’L COMM’N ON NON-IONIZING RADIATION PROT., ICNIRP NOTE ON RECENT ANIMAL CARCINOGENESIS STUDIES 6 (2018), <https://www.icnirp.org/cms/upload/publications/ICNIRPnote2018.pdf>; *see also*  *2019 Order*, 34 FCC Rcd. at 11,693 n.34. Petitioners’ contention that the IARC would have classified RF radiation as “probably carcinogenic” had the NTP and Ramazzini Institute studies been published earlier is speculative, particularly in light of the International Commission on Non-Ionizing Radiation Protection’s evaluation of those studies. And the IARC monograph’s classification of RF radiation as “possibly carcinogenic” is not so contrary to the Commission’s determination that exposure to RF radiation at levels below its current limits does not cause cancer as to render that determination arbitrary or capricious.

Petitioners also argue that the Commission’s order

impermissibly fails to respond to various “additional legal considerations.” Specifically, Petitioners argue that the order (i) ignores “express invocations of constitutional, statutory and common law based individual rights,” including property rights and the rights of “bodily autonomy and informed consent”; (ii) fails to explain whether FCC regulation preempts rights and remedies under the Americans with Disabilities Act and the Fair Housing Act; (iii) does not assess the costs and benefits associated with maintaining the Commission’s current limits; (iv) does not resolve the question of whether “those advocating more protective limits have to prove the existing limits are inadequate,” or whether the Commission carries the burden of proving that its existing limits are adequate; and (v) overlooks that the Supreme Court’s decision in *Jacobson v. Massachusetts*, 197 U.S. 11, 25 S.Ct. 358, 49 L.Ed. 643 (1905), “flatly requires that the Commission allow for some remedy for those who suffer from exposure.” Pet’rs’ Br. at 84–101.

[28] [29] These arguments are not properly before us. The Communications Act provides that a petition for reconsideration is a “condition precedent to judicial review” of “questions of fact or law upon which the Commission … has been afforded no opportunity to pass.” 47 U.S.C. § 405(a). We will accordingly only consider a question raised before us if “a reasonable Commission necessarily would have seen the question … as part of the case presented to it.” *NTCH, Inc. v. FCC*, 841 F.3d 497, 508 (D.C. Cir. 2016) (quoting *Time Warner Ent. Co. v. FCC*, 144 F.3d 75, 81 (D.C. Cir. 1998)). Petitioners did not submit a petition for reconsideration to the Commission, and they point to no comments \*913 \*\*97 raising their “additional legal considerations” in such a manner as to necessarily indicate to the Commission that they were part of the case presented to it.

Although Petitioners assert that the “Cities of Boston and Philadelphia specifically flagged [the issue of whether FCC regulation preempts rights and remedies under the Americans with Disabilities Act and the Fair Housing Act] and sought clarification,” Pet’rs’ Br. at 86, they are incorrect. The Cities of Boston and Philadelphia merely observed that the Second Circuit’s decision in *Cellular Phone Taskforce* did not address whether “‘electrosensitivity’ [is] a cognizable disability under the Americans with Disabilities Act,” J.A. 4,598. And the Cities noted that “the FCC and its sister regulatory agencies share responsibility for adherence to the ADA,” J.A. 4,598–99, and urged the Commission to “lead in advice to electrosensitive persons about prudent avoidance,” J.A. 4,599. This did not put the Commission on notice that the question whether FCC regulation

preempts rights and remedies under the Americans with Disabilities Act and the Fair Housing Act was part of the case presented to it. Nor did a comment asserting that “[t]he telecommunications Act should not be interpreted to injure an identifiable segment of the population, exile them from their homes and their city, leave them no place where they can survive, and allow them no remedy under City, State or Federal laws or constitutions.” J.A. 10,190. And Petitioners point to no comments that did a better job of flagging their other “additional legal considerations” for the Commission. The Commission therefore did not have an opportunity to pass on these arguments, so we may not review them. 47 U.S.C. § 405(a).

### C.

Petitioners also argue that NEPA required the Commission to issue an EA or EIS regarding its decision to terminate its notice of inquiry.

[30] [31] [32] [33] Petitioners are wrong. The Commission was not required to issue an EA or EIS because there was no ongoing federal action regarding its RF limits. The Commission already published an assessment of its existing RF limits that “‘functionally’ satisfied NEPA’s requirements ‘in form and substance.’ ” *EMR Network*, 391 F.3d at 272 (quoting *Cellular Phone Taskforce*, 205 F.3d at 94–95). NEPA obligations attach only to “proposals” for major federal action. See 42 U.S.C. § 4332(c); see also 40 C.F.R. § 1502.5. Once an agency has satisfied NEPA’s requirements, it is only required to issue a supplemental assessment when “there remains major federal action to occur.” *W. Org. of Res. Councils v. Zinke*, 892 F.3d 1234, 1242 (D.C. Cir. 2018) (internal quotation marks omitted) (quoting *Marsh v. Ore. Nat’l Res. Council*, 490 U.S. 360, 374, 109 S.Ct. 1851, 104 L.Ed.2d 377 (1989)). An agency’s promulgation of regulations constitutes a final agency action that is not ongoing. *Id.* at 1243. Once an agency promulgates a regulation and complies with NEPA’s requirements regarding that regulation, it is not required to conduct any supplemental environmental assessment, even if its original assessment is outdated. *Id.* at 1242. Such is the case here. As we explained in *EMR Network* in response to the argument that new data required the Commission to issue a supplemental environmental assessment of its RF guidelines under NEPA, “the regulations having been adopted, there is at the moment no ongoing federal action, and no duty to

supplement the agency's prior environmental inquiries.”  391 F.3d at 272 (internal quotation marks and citation omitted).

<sup>[34]</sup>That the Commission voluntarily initiated an inquiry to “determine whether there is a need for reassessment of the \*914 \*\*98 Commission radiofrequency (RF) exposure limits and policies” does not change the analysis. *2013 Notice of Inquiry*, 28 FCC Rcd. at 3,501. As the Supreme Court explained long ago, “the mere contemplation of certain action is not sufficient to require an impact statement” under NEPA,  *Kleppe v. Sierra Club*, 427 U.S. 390, 404, 96 S.Ct. 2718, 49 L.Ed.2d 576 (1976) (internal quotation marks omitted), because, as in this case, “the contemplation of a project and the accompanying study thereof do not necessarily result in a proposal for major federal action,”  *id.* at 406, 96 S.Ct. 2718. *See also*  *Pub. Citizen v. Off. of U.S. Trade Representatives*, 970 F.2d 916, 920 (D.C. Cir. 1992) (“In accord with  *Kleppe*, courts routinely dismiss NEPA claims in cases where agencies are merely contemplating a particular course of action but have not actually taken any final action at the time of suit.”) (collecting cases). Were the Commission to propose revising its RF exposure guidelines, it might be required to prepare NEPA documentation. But since the Commission for now has not proposed to alter its guidelines, it need not yet conduct any new environmental review.

### III.

<sup>[35]</sup>For the reasons given above, we grant the petitions in part and remand to the Commission to provide a reasoned explanation for its determination that its guidelines adequately protect against harmful effects of exposure to radiofrequency radiation unrelated to cancer. It must, in particular, (i) provide a reasoned explanation for its decision to retain its testing procedures for determining whether cell phones and other portable electronic devices comply with its guidelines, (ii) address the impacts of RF radiation on children, the health implications of long-term exposure to RF radiation, the ubiquity of wireless devices, and other technological developments that have occurred since the Commission last updated its guidelines, and (iii) address the impacts of RF radiation on the environment. To be clear, we take no position in the scientific debate regarding the health and environmental effects of RF radiation—we merely conclude that the Commission’s cursory analysis of material record evidence was insufficient as a matter of law. As the dissenting opinion

indicates, there may be good reasons why the various studies in the record, only some of which we have cited here, do not warrant changes to the Commission’s guidelines. But we cannot supply reasoning in the agency’s stead, *see*  *SEC v. Chenery Corp.*, 318 U.S. 80, 87–88, 63 S.Ct. 454, 87 L.Ed. 626 (1943), and here the Commission has failed to provide any reasoning to which we may defer.

*So ordered.*

Karen LeCraft Henderson, Circuit Judge, dissenting in part:

“[A] court is not to substitute its judgment for that of the agency.”  *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43, 103 S.Ct. 2856, 77 L.Ed.2d 443 (1983). We thus must “uphold a decision of less than ideal clarity if the agency’s path may reasonably be discerned.”  *Id.* (quoting  *Bowman Transp., Inc. v. Arkansas-Best Freight Sys., Inc.*, 419 U.S. 281, 286, 95 S.Ct. 438, 42 L.Ed.2d 447 (1974)). I believe my colleagues’ limited remand contravenes these first principles of administrative law. Because I would deny the petitions in full, I respectfully dissent from Part II.A.i.–iv. and Part III of the majority opinion.

### I.

It is important to emphasize how deferential our standard of review is here—where, first, an agency’s decision to terminate a notice of inquiry without initiating a rulemaking occurred after the agency opened the inquiry on its own and, second, \*915 \*\*99 the inquiry involves a highly technical subject matter at the frontier of science. As the majority recognizes, “[t]he arbitrary and capricious standard of the Administrative Procedure Act ‘encompasses a range of levels of deference to the agency.’” Maj. Op. 903 (quoting  *Am. Horse Prot. Ass’n v. Lyng*, 812 F.2d 1, 4 (D.C. Cir. 1987)). The majority further acknowledges that the Federal Communications Commission’s (Commission or FCC) “order is entitled to a high degree of deference.” *Id.* at 903. And our precedent also makes plain that “[i]t is only

in the rarest and most compelling of circumstances that this court has acted to overturn an agency judgment not to institute rulemaking.” *WWHT, Inc. v. FCC*, 656 F.2d 807, 818 (D.C. Cir. 1981); *see also Cellnet Commc'n, Inc. v. FCC*, 965 F.2d 1106, 1111 (D.C. Cir. 1992) (“an agency’s refusal to initiate a rulemaking is evaluated with a deference so broad as to make the process akin to non-reviewability”). For the reasons that follow, I believe the Commission’s order does not fit those rarest and most compelling circumstances.

A.

We have held that research articles containing tentative conclusions do not provide a basis for disturbing an agency’s decision not to initiate rulemaking. *EMR Network v. FCC*, 391 F.3d 269, 274 (D.C. Cir. 2004). Nevertheless, the majority rejects reaching the same conclusion here regarding the petitioners’ assertion that radiofrequency (RF) radiation exposure below the Commission’s limits can cause negative health effects unrelated to cancer. To do so, it relies on five research articles in an over 10,500-page record. *See Maj. Op. at 903–04.*<sup>1</sup>

A close inspection of the five research articles confirms that they also “are nothing if not tentative.” *EMR Network*, 391 F.3d at 274. The Foerster article concludes “[o]ur findings *do not provide conclusive evidence of causal effects and should be interpreted with caution* until confirmed in other populations.” Joint Appendix (J.A.) 6,006 (Milena Foerster et al., *A Prospective Cohort Study of Adolescents’ Memory Performance and Individual Brain Dose of Microwave Radiation from Wireless Communication*, 126 ENV’T HEALTH PERSPS. 077007 (July 2018)) (emphases added).<sup>2</sup> The Lai article provides a similarly murky picture of the current science. *See J.A. 5,320–68* (Henry Lai, *A Summary of Recent Literature (2007–2017) on Neurological Effects of Radiofrequency Radiation*, in *MOBILE COMM’NS & PUB. HEALTH* 187–222 (M. Markov ed., 2018)). In summarizing the results of human studies on the behavioral effects of RF radiation, the Lai article lists 31 studies that showed *no significant behavioral effects* compared to 20 studies that showed behavioral effects. *See J.A. 5,327–32*. Moreover, of the 20 studies that showed a behavioral effect, at least four found behavioral *improvements*, not negative health effects.

Even the Yakymenko article, which asserts that 93 of 100 peer-reviewed studies found low-intensity RF radiation induces *\*916 \*\*100 oxidative effects in biological systems*, fails to address the critical issue—whether RF radiation below the Commission’s current limits can cause negative health effects. *See J.A. 5,243–58* (Igor Yakymenko et al., *Oxidative Mechanisms of Biological Activity of Low-Intensity Radiofrequency Radiation*, ELECTROMAGNETIC BIOLOGY & MED., EARLY ONLINE, 1–16 (2015)). Specifically, the Yakymenko article discusses the International Commission on Non-Ionizing Radiation Protection’s (ICNIRP) recommended RF exposure limit—a specific absorption rate of 2 W/kg. *See J.A. 5,243–44*. But the ICNIRP’s recommended RF exposure limit is significantly higher than the Commission’s current limit—0.08 W/kg averaged over the whole body and a peak spatial-average of 1.6 W/kg over any 1 gram of tissue. *See 47 C.F.R. § 1.1310(c)*. Accordingly, it is uncertain how many, if any, of the referenced peer-reviewed studies were conducted at RF radiation levels below the Commission’s current limits.<sup>3</sup>

Given this record, I believe we should have arrived at the same conclusion we did in *EMR Network*—“nothing in th[e]se studies so strongly evidenc[es] risk as to call into question the Commission’s decision to maintain a stance of what appears to be watchful waiting.” *EMR Network*, 391 F.3d at 274. “An agency is not obliged to respond to every comment, only those that can be thought to challenge a fundamental premise.” *MCI WorldCom, Inc. v. FCC*, 209 F.3d 760, 765 (D.C. Cir. 2000). A review of the five articles on which the majority opinion relies makes plain that the articles do not challenge a fundamental premise of the Commission’s order. Instead, it “cherry-pick[s] the factual record to reach [its] conclusion.” *Ortiz-Diaz v. U.S. Dep’t of Hous. & Urb. Dev.*, 867 F.3d 70, 79 (D.C. Cir. 2017) (Henderson, J., concurring in the judgment).

My colleagues assert that “[t]he dissenting opinion portrays this case as about the Commission’s disregard of just five articles.” *Maj. Op. 910*. But their attempt to “turn the tables” plainly fails. It is they who chose the five articles, *see Maj. Op. 903–04*, to rely on as the basis for their remand, *see id. at 906* (“the Commission’s order remains bereft of any explanation as to why, *in light of the studies in the record*, its guidelines remain adequate”) (emphasis altered); *id. at 907* (“*the studies in the record* to which Petitioners point *do* challenge a fundamental premise of the Commission’s decision to terminate its notice of inquiry”) (first emphasis added). I discuss the

five articles *only* to demonstrate that the studies “are nothing if not tentative.”  *EMR Network*, 391 F.3d at 274. Because the studies on which the majority relies plainly are tentative, they do not challenge a fundamental premise of the Commission’s decision and therefore cannot provide the basis for the majority’s limited remand under our precedent.<sup>4</sup>

B.

I reach the same conclusion regarding the majority’s remand of the petitioners’ environmental harm argument. *See Maj. Op. 909–10*. The majority relies on a 2014 letter from the U.S. Department of the Interior (Interior) to the U.S. Department of Commerce about, *inter alia*, the impact of communications towers on migratory birds. But the Interior letter itself concedes that “[t]o date, no independent, \*917 \*\*101 third-party field studies have been conducted in North America on impacts of tower electromagnetic radiation on migratory birds.” J.A. 8,383.

Moreover, the petitioners did not raise the Interior letter in the environmental harm section of their briefs. “We apply forfeiture to unarticulated [legal and] evidentiary theories not only because judges are not like pigs, hunting for truffles buried in briefs or the record, but also because such a rule ensures fairness to both parties.” *Jones v. Kirchner*, 835 F.3d 74, 83 (D.C. Cir. 2016) (alteration in original) (citation omitted). And finally, the environmental harm studies on which the petitioners *did* rely “are nothing if not tentative.”  *EMR Network*, 391 F.3d at 274.<sup>5</sup>

C.

More importantly, the majority’s limited remand runs afoul of our precedent on this precise subject matter. In  *EMR Network*, the petitioner asked “the Commission to initiate an inquiry on the need to revise [its] regulations to address the non-thermal effects” of  RF radiation. 391 F.3d at 271. In denying the petition, we concluded “the [Commission]’s decision not to leap in, at a time when the [Environmental Protection Agency (EPA)] (and

other agencies) saw no compelling case for action, appears to represent the sort of priority-setting in the use of agency resources that is least subject to second-guessing by courts.”  *Id.* at 273.

This time around, the majority faults the Commission for the U.S. Food and Drug Administration’s (FDA) allegedly “conclusory statements” in response to the Commission’s 2013 notice of inquiry. *See Maj. Op. 905–06*. The crux of the majority’s position is that “[t]he statements from the FDA on which the Commission’s order relies are practically identical to the Secretary’s statement in  *American Horse* and the Commission’s statement in  *American Radio*.” *Id.*<sup>6</sup> But the analogy to  *American Horse* and  *American Radio* does not hold water. The majority’s Achilles’ heel is the fact that the Commission and the FDA are, to state the obvious, distinct agencies.

In  *American Horse*, the appellant relied on the results of a study commissioned by the U.S. Department of Agriculture (Agriculture) to support its request for revised Agriculture regulations.  *Am. Horse*, 812 F.2d at 2–3. The study found that devices Agriculture had declined to prohibit caused effects falling within the statutory definition of the condition known as “sore”;<sup>7</sup> and the Congress had charged Agriculture to eliminate the practice of soring show horses.  *Am. Horse*, 812 F.2d at 2–3. Against this backdrop, we found the Agriculture Secretary’s “two conclusory sentences [dismissing the need to revise agency regulations] … insufficient to assure a reviewing court that the agency’s refusal to act was the product of reasoned decisionmaking.” *Id.* at 6. But an agency \*918 \*\*102 head’s terse dismissal of his own agency’s study is not the case here. First, as noted *supra*, there is no conclusive study in the record, much less one commissioned by the agency whose regulations are being considered for revision. Instead, the record contains dozens of highly technical studies from various sources—the credibility and findings of which we are ill-equipped to evaluate. And crucially, unlike in  *American Horse*, the Commission requested the opinion of the FDA—the agency charged with “establish[ing] and carry[ing] out an electronic product radiation control program,”  21 U.S.C. § 360ii(a)—studied that opinion and explained why it relied thereon in making its decision.

Similarly, in  *American Radio*, the studies summarily dismissed by the FCC were studies the FCC sought to evaluate *itself*; we remanded for the FCC to explain why

it failed to do so. *See*  *Am. Radio*, 524 F.3d at 241. Moreover,  *American Radio* addressed the reasoning underlying the FCC's *promulgation* of a rule, an action subjected to far less deference than an agency's decision not to initiate a rulemaking.<sup>8</sup>

I believe the Commission reasonably relied on the conclusions of the FDA, the agency statutorily charged with protecting the public from RF radiation. *See*  21 U.S.C. § 360ii(a) (FDA "shall establish and carry out an electronic product radiation control program designed to protect the public health and safety from electronic product radiation").<sup>9</sup> Our precedent is well-settled that "[a]gencies can be expected to 'respect [the] views of such other agencies as to those problems' for which those 'other agencies are more directly responsible and more competent.' "  *City of Bos. Delegation v. FERC*, 897 F.3d 241, 255 (D.C. Cir. 2018) (second alteration in original) (quoting  *City of Pittsburgh v. Fed. Power Comm'n*, 237 F.2d 741, 754 (D.C. Cir. 1956)). That is precisely what the Commission did here.

The Commission's 2013 *Notice of Inquiry* explained that the Commission intended to rely on, *inter alia*, the FDA to determine whether to reassess its own RF exposure limits. *See In re Reassessment of Fed. Commc'n Radiofrequency Exposure Limits & Policies*, 28 FCC Rcd. 3,498, 3,501 ¶ 6 (2013) (2013 *Notice of Inquiry*) ("Since the Commission is not a health and safety agency, we defer to other organizations and agencies with respect to interpreting the biological research necessary to determine what [RF radiation] levels are safe."). And the Commission has consistently deferred to expert health and safety agencies in this context. *See id.* at 3,572 ¶ 211 (RF exposure limits adopted in 1996 "followed recommendations received from the [EPA], the [FDA], and other federal health and safety agencies").<sup>10</sup>

\*919 \*\*103 The Commission was true to its word. On March 22, 2019, it asked the FDA if changes to the RF exposure limits were warranted by the current scientific research.<sup>11</sup> On April 24, 2019, the FDA responded:

FDA is responsible for the collection and analysis of scientific information that may relate to the safety of cellphones and other electronic products. ... As we have stated publicly, ... the available scientific evidence to date does not support adverse health effects in

humans due to exposures at or under the current limits, and ... the FDA is committed to protecting public health and continues its review of the many sources of scientific literature on this topic.

J.A. 8,187 (Letter from Jeffrey Shuren, M.D., J.D., Dir., Ctr. for Devices and Radiological Health, U.S. Food & Drug Admin., Dep't of Health & Hum. Servs., to Julius Knapp, Chief, Off. of Eng'g & Tech., U.S. Fed. Commc'n Comm'n (April 24, 2019)).<sup>12</sup> In my view, the Commission, relying on the FDA, reasonably concluded no changes to the current RF exposure limits were warranted at the time. *See*  *In re Reassessment of Fed. Commc'n Radiofrequency Exposure Limits & Policies*, 34 FCC Rcd. 11,687, 11,691 ¶ 10 (2019) ( 2019 Order).

Simply put, the Commission's reliance on the FDA is reasonable "[i]n the face of conflicting evidence at the frontiers of science." *See*  *Cellular Phone Taskforce v. FCC*, 205 F.3d 82, 90 (2d Cir. 2000). The majority takes issue with what it categorizes as "conclusory statements." Maj. Op. 905–06. But the Supreme Court's  *State Farm* [decision] does not require a word count; a short explanation can be a reasoned explanation."  *Am. Radio*, 524 F.3d at 247 (Kavanaugh, J., dissenting in part). Brevity is even more understandable if the agency whose rationale is challenged relies \*920 \*\*104 on the agency the Congress has charged with regulating the matter.

Granted, "[w]hen an agency in the Commission's position is confronted with evidence that its current regulations are inadequate or the factual premises underlying its prior judgment have eroded, it must offer more to justify its decision to retain its regulations than mere conclusory statements." Maj. Op. 903. But the majority opinion rests on an inaccurate premise—the Commission was not confronted with evidence that its regulations are inadequate nor have the factual premises underlying its RF exposure limits eroded. Sifting through the record's technical complexity is outside our bailiwick. If the record here establishes one point, however, it is that there is no scientific consensus regarding the "non-thermal" effects, if any, of RF radiation on humans. More importantly, the FDA, not the Commission, made the allegedly "conclusory statements" with which the majority takes issue and I believe the Commission adequately explained why it relied on the FDA's

expertise.<sup>13</sup>

As in  *EMR Network*, the record does not “call into question the Commission’s decision to maintain a stance of what appears to be watchful waiting.”  391 F.3d at 274. To hold otherwise begs the question: what was the Commission supposed to do? It has no authority over the level of detail the FDA provides in response to the Commission’s inquiry. It admits that it does not have the expertise “to interpret[ ] the biological research necessary to determine what [RF radiation] levels are safe.” 2013 *Notice of Inquiry*, 28 FCC Rcd. at 3,501 ¶ 6. The Commission opened the 2013 *Notice of Inquiry* “as a matter of good government” despite its “continue[d] ... confidence in the current [RF] exposure limits.” *Id.* at

3,570 ¶ 205. If it *had* reached a conclusion contrary to the FDA’s, it most likely would have been attacked as *ultra vires*. For us to require the Commission to, in effect, “nudge” the FDA stretches both our jurisdiction as well as its authority beyond recognized limits.

Accordingly, I respectfully dissent from the limited remand set forth in Part II.A.i.–iv. and Part III of the majority opinion.<sup>14</sup>

#### All Citations

9 F.4th 893, 454 U.S.App.D.C. 77

#### Footnotes

- <sup>1</sup> “The record in an informal rulemaking proceeding is ‘a less than fertile ground for judicial review’ and has been described as a ‘sump in which the parties have deposited a sundry mass of materials.’” *Pro. Drivers Council v. Bureau of Motor Carrier Safety*, 706 F.2d 1216, 1220–21 (D.C. Cir. 1983) (quoting  *Nat'l Res. Def. Council, Inc. v. SEC*, 606 F.2d 1031, 1052 (D.C. Cir. 1979)).
- <sup>2</sup> See also J.A. 5,995 (“[T]he health effects of [exposure to radiofrequency electromagnetic fields (RF-EMFs)] are still unknown. ... [T]o date studies addressing this topic have produced inconsistent results.”); J.A. 6,005 (“Although we found decreases in figural memory, some experimental and epidemiological studies on RF-EMF found *improvements* in working memory performance.”) (emphasis added).
- <sup>3</sup> The BioInitiative Report the majority opinion cites is hardly worth discussing because the self-published report has been widely discredited as a biased review of the science.
- <sup>4</sup> The majority’s hand wave to other record information, see Maj. Op. 909–10, does not carry the day. Rather than provide “substantial information,” *id.* at 910, the cited material consists primarily of letters expressing generalized concerns about RF limits worldwide.
- <sup>5</sup> See, e.g., J.A. 5,231 (Albert Manville, II, *A Briefing Memorandum: What We Know, Can Infer, and Don’t Yet Know about Impacts from Thermal and Non-Thermal Non-Ionizing Radiation to Birds and Other Wildlife* 2 (2016)) (“the direct relationship between electromagnetic radiation and wildlife health continues to be complicated and in cases involving non-thermal effects, still unclear”); J.A. 6,174 (Ministry of Env’t & Forest, Gov’t of India, *Report on Possible Impacts of Communication Towers on Wildlife Including Birds and Bees* 4 (2011)) (“exact correlation between radiation of communication towers and wildlife, are not yet very well established”).

<sup>6</sup> See  *Am. Radio Relay League, Inc. v. FCC*, 524 F.3d 227 (D.C. Cir. 2008).

<sup>7</sup> See  15 U.S.C. § 1821(3) ("The term 'sore' when used to describe a horse means that [as a result of any substance or device used on a horse's limb] such horse suffers, or can reasonably be expected to suffer, physical pain or distress, inflammation, or lameness when walking, trotting, or otherwise moving ....").

<sup>8</sup> See, e.g.,  *ITT World Commc'ns, Inc. v. FCC*, 699 F.2d 1219, 1245–46 (D.C. Cir. 1983), *rev'd on other grounds*,  466 U.S. 463, 104 S.Ct. 1936, 80 L.Ed.2d 480 (1984) ("Where an agency promulgates rules, our standard of review is diffident and deferential, but nevertheless requires a searching and careful examination of the administrative record to ensure that the agency has fairly considered the issues and arrived at a rational result. Where, as here, an agency chooses *not* to engage in rulemaking, our level of scrutiny is even more deferential ..." (emphasis in original) (footnotes and internal quotations omitted)).

<sup>9</sup> See also  *In re Guidelines for Evaluating the Env't Effects of Radiofrequency Radiation*, 11 FCC Rcd. 15,123, 15,130 ¶ 18 (1996) ("The FDA has general jurisdiction for protecting the public from potentially harmful radiation from consumer and industrial devices and in that capacity is expert in RF exposures that would result from consumer or industrial use of hand-held devices such as cellular telephones.").

<sup>10</sup> See also *In re Guidelines for Evaluating the Env't Effects of Radiofrequency Radiation*, 12 FCC Rcd. 13,494, 13,505 ¶ 31 (1997) ("It would be impracticable for us to independently evaluate the significance of studies purporting to show biological effects, determine if such effects constitute a safety hazard, and then adopt stricter standards that [sic] those advocated by federal health and safety agencies. This is especially true for such controversial issues as non-thermal effects and whether certain individuals might be 'hypersensitive' or 'electrosensitive.'").

<sup>11</sup> See J.A. 8,184 (Letter from Julius Knapp, Chief, Off. of Eng'g & Tech., U.S. Fed. Commc'ns Comm'n, to Jeffrey Shuren, M.D., J.D., Dir., Ctr. for Devices and Radiological Health, U.S. Food & Drug Admin. (March 22, 2019)) ("Given that existing studies are continually being evaluated as new research is published, and that the work of key organizations such as [the Institute of Electrical and Electronics Engineers] and ICNIRP is continuing, we ask FDA's guidance as to whether any changes to the standards are appropriate at this time.").

<sup>12</sup> See also *Statement from Jeffrey Shuren, M.D., J.D., director of the FDA's Center for Devices and Radiological Health on the recent National Toxicology Program draft report on radiofrequency energy exposure*, FOOD & DRUG ADMIN. (Feb. 2, 2018), <https://www.fda.gov/news-events/press-announcements/statementjeffrey-shuren-md-jd-director-fdas-centre-r-devices-and-radiological-health-recent-national> (Since 1999, "there have been hundreds of studies from which to draw a wealth of information about these technologies which have come to play an important role in our everyday lives. Taken together, all of this research provides a more complete picture regarding radiofrequency energy exposure that has informed the FDA's assessment of this important public health issue, and given us the confidence that the current safety limits for cell phone radiation remain acceptable for protecting the public health. ... I want to underscore that based on our ongoing evaluation of this issue and taking into account all available scientific evidence we have received, we have not found sufficient

evidence that there are adverse health effects in humans caused by exposures at or under the current radiofrequency energy exposure limits.”).

<sup>13</sup> The majority asserts that “[o]ne agency’s unexplained adoption of an unreasoned analysis just compounds rather than vitiates the analytical void.” Maj. Op. 910–11. As set out *supra*, however, the Commission adequately explained its reliance—for the past 25 years—on the FDA’s RF exposure expertise. Plus, after a review of “hundreds of studies,” the FDA’s conclusion is far from unreasoned. See *supra* note 12. And the two cases to which the majority points are inapposite. See Maj. Op. 910–11 (citing  *City of Tacoma v. FERC*, 460 F.3d 53, 76 (D.C. Cir. 2006), and  *Ergon-West Virginia, Inc. v. EPA*, 896 F.3d 600, 612 (4th Cir. 2018)). Importantly, unlike these petitions, neither case involves a decision not to initiate a rulemaking. As noted, inaction is reviewed under an especially deferential standard. It would be inappropriate to apply precedent using a less deferential standard to modify the standard applicable here. And finally, the Commission did not “blindly adopt the conclusions” of the FDA. See  *City of Tacoma*, 460 F.3d at 76. Nor did it “turn a blind eye to errors and omissions apparent on the face of” the FDA’s conclusions. See  *Ergon-West Virginia*, 896 F.3d at 612.

The majority’s citation to  *Bellion Spirits, LLC v. United States*, No. 19-5252, 7 F.4th 1201 (D.C. Cir. Aug. 6, 2021), is even further afield. First,  *Bellion Spirits* addressed a “statutory authority” question—it did not apply arbitrary and capricious review, much less the especially deferential standard applicable to a decision not to initiate a rulemaking. See  *Bellion Spirits*, 7 F.4th at 1210. Second, to the extent  *Bellion Spirits* is remotely relevant, I believe it supports my position. There, the Alcohol and Tobacco Tax and Trade Bureau “consulted with [the] FDA on a matter implicating [the] FDA’s expertise and then considered that expertise in reaching its own final decision.”  *Id.* at 1210. Again, in my view, the Commission did the same thing.

<sup>14</sup> Although I join Part II.B. of the majority opinion, I do not agree with the majority’s aside, contrasting the Commission’s purported silence regarding non-cancerous effects and its otherwise reasoned response. See Maj. Op. 911–12. As explained *supra*, I believe the Commission reasonably relied on the FDA’s conclusion that RF radiation exposure below the Commission’s limits does not cause negative health effects—cancerous or non-cancerous.

**PLANNING BOARD: TOWN OF RIVERHEAD  
STATE OF NEW YORK: COUNTY OF SUFFOLK**

----- X

In the Matter of the Application of Elite Towers, L.P.,  
New York SMSA Limited Partnership d/b/a Verizon  
Wireless and the Wading River Fire District as co-Applicants,  
and the Wading River Fire District, as Owner, for all necessary  
permits to construct, operate and maintain a public  
utility wireless communication facility at 1503 North Country  
Road, Wading River, New York, known and designated  
as Suffolk County Property Tax Map No.: District 600,  
Section 54, Block 1, Lot 28.4 (the "Property")

**ALTERNATIVE  
SITES AFFIDAVIT**

----- X  
STATE OF NEW YORK

)

) ss.:

COUNTY OF SUFFOLK

)

**TANYA NEGRON**, being duly sworn, deposes and says:

1. I am the managing member of Elite Towers, L.P. ("Elite"), and in my capacity as same, investigated potential locations for wireless communication facilities ("Communication Facility" or "Communication Facilities") in and around the Property.
2. I submit this affidavit in support of Elite's, New York SMSA Limited Partnership d/b/a Verizon Wireless ("Verizon Wireless")'s, and the Wading River Fire District ("Fire District") Application (the "Application") to the Town of Riverhead (the "Town") Planning Board in order to construct a Communication Facility.
3. The Communication Facility will be located at the Property, and will consist of the following: (1) construction of a 190' concealment pole ("Pole") in the rear of the Property; (2) installation of a triangular equipment compound (the "Equipment Compound") located on the rooftop of the existing building adjacent to the location of the Pole; (3) **on the Pole**, twelve (12) Verizon Wireless antennas (three (3) sectors of four (4) antennas per sector), to be mounted

within the Pole at a centerline height of 184'-0", with associated appurtenances, including twelve (12) RRH units (three (3) sectors of four (4) RRHs per sector); (4) on the Pole, three (3) antennas installed for use by the Fire District, to be mounted at the top of the Pole at a top height of 213'-0", with associated appurtenances; (5) on the Pole, three (3) antennas installed for use by the Fire District, to be mounted on the side of the Pole at a mounting height of 95'-0", with associated appurtenances; (6) on the Pole, four (4) antennas installed for use by the Fire District, to be mounted on the side of the Pole at a mounting height of 75'-0", with associated appurtenances; (5) **within the Equipment Compound**, on which will be situated Verizon Wireless equipment cabinets atop a metal platform, with associated appurtenances; and (7) all other appurtenances, equipment, cables, conduits and wires related thereto.

4. My role for Elite includes identifying potential locations for new Communication Facilities based upon a need to remedy service deficiencies in a specified geographic area on behalf of wireless carriers including Verizon Wireless, and when appropriate, for public service entities such as the Fire District.

5. Among other information, I utilize input from wireless carriers' and the Fire District's Radio Frequency ("RF") Engineering Departments/consultants, including: (a) the location of other existing Communication Facilities in an area; and (b) existing coverage in the area.

6. Utilizing the aforementioned criteria, it is my responsibility to ascertain potential sites for the construction of new Communication Facilities.

7. I use several factors to determine if a potential site is a suitable location, including the location, height and clearance for the wireless communication antennas. In addition, I consider whether there is enough room to accommodate carrier(s) and public service entity

equipment at the candidate Communication Facility Property.

8. I also confer with carriers' RF engineers, who determine which location, or locations, are suitable for a Communication Facility.

9. Thereafter, I visit potential Communication Facility sites within the subject area, in order to identify a site that meets all of the aforementioned criteria, as well as meeting the requirements provided for under a municipality's code and/or regulations, to the extent feasible.

10. Once a potential site has been identified, I determine whether the property owner would be interested in leasing space to Elite in order to construct, operate and maintain a Communication Facility.

11. With regard to the applicable municipal code and/or regulations in connection with this Application, I reviewed, among other things, the Town Code which contains provisions affecting Communication Facilities, as more fully set forth under Chapter 301, Article LI, §301-273 et seq., "Wireless Communications Towers and Antennas" (the "Wireless Ordinance"), which regulates, among other things, the siting of new wireless facilities, such as the Communication Facility contemplated by Elite, Verizon Wireless and the Fire District herein.

12. The subject area in which Verizon Wireless and the Fire District are experiencing a service deficiency includes a limited number of parcels with sufficient size and appropriate current land use. In particular, the absence of many commercially-utilized parcels in the area eliminate much of the land mass in the vicinity from consideration. Further, due to the varying topographical terrain with tall vegetation in the area, this largely prevents the ability to propose a lower-height structure to provide communications to the surrounding area.

13. In addition to my review of the applicable Code provisions, I reviewed the Town's zoning map and aerial views of the search area within which Verizon Wireless and the

Fire District are experiencing a service deficiency.

14. Once a potential site has been identified, I determine whether the property owner would be interested in leasing space to Elite in order to construct, operate and maintain a Communication Facility.

15. Therefore, in order to locate a site that complies with the Wireless Ordinance, as well as Verizon Wireless and the Fire District's search criteria, I conducted a full and complete investigation of all properties within the vicinity, including all existing structures which can accommodate a Communication Facility.

16. Based upon this search, Elite, Verizon Wireless and the Fire District have reviewed, and rejected, the following potential sites within its search area (the "Potential Sites"), as evidenced below:

17. St. John the Baptist Church  
1488 North Country Road  
Wading River, New York 11792  
SBL: 600-054-00-02-008-000  
600-054-00-01-00-011-000  
Owner: The RC Church of St. John

Inquiry was made to the Church as to their interest in locating the Communication Facility on this parcel. The Church never responded to our certified letter to same. (See attached as part of Exhibit A). As such, our understanding is that there would not be a feasible way to locate on this property without the owner's consent.

18. The Rock Golf Club  
141 Fairway Drive  
Wading River, New York 11792  
SBL: 600-057-00-01-00-001-032  
Owner: Great Rock Holdings LLC

Inquiry was made to the owner as to their interest in locating the Communication Facility

on this parcel. The owner never responded to our certified letter to same. (See attached as part of Exhibit A). As such, our understanding is that there would not be a feasible way to locate on this property without the owner's consent.

19. The Shoppes at East Wind  
5720 Route 25A  
Wading River, New York 11792  
SBL: 600-076-00-01-00-004-000  
Owner: Knightworld Inc.

Inquiry was made to the owner as to their interest in locating the Communication Facility on this parcel. The owner never responded to our certified letter to same. (See attached as part of Exhibit A). As such, our understanding is that there would not be a feasible way to locate on this property without the owner's consent.

20. Included with the foregoing offers to the above, specified properties, I also undertook a review of the entire area to assess whether there were any other viable locations to site the Communication Facility. In the vicinity there are primarily residential, institutional and small commercial uses. Therefore, the above-targeted parcels are the ones that could best accommodate the Communication Facility in the area.

21. It should be noted that this analysis is with an eye towards the apparent conflicting interests from a zoning perspective, where the potential impacts on surrounding areas must also be taken into account when reviewing applications for wireless facilities. By locating on the Property, Elite intends to site the Communication Facility within a location that would provide service, and do so by employing the least intrusive means. Specifically, the Pole is set back from North Country Road at the rear of the Property. As such, the existing building will offer screening. Further, the increase in elevation, coupled with the extensive vegetative area behind the Property will offer further visual shielding.

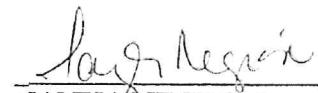
22. The proposed Communication Facility at the subject Property meets all potential site criteria based upon its location, wireless antenna clearance, network coverage, and availability. Further, the owner of the subject Property is the only location where a willing landlord agreed to enter lease negotiations with Elite.

23. Therefore, the proposed Communication Facility at the subject Property would provide: (1) the least intrusive means to resolve Verizon Wireless's and the Fire District's existing service deficiency; (2) adequate and reliable network coverage for Verizon Wireless and the Fire District in the subject area; and (3) the ability to accommodate additional wireless carriers who may collocate on the proposed Communication Facility.

### **CONCLUSION**

24. Based on the foregoing, I respectfully request that the Planning Board grant Elite's, Verizon Wireless's and the Fire District Application in all respects.

**ELITE TOWERS, L.P.**

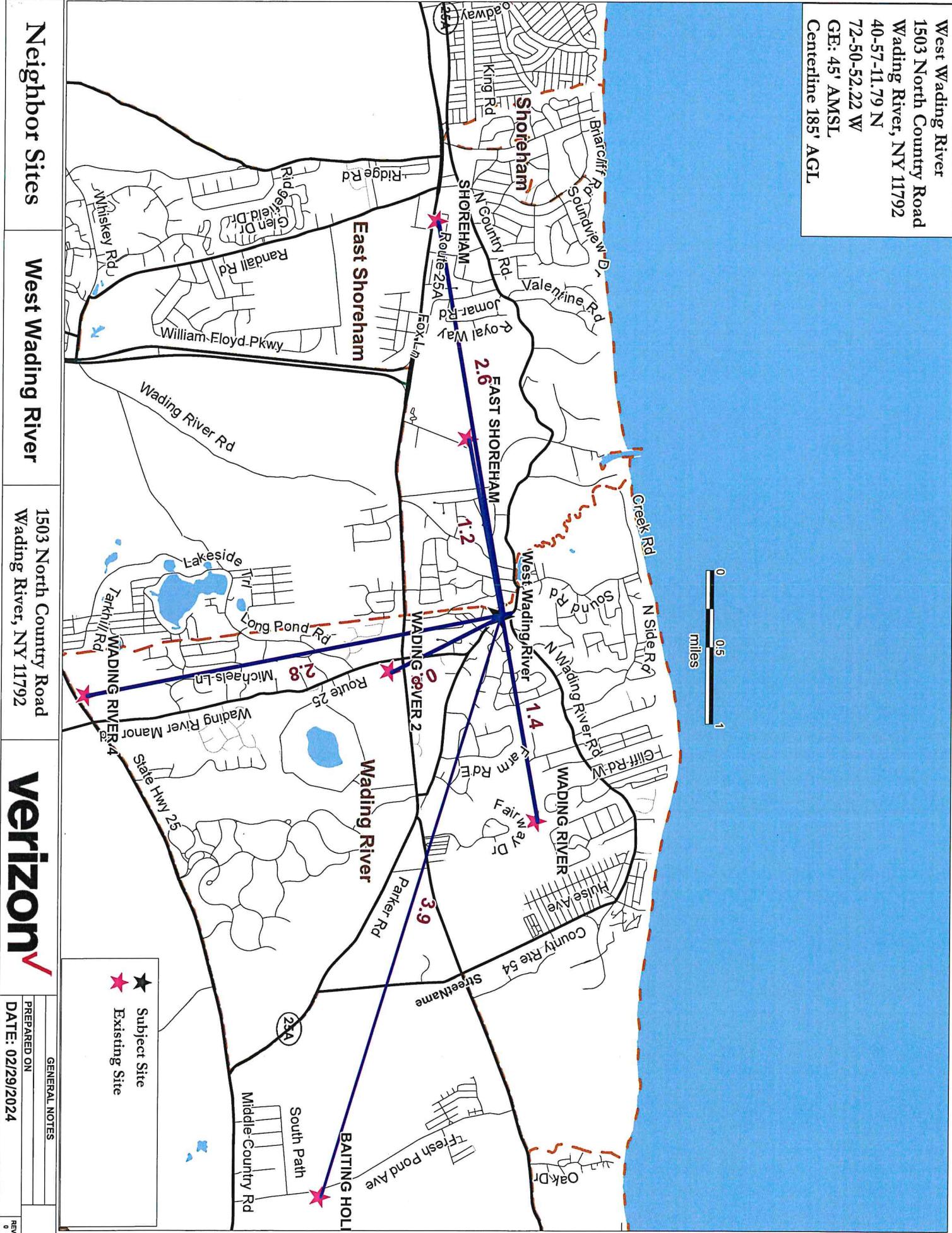
  
\_\_\_\_\_  
TANYA NEGRON

Sworn to before me this 11<sup>th</sup>  
day of September, 2023.

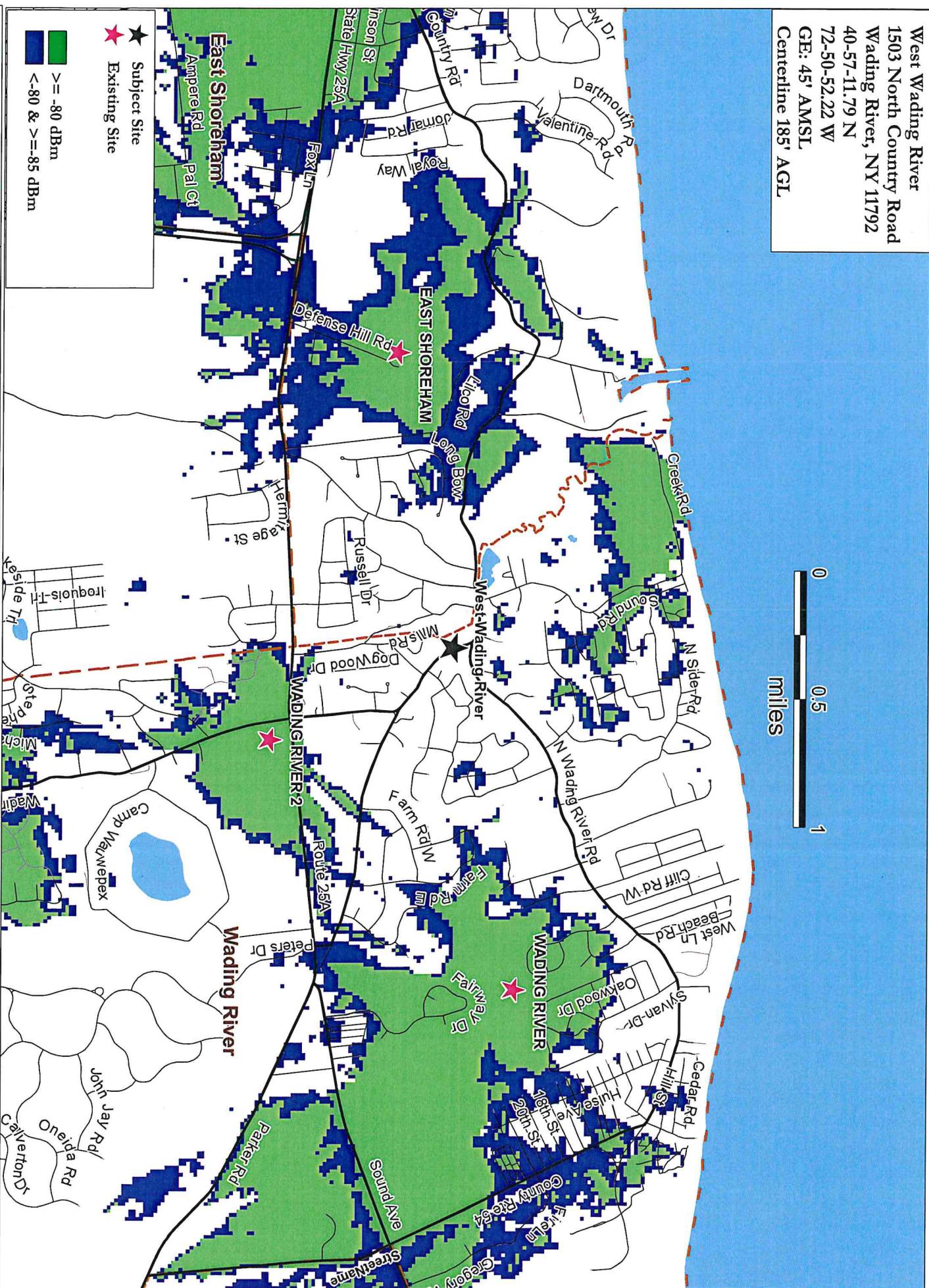
  
\_\_\_\_\_  
Notary Public

Loula Fernandes  
Notary Public - State of New York  
No. 01FE6374706  
Qualified in Suffolk County  
Commission Expires April 30, 2026

West Wading River  
1503 North Country Road  
Wading River, NY 11792  
40-57-11.79 N  
72-50-52.22 W  
GE: 45' AMSL  
Centerline 185' AGL



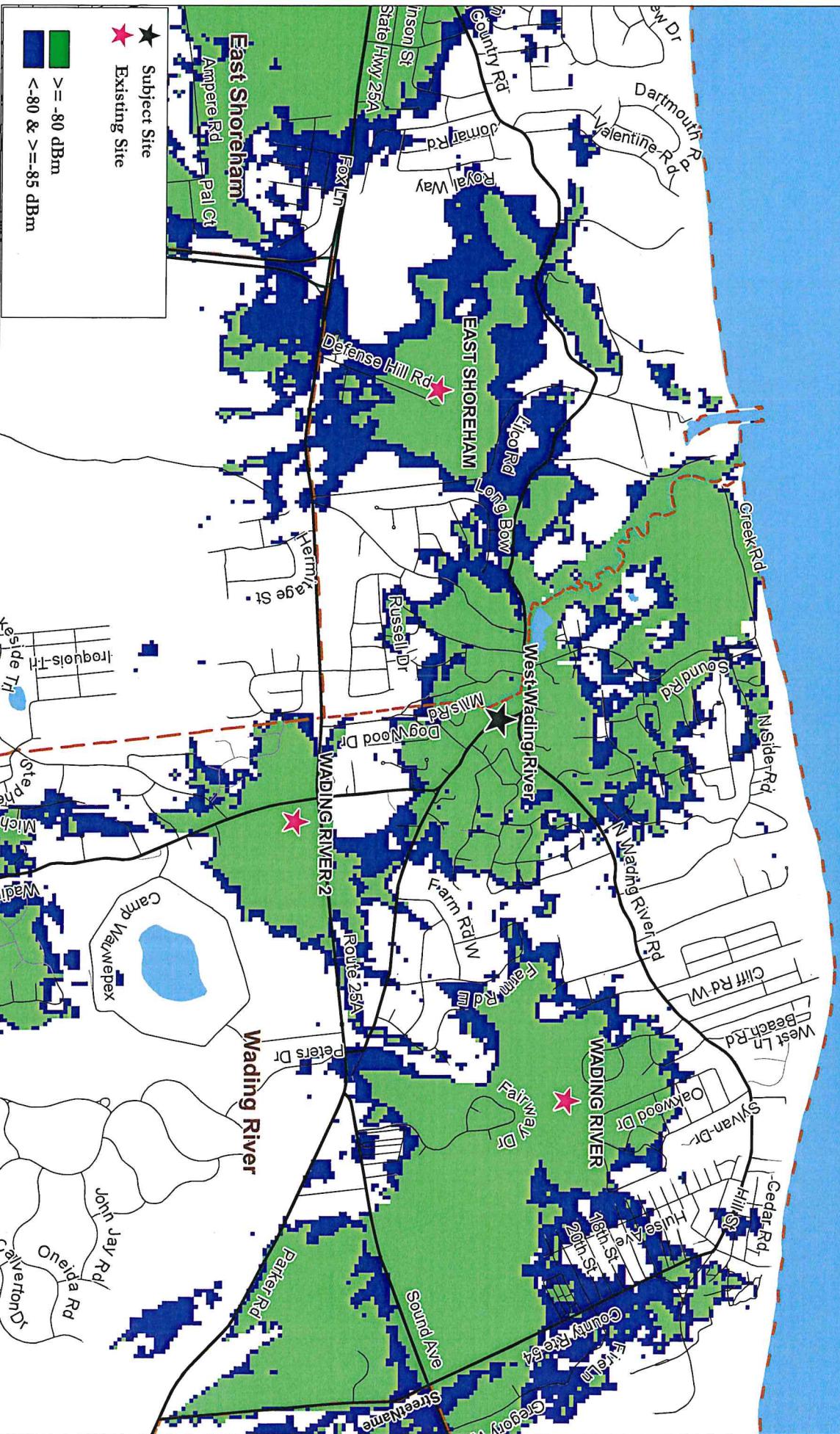
West Wading River  
1503 North Country Road  
Wading River, NY 11792  
40-57-11.79 N  
72-50-52.22 W  
GE: 45' AMSL  
Centerline 185' AGL



| <b>West Wading River</b>  | 1503 North Country Road | <b>verizon</b>  |  |               |  |             |  |                  |       |
|---|-------------------------|--|--|---------------|--|-------------|--|------------------|-------|
|   | Wading River, NY 11792  |  |  |               |  |             |  |                  |       |
| <table border="1"> <thead> <tr> <th colspan="2">GENERAL NOTES</th> </tr> </thead> <tbody> <tr> <td>PREPARED ON</td> <td></td> </tr> <tr> <td>DATE: 02/09/2024</td> <td>REV 0</td> </tr> </tbody> </table> |                         |  |  | GENERAL NOTES |  | PREPARED ON |  | DATE: 02/09/2024 | REV 0 |
| GENERAL NOTES   |                         |  |  |               |  |             |  |                  |       |
| PREPARED ON   |                         |  |  |               |  |             |  |                  |       |
| DATE: 02/09/2024  | REV 0                   |  |  |               |  |             |  |                  |       |

West Wading River  
1503 North Country Road  
Wading River, NY 11792  
40-57-11.79 N  
72-50-52.22 W  
GE: 45' AMSL  
Centerline 185' AGL

0  
0.5  
1 miles



Existing and Proposed  
700 MHz LTE Coverage

West Wading River

1503 North Country Road  
Wading River, NY 11792

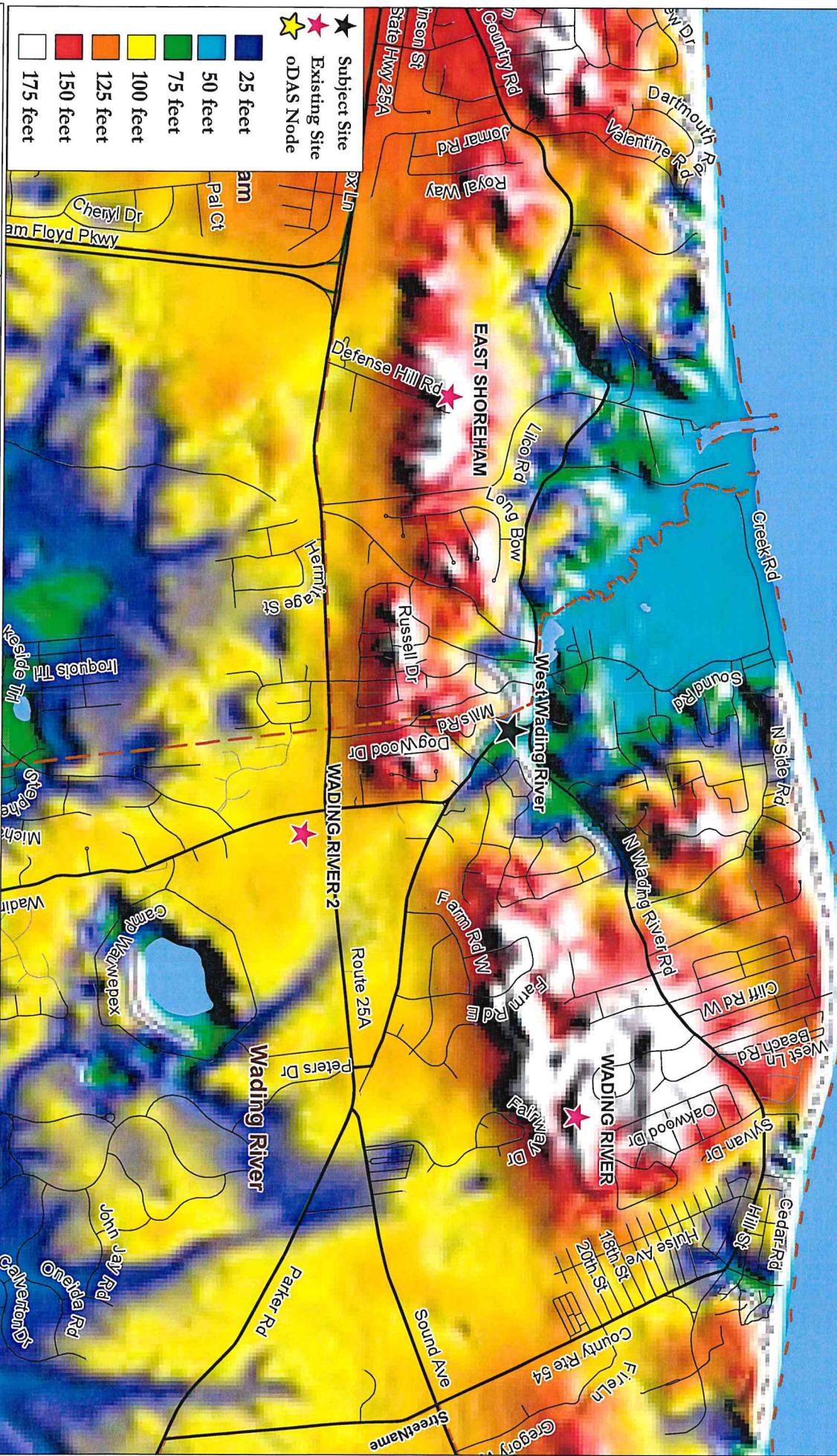
**verizon** ✓

GENERAL NOTES  
PREPARED ON  
DATE: 02/09/2024

REV 0

West Wading River  
1503 North Country Road  
Wading River, NY 11792  
40-57-11.79 N  
72-50-52.22 W  
GE: 45' AMSL  
Centerline 185' AGL

0  
0.5  
1  
miles



# LYNCH APPRAISAL LTD.

REAL ESTATE APPRAISERS AND CONSULTANTS  
15 DEWEY STREET  
HUNTINGTON, NEW YORK 11743  
(631) 427-1000

November 13, 2024

TOWN OF RIVERHEAD  
TOWN BOARD  
4 West Second Street  
Riverhead, New York 11901

Re: Real Estate Consulting Report

*Elite Towers, LP, Wading River  
Fire District & SMSA Limited  
Partnership d/b/a Verizon Wireless*

Proposed Communications  
Facility:

*Concealment Pole Located at  
Wading River Fire Department -  
1503 North Country Road  
Wading River, New York*

Dear Board Members:

In accordance with a request from the applicants, Elite Towers, LP, Wading River Fire District and Verizon Wireless, collectively hereinafter referred to as the "Applicants", I have inspected the above site and prepared a Real Estate Consulting Report (the "Report") regarding potential effects of a proposed wireless communications facility (the "Communications Facility") on the surrounding community.

After considering the location, market conditions, proposed build, and all other factors that influence value, it is my professional opinion that the Applicants' proposed Communications Facility will not negatively affect property values in the surrounding area and will not have any adverse effect on the character of the neighborhood or the pattern of its development, and is compatible with the site and surrounding structures and uses.

My conclusions are outlined in the following Report.

Respectfully submitted,

LYNCH APPRAISAL LTD.

By: *Michael J. Lynch*  
Michael J. Lynch  
N.Y.S. Cert. General R.E. Appraiser #46000001012

Purpose and Intended Use of Report

The purpose and intended use of the Report is to study any possible adverse effects the proposed Communications Facility will have on the surrounding community.

This Report is strictly prepared at the request of the Applicants to present to the Town of Riverhead Town Board.

Effective Date of Report

The effective date of the Report is November 13, 2024, the date of inspection of the Property by Mr. Michael J. Lynch.

Description of Proposed Communications Facility

The Applicants' proposed Communications Facility consists of, without limitation, the installation of seven (7) whip antennas (with the tallest at a top height of 213'0" AGL) by the Wading River Fire District affixed to a 190' AGL RF-transparent concealment pole (the "Concealment Pole"), plus three (3) panel antennas by Verizon Wireless within said tower structure. The Communications Facility will be situated at the immediate rear of the Wading River Fire District firehouse (the "Firehouse"). In addition, associated equipment cabinetry will be mounted on a metal platform atop the Firehouse at a height of 39'6" (agl), plus a natural gas generator, and an equipment room inside the Firehouse. Moreover, the Concealment Pole will be designed to accommodate future carriers. Lastly, the Concealment Pole will be situated at the base of a wooded hillside, which aids in the screening of the Communications Facility.

### Description of Property and Surrounding Neighborhood

The Property consists of a 1.57± acre parcel located at the northwesterly corner of Jacobs Lane and North Country Road (C.R. 25), in the Hamlet of Wading River, Town of Riverhead, Suffolk County, New York. It is also known and designated by Suffolk County Tax Map Number: District 600, Section 54, Block 1, Lot 28.4, and is situated within a Town of Riverhead Residence B-80 (RB80) Zoning District. The Property is generally rectangular, level to hilly (at its west and northwest sides) in its topography, and improved with the Firehouse plus a detached utility building, a diesel fueling station, and associated paved parking and driveway areas. There is also an existing, 115' (agl) lattice tower, located just outside the northwesterly corner of the Firehouse that is presently in use by the fire district for its communications needs. Finally, with respect to the Firehouse, there is a fire siren that is on automatic activation during emergency calls. The Property, itself, is abutted and adjacent on its west and south sides by single-family residences, while abutting on its north is the Wading River Congregational Church. Opposite, along the easterly side of North Country Road, is the wooded rear yard of a residence that fronts on North Wading River Road, plus St. John the Baptist R.C. Church. Diagonally opposite to the northeast, on North Country Road, is an insurance agency building. Located just to the west of the Property is the boundary with the Town of Brookhaven.

### Scope of the Report

In preparing this Report, the appraiser:

- Inspected the Property and surrounding community on November 13, 2024;
- Reviewed the Elite Towers/Wading River zoning drawings prepared by Azimuth Engineering PC, last updated 6/17/24;
- Reviewed visual assessment and photo simulations of the proposed Communications Facility prepared by VHB, dated December 2023;

- Reviewed Suffolk County tax maps, and Town of Riverhead zoning code and zoning maps;
- Researched sales trends in the area of the Property in addition to comparable sites throughout Suffolk and Nassau Counties, including the East End of Long Island; and
- Prepared this Report.

#### Report Methodology

In analyzing any potential adverse effect the Communications Facility may have on the surrounding community, the appraiser considered the proposed build of the Communications Facility and that it will replace an existing, 115' (agl) lattice tower that is sorely outdated; that the Property is utilized as Firehouse with a fueling station, and features a fire siren that automatically activates during emergency calls; and the surrounding, wooded and rolling topographical nature of the neighborhood and area that helps to screen, visually, the Concealment Pole.

In addition, we have reviewed and carried out studies with respect to wireless communications facilities in Nassau and Suffolk Counties, including the East End. These communications facilities include concealment and monopole sites, lattice and guyed wire tower sites, rooftop mounted sites, and water tank sites. On the following pages are two studies featuring a concealment pole and monopole communications facilities on the East End of Suffolk County:

1) 150' Stealth Wireless Monopole (Flagpole) at Cherry Creek Golf Links, 900 Reeves Avenue, Centerville (Riverhead)

A 150'± stealth monopole was erected at this golf course in 2003 (see Figure 1). Subsequent to the monopole, a new development of single-family residences commenced adjoining the golf course and said wireless facility to its east. This homeowner's association, known as the "Highlands at Reeves," had its first sale in 2006. The development includes a community pool, clubhouse, and other amenities typical to a modern homeowner's association development on Long Island. The golf course and development are built on former agricultural lands.

Our staff looked at sales data within the Highlands at Reeves from 2006–2014, finding 36 sales ranging from \$399,000–\$850,000, or on a per square foot of building area running from \$136/SF–\$258/SF. The average and median sale price per square foot was \$197/SF and \$199/SF, respectively.

We then compared this above data to a very similar development located 1.5± miles to the east known as "The Highlands at Aquebogue," situated along the south side of Sound Avenue, adjacent to the east side of the Long Island National Golf Club. The Highlands at Aquebogue had its first sale in 2006, with units still available as of 2014. Our researched sales run from 2006–2014, revealing 65 sales ranging from \$425,000–\$719,000, or on a per square foot of building area running from \$135/SF–\$252/SF. The average and median sale price per square foot was \$201/SF and \$207/SF, respectively.

The difference between the two groups, utilizing average and median sale prices per square foot of building area, was very close, differing by a nominal 2%–4%. Therefore, based upon these two groups

of data, it does not appear that the presence of the 150' monopole had an appreciable effect on the adjacent residential community.



**Figure 1:** Birdseye View of Cherry Creek Golf Links with Monopole and Adjacent Development

2) **165' Monopole at 145 Powell Avenue, Village of Southampton**

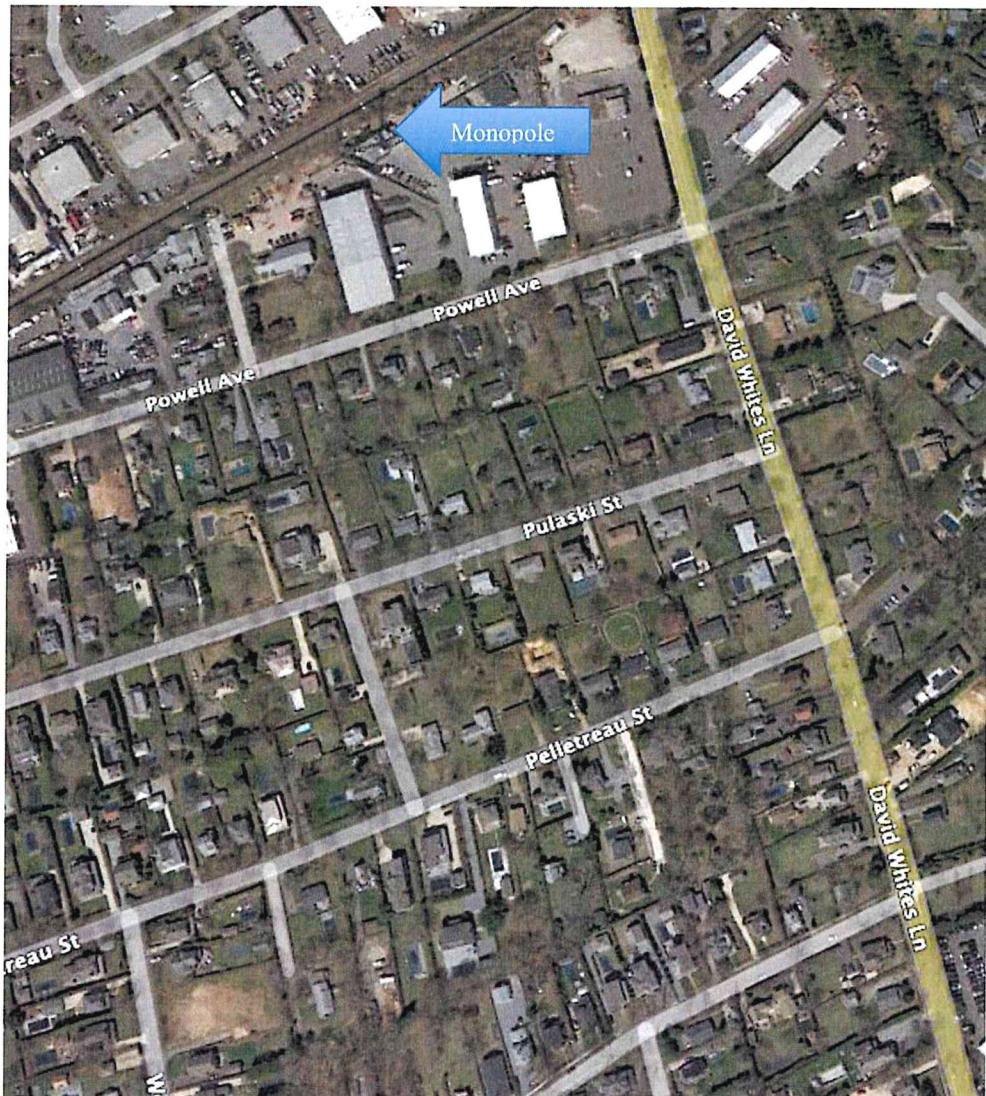
A 165' monopole with exposed antennas at the above address was constructed and received a certificate of occupancy from the Village of Southampton on April 15, 2016. The structure sits on an industrial-zoned improved parcel and is adjacent to an L.I.R.R. right-of-way. The Suffolk County Tax Map of the parcel is 0904/9/2/22.2.

Opposite this monopole, along the south side of Powell Avenue, the neighborhood is 100% residential and consists of streets comprised of a mix of older and newer 1-family dwellings on lot sizes ranging from roughly from 1/3 to 1 acre in land area. Due to the high demand for building sites in the Village, many of the older, modest homes are being razed to make way for new, luxury-market priced residences. In addition, many of the dated but larger dwellings are being renovated or rebuilt and selling for luxury market prices. The rebuilt or newer residences in the neighborhood are typically selling in the \$2,000,000 to \$3,500,000 range, and almost all contain in-ground swimming pools as an amenity.

In this study, I focused on renovated or newer luxury-priced home sales along Pulaski Street, 1 block south of Powell Avenue, that generally possesses visibility of portions of the monopole due to the 165' height of the communications facility and the area's level topography, but do not face industrial or commercial properties. The Pulaski Street sales were then compared with a similar mix of home sales farther south in the same neighborhood and Tax Map Section where the monopole visibility becomes greatly decreased. The average and median closing dates in each sample is close, both differing by less than two months. The two sets of data, on a price per square foot of gross living area (GLA), are compared on the following page.

Based on the below data of closed luxury-priced home sales, the closer proximity and general visibility of portions of the 165' monopole did not appear to lead to lower real property values of properties along Pulaski Street when compared to that of properties along streets farther south with greatly reduced visibility of said structure.

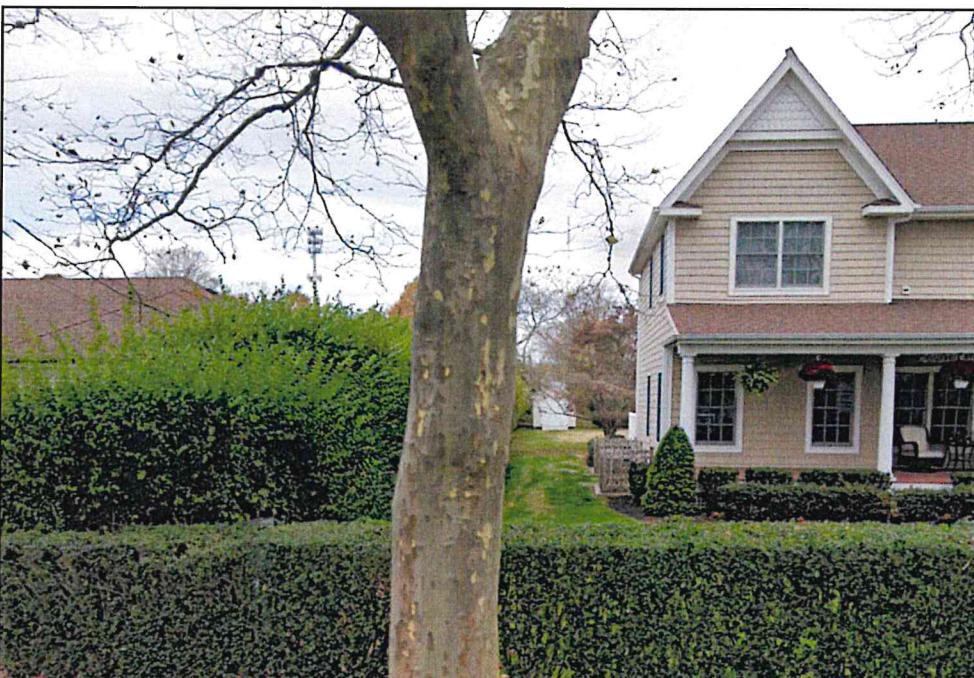
| Home Sales Along Pulaski Street           |                     |                     | Home Sales on Streets                 |                     |                     |
|---|---------------------|---------------------|---------------------------------------|---------------------|---------------------|
| <u>Near 165' Monopole</u>                 | <u>Date of Sale</u> | <u>\$/SF of GLA</u> | <u>Farther South of 165' Monopole</u> | <u>Date of Sale</u> | <u>\$/SF of GLA</u> |
| 70 Pulaski Street, Southampton            | 6/23/21             | 987                 | 152 Pelletreau Street, Southampton    | 11/16/20            | 1178                |
| 79 Pulaski Street, Southampton            | 4/1/21              | 1239                | 24 Osborne Avenue, Southampton        | 11/2/20             | 1039                |
| 64 Pulaski Street, Southampton            | 3/20/21             | 943                 | 175 Wooley Street, Southampton        | 10/15/20            | 892                 |
| 24 Pulaski Street, Southampton            | 6/3/20              | 969                 | 97 Pelletreau Street, Southampton     | 8/6/20              | 894                 |
| 154 Pulaski Street, Southampton           | 8/7/19              | 831                 | 148 Wooley Street, Southampton        | 6/18/20             | 1078                |
| 44 Pulaski Street, Southampton            | 4/19/17             | 814                 | 174 Wooley Street, Southampton        | 9/13/19             | 827                 |
| 32 N. Wooley St.(cor. Pulaski St.) South. | 3/9/17              | 1107                | 75 Halsey Avenue, Southampton         | 8/20/18             | 928                 |
|   |                     |                     | 21 Van Brunt Street, Southampton      | 4/28/18             | 922                 |
| Mean \$/SF                                |                     | 984                 | Mean \$/SF                            |                     | 970                 |
| Median \$/SF                              |                     | 969                 | Median \$/SF                          |                     | 930                 |



**Figure 2:** Map of 145 Powell Avenue and Adjacent Neighborhood to South



**Figure 3:** View of 165' Monopole at Powell Ave., Southampton (C.O. 4/15/16)



**Figure 4:** Visibility of Monopole Viewed Between Two Residences on Pulaski Street, Southampton

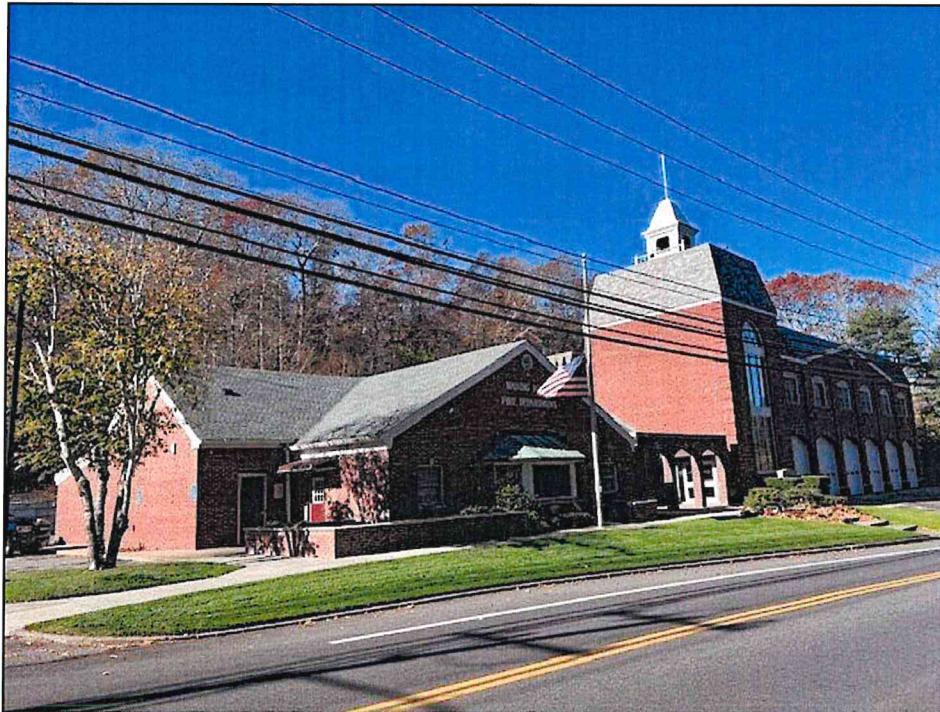
Conclusions

In summary, we offer the following conclusions:

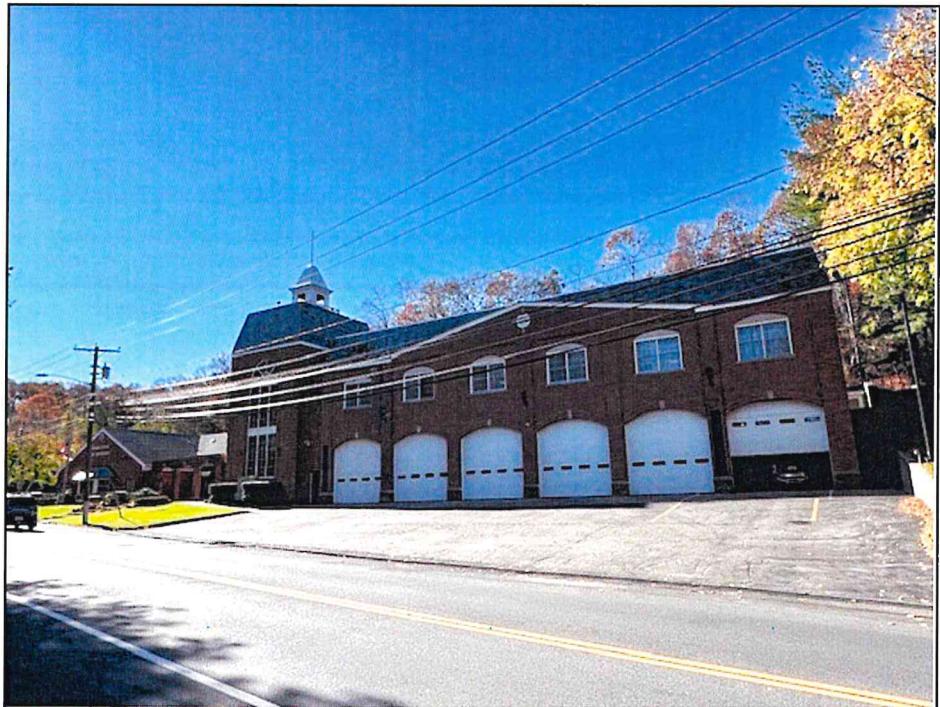
- The proposed Communications Facility is appropriate for the Property given that the application involves the mounting of cellular panel antennas internally within a Concealment Pole, plus the exterior affixing of fire district whip antennas. It will replace a decades-old and greatly outdated lattice tower that is presently in use by the fire district;
- The proposed Communications Facility is designed to accommodate additional wireless carriers in the future, thereby eliminating the need for further wireless structures in the immediate neighborhood of Wading River;
- The Property, at just over one and one-half acres, is improved with a municipal firehouse that features an active fire siren, fueling station and associated paved parking and driveway areas; therefore, the Property is well suited for the Communications Facility;
- The surrounding to the Property is characterized by wooded and rolling terrain, thereby helping to screen much of the proposed Concealment Pole;
- No correlation was found between the presence of wireless communication facilities and declining property values in the various monopole studies we reviewed or carried out on residential communities in the East End of Long Island.
- Therefore, the proposed Communications, if approved, will be compatible with surrounding land uses and not cause any deleterious effects to nearby real property values or the character of the neighborhood.

## ADDENDA

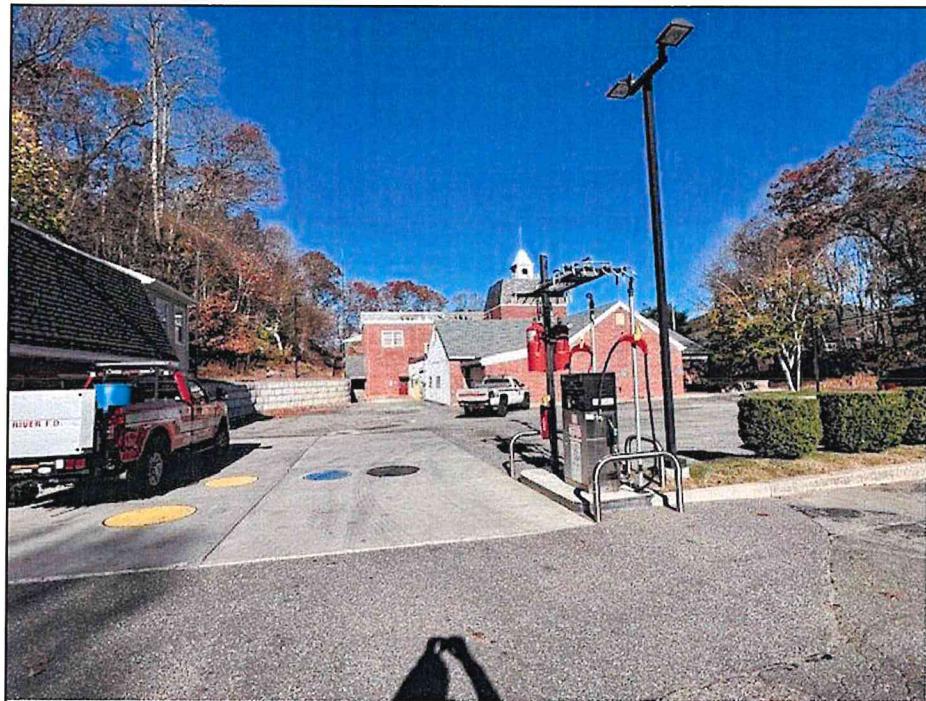
**Photographs**



**Photo 1:** Fire District Property Looking Northwest from N. Country Road



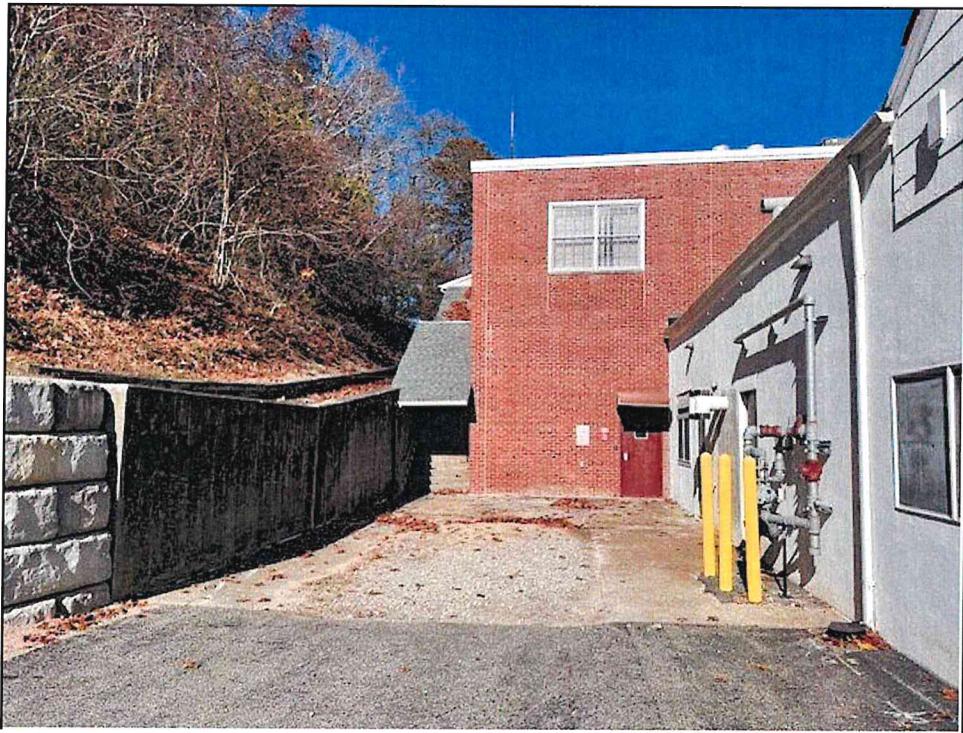
**Photo 2:** Fire District Property Looking Southwest from N. Country Road



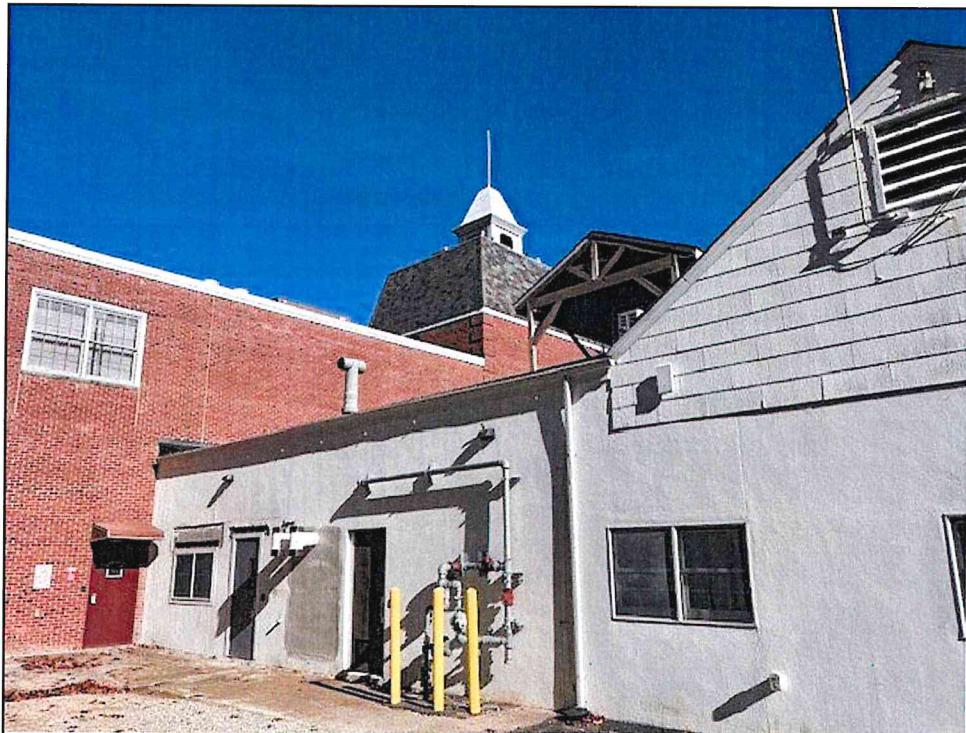
**Photo 3:** Fire District Property Viewed North



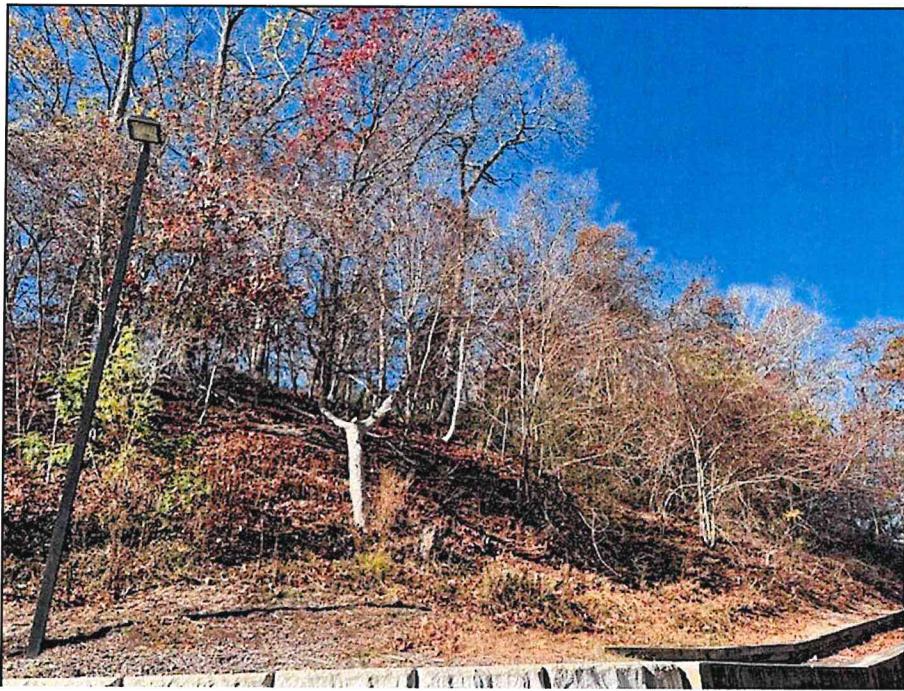
**Photo 4:** Fire District Property Viewed Northwest



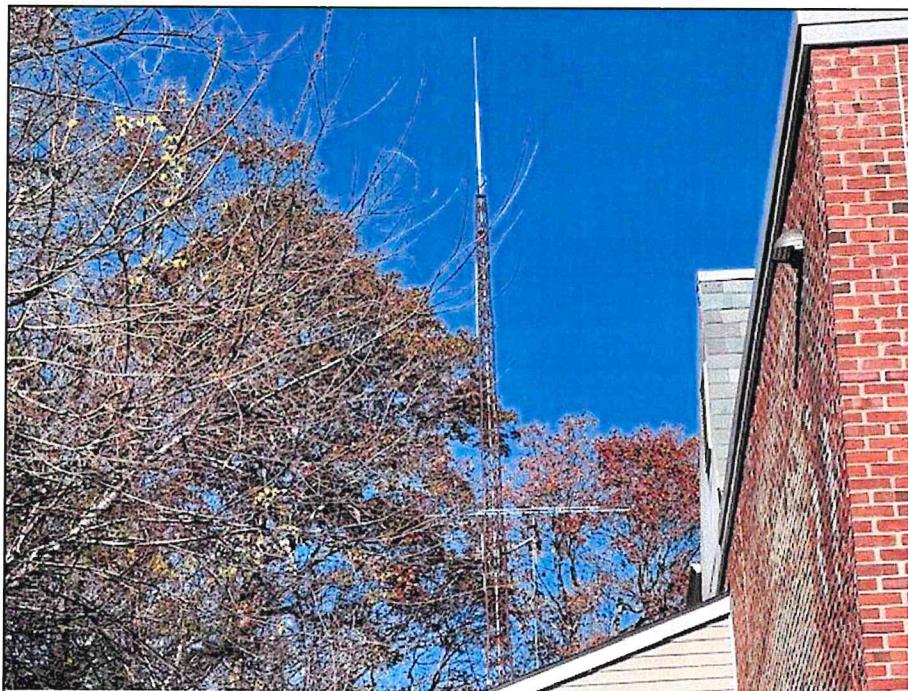
**Photo 5:** Proposed Location of Concealment Pole Behind Firehouse, Looking North



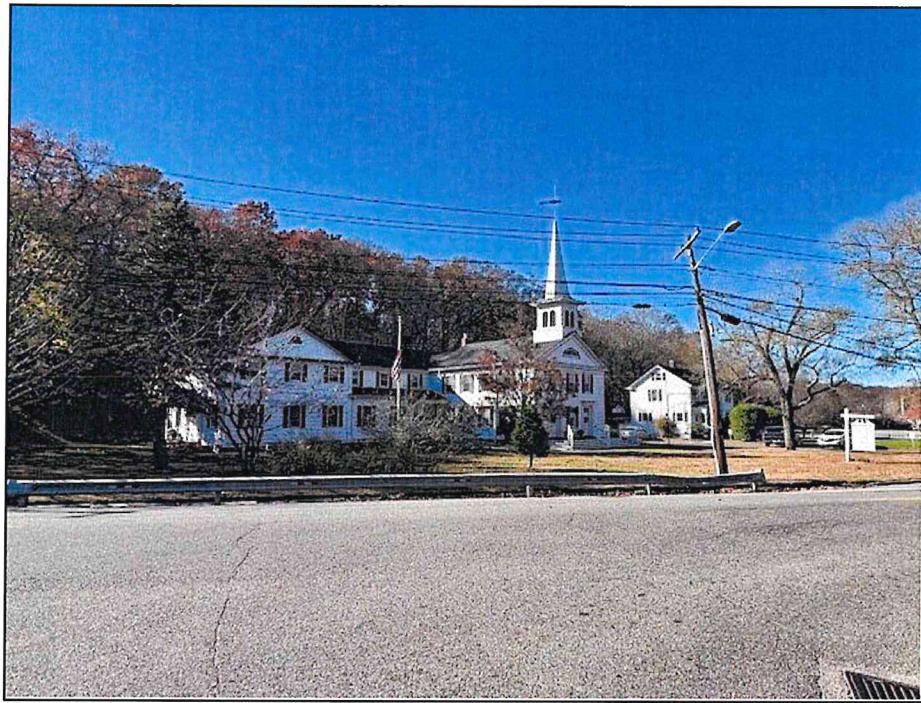
**Photo 6:** Proposed Location of Concealment Pole Behind Firehouse, Looking Northeast



**Photo 7:** Wooded Hillside Immediately Behind Proposed Location of Concealment Pole



**Photo 8:** Existing Lattice Tower Towards Northwest Corner of Firehouse



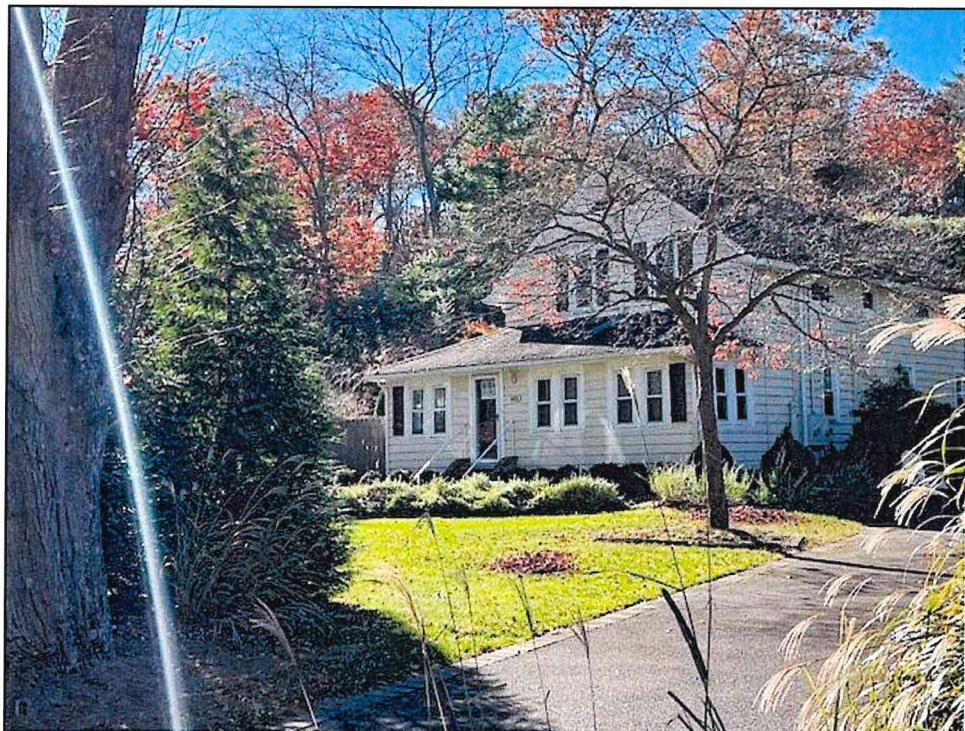
**Photo 9:** Wading River Congregational Church abutting Fire District Property to North on N. Country Road



**Photo 10:** Jacobs Lane (private r/o/w) bordering South Boundary of Fire District Property, Looking West



**Photo 11:** View (from Google Earth) of Abutting Residence at 12 Jacobs Lane, to West of Fire District Property



**Photo 12:** View of Residence at 1483 N. Country Road, Adjacent to South of Fire District Property



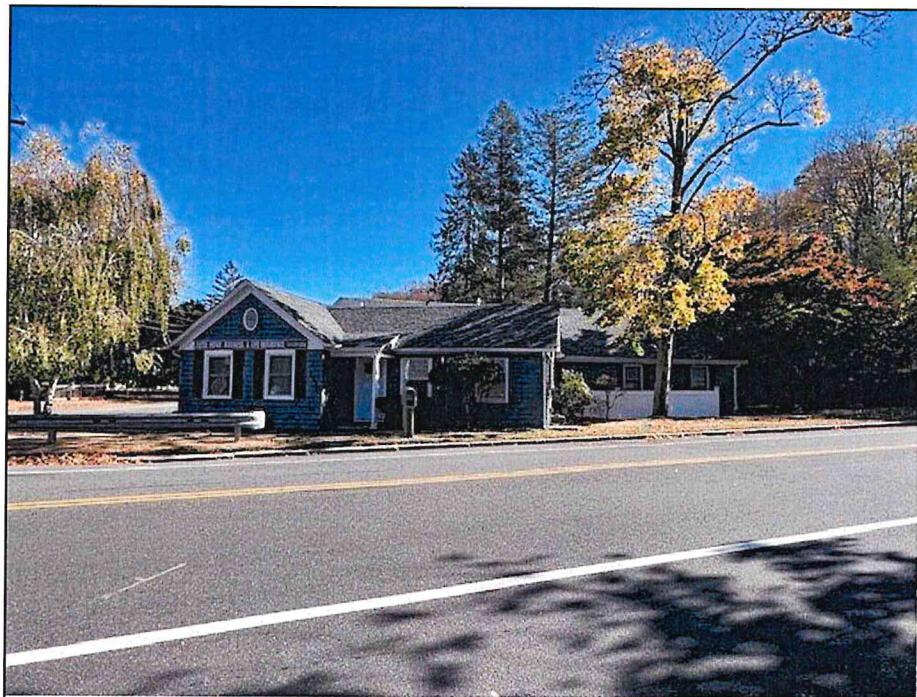
**Photo 13:** View of Natural Screening Looking North from Jacobs Lane towards Fire District Property



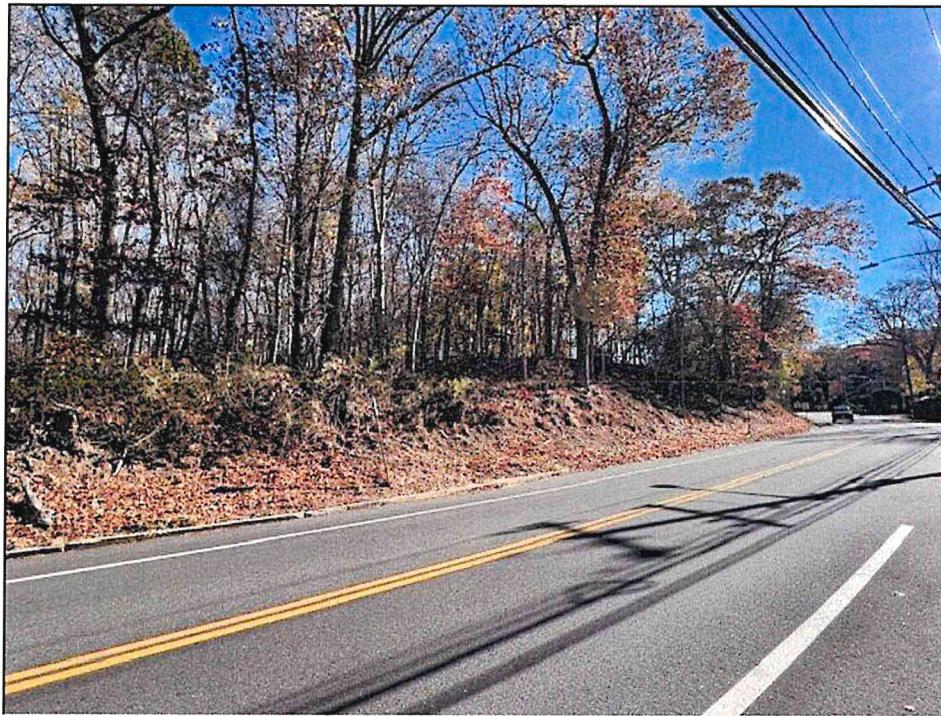
**Photo 14:** St. John the Baptist R.C. Church Opposite Fire District Property to East on N. Country Road



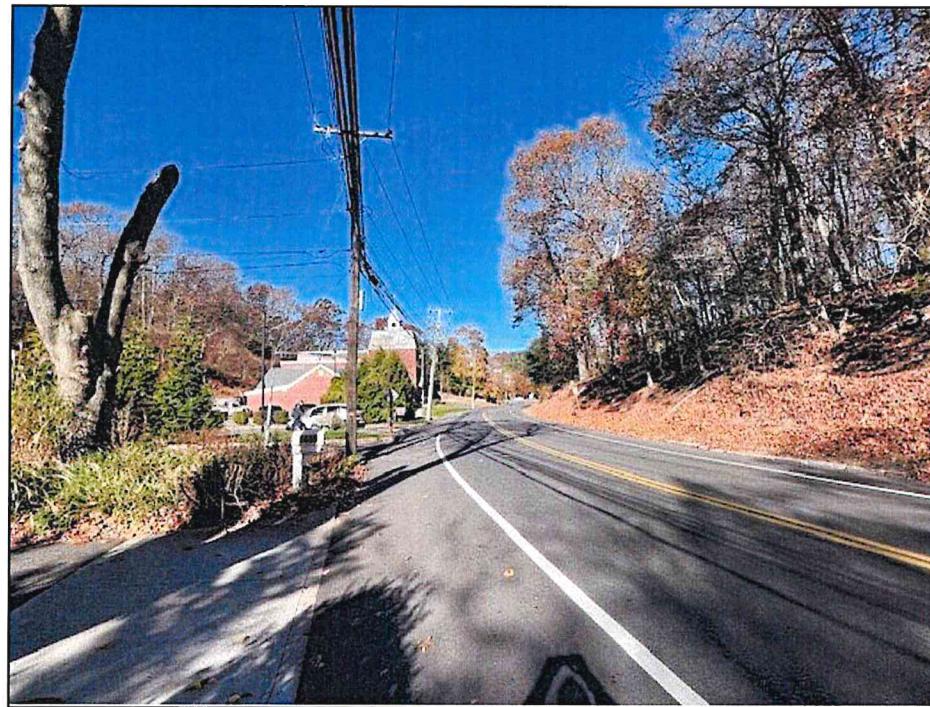
**Photo 15:** Residence Opposite Fire District Property on N. Country Road  
(dwelling fronts on N. Wading River Road)



**Photo 16:** Insurance Agency Diagonally Opposite Property to Northeast on  
N. Country Road and N. Wading River Road



**Photo 17:** N. Country Road Standing South (Fire District Property to Right in Photo)



**Photo 18:** N. Country Road Standing North

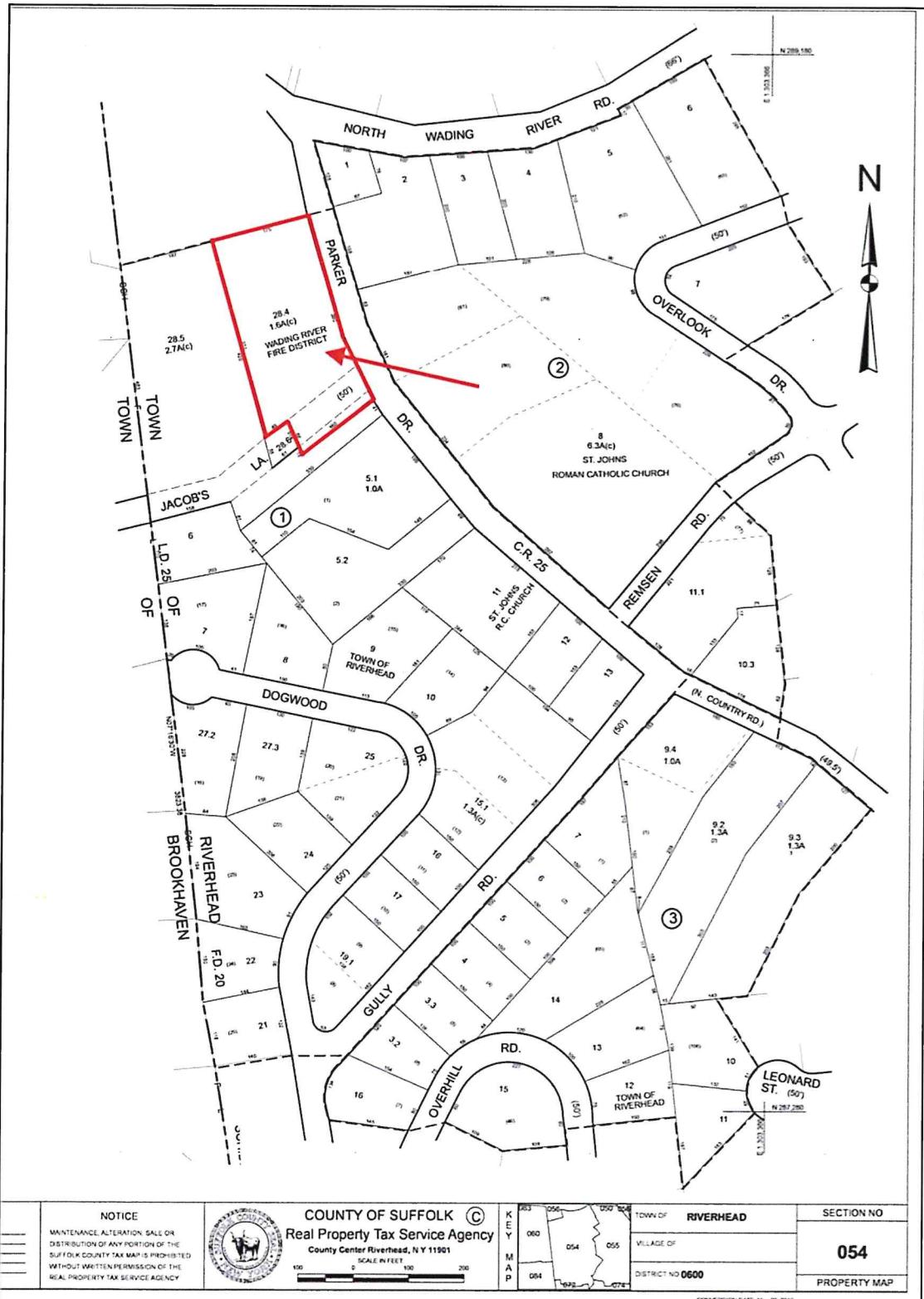


**Photo 19:** Looking South from Intersection of N. Country Road and N. Wading River Road, w/Fire District Property off to Right in Photo

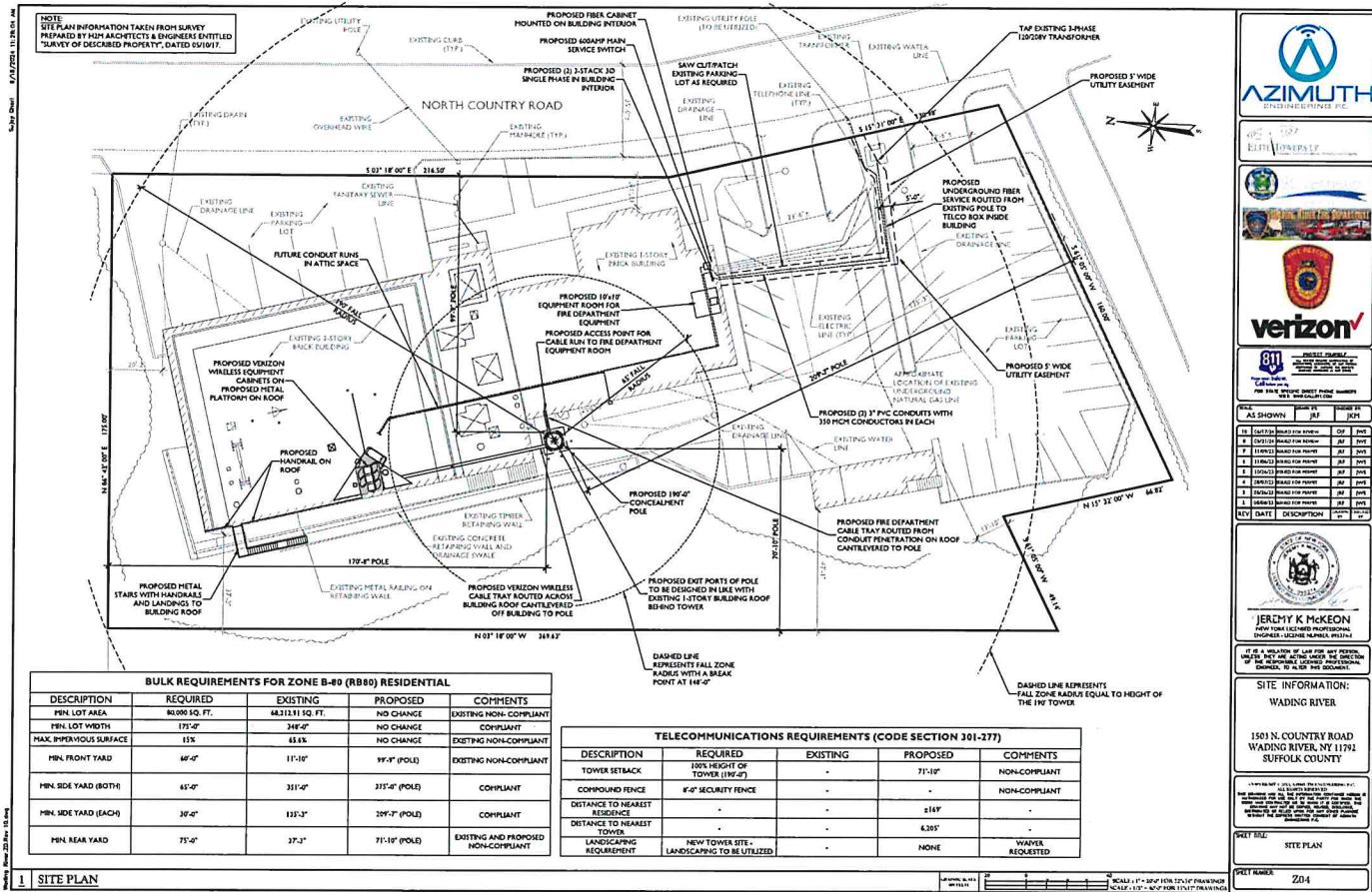


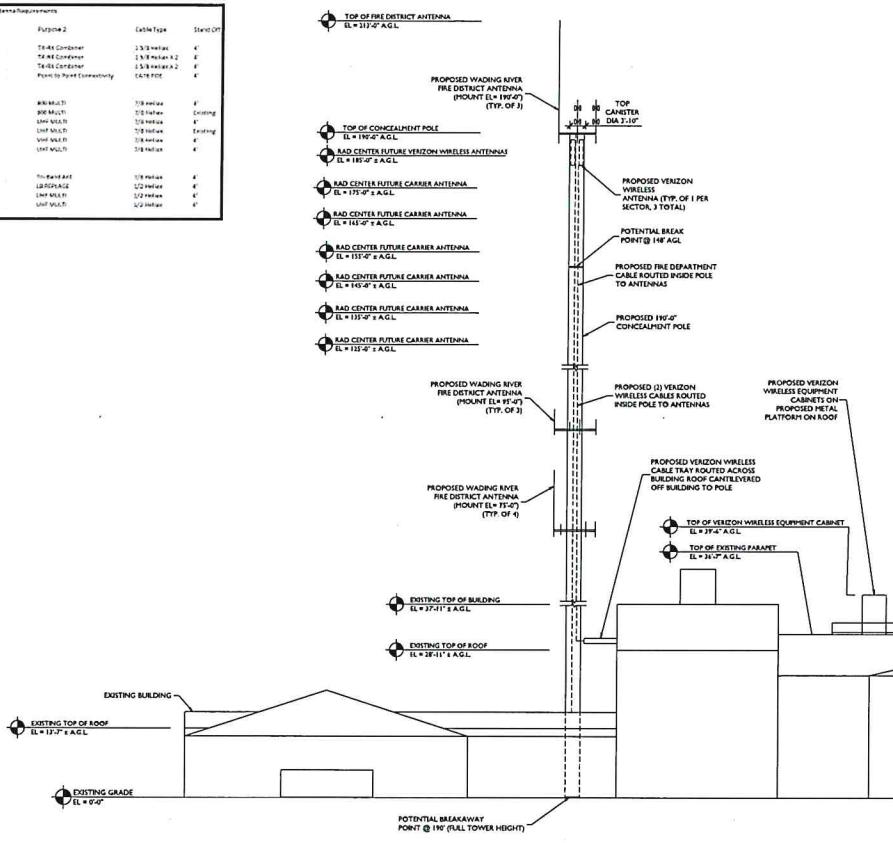
**Photo 20:** Google Aerial View of Property, Proposed Location of Concealment Pole (Yellow Arrow) & Surrounding Area, Oriented North

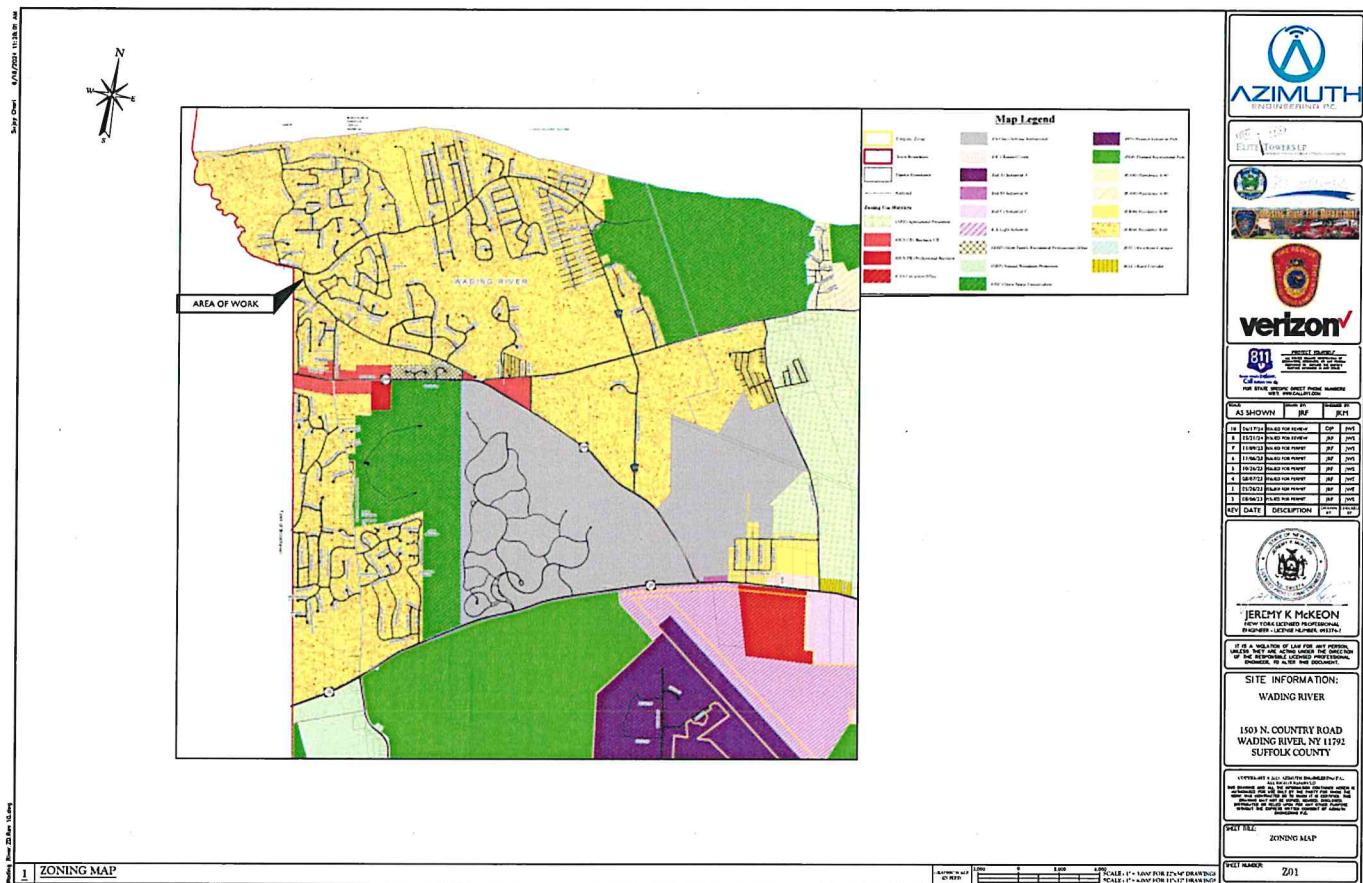
## Suffolk County Tax Map



## Zoning Drawings









CERTIFICATION

I certify that, to the best of my knowledge and belief:

1. the statements of fact contained in this report are true and correct.
2. the reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are my personal, impartial, and unbiased professional analyses, opinions, and conclusions.
3. I have no present or prospective interest in the Subject property or personal interest or bias with respect to the subject matter of the report or the parties involved. I have performed no services as an appraiser, or in any other capacity, regarding the subject property within the three-year period immediately preceding the acceptance of this assignment.
4. my engagement in this assignment was not contingent upon developing or reporting predetermined results.
5. my compensation for completing this assignment is not contingent upon the development or reporting of predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.
6. I made a personal inspection of the property, which is the subject of this report, on November 13, 2024.
7. no one provided significant professional assistance to the person signing this report.



---

Michael J. Lynch

### ASSUMPTIONS AND LIMITING CONDITIONS

This report has been made with the following general assumptions:

1. No responsibility is assumed for the legal description or for matters including legal or title considerations. Title to the property is assumed to be good and marketable unless otherwise stated.
2. The information furnished by others is believed to be reliable. However, no warranty is given for its accuracy.
3. All engineering is assumed to be correct. The plot plans, drawings, and illustrative material in this report are included only to assist the reader in visualizing the property.
4. It is assumed that there are no hidden or unapparent conditions of the property, subsoil, or structures that render it more or less valuable. No responsibility is assumed for such conditions or for arranging for engineering studies that may be required to discover them.

The report has been made with the following general limiting conditions:

1. The information contained in this report is specific to the needs of the client and for the intended use stated in this report. The appraiser is not responsible for the unauthorized use of this report.
2. Possession of this report, or a copy thereof, does not carry with it the right of publication. It may not be used for any purpose by any person other than the party to whom it is addressed without the written consent of the appraiser, and in any event only with proper written qualification and only in its entirety.
3. The appraiser herein by reason of this appraisal is not required to give further consultation, testimony, or be in attendance in court with reference to the property in question unless arrangements have been previously made.
4. Neither all nor any part of the contents of this report shall be disseminated to the public through advertising, public relations, news, sales, or other media without the prior written consent and approval of the appraiser.

**MICHAEL J. LYNCH**  
**Certified N.Y.S. General Real Estate Appraiser #46-1012**

**QUALIFICATIONS**

Real estate appraiser since 1981. President of Lynch Appraisal Ltd., located at 15 Dewey Street, Huntington, New York 11743.

Appraised various types of real property on Long Island, New York City and Westchester County including multi-family dwellings, apartment buildings, commercial property, factories, warehouses, R & D buildings, office buildings, large residential estates, residential and commercial subdivisions, boat yards, and special-use properties.

Prepared appraisals for use in estates, estate planning, feasibility studies, condemnation proceedings, tax certiorari, and matrimonial matters.

Specialized in testimony such as special permits, area and use variances for properties. Applications have included proposed wireless communications sites, fast-food establishments, convalescent homes, gasoline service stations, convenience stores, multi-family residences, new construction, etc.

Appeared as Expert Witness:

Nassau County Supreme Court.  
New York Supreme Court.

Town of Babylon Zoning Board of Appeals.  
Town of Babylon Planning Board.  
Town of Babylon Town Board.  
Town of Brookhaven Board of Zoning Appeals.  
Town of Brookhaven Planning Board.  
Town of Brookhaven Town Board.  
Town of East Hampton Planning Board.  
Town of East Hampton Zoning Board of Appeals.  
Town of Huntington Zoning Board of Appeals.  
Town of Huntington Planning Board.  
Town of Huntington Town Board.  
Town of Islip Town Board.  
Town of Islip Planning Board.  
Town of Islip Zoning Board of Appeals.  
Town of Riverhead Planning Board.  
Town of Riverhead Board of Zoning Appeals.  
Town of Shelter Island Zoning Board of Appeals.  
Town of Smithtown Board of Zoning Appeals.  
Town of Smithtown Town Board.

Appeared as Expert Witness (cont.):

Town of Southampton Planning Board.  
Town of Southold Zoning Board of Appeals.  
Town of Southold Planning Board.  
Town of Oyster Bay Zoning Board of Appeals.  
Town of Oyster Bay Town Board.  
Town of North Hempstead Board of Zoning Appeals.  
Town of North Hempstead Town Board.  
Town of Hempstead Board of Zoning Appeals.  
Town of Hempstead Town Board.  
Town of Shelter Island Zoning Board of Appeals.  
Village of Atlantic Beach Zoning Board of Appeals.  
Village of Bayville Zoning Board of Appeals.  
Village of Brookville Board of Zoning Appeals.  
Village of Cedarhurst Board of Zoning Appeals.  
Village of Cove Neck Zoning Board of Appeals.  
Village of East Hills Zoning Board of Appeals.  
Village of East Rockaway Board of Appeals.  
Village of Farmingdale Board of Trustees.  
Village of Farmingdale Planning Board.  
Village of Floral Park Board of Trustees.  
Village of Freeport Planning Board.  
Village of Freeport Board of Zoning Appeals.  
Village of Garden City Zoning Board of Appeals.  
Village of Garden City Board of Trustees.  
Village of Garden City Planning Commission.  
Village of Great Neck Zoning Board of Appeals.  
Village of Great Neck Plaza Board of Trustees.  
Village of Great Neck Estates Zoning Board of Appeals.  
Village of Hempstead Zoning Board of Appeals.  
Village of Hempstead Personal Wireless Services Facilities Review Board.  
Village of Island Park Zoning Board of Appeals.  
Village of Lattingtown Zoning Board of Appeals.  
Village of Laurel Hollow Board of Zoning Appeals  
Village of Lawrence Zoning Board of Appeals.  
Village of Lynbrook Board of Trustees.  
Village of Lynbrook Zoning Board of Appeals.  
Village of Malverne Board of Trustees.  
Village of Manorhaven Board of Zoning Appeals.  
Village of Massapequa Park Zoning Board of Appeals.  
Village of Matinecock Zoning Board of Appeals.  
Village of Mill Neck Board of Zoning Appeals.  
Village of Mill Neck Planning Board.  
Village of Mineola Board of Trustees.  
Village of Munsey Park Board of Trustees.

Appeared as Expert Witness (cont.):

Village of New Hyde Park Board of Trustees.  
Village of New Hyde Park Zoning Board of Appeals.  
Village of North Hills Zoning Board of Appeals.  
Village of Muttontown Board of Trustees.  
Village of Muttontown Board of Zoning Appeals.  
Village of Old Brookville Zoning Board of Appeals.  
Village of Old Westbury Board of Zoning Appeals.  
Village of Oyster Bay Cove Board of Zoning Appeals.  
Village of Oyster Bay Cove Board of Trustees.  
Village of Oyster Bay Cove Planning Board.  
Village of Port Washington North Zoning Board of Appeals.  
Village of Rockville Centre Zoning Board of Appeals.  
Village of Roslyn Board of Trustees.  
Village of Roslyn Harbor Zoning Board of Appeals.  
Village of Sands Point Board of Zoning Appeals.  
Village of Sea Cliff Zoning Board of Appeals.  
Village of Upper Brookville Board of Trustees.  
Village of Upper Brookville Zoning Board of Appeals.  
Village of Valley Stream Board of Zoning Appeals.  
Village of Westbury Board of Trustees.  
Village of Westbury Zoning Board of Appeals.  
Village of Williston Park Board of Trustees.  
Village of Williston Park Zoning Board of Appeals.  
Village of Asharoken Zoning Board of Appeals.  
Village of Huntington Bay Zoning Board of Appeals.  
Village of Islandia Board of Trustees.  
Village of Islandia Zoning Board of Appeals.  
Village of Lloyd Harbor Board of Trustees.  
Village of Lloyd Harbor Planning Board.  
Village of Lloyd Harbor Zoning Board of Appeals.  
Village of Northport Board of Zoning Appeals.  
Village of Northport Board of Architectural & Historic Review.  
Village of East Hampton Zoning Board of Appeals.  
Village of Amityville Zoning Board of Appeals.  
Village of Lindenhurst Zoning Board of Appeals.  
Village of Lake Grove Zoning Board of Appeals.  
Village of Bellport Board of Trustees.  
Village of Patchogue Planning Board.  
Village of Patchogue Zoning Board of Appeals.  
Village of Port Jefferson Board of Trustees.  
Village of Quogue Zoning Board of Appeals.  
Village of Southampton Board of Architectural Review & Historic Preservation.  
Village of Southampton Planning Board.  
Village of The Branch Zoning Board of Appeals.  
Village of Head of the Harbor Board of Trustees.

Appeared as Expert Witness (cont.):

Village of Westhampton Beach Board of Trustees.  
Village of Westhampton Beach Architectural Review Board.  
  
City of Glen Cove Planning Board.  
City of Glen Cove Zoning Board of Appeals.  
City of Long Beach Zoning Board of Appeals.

#### PARTIAL LIST OF MUNICIPAL CLIENTS

Town of Oyster Bay (Office of Town Attorney)  
Town of N. Hempstead (Community Development Agency)  
Village of Muttontown  
Village of Centre Island  
Village of Upper Brookville  
Locust Valley Water District

#### EDUCATION

Hofstra University, Hempstead, New York: BBA - Management (1983);  
MBA - Banking & Finance (1991).

#### TECHNICAL TRAINING

##### NYS Department of State

Real Estate General Appraiser Certification #46000001012, Expiration 12/21/24

##### Appraisal Institute

Real Estate Appraisal Principles - Exam #1A-1.  
Basic Valuation Procedures - Exam #1A-2.  
Capitalization Theory and Techniques, Part A, - Exam #1B-A.  
Capitalization Theory and Tech. Part B, - successfully challenged Exam #1B B.  
Case Studies in Real Estate Valuation - successfully challenged Exam #2-1.  
Standards of Professional Practice, Part A (USPAP) - Exam #I410  
Standards of Professional Practice, Part B - Exam #II420

##### McKissick

7-Hour National USPAP Update Course (11/18/22)

##### Columbia Society of Real Estate Appraisers

Fair Housing, Fair Lending (9/12/22, 9/14/22)