



Town of Mashpee

Planning Board

16 Great Neck Road North
Mashpee, Massachusetts 02649

Meeting of the Mashpee Planning Board
Wednesday, April 17, 2019
Waquoit Meeting Room, 7:00 PM

Call Meeting to Order

7:00 PM – Waquoit Meeting Room – Mashpee Town Hall

- Pledge of Allegiance

Approval of Minutes

- Review and approval of meeting minutes from April 3, 2019

Public Hearing

7:10PM - Bennett Environmental Associates for Windchime Condominium Trust

Consider an application to modify a special permit issued February 4, 1987 and recorded at the Barnstable County Registry of Deeds in Book 5734, Pages 225-269. Such application was made for consideration of the release of the escrow funds held under the Special Permit to make improvements to the on-site wastewater treatment system through the BRP WP 68 "Treatment Works Plan Approval" permitting process; and to seek reduction in the Wastewater Treatment Monitoring Plan as commensurate to the environmental monitoring requirements specified under the Groundwater Discharge Permit 263-3M1

7:15PM – May 6, 2019 Town Meeting Warrant, Proposed Zoning Amendments

- Warrant Article _: To amend Section E of §174-5(G) Light Industrial Overlay District
- Warrant Article _: To amend §174-25 (I) (10) of the Zoning Bylaw "Accessory uses" by adding the letters "SP" under the columns identified as, C-3 and I-1 and further to amend §174-25 (E) (2), Principal retail business and consumer service establishments by adding the letters "SP" under the column identified as I-1.

7:30PM – Blue Sky Towers II, LLC

Blue Sky Towers II, LLC has made an application for a special permit to erect a Personal Wireless Service Facility as required by Section 174-25 (H)(9); 174-45.3 of the Mashpee Zoning By-Law at 101 Red Brook Road, Mashpee Fire Station #2 (Assessors Map 104, Lot 2) consisting of a 150' monopole. This public hearing is being reopened by the Planning Board following referral to The Cape Cod Commission as a Development of Regional Impact (DRI). The public hearing opened on June 6, 2018.

New Business

- Sign Special Permit Decision for shared driveway at 147 and 155 Old Barnstable Road

Old Business

Chairman's Report

Board Member Committee Reports

- Cape Cod Commission, Community Preservation Committee, Design Review, Plan Review, Environmental Oversight Committee, Greenways/Quashnet Footbridge, Historic District Commission, MMR Military Civilian Community Council.

Updates from Town Planner

- Update on Town Meeting zoning amendment proposals
- Planning Department transition to electronic permitting

Additional Topics (not reasonably anticipated by Chair)

Adjournment

MASHPEE TOWN CLERK

APR 12 2019

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**Mashpee Planning Board
Minutes of Meeting
April 3, 2019 at 7:00 p.m.
Mashpee Town Hall-Waquoit Meeting Room
16 Great Neck Road North
Approved 4/17/19**

Present: Chairman Mary Waygan, Joe Cummings, Dennis Balzarini

Also: Evan Lehrer-Town Planner

Absent: David Kooharian, Robert (Rob) Hansen (Alt.), David Weeden

CALL TO ORDER

The Town of Mashpee Planning Board meeting was opened with a quorum in the Waquoit Meeting Room at Mashpee Town Hall by Chairman Waygan at 7:00 p.m. on Wednesday, April 3, 2019. The Chair stated that the meeting was being videographed and recorded and asked that speakers approach the podium stating their name and business, adding that comments were to be addressed to the Chair and taken under advisement if necessary. The Pledge of Allegiance was recited.

APPROVAL OF MINUTES—March 20, 2019

MOTION: Mr. Balzarini made a motion to accept the minutes of March 20th, 2019, as presented. Mr. Cummings seconded the motion. All voted unanimously.

PUBLIC HEARING

7:10 p.m. Blue Sky Towers II, LLC Application for Special Permit to erect a Personal Wireless Service Facility as required by Section 174-25 (H)(9); 174-45.3 of the Mashpee Zoning Bylaw at 101 Red Brook Road, Mashpee Fire Station #2 (Assessor's Map 104, Lot 2) consisting of a 15' monopole. This Public Hearing is being reopened by the Planning Board following referral to The Cape Cod Commission as a Development of Regional Impact. The Public Hearing opened on June 6, 2018.

The appointed time having arrived, the Chair read for the record the request and Public Hearing Notice. The Chair reported that a letter had been received from Attorney Elizabeth Thompson, representing Blue Sky Towers II, requesting a continuance due to Planning Board member availability. The Chair read for the record the letter dated April 1.

MOTION: Mr. Balzarini made a motion to continue the Public Hearing to April 17 at 7:30 p.m. Mr. Cummings seconded the motion. All voted unanimously.

The Chair addressed the audience, stating that any questions could be answered by the Town Planner, because the Board was unable to accept any public comment at this time.

A recess was taken at 7:15 p.m. so that Mr. Lehrer could address any questions in the lobby. The meeting reconvened at 7:22 p.m.

NEW BUSINESS

Request for Waiver of Public Hearing Notices for Town of Falmouth-Mr. Lehrer reported that Falmouth had not forwarded the required abutting Public Hearing Notices for their Warrant Articles during the past Town Meeting cycle. Mashpee Bylaw allowed for a waiver to be granted by the Planning Board. Without the waiver, the Attorney General could not approve their Zoning Bylaws.

MOTION: Mr. Balzarini made a motion to waive the Notice of Public Hearing from the Falmouth Planning Board, held on proposed Zoning Amendments, for the November 2018 Town Meeting. Mr. Cummings seconded the motion. All voted unanimously.

Planning Board members signed the waiver.

Charles Rowley Billing for March 2019-An invoice in the amount of \$490 was received from Charles Rowley, including two Planning Board meetings and an additional meeting with Chief Rullo and Matt Costa.

MOTION: Mr. Balzarini made a motion to pay Charles Rowley \$490 for services provided to the Town. Mr. Cummings seconded the motion. All voted unanimously.

The voucher was signed the Planning Board members.

OLD BUSINESS

Request for Release of Funds Held in Escrow for 33 Trinity Place, Cotuit Solar-A request from Cotuit Solar had been received for a performance bond release, funds currently totaling \$27,900. Mr. Rowley submitted a letter describing his final inspection on April 2, read by the Chair, and confirming that monuments and the gravel apron had been installed. Further information may be needed regarding the gate. It was Mr. Rowley's opinion that the project was substantially completed and recommended release of the security. Mr. Lehrer will follow up with Cotuit Solar regarding the gate.

MOTION: Mr. Balzarini made a motion that the Planning Board vote to reduce the guarantee amount to zero, for 33 Trinity Place. Mr. Cummings seconded the motion. All voted unanimously.

Planning Board members signed the Release of Funds.

CHAIRMAN'S REPORT

None at this time

BOARD MEMBER COMMITTEE UPDATES

Cape Cod Commission-No update

Community Preservation Committee-No meeting

Design Review Committee- No meeting

Plan Review-No meeting

Environmental Oversight Committee- No meeting

Greenway Project & Quashnet Footbridge-No update

Historic District Commission-No meeting

MMR Military Civilian Community Council-MMR Joint Land Use Study- Mr. Lehrer will follow up for the next Planning Board meeting.

UPDATES FROM TOWN PLANNER

Proposals from the Town Planner on Zoning Bylaw Amendments-Mr. Lehrer referenced the Warrant Article for amendments to the Light Industrial Overlay District, noting that the original Article was split into two. Mr. Lehrer stated that the Article specific to design guidelines, cited to amend the incorrect section of the Zoning Bylaw. Mr. Lehrer requested the Board set a new Public Hearing date, specific to the accurate language.

MOTION: Mr. Balzarini made a motion to set a Public Hearing regarding proposed amendments to Zoning Bylaw Section 174-45 (6)(E) on May 1 at 7:10 p.m. Mr. Cummings seconded the motion. All voted unanimously.

It was confirmed that there was sufficient time to hold the hearing.

ADDITIONAL TOPICS

ADJOURNMENT

MOTION: Mr. Balzarini made a motion to adjourn. Mr. Cummings seconded the motion. All voted unanimously. The meeting ended at 7:30 p.m.

Respectfully submitted,

Jennifer M. Clifford
Board Secretary

LIST OF DOCUMENTS PROVIDED

- Waiver of Notice of Public Hearing for Falmouth Planning Board
- Charles Rowley Invoice for Services for Month of March
- Charles Rowley 4/2/19 Letter Regarding Final Inspection of Cotuit Soar, Trinity Place
- Attorney Elizabeth Thompson 4/1/19 Letter Regarding Continuance for Blue Sky Towers II, LLC

BENNETT ENVIRONMENTAL ASSOCIATES, INC.

LICENSED SITE PROFESSIONALS ♪ ENVIRONMENTAL SCIENTISTS ♪ GEOLOGISTS ♪ ENGINEERS

1573 Main Street - P.O. Box 1743, Brewster, MA 02631 ♪ 508-896-1706 ♪ Fax 508-896-5109 ♪ www.bennett-ea.com

BEA99-2252

March 12, 2019

Mary Waygan, Chairman
C/o Evan Lehrer, Town Planner
TOWN OF MASHPEE – PLANNING BOARD
16 Great Neck Road
Mashpee, MA 02649

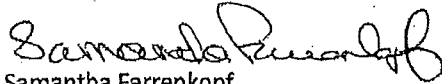
via email: ELeherer@mashpee.gov

RE: Windchime Condominiums
Special Permit and Modification
Sandcastle Mashpee, Inc. (5/21/87) and Windchime Point Development Group, LP (10/30/1998)
90 Great Neck Road South [Parcel ID 75-11-0]
Mashpee, MA

Dear Chairman Waygan and Honorable Planning Board Members,

As requested, BENNETT ENVIRONMENTAL ASSOCIATES, LLC (BEA) on behalf of the Windchime Board of Directors and Homeowners Association, would like to request a continuance of the hearing regarding Special Permit Modification, from March 20th to April 17th. Thank you for your consideration.

Sincerely,


Samantha Farrenkopf
Operations and Compliance Coordinator

cc. Joe Mooney – Windchime Board of Directors [via email]
David Bennett [internal]

MASHPEE TOWN CLERK

MAR 12 2019

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Appendix A: Certification Statement

Appendix B: Engineering Plans titled “Windchime Point” (33 sheets), Prepared by Eldredge Surveying & Engineering [Sanitary Engineering by Mount Hope Engineering – Portsmouth, Rhode Island], Dated June 1996

Appendix C: Hydrogeologic Profile Plan/Flow Schematic Plan

INTRODUCTION

This Engineering Report is provided in accordance with the requirements set forth in the Groundwater Discharge Permit GWDP SE 263-3M1 (Modified September 21, 2017) under the Section D(10) “Supplemental Conditions”, in advance of the November 2020 submittal requirement. The purpose of this report is to define modifications and improvements to the wastewater treatment facility which are required to meet Discharge Limitations. Bennett Environmental Associates, LLC (BEA) assumed wastewater treatment facility operations at the facility in June 2016, recognizing issues with the facility maintenance, capabilities of the existing facility design, and inconsistency in meeting prescribed standards.

Since engagement in June 2016, BEA has worked with the Board of Directors for Windchime Condominium Trust to improve maintenance regimens that showed evidence of deficiencies under previous operators, and to make strategic repairs toward maximizing the life of the existing system. As part of these efforts, pump and blower replacements were completed, maintenance pumping was conducted, routine maintenance schedules for equipment were established, adjustments to process controls were made in consultation with F.R. Mahony, and spare parts and field-testing inventories were acquired. The goals of the work conducted were to a) increase treatment capacity for enhanced nitrogen removal and b) to improve consistency in meeting the permitted Effluent Limitations. Although some improvement has been realized, BEA has identified the aging equipment and technology as limitations that will not allow the facility to consistently meet permit requirements.

BEA proposes system modification from its current “side-stream” configuration to a “continuous flow” configuration. The proposed modification would reconfigure the manner in which the incoming flow is directed through the treatment train. System tanks and electrical/mechanical components will be reutilized to the extent practical and reconfigured. The existing 4’ Amphidrome Plus® reactor will be abandoned and a new 6’ Amphidrome Plus® filter with 6’ of media will be installed. The remaining Amphidrome Plus® filter will serve as a polishing filter in order to remove excess BOD. This modification also includes plumbing upgrades, a new processor/controller system with remote telemetry capabilities, and other miscellaneous electro/mechanical and component upgrades. This modification has been applied to multiple, similar applications and is currently being used in all new Amphidrome® systems, with great success. The “continuous feed” configuration separates the aerobic and anaerobic treatment processes (nitrification and de-nitrification) and allows for better process control.

This Engineering Report describes the property, the existing treatment facility, environmental conditions, proposed treatment facility upgrades and implementation schedule toward the submission of a BRP WS-68 application with detailed plans to upgrade the facility for additional treatment capacity to improve effluent quality associated with the “continuous feed” configuration. Subject to approvals and solicitation of contractors, construction of the upgrade of the system could begin in winter 2020 and be completed prior to the summer season.

PROPERTY DESCRIPTION

The subject Windchime Condominium Trust property is located approximately 3,000' southeast of the Mashpee Rotary, on Great Neck Road South. Individual condominiums are privately owned, and the property is overseen by a Board of Directors comprised of condominium owners. The Board has the legal authority and financial responsibility for the maintenance of the grounds, utilities, and infrastructure throughout the property. Windchime Condominiums employs an on-site maintenance manager directly, and a property manager through American Properties Team. Bennett Environmental Associates, LLC is also a provider of services to the Board of Directors for the operation and maintenance of the wastewater treatment facility on a daily basis, throughout the year.



FIGURE 1: Windchime Condominium Trust Property

The majority of the 70 acre site is upland. The Mashpee River defines the eastern boundary of the site, with associated fringe wetlands [Refer to Figure 1]. According to assessor's records, there are 101 two-to-three bedroom condominiums, with a total of approximately 204 bedrooms associated with the property. There is also one common building

identified as 90 Great Neck Road South with an entrance located on Blue Spruce Way that serves as a clubhouse and has a tennis court and swimming pool area. Average monthly flows vary moderately, from a low of about 9,000 gallons in April 2017 to a high of about 18,000 gallons in August 2018, both extremes considerably less than the Title 5 tabulated design flow criteria (31,610 gpd).

The subject property and surrounding area are serviced by municipal water supply. At the time of this filing, the Town of Mashpee is implementing steps outlined in their Comprehensive Watershed Nitrogen Management Plan, including a Comprehensive Wastewater Management Plan (CWWMP) involving the potential development of a municipal sewer service in the town and portions of neighboring towns. The Final Recommendation Plan / Final Environmental Impact Report prepared by GHD in May 2015 describes the use of shellfish aquaculture in conjunction with traditional infrastructure to meet the nitrogen TMDL. The information presented in the report indicated that the recommended plan would include the continued use of existing wastewater treatment facilities with potential upgrades for enhanced nutrient removal efficiencies, dependent upon a review of the effectiveness of shellfish aquaculture.

The report referenced above further estimates the end of design life for existing facilities as 20 years from initial construction, indicating an end of the design life for the Windchime facility as 2016, roughly corresponding to the schedule of these proposed upgrades. Phase II of the Mashpee WWMP is projected between 2022 and 2026, and includes the upgrade of existing private wastewater treatment facilities and extension of conventional sewerage, if non-conventional alternatives are not as effective in the reducing nutrient levels in the estuaries as anticipated. A June 13, 2017 Existing WWTF and Collection System Evaluation prepared by GHD for the Town of Mashpee indicates that the implementation schedule is currently in the Short-term Initiatives Phase, which was anticipated to be conducted in 2015-2016, including system evaluations and collection system extensions for Mashpee Commons and the Wampanoag wastewater treatment facilities.

It is beyond the scope of this Engineering Report to anticipate the final resolution of the 208 Initiative and consider the metrics for evaluating non-traditional wastewater treatment alternatives or acceptance by the MassDEP and EPA under the Conservation Law Foundation settlement agreement. Notwithstanding, the proposed Windchime improvements and technology upgrades contribute to the CWWMP objective of nutrient reduction in the groundwater eventually received by the estuaries. The resulting effluent quality will far exceed conventional Title 5 septic system treatment levels and also surpass Innovative/Alternative treatment technology levels. Assuming that the upgrades are completed in 2020, the facility useful life should extend beyond 2040.

ENVIRONMENTAL CONDITIONS

The subject property is east of the Cape Cod Canal and within the Cape Cod Sole Source Aquifer. By definition, a Sole Source Aquifer is a Potentially Productive Aquifer and a Potential Drinking Water Source area. The subject property and surrounding area are serviced by

municipal water supply wells. The property is bordered to the east by wetlands associated with the Mashpee River [Refer to Figure 2]. MassDEP Priority Resource Mapping shows flood plains, cranberry bog, potential vernal pool, and estimated rare wetland wildlife habitat areas in the vicinity, however, the subject property and treated wastewater discharge are located outside of Zone II Wellhead protection areas, outside any mapped habitat area, and more than 100' from any surface water body or designated resource area.

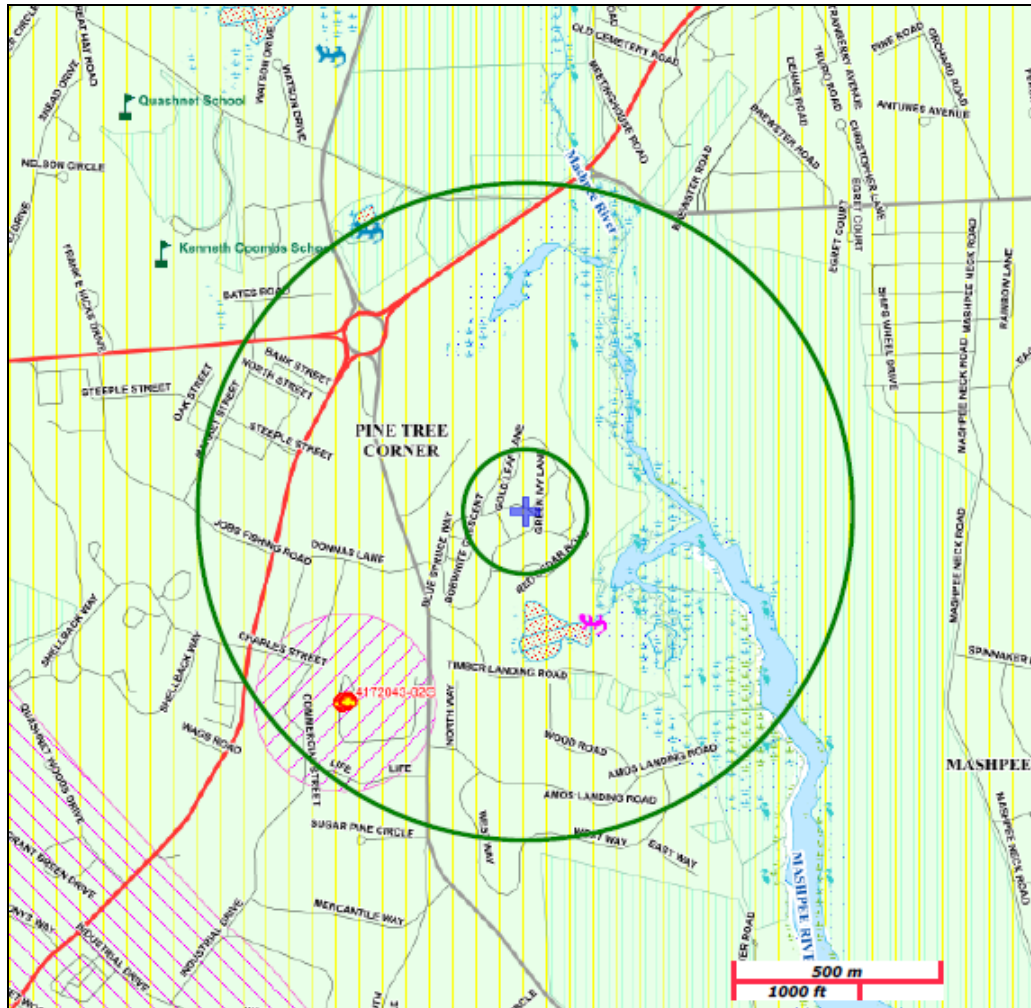


FIGURE 2: The MassDEP Priority Resource Map.

Federal Emergency Management Agency (FEMA) flood insurance rate mapping shows the area of the subject property within a Zone X, indicating minimal flooding hazard. The area of the subject property has elevations ranging from 65' near Great Neck Road South to 45' in the north near the wastewater treatment facility. Groundwater is located within 40-50' below grade in the area of the WWTF leaching gallery, subject to seasonal variation. Regional groundwater contours indicate an easterly groundwater flow direction toward the Mashpee River. The Mashpee River is the closest down-gradient environmental receptor, intermediate to Popponeset Bay. The Mashpee River is considered a coastal/marine Class SA Outstanding Resource Water

(ORW), per 314 CMR 4.00. These waters are designated an excellent habitat for fish, other aquatic life and wildlife, and for primary and secondary contact recreation, and are generally suitable for shellfish harvesting without depuration.

GROUNDWATER CHARACTERISTICS

As part of the GWDP requirements, upgradient groundwater monitoring well MW-3R and downgradient monitoring wells MW-1, MW-2 and MW-4 are required to be gauged and field tested monthly; and sampled and analyzed on a quarterly basis. Additionally, a Special Permit issued by the Town of Mashpee for the Windchime Condominiums property prescribed expanded quarterly monitoring locations and parameters. Locations monitored as part of the Special Permit include upgradient monitoring well B-2R; downgradient piezometers PZ-1R, PZ-2R, and PZ-3R; and surface water locations SW-1, SW-2, and SW-3. All wells have been surveyed to a common vertical datum. Groundwater monitoring has been conducted by BEA on a quarterly basis since March 2003.

The two upgradient monitoring wells, B-2R and MW-3R, are located west of the Windchime Condominiums property along the utility easement. It is noted that while these locations are upgradient of the Windchime WWTF leaching fields, they are downgradient of the adjacent Mashpee Commons WWTF leaching fields. In monitoring well B-2R, total nitrogen concentrations have ranged from 0.46 mg/L to 5.6 mg/L, with an average concentration of 1.48 mg/L. Monitoring well MW-3R total nitrogen concentrations have ranged from 0.51 mg/L to 8.86 mg/L, with an average concentration of 1.42 mg/L.

The three downgradient monitoring wells, MW-1, MW-2 and MW-4, are located north of the Windchime condominiums property along the unpaved River Road in the wooded buffer intermediate to the Mashpee River. In monitoring well MW-1, total nitrogen concentrations have ranged from 0.43 mg/L to 3.6 mg/L, excluding one report of 470 mg/L in September 2011, which was acknowledged as a laboratory error. The average concentration of total nitrogen at MW-1, excluding the error, is 0.99 mg/L. Total nitrogen concentrations in MW-2 have ranged from 2.6 mg/L to 27.4 mg/L, with an average concentration of 8.40 mg/L. In monitoring well MW-4, total nitrogen ranged from a concentration of 0.25 mg/L to 3.43 mg/L, with an average concentration of 1.02 mg/L.

The three piezometers, PZ-1R, PZ-2R and PZ-3R, are located immediately adjacent to the west side of the Mashpee River. In PZ-1R, total nitrogen concentrations ranged from 0.054 mg/L to 3.84 mg/L, with an average concentration of 0.74 mg/L. Total nitrogen concentration in PZ-2R ranged from 0.44 mg/L to 18.6 mg/L, with an average concentration of 7.48 mg/L. In PZ-3R, total nitrogen ranged from 0.23 mg/L to 7.6 mg/L, with an average concentration of 1.03 mg/L [Refer to Figure 4].

Elevated total nitrogen levels (above 10 mg/L) are likely the result of incomplete denitrification treatment, as has been noted and is to be addressed in the planned upgrade of the existing wastewater treatment facility. The inability to regularly meet nitrate and total nitrogen effluent limitations is documented in DMR filings dating back many years.

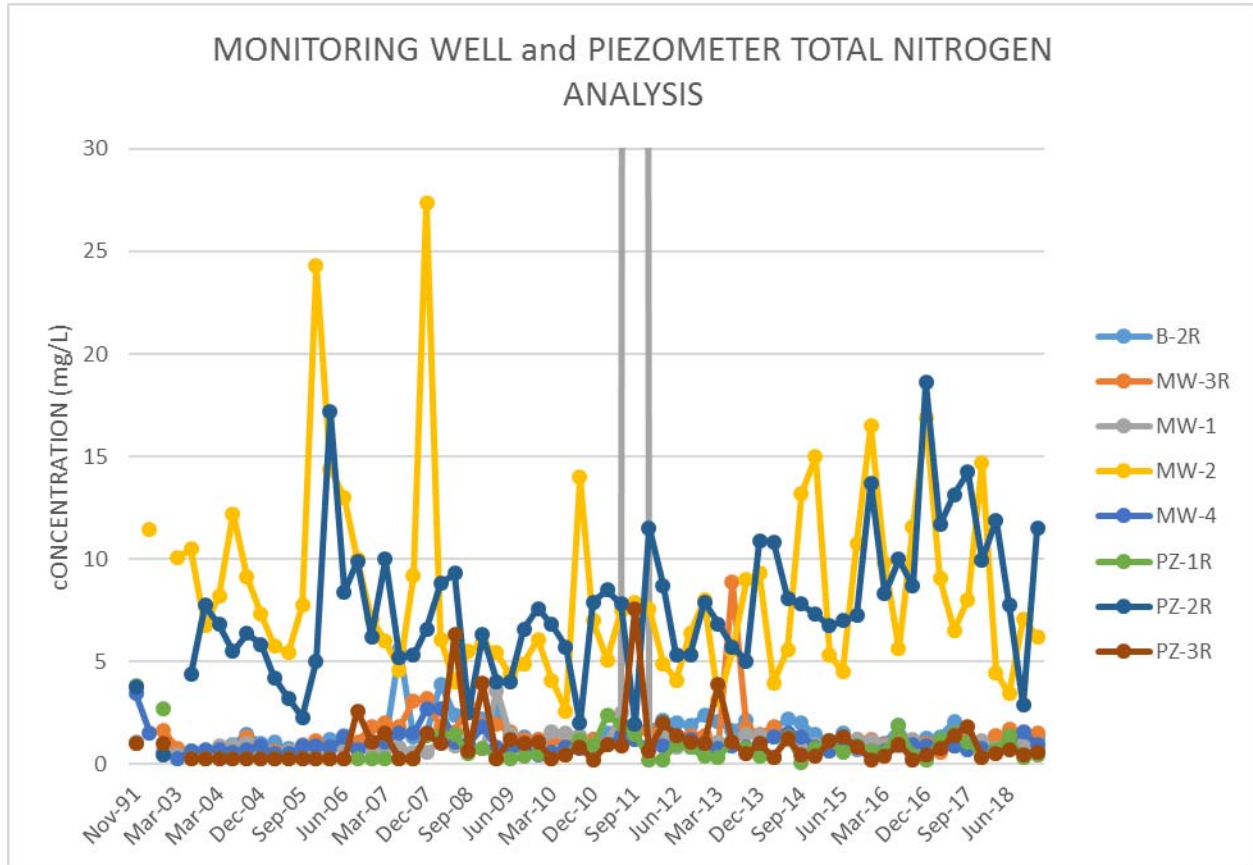


Figure 4: Total nitrogen concentrations in groundwater monitoring wells and piezometers tracked under GWDP and Special Permit

Surface water monitoring locations SW-1, SW-2 and SW-3 are located generally adjacent to and east of the piezometers, and within the Mashpee River. At the SW-1 location, total nitrogen concentrations have ranged from 0.14 mg/L to 5.88 mg/L, with an average concentration of 0.75 mg/L. The SW-2 location has reported total nitrogen concentrations ranging from 0.25 mg/L to 7.90 mg/L, with an average concentration of 1.26 mg/L. At the SW-3 location, total nitrogen concentrations have ranged from 0.25 mg/L to 2.42 mg/L, with an average concentration of 0.73 mg/L [Refer to Figure 5].

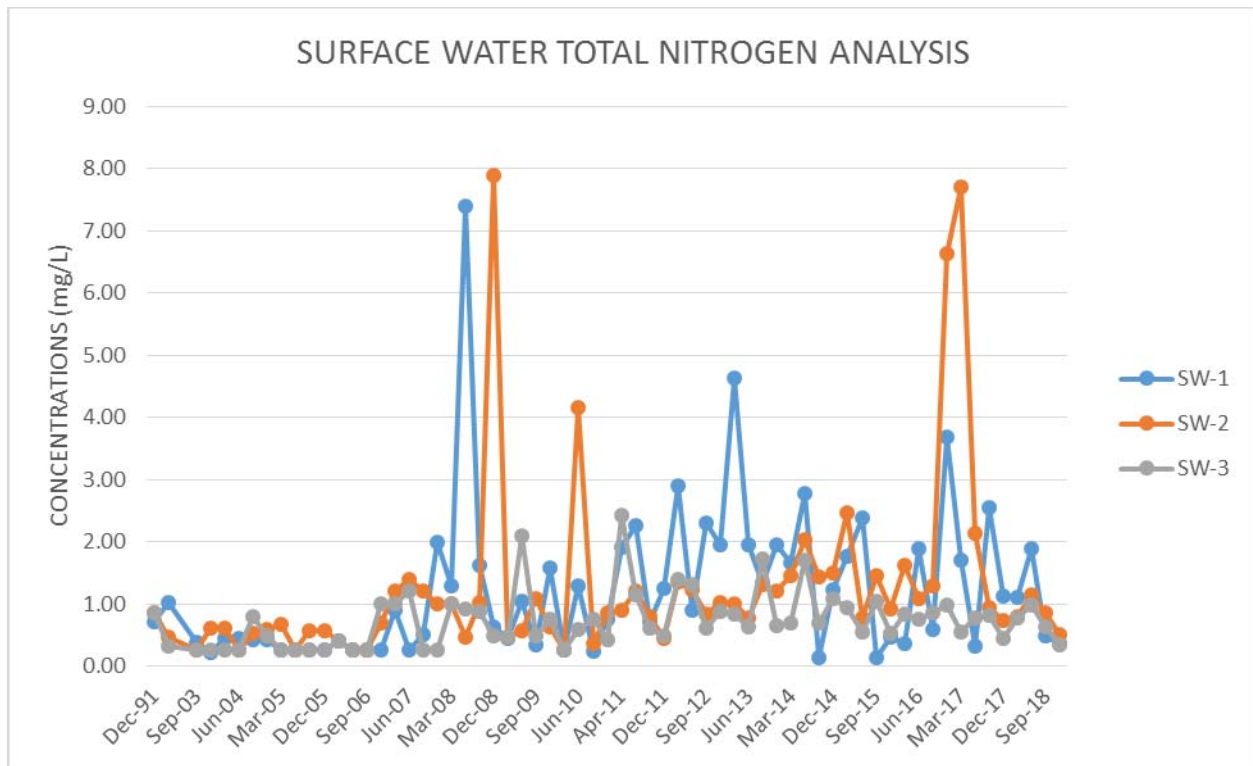


Figure 5: Total nitrogen concentrations in surface water tracked under Special Permit

WASTEWATER CHARACTERISTICS

Sanitary wastewater is generated by the property’s domestic use. No industrial or hazardous wastes are generated at the property. The sanitary waste is collected and conveyed to a centralized sewage treatment facility. Sludge from the treatment facility processes is periodically pumped and disposed of at a Publicly Operated Treatment Works (POTW). The chemicals used as part of the treatment process include sodium bicarbonate for alkalinity addition, and MicroC for carbon addition in the denitrification process. Sodium bicarbonate is stored in 50 lb bags and MicroC is stored in 55-gallon drums. MicroC is stored in an individual explosion proof room of the treatment building, while sodium bicarbonate is stored in the treatment building housing blowers, compressors and electrical controls. Neither chemical requires special handling.

The tabulated Title 5 design flow of domestic waste was estimated to be 31,610 gpd using design criteria applicable in 1996. Original design plan calculations note that the leaching area capacity under STP Guidelines is 40,100 gpd. Wastewater flow is measured through the system flow meter, and is typically between 9,000-18,000 gpd. The average water use from June 2016 through January 2019 has been 12,715 gpd. Thus, actual flows are considerably less than those predicted by the Title 5 tabulated design flow criteria.

Design values for domestic sewage influent were as follows: CBOD 300 mg/L, TKN 65 mg/L, Ammonia 55 mg/L, and Phosphate as P 3.0 mg/L. Specific testing of influent at the

facility from June 2016 through January 2019 indicates that the average TSS is 1,034 mg/L, average Ammonia is 18 mg/L, and average BOD is 279 mg/L. The analytical data for influent and effluent samples collected at the facility is used in the characterization of wastewater specific to the facility and in the evaluation of proposed treatment system upgrades. Analysis of influent and effluent shows the system is not completely nitrifying or denitrifying, a condition inherent to the current “side stream” configuration wherein the “final effluent” is a mixed flow of raw, nitrified and denitrified water which is contained all in one tank. The laboratory analytical data indicates an average effluent nitrate concentration of 8.98 mg/L and an average effluent TKN concentration of 9.33 mg/L reported from June 2016 through January 2019 [Refer to Figure 6].

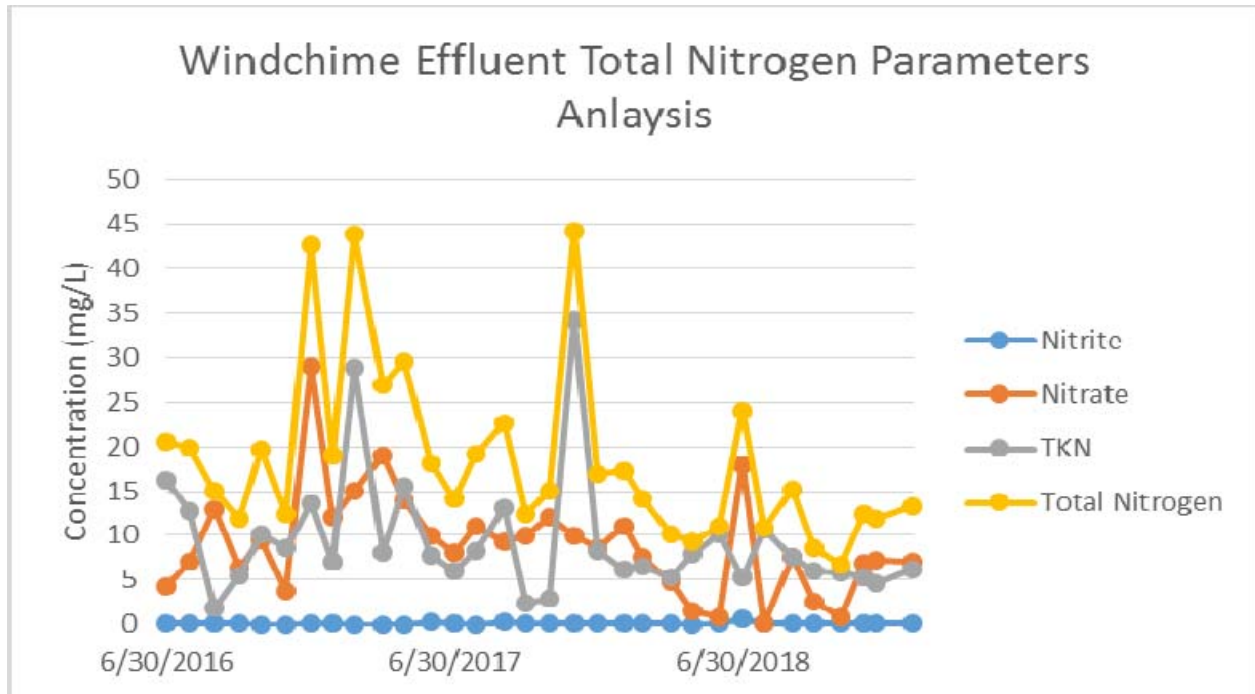


Figure 6: Effluent quality demonstrating partial nitrification and denitrification

EXISTING WASTEWATER TREATMENT SYSTEM

The existing sanitary wastewater system at the subject property consists of an extensive collection and conveyance system connected to a centralized sewage treatment facility with leaching fields for the on-site subsurface discharge of treated effluent. The wastewater treatment system is a dual train side-stream Amphidrome® Plus™ system -- a submerged, attached-growth bioreactor process that currently provides secondary and tertiary treatment of sewage. This system was designed by Mount Hope Engineering (Todd Chaplin, PE) of Swansea, MA as part of a plan set for the Windchime Condominium development prepared by Eldredge Surveying & Engineering, and permitted by the MassDEP under the Groundwater Discharge Permit requirements in 1996 [Refer to Appendix A].

The collection system for the development consists of a combination of gravity flow and pressure dosed flow to the wastewater treatment facility. Four (4) lift stations receive flow and

pump to the gravity collection system. Lift Station #1 is located at #11 Red Cedar Road, Lift Station #2 is located at #10 Red Cedar Road, Lift Station #3 is located at #17 Red Cedar Road, and Lift Station #4 is located at #29 Red Cedar Road. The collection system terminates at the head of the wastewater treatment facility, located in the northeast portion of the property. Here, a main sewer collection manway directs flow to a valve pit equipped with motorized actuated valves that split the incoming flow in 6-hour durations between two treatment trains.

The treatment system is a “side stream” design with two treatment trains (Train #1 and Train #2), consisting of two (2) anoxic tanks (pretreatment tanks #1 and #2), each containing 20,000 gallons. From the anoxic tanks, flow continues to two flow equalization tanks (F.E.T #1 and #2) with a capacity of 10,000 gallons and 18,000 gallons, respectively. The flow equalization tanks are each tied into their own Amphidrome feed pump chambers (AFPC #1 and AFPC#2) wherein the influent flow is dosed to the main Amphidrome® filters (submerged, attached growth bioreactors), two Amphidrome® Plus™ denitrification filters, and two 8,000-gallon clear wells for recirculation back to the anoxic tanks, as well as denitrifying by circulating water through the Amphidrome® Plus™ reactors. The clear wells also pump the final effluent to a pressurized ultraviolet disinfection system. Flow passes through the UV system, which is currently decommissioned due the lack of fecal coliform sampling requirements or permit limitations in the current Groundwater Discharge Permit, and is discharged to a final dosing pump chamber. The final dosing pump chamber alternates discharge of treated effluent between two d-boxes that distribute flow to two (2) soil absorption systems (designated as leaching area A and B). Each leaching area consists of two (2) 8.0’ x 8’8” x 140’ leaching trenches and contain seventeen (17) 8.0’ diameter leaching pits. Compressors, blowers, and electronic controls are housed in a heated treatment building constructed adjacent to the tanks and the leaching fields. The treatment building and the lift stations are provided with backup electric generators to ensure continuous operation in the event of utility power loss.

Since June 2016, average effluent TSS, BOD, and nitrate concentrations have been reported as 34.0 mg/L, 20.0 mg/L and 8.98 mg/L, respectively. TSS exceeded the 30 mg/L permit limitation on eleven occasions during that timeframe, while BOD exceeded the permit limitation on four occasions. Nitrate exceeded the 10 mg/L permit limit ten times during that timeframe. Effluent TKN averaged 9.3 mg/L, ranging from 1.86 mg/L in August 2016 to 34.2 mg/L in November 2017. These concentrations demonstrate the need for enhanced nitrification within the system in order to consistently meet an effluent total nitrogen concentration of 10 mg/L. The elevated TKN is attributed in part to organic nitrogen. Reconfiguration of the anoxic tanks will provide additional hydraulic retention time equalization, to increase the efficiency in nitrification and the conversion of organic nitrogen through ammonia/nitrite to nitrate. Additionally, the “continuous feed” configuration allows for greater process controls for recycling, to facilitate nitrification and denitrification processes. Bennett Environmental Associates, LLC. in conjunction with the system manufacturer F.R. Mahony Associates have worked diligently in order to maximize the treatment efficiency of the existing wastewater system to meet permit limitations through existing process controls. We have determined that these are the best results achievable with the “side-stream” configuration, as the facility was being operated in accordance with the operations and maintenance manual, and with additional support from the system manufacturer.

PROPOSED WASTEWATER TREATMENT

The existing wastewater treatment facility was permitted for construction and use in 1996. After 22 years in operation, it is nearing or has reached the end of its life expectancy. The need for improved treatment efficiency and reliability requires upgrades to the treatment process. The current Groundwater Discharge Permit dated May 13, 2016 expires on May 13, 2021. No changes in effluent limits are proposed for the permit renewal. (See Figure 7).

Constituent	Influent	Effluent [SE 263-3M1]	Effluent [Renewal]
Flow	40,000 GPD	40,000 GPD	40,000 GPD
BOD	NA (CBOD 300 mg/L)	30 mg/L	30 mg/L
TSS	250 mg/L	30 mg/L	30 mg/L
Nitrate	NA	10 mg/L	10 mg/L
Total Nitrogen	NA	10 mg/L [5 mg/L Special Permit aspirational limitation]	10 mg/L [5 mg/L Special Permit aspirational limitation]
Oil & Grease	NA	15 mg/L	15 mg/L
TKN	65 mg/L	NA	NA
Ammonia as N	55 mg/L	NA	NA

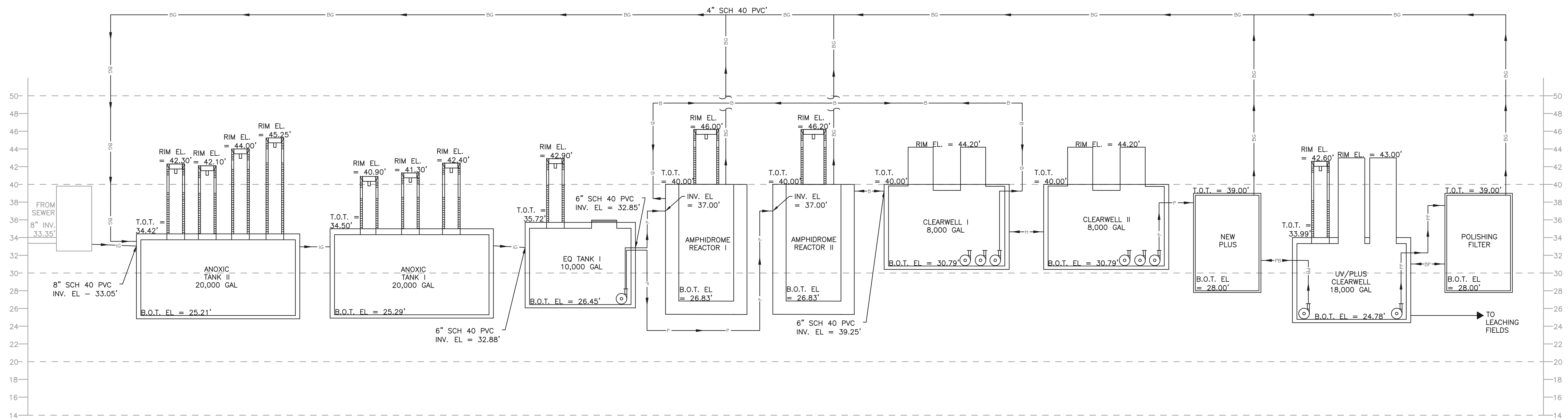
An evaluation of the facility and components has been conducted as part of the Engineering Report as well as a review of upgrades to similar facilities, in consultation with FR Mahony and in consideration of recent improvements made to the facility. Based on this evaluation, BEA recommends the reconfiguration of the existing Amphidrome components and pumps to a “continuous flow” process, wherein incoming flow is treated through one continuous train by reutilization of existing components, altering the way flow is directed through the system, and adding a new system component (Amphidrome plus®) reactor. Incoming flow will be introduced to one of the two existing 20,000 gallon anoxic tanks, both of which will be configured in series, flow will then exit to a 10,000 gallon flow equalization tank wherein it will be pumped to the two main Amphidrome reactors. Following the Amphidrome reactors, flow will continue to the two 8,000 gallon clearwells which will be hydraulically connected. Flow from the clearwells will then be pumped to a new Amphidrome Plus reactor (6’ diameter with 6’ of media), and then to an 18,000 gallon Amphidrome Plus® clearwell/polishing filter dosing tank/UV dosing tank wherein system programming and tank level sensors will either recycle the effluent flow for additional treatment through a polishing filter for excess BOD removal (one of the pre-existing Amphidrome plus® reactors) or pump the effluent flow to a UV disinfection unit and then to a final dosing pump chamber for final distribution to a subsurface soil absorption system.

The reconfiguration and re-utilization of existing tanks and the addition of Amphidrome components (Amphidrome Plus) and pumps into a “continuous flow” configuration, is shown in the attached Flow Profile and Schematic Plans, Appendix C. The “continuous flow” reconfiguration allows for greater process control of air and water flow/recycling to optimize both the aerobic nitrification and anaerobic denitrification processes, outside dependence on the

clearwell mixing inherent to the “side stream configuration”. A new control panel with upgraded software and telemetry features are also part of the planned upgrade. This reconfiguration of piping, re-utilization of existing tanks, and addition of new system components will allow for improved treatment capacity, greater level of process control, and reliable, compliant effluent. The continuous flow model has proven to be effective in similar applications and has become the standard flow model for F.R. Mahony Associates for their Amphidrome® technology. Similar project models include Pleasant Bay Health and Living Centers - Brewster, MA; Harborside Village – Wellfleet, MA; and Stratford Ponds Condominiums – Mashpee, MA.

IMPLEMENTATION PLAN

BEA’s objective is to submit the permit application for modifications described herein, receive approvals, and complete the contractor selection process by fall of 2019. This would allow for construction to begin in winter of 2020. It is recommended that work not be scheduled during the summer season between June 15th and September 15th. This will avoid management of seasonally high flows, and heightened traffic and pedestrian activity. During construction, influent wastewater will be contained within the anoxic and equalizations tanks. Levels will be monitored and as needed, wastewater will be disposed off-site licensed hauler. Substantial completion of the wastewater treatment facility upgrade is anticipated before June 2020, at which time it would be ready for inspection and clean water testing.



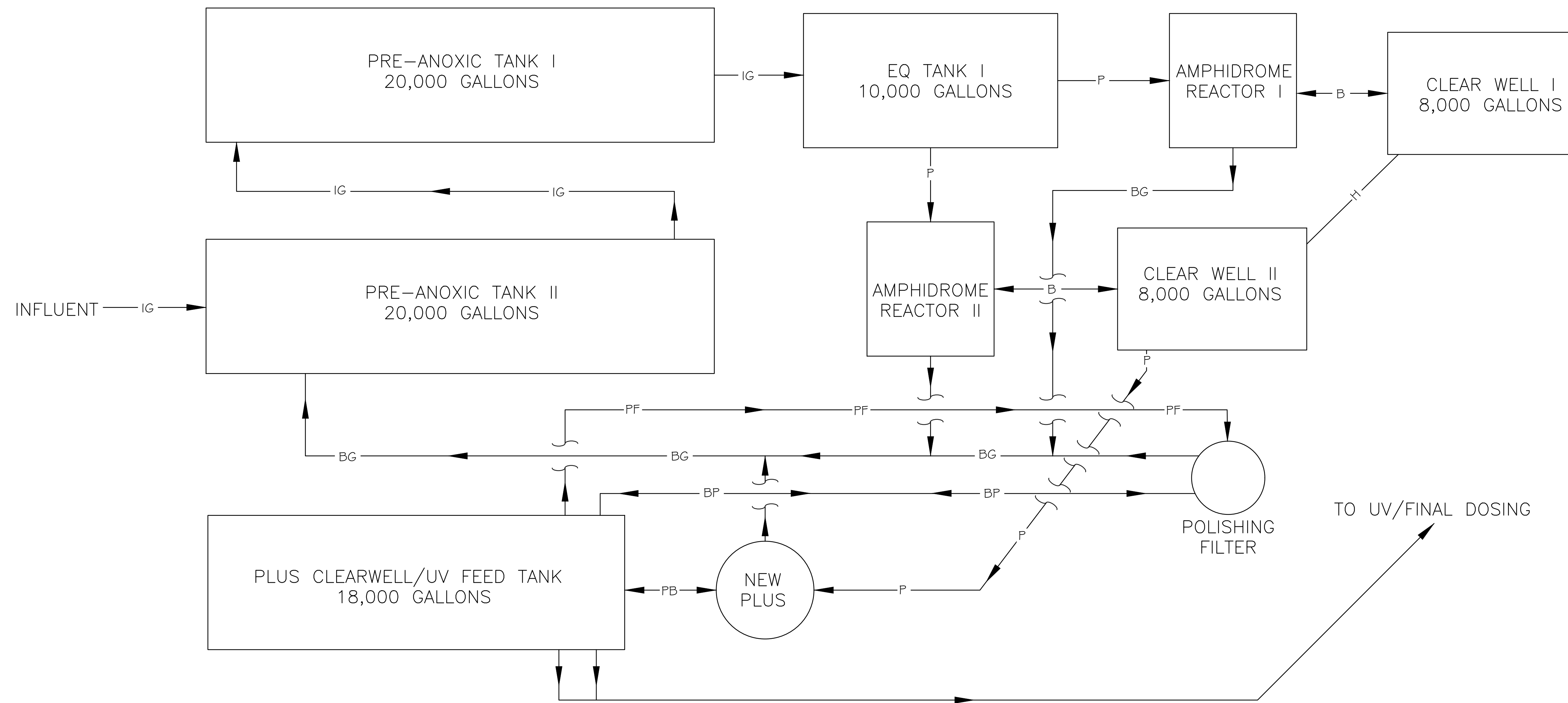
HYDRAULIC PROFILE

VERTICAL: 3/8" = 1'-0"
 HORIZONTAL: NOT TO SCALE

LEGEND

- IG—IG— INFLUENT GRAVITY FLOW
- BG—BG— BACKWASH GRAVITY FLOW TO HEAD OF WORKS
- P—P— PUMPED FORCE MAIN
- PF—PF— PUMPED PLUS FEED
- PB—PB— PUMPED PLUS BACKWASH
- B—B— PUMPED RETURN/BACKWASH AMPHIDROME
- BP—BP— BACKWASH POLISHING FILTER
- H—H— HYDRAULIC CONNECTION

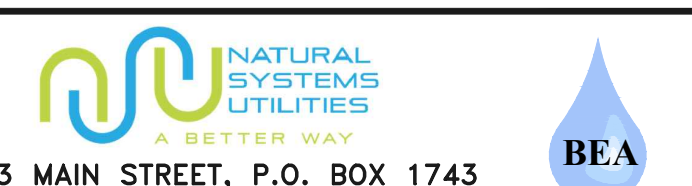
REVISIONS	[NAME]	WINDCHIME POINT WASTEWATER PROCESS HYDRAULIC PROFILE
		<small>1573 MAIN STREET, P.O. BOX 1743 BREWSTER, MASSACHUSETTS 02631</small>
		<small>DRAWN BY: J.WATKINSON DESIGNED BY: J.WATKINSON REVIEWED BY: S.FARRENKOPF</small>
		<small>MASSACHUSETTS LICENSED PROFESSIONAL ENGINEER LICENSE NO. [XXXXXXXXXXXXX]</small>
		<small>SCALE: AS SHOWN DATE: 2019.03.28 PROJECT NO.: 19-005</small>
		<small>ONLY APPROVED DRAWINGS MAY BE USED FOR CONSTRUCTION</small>
		19-005 - H1



PROCESS FLOW DIAGRAM
NOT TO SCALE

LEGEND

- IG — INFLUENT GRAVITY FLOW
- BG — BACKWASH GRAVITY FLOW TO HEAD OF WORKS
- P — PUMPED FORCE MAIN
- PF — PUMPED PLUS FEED
- PB — PUMPED PLUS BACKWASH
- B — PUMPED RETURN/BACKWASH AMPHIDROME
- BP — BACKWASH POLISHING FILTER
- H — HYDRAULIC CONNECTION

REVISIONS	[NAME]	WINDCHIME POINT WASTEWATER PROCESS PROCESS FLOW DIAGRAM
		
		<small>1573 MAIN STREET, P.O. BOX 1743 BREWSTER, MA 02631</small>
		<small>DRAWN BY: M.CALIENTE DESIGNED BY: M.CALIENTE REVIEWED BY: S.FARRENKOPF</small>
		<small>SCALE: NTS DATE: 2019.04.04 PROJECT NO.: 19-005</small>
		<small>MASSACHUSETTS LICENSED PROFESSIONAL ENGINEER LICENSE NO. [XXXXXXXXXXXX]</small>
		<small>ONLY APPROVED DRAWINGS MAY BE USED FOR CONSTRUCTION</small>
		19-005 - P1



PLANNING BOARD DECISION
WINDCHIME CONDOMINIUMS (Formerly Sandcastle Mashpee, Inc)
Bennett Environmental Associates on behalf of Windchime Condominium Trust
SPECIAL PERMIT MODIFICATION
April 17, 2019

I. Proposal.

Reference is made to a Special Permit Decision issued by the Mashpee Planning Board, dated April 22, 1987 and recorded with the Barnstable County District Registry of Deeds at Book 5734, Pages 225-244, Book 5910, Pages 190-191, Book 6405, Pages 268-269, and Book 6047, Pages 003-004, as amended from time to time (hereinafter the "Special Permit") originally titled Sandcastle Mashpee, Inc. The Special Permit authorizes construction of a multi-unit condominium consisting of 156 units over 38.6 acres of land in cluster configuration with surrounding open space.

The applicant proposes to modify the Special Permit to name a State regulated financial assurance mechanism (FAM) as long-term performance guarantee in place of a performance bond held in escrow by the Town of Mashpee Treasurer reserved for improvements to the onsite wastewater treatment system under BRP WP 68 Permit from the Massachusetts Department of Environmental Protection (DEP). The DEP permit requires that a FAM be held, duplicative of the \$125,000 performance bond held in escrow in an interest bearing account. The applicant also proposes to modify the Special Permit to reduce the Wastewater Treatment Monitoring Program as commensurate with the GWDP Permit 253-3M1 requirements.

II. Jurisdiction.

The application was made and this decision has been issued by the Mashpee Planning Board pursuant to Section 174-24.C. of the Mashpee Zoning By-Law as it existed on April 17, 2019, the date on which this Special Permit Modification was approved by the Mashpee Planning Board. As the proposal does not increase square footage of any use by more than ten percent (10%), the provisions of Section 174-24.C.(9)(d) of said by-law provide that the land involved in this application is subject to the dimensional and other relevant provisions of the Zoning By-law as it existed on November 6, 1985, the date on which a preliminary subdivision plan was filed on the property, freezing the zoning in effect at the time that this special permit was originally issued on April 22, 1987.

The project is also subject to the applicable provisions of M.G.L. Chapter 40A, Section 9.

The proposal is not subject to review as a mandatory Development of Regional Impact by the Cape Cod Commission.

III. Chronology.

Application for this Special Permit Modification was filed with the Town Clerk on November 1, 2018 along with accompanying plans.

The proposed application was reviewed at the Board's December 19, 2018 meeting. Associate Member Rob Hansen was seated by Chair Waygan to review and vote on this application in the absence of member David Kooharian, Clerk per the request of the applicant. The applicant withdrew the request to modify the Special Permit to reduce the Wastewater Treatment Monitoring Program as commensurate with the GWDP Permit 253-3M1 requirements and was continued to the January 16, 2019 meeting.

The Planning Board voted to reduce the balance of the performance bond held by the Treasurer specifically for improvements to the onsite Wastewater Treatment System (\$125,000 plus accrued interest) to \$0.00. The public hearing was continued until the meeting of January 19th by request of the applicant due to lack of quorum and again by the applicant's request until April 17, 2019. The modification was approved on April 17, 2019 subject to the conditions enumerated below. The members of the Board were recorded voting as voting in favor of the application: Mary Waygan, Dennis Balzarini, David Weeden, and Rob Hansen were recorded as voting in favor of approval of the proposed modification; no members were recorded as voting against.

IV. Findings.

1. The proposed modification involves less than 10% increase in the area of any use and is therefore, under the provisions of Section 174-24.C.(9)(d) of the Zoning By-law, subject to the dimensional and other relevant provisions of the Zoning By-law as it existed on November 6, 1985, the date on which a preliminary subdivision plan was filed on the property, freezing the zoning in effect at the time that this special permit was originally issued on April 22, 1987. At that time the property was in an R-3M zoning district.
2. The project satisfies the requirements of Massachusetts General Law Chapter 40A, in that it complies with the general purposes and intent of the Mashpee Zoning By-Law on the applicable dates.
3. In conformance with the provisions of Article VI, Section 174-24.C.(2) of the Zoning Bylaw, the Planning Board finds that the proposal will not adversely affect public health or safety, will not cause excessive demand on community facilities, will not significantly decrease surface or ground water quality or air quality, will not have significant adverse impact on wildlife habitat, estuarine systems, traffic flow, traffic safety, waterways, fisheries, public lands or neighboring properties, will not cause excessive levels of noise, vibration, electrical disturbance, radioactivity or glare, will not destroy or disrupt any species listed as rare, endangered or threatened by the Massachusetts Natural Heritage program or any known historic or archaeological site, will not produce amounts of trash, refuse or debris in excess of the town's landfill and waste disposal capacities, will properly dispose of stumps, construction debris, hazardous materials and other wastes, will provide adequate off street parking, will not cause excessive erosion or cause increase runoff into neighboring properties or into any natural river, stream, pond or water body and will not otherwise be detrimental to the town or the area.

V. Conditions.

1. All references to the \$125,000 long-term performance guarantee in the form of a performance bond held in escrow by the Town of Mashpee Treasurer shall be replaced to identify the Financial Assurance Mechanism (FAM) held by the Eastern Bank of Boston, MA as the escrow agent (account number 192513139) with the MA Department of Environmental Protection for the benefit of Windchime Condominiums for repairs, upgrades and replacement of the wastewater treatment plant per the requirements of the Groundwater Discharge Permit # 263 as regulated under 314 CMR 5.00.
2. The applicant shall complete construction and work related to the upgrade of the onsite wastewater treatment system no later than December 19, 2023. If unforeseen delays hinder completion of the upgrades by that date the applicant shall be required to apply for an extension from the Planning Board and report on progress.

VI. Expiration, Extension or Modification.

This Special Permit Modification shall lapse only as part of any lapse of the original Special Permit as previously modified. It may be further modified under the terms of Section 174-24.C.(9) of the Mashpee Zoning By-law.

DRAFT

VII. Signature and Filing.

This special permit modification decision has been approved by the Mashpee Planning Board on this 17th Day of April 2019.

A true copy
Attest

Member, Mashpee Planning Board

COMMONWEALTH OF MASSACHUSETTS

Barnstable, ss.

On this 17th day of April 2019, before me, the undersigned notary public, personally appeared _____, a member of the Mashpee Planning Board, proved to me through satisfactory evidence of identification, which were _____, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that (he/she) signed it voluntarily for its stated purpose.

Notary Public
My Commission expires: _____

A copy of this decision has been duly filed on _____, 2019 with the Town Clerk of Mashpee.

Town Clerk

Notice of this decision was mailed on _____, 2019 to the applicant, to the parties in interest designated in M.G.L. Chapter 40A, Section 11 and to all persons at the hearing who requested such notice. Any appeal shall be made pursuant to Section 17 of the Chapter 40A of the Massachusetts General Laws within twenty (20) days after the date of said filing.

I, _____, Town Clerk of the Town of Mashpee, hereby certify that a copy of this decision was filed with the office of the Town Clerk on _____, 2019 and that no appeal of that decision was filed within twenty (20) days thereafter.

Date

Town Clerk

Upon expiration of the statutory appeal period with no appeal having been filed, this special permit decision has been signed by the Mashpee Planning Board on _____, 2019 and may be recorded.



DRAFT



Town of Mashpee

16 Great Neck Road North
Mashpee, Massachusetts 02649

TOWN OF MASHPEE PLANNING BOARD PUBLIC HEARING NOTICE

Pursuant to Massachusetts General Laws, Chapter 40A, the Mashpee Planning Board will hold a public hearing on Wednesday, April 17, 2019 at 7:10 p.m. at the Mashpee Town Hall, 16 Great Neck Road North, to review the following zoning articles proposed for action at the May 6, 2019 Town Meeting.

Warrant Article __:

To amend Section E of §174-5(G) Light Industrial Overlay District

This article will require that developments permitted within the Light Industrial Overlay District conform to design guidelines for Cape Cod as approved by the Cape Cod Commission.

Warrant Article __:

To amend §174-25 (I) (10) of the Zoning Bylaw "Accessory uses" by adding the letters "SP" under the columns identified as, C-3 and I-1 and further to amend §174-25 (E) (2), Principal retail business and consumer service establishments by adding the letters "SP" under the column identified as I-1.

This article will amend the zoning by-law to make outdoor dining an allowed accessory use by special permit in the C-3 and I-1 zoning district to an allowed eating place serving food and beverage, provided that visual screening shall be required in any area abutting a residential zone. Such screening shall consist of a solid fence, wall or mature hedge or other screen type planting of such height as to screen any diners from view from the said residential zone per section 174-25 (I)(10) of the zoning bylaw and will also make eating places serving food and beverages to be consumed within the building an allowed principal retail and consumer service use in the I-1 zoning district by special permit per section 174-25(E)(2) of the zoning bylaw an allowed use in the I-1 district to establish consistency with the provisions in the Light Industrial Overlay District.

The full text of these articles may be reviewed in the office of the Town Clerk or Town Planner at Mashpee Town Hall.

Submitted by:

Mary E. Waygan, *Chair*
Mashpee Planning Board

Publication dates: Friday, March 22, 2019
 Friday, March 29, 2019

MASHPEE TOWN CLERK

MAR 15 2019

RECEIVED BY _____

Article 26

To see if the Town will vote to amend Section E of §174-5 (G) Light Industrial Overlay District to read as follows:

Base zoning dimensional requirements defined in the Land Space Requirements Table in Section 174-31 of the Mashpee Zoning Bylaw shall apply in the Light Industrial Overlay District. The design and construction of buildings and structures, and site designs within the Light Industrial Overlay District shall conform to "Design Guidelines for Cape Cod: Designing the Future to Honor the Past" prepared by the Cape Cod Commission and Community Vision, Inc. (as approved by the Cape Cod Commission on September 1994, 2nd Edition March 1998) and its addendum, "Contextual Design on Cape Cod" (as approved by the Cape Cod Commission on October 1, 2009), copies of which shall be on file and available for review at the Office of the Town Clerk and the Planning Department Office and shall be subject to approval by the permitting authority, or take any other action relating thereto.

Submitted by the Planning Board

Explanation: This article will require that developments permitted within the Light Industrial Overlay District conform to design guidelines for Cape Cod as approved by the Cape Cod Commission.

SEE MAP IN APPENDIX A

The Board of Selectmen recommends approval of Article 26 by a vote of 5-0

The Finance Committee recommends approval of Article 26 by a vote of 5-0

Article 27

To see if the Town will vote to amend §174-25 (I) (10) of the Zoning Bylaw “Accessory uses” by adding the letters “SP” under the columns identified as, C-3 and I-1 to read:

Type of Use		Residential		Commercial			Industrial
I. Accessory Uses		R-3	R-5	C-1	C-2	C-3	I-1
(10)	Outdoor dining shall be allowed in commercial districts as an accessory use to an allowed eating place serving food and beverage, provided that visual screening shall be required in any area abutting a residential zone. Such screening shall consist of a solid fence, wall or mature hedge or other screen type planting of such height as to screen any diners from the said residential zone.	--	--	PR	PR	SP	SP

And further to amend §174-25 (E) (2), Principal retail business and consumer service establishments by adding the letters “SP” under the column identified as I-1 to read:

Type of Use		Residential		Commercial			Industrial
E. Principal retail business and consumer service establishments		R-3	R-5	C-1	C-2	C-3	I-1
(2)	Eating places serving food and beverages to be consumed within the building.	--	--	PR/SP	PR/SP	SP	SP

or take any other action relating thereto.

Submitted by the Planning Board

Explanation: This article will make outdoor dining an allowed accessory use, by special permit, in the C-3 and I-1 zoning district accessory to an allowed eating place serving food and beverage, provided that visual screening shall be required in any area abutting a residential zone. Such screening shall consist of a solid fence, wall or mature hedge or other screen type planting of such height as to screen any diners from view from the said residential zone per section 174-25 (I)(10) of the Zoning Bylaw and will also make eating places serving food and beverages to be consumed within the building an allowed principal retail and consumer service use in the I-1 zoning district by special permit per section 174-25(E)(2) of the Zoning Bylaw an allowed use in the I-1 district to establish consistency with the provisions in the Light Industrial Overlay District.

SEE MAP IN APPENDIX A

The Board of Selectmen recommends approval of Article 27 by a vote of 5-0

The Finance Committee recommends approval of Article 27 by a vote of 5-0

Sean Gormley
Project Manager
Blue Sky Towers II, LLC
352 Park Street, Suite 106
N. Reading, MA 01864

RE: Proposed Wireless Communication Facility
Site: Mashpee Fire Station #2
101 Red Brook Rd
Mashpee, MA 02649

December 20, 2018

Dear Mr. Gormley,

I have completed a market study investigating the potential impact that cellular towers may have on adjacent residential property values.

The intended user of this report is the Mashpee, MA Land Use Permitting Boards in their deliberations relative to the applications submitted by your firm.

The purpose of this study is to provide substantive data to answer the following question: *Will the granting of the application diminish the value of surrounding properties?*

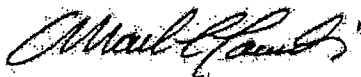
This letter contains a summary of my research into this question and the rationale used to arrive at my conclusions.

The work consists of a viewing of the area around the tower site, a review of the materials relating to the proposed tower and research into sales of properties throughout the region that are in close proximity or have visual exposure to a cellular communication tower.

Also included in this report are the results of a national survey of appraisers regarding this question and information obtained from other appraisers known to have researched this same question.

It is my opinion that the proposed tower will have no measurable impact on surrounding property values due to proximity or visibility.

Sincerely,



Mark Correnti, SRA
Massachusetts Certified Residential Appraiser, 103752
New Hampshire Certified Residential Appraiser, NHCR-460
Managing Member
FairMarket Advisors, LLC

Copyright

This report is copyrighted. ALL RIGHTS RESERVED. It is only for the use of the Mashpee, Massachusetts Land Use Permitting Boards. No part of this document may be reproduced, stored or transmitted in any form, for any reason or by any means, whether re-drawn, enlarged or otherwise altered including mechanical, photocopy, digital storage & retrieval or otherwise, without the prior written permission from FairMarket Advisors, LLC., the copyright owner. The text, layout and designs presented in this document, as well as the document in its entirety, are protected by the copyright laws of the United States (17 U.S.C. 101 et seq.) and similar laws in other countries.

Assumptions and Limiting Conditions

This report is written subject to the following assumptions and limiting conditions. Because a proper understanding of the analysis and conclusions contained in this report requires an awareness of these assumptions and limiting conditions, parties using this report are asked to carefully review and consider them when reading the report.

This report is written with the understanding and intention that it is to be used *only* in conjunction with the request before the Mashpee, MA Land Use Permitting Boards.

The information contained in this report is specific to the needs of the client and for the intended use stated in the report. Parties using this report for any purpose other than that stated herein must assume full responsibility and do so at their own risk. FairMarket Advisors, LLC cannot accept any responsibility for any damages suffered by third parties because of the unauthorized or inappropriate use of this report.

This report is prepared for the exclusive use of the client identified in this report. The report is based upon the data available to me at the time of preparation of this document.

Distances estimated from the sales to the towers are based upon GIS technology, not physical measurements by the author.

Because of this report, I am not required to give further consultation, testimony, depositions, or be in attendance for any legal proceeding regarding the subject matter unless prior arrangements have been previously made.

Information contained herein that has been obtained from third parties is assumed to be correct and reliable.

General comment

A commonly held opinion is that the value of a home is negatively affected if it is close to a cell tower or a cell tower can be seen from the property.

Randall Bell, PhD. MAI has written extensively about property damages: in his work Real Estate Damages: An Analysis of Detrimental Conditions¹, makes the following statement:

“The most significant issue in assessing the consequences of a detrimental condition on residential property values is the general predisposition of people to believe that detrimental conditions affect residential property values...*If market value is going to be affected, then this particular detrimental condition has to be given enough weight in the decision process of buyers and sellers to have a material effect on the price.*

In other words, the detrimental condition issue has to be important relative to all the other variables that influence the home purchase decision, (public safety, quality of schools, access to employment ... special features of the home, affordability, etc.)”

Appraisers can examine data to determine if a detrimental condition (cell tower) affects value by application of sensitivity analysis which is a method used to isolate the effect of individual variables on value.

The two most common types of sensitivity analysis used in general real estate practice are:

1. Paired sales by which two properties - one with cell tower influence is matched to a similar property without cell tower influence to see if there is a price difference that can be attributed to the cell tower.
2. Grouped data analysis which matches a property with cell tower influence to the median price paid for groups of sales of similar properties without the cell tower influence. Again, to see if there is a price difference attributable to the cell tower. Similar properties are properties a typical buyer would find to be acceptable alternatives to the property with the cell tower influence (similar style, size, etc.).

Due to the diversity of home styles in New England, most appraisers use grouped data analysis.

Buyers are the *market makers*; only through their buying decisions can it be determined if and to what extent the presence or absence of a neighborhood attribute influences value.

For this report sales in residential neighborhoods in Mashpee and Barnstable located close to cell towers were identified and grouped data analysis is used to see if the presence of the tower impacted the sale price.

¹ Bell, Randall, Real Estate Damages: An Analysis of Detrimental Conditions, Chicago: Appraisal Institute 1999, page 38.

Data limitations – Scarcity

To understand the impact of cell towers on residential values we attempt to locate sales of single-family residences that have recently sold and also have a view of a cell tower.

Whenever possible an attempt to obtain local data is made first, however sales located less than 1,000 feet or closer to a tower or that have a view of a tower are scarce.

The FCC maintains a database of registered communication towers and arrays. In Mashpee there is currently four towers located in the community. Two towers are located on Industrial Drive and the other two are located on Echo Rd. The two towers on Echo Rd are in close proximity to runways at the Otis Air National Guard base. The two towers on Echo Rd are dismissed as a viable study area to use as there is a competing external influence in the form low flying aircraft.

This report contains information on four residences that have sold in Mashpee and two in Barnstable; all having some visibility of a cell tower. The view from each sale included in this report is different and depends on topography, distance, tree cover and home orientation to the tower.

Certification

The undersigned certifies that, to the best of my knowledge and belief:

The statements of fact contained in this report are true and correct.

The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, are my personal, impartial, and unbiased professional analyses, opinions, conclusions and recommendations.

I have provided the following valuation² services on the property within the preceding three years from the date of this letter: None.

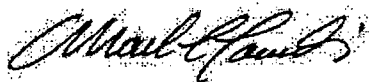
I have no present or prospective interest in the subject property, I have no personal interest with respect to the parties and I have no bias with respect to the subject property or to the parties involved with this assignment.

My engagement in this assignment was not contingent upon developing or reporting predetermined results.

My compensation for completing this assignment is not contingent upon the reporting of a 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 information.

My analyses, opinions and conclusions were developed, and this letter has been prepared in conformity with the Uniform Standards of Professional Appraisal Practice.

I have inspected the subject property. I have studied the plans, reviewed the community GIS data and municipal records about the property. I have also discussed the property with the client and believe I have a sufficient understanding of the attributes unique to the property.



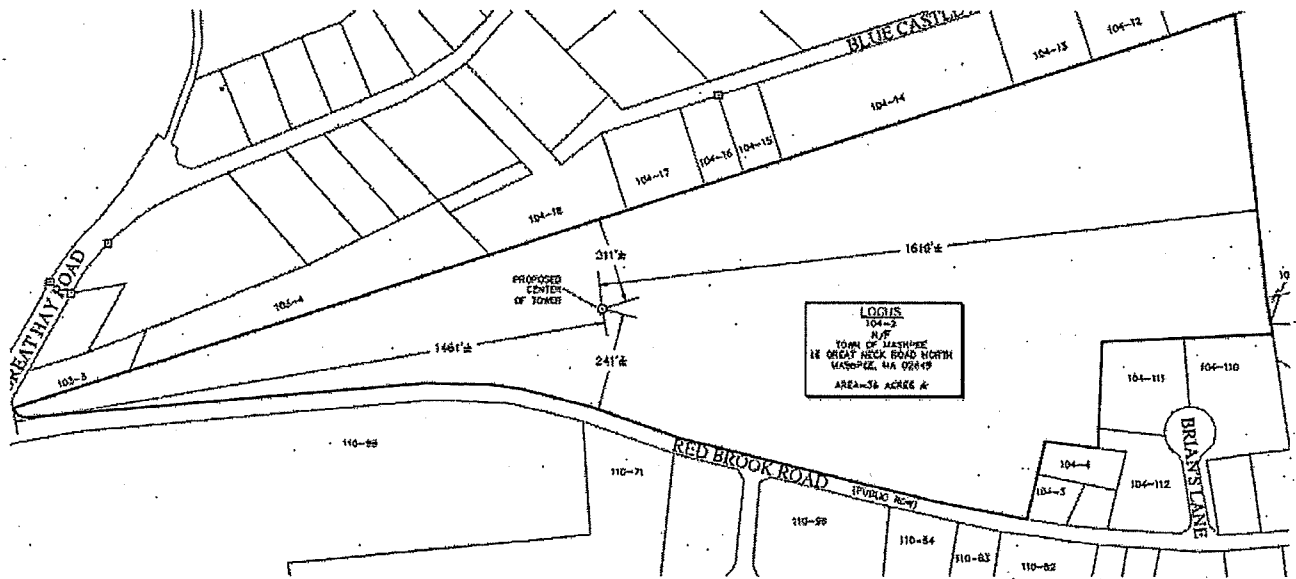
Mark Correnti, SRA
Massachusetts Certified Residential Appraiser, 103752
New Hampshire Certified Residential Appraiser, NHCR-460
Managing Member
FairMarket Advisors, LLC

² Listing, selling, repairs, maintenance, appraisal, consulting, review, property inspections, tax abatements

Property description: 101 Red Brook Rd Mashpee, MA (Mashpee Tax Map 104 Lot 2)

Proposed Site

The proposed site is in the Residential District (R-3) zoning district and is subject to the requirements of both the Wireless Facility Overlay and Groundwater Protection Overlay districts. The site is 36 acres in size, is owned by the town of Mashpee, and is being used as the town of Mashpee fire station. With the exception of the 5,200-sf fire station the parcel is primarily wooded.



Town of Mashpee GIS System tax parcel mapping. Subject parcel is 104-2

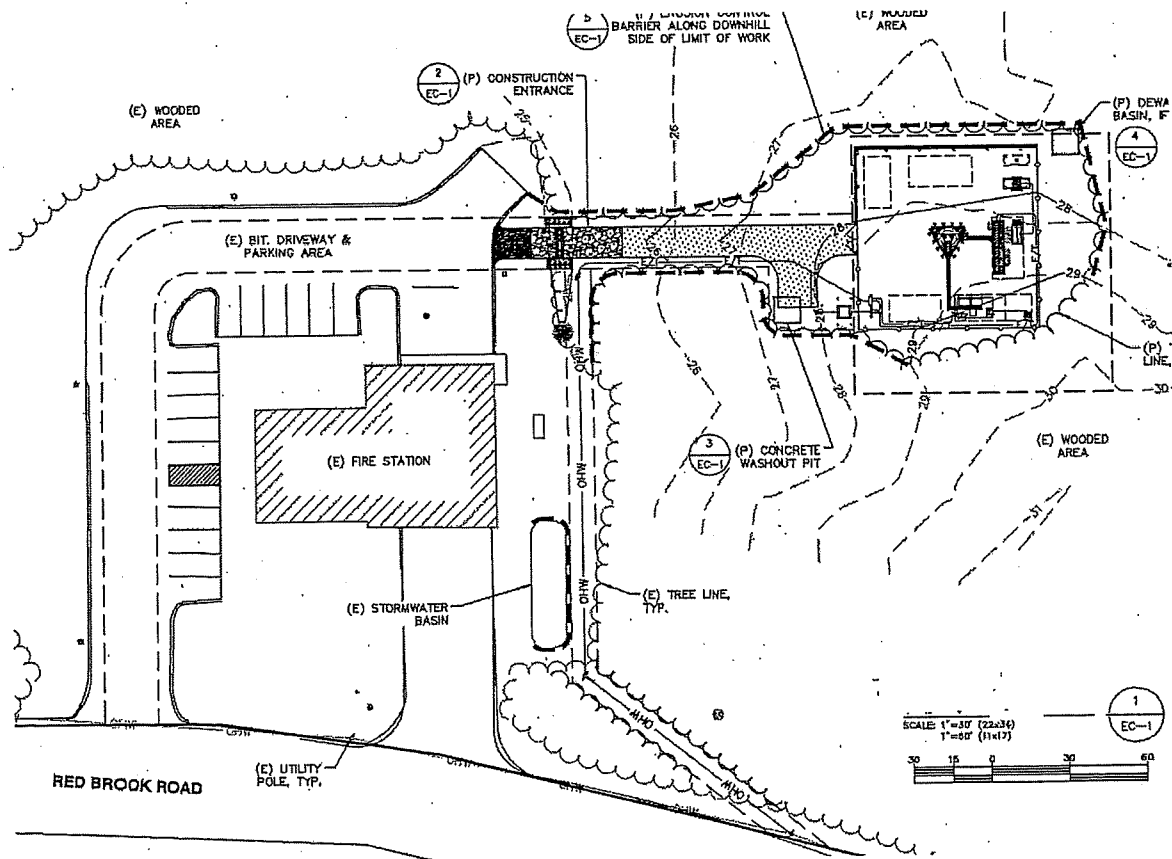
Surrounding land uses are primarily single-family residential. The surrounding residential sites vary significantly in terms of size, style, and value.

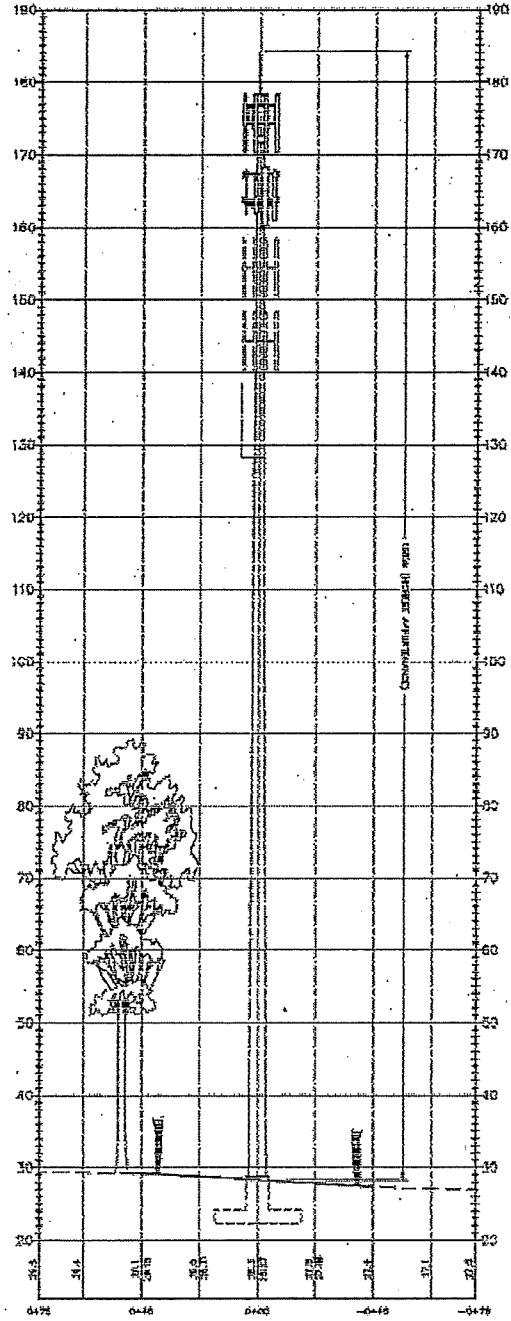


Proposed site as seen on October 4, 2018

Entrance/street scene

A 150' monopole with a 70' x 70' fenced compound is proposed to be located in a wooded section of the parcel approximately 200' east of the fire station. The proposed 150' tower (156' with lightning rod) would be located at Latitude: 41 degrees 35 minutes 2.89 seconds north and Longitude 70 degrees 29 minutes 3.08seconds west as depicted on the following pages.





Community based research

Over the past several years I have researched the issue of residential property values and cell towers throughout New England, the primary focus being in New Hampshire and Massachusetts.

The research consists of identifying recent sales of homes having either proximity to or a view of a communication tower within the community considering the development of a new tower. Often data from surrounding communities is researched and included to supplement local data. The communities may differ in characteristics, but together provide a good indication of the effect on the value of residential properties located near or having view of cell towers.

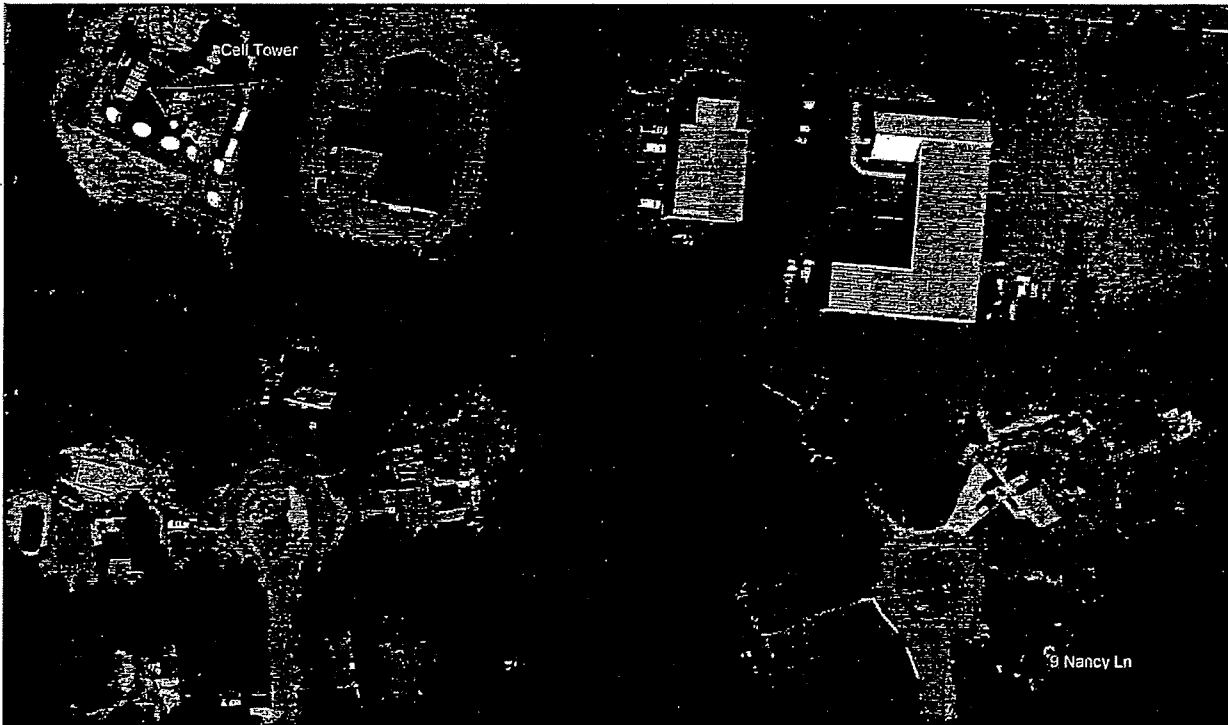
My research focuses on sales that have visibility of a tower or are 1,000 feet or closer to the tower. All sales found to have visibility are included regardless of distance to provide additional data for the reader to consider.

Each property sale is shown in *bold italics* underneath each are the medians calculated for the competitive sales examined. The data (from left to right) is: the number of competitive sales, the size range examined, the median lot size in acres, listing price, sale price, percent variance between the list and sale price, room, bedroom, bath count, garage size and average days on market.

This type of comparison enables identification of sales with substantial deviation from the median. If a sale presents a substantial deviation from the median further review is done to determine the reason for the deviation. An explanation for the deviation is provided as needed.

Mashpee, MA research

The property located at 9 Nancy Ln sold July 21, 2006 for \$370,000. This is a 6- room 3-bedroom cape from which the 250-foot-high tower located on Industrial Drive can clearly be seen.



The tower on Industrial Dr is 879' from 9 Nancy Dr. and is visible from the front yard



Driveway to 9 Nancy Ln at white mailbox at left.

9 Nancy Ln sold for more than the median price of 37 similar style homes in a shorter time frame.

count	Street	Acre	Style	YrBuilt	Closed	List	Sale	Spread	Sq Ft Fin	Rms	BR	Baths	Gar	DOM
75	Median	0.44		1987	≥ 6 months ≤	\$369,000	\$357,500	99%	1,638	6	3	2.0	1	74
Viz	9 Nancy Ln	0.94	Cape	1993	7/21/2006	\$374,900	\$370,000	99%	1,428	6	3	2.0	1	43
37	≥ 1,200 sf - 1,800 sf ≤	0.48		1987	≥ 6 months ≤	\$339,450	\$327,500	96%	1,525	6	3	2.0	1	87

This sale indicates the view of the tower had no effect on the price or marketing time.

12 Windermere Way sold on December 15, 2010 for \$252,100. It is a 1,332-sf ranch built in 1988. From the front yard it has a view of the same cell tower that is visible over a house directly across the street from it.





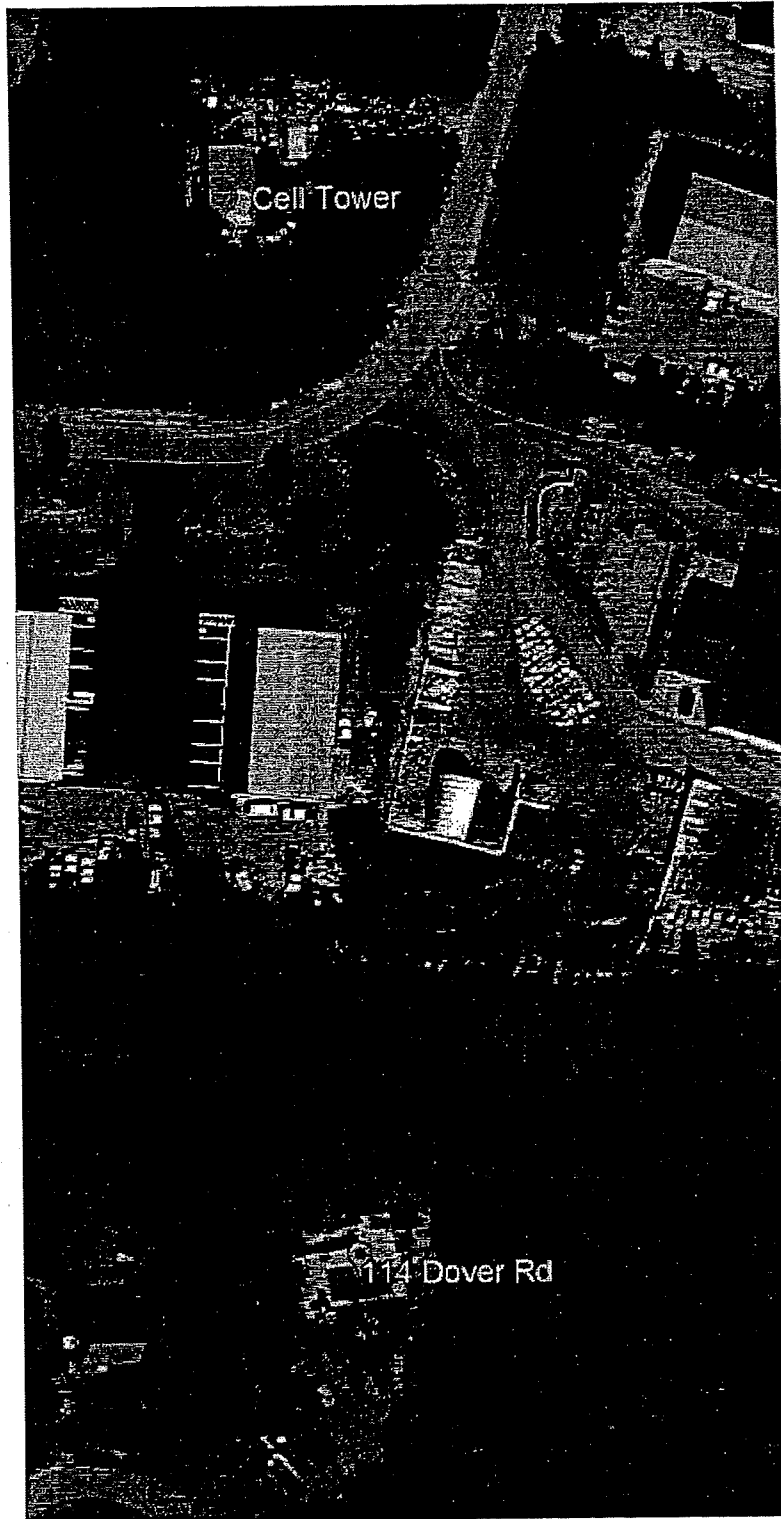
View of cell tower from the front yard of 12 Windermere Way.

Although 12 Windermere Way is 1,130' from the tower, it is clearly visible from the residence.

Count	Spread	Acres	Style	Year Bld	Days Closed	Asst	Sale	Spread	Sq Ft Fin	Rms	Bns	Bath	Gar	DOM
103	Median	0.39		1988	≥ 6 months ≤	\$339,000	\$317,000	94%	1,700	6	3	2.0	1	91
<i>Viz</i>	<i>12 Windermere Wy</i>	<i>0.92</i>	<i>Ranch</i>	<i>1988</i>	<i>12/15/2010</i>	<i>\$289,000</i>	<i>\$252,100</i>	<i>87%</i>	<i>1,332</i>	<i>5</i>	<i>3</i>	<i>2.0</i>	<i>1</i>	<i>88</i>
35	≥ 1,100 sf - 1,800 sf ≤	0.39		1988	≥ 6 months ≤	\$254,900	\$245,000	96%	1,428	6	3	2.0	1	83

12 Windermere sold slightly above its peers in relatively the same time period.

114 Dover Road is 1,687 sf cape that sold on June 30, 2015 for \$362,000. It has a view of a different tower that is 775' away and is also on Industrial Drive.





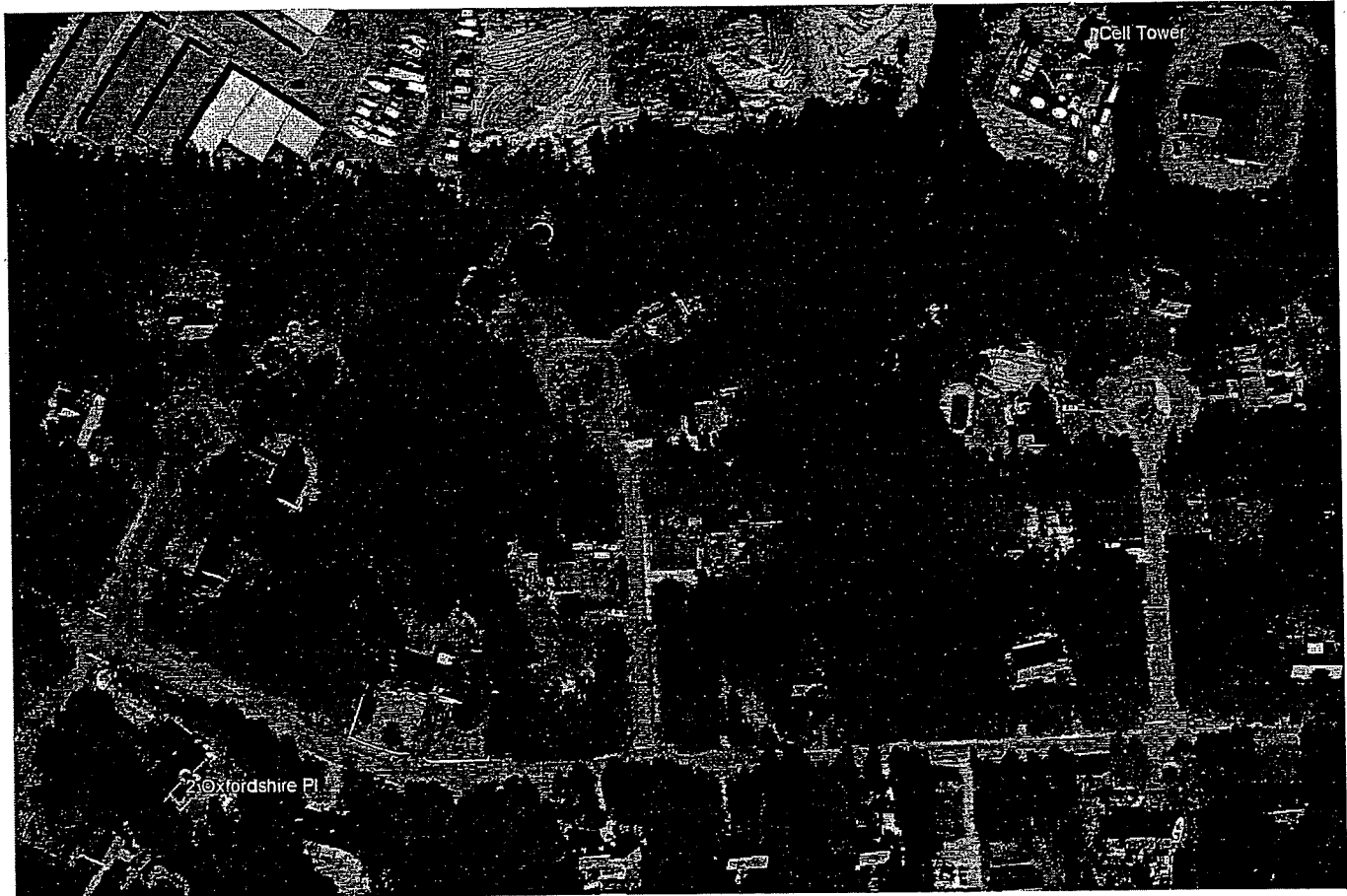
114 Dover Rd is the cape style residence on the right.

114 Dover Rd is unique as it also has an inground pool. It was compared to other residences that sold in Mashpee that were similar in age, style, and size, that also had an inground pool. At the time of its sale in 2015, 114 Dover Rd did not have solar panels. Because this was a feature added after the 2015 sale, the solar panels were not considered in the analysis.

Count	Street	Acre	Style	Year	Time Closed	List Price	Sale Price	Spread	Sq. Ft. Fin	Amenity	Kms	BR	Baths	Gar	DOM
180	Median	0.35		1987	≥ 6 months ≤	\$349,900	\$345,250	99%	1,710	No pool	6	3	2.0	1	51
Viz	114 Dover Rd	0.93	Cape	1994	6/30/2015	\$369,900	\$360,000	97%	1,687	Inground pool	6	3	2.0	0	13
4	Inground pool	0.31		1980	≥ 6 months ≤	\$354,450	\$359,950	102%	1,692	Inground pool	7	3	2.0	1	191

The data shows that 114 Dover Rd sold at relatively the same price as similar residences with inground pools in significantly less time.

2 Oxfordshire Pl is located 1,250' from a cell tower on Industrial Dr. and is included in this analysis as it does have a view of one of the aforementioned cell towers.





View of cell tower from the street at 2 Oxfordshire Pl

Count	Street	Acres	Style	Year	Build	Closed	List	Sale	Spread	Sq Ft	Days	Rms	BR	Baths	Gar	DOM
162	Median	0.34		1987		≥ 6 months ≤	\$359,000	\$344,250	99%	1,662	6	3	2.0	1	77	
Viz	2 Oxfordshire Pl	0.94	Cape	1993		6/26/2014	\$374,900	\$370,000	99%	2,051	7	3	2.5	2	17	
19	≥ 1,800 sf - 2,400 sf ≤	0.48		1989		≥ 6 months ≤	\$379,900	\$355,000	93%	2,100	7	3	2.0	2	70	

2 Oxfordshire Pl is a 2,051-sf cape that sold on June 26, 2014 for \$370,000. It sold above its peers in significantly less time.

With regards to any of the above-mentioned properties in Mashpee, On October 4, 2018 I had inquired with the assessing office in person if there had been any tax abatements filed due to a view of a cell tower. Tax abatement material was not available for public viewing, however the Director of Assessing, Mr. Jason Streebel had told me that in his years in service on the Mashpee Board of Assessors that he has never seen an abatement filed due to a view or proximity to a cell tower.

Barnstable, MA research

Due to the lack of cell towers in Mashpee coupled with the lack of residential sales that had views of cell towers, the search parameters were expanded to include the nearby town of Barnstable.

The two towers in Mashpee were visible from a single neighborhood in Mashpee. Expanding the search parameters to include different neighborhoods allows a different perspective from neighborhoods with different price points.

Admirals Lane in Osterville is a street of high-end residences. Both 10 and 11 Admirals Ln are located at the corner of Admirals Lane and Main Street. Directly across the street is a 150' cell tower.



10 and 11 Admirals Lane are 400' and 490' respectively from the cell tower. The tower is visible from the driveways of each - more so in the winter months.

count	Street	Acres	Style	Yr Built	Closed	List	Sale	Spread	Sq Ft	Rms	BR	Baths	Gar	DOM
461	Median	0.42		1977	≥ 6 months ≤	\$399,000	\$390,000	99%	1,636	6	3	2.0	1	37
Viz	10 Admiral Way	1.22	Cape	1978	5/21/2018	\$849,000	\$815,000	96%	2,300	6	3	2.5	2	222
87	≥ 1,800 sf - 2,800 sf ≤	0.56		1986	≥ 6 months ≤	\$479,900	\$459,900	96%	2,114	7	3	2.5	2	60

count	Street	Acres	Style	Yr Built	Closed	List	Sale	Spread	Sq Ft	Rms	BR	Baths	Gar	DOM
534	Median	0.43		1978	≥ 6 months ≤	\$384,900	\$365,000	95%	1,600	6	3	2.0	1	41
Viz	11 Admiral Way	1.18	Cape	1979	11/2/2017	\$849,000	\$835,000	98%	2,348	9	3	2.5	2	6
115	≥ 1,800 sf - 2,800 sf ≤	0.53		1985	≥ 6 months ≤	\$499,000	\$475,000	95%	2,127	7	3	2.5	2	53

The sales data for both show that Admirals Ln is an exclusive and desirable location, both residences are well appointed and updated. The relatively close proximity and slight views of the nearby 150' cell tower has not negatively impacted the desirability, marketability, or value of either.

Additional research materials

To augment the findings presented thus far included in the addendum is the results of a survey of assessors and appraisers and statements and conclusions from reports prepared by other appraisers who have completed similar research to determine if verifiable market data exists supporting the opinion that the presence of a cell tower has a deleterious impact on surrounding property values.

The additional data all indicates that there is no data to support the contention that there is a measurable impact on home values due to the proximity of a communication tower.

Summary and Conclusion

Objection to site development for cell towers usually comes from a change in the view from an abutting property. This change causes surrounding landowners to assume that their property will lose value because the of a view of a tower reduces value. This report contains sale data of homes with a view of a cell tower that have sold; these sales do not support the value loss assumption.

Based upon the national e-mail survey of appraisers and assessors, research into properties located close to or having visual exposure to communication towers that have sold in Massachusetts, data obtained from other appraisers researching this same issue and a review of numerous reports prepared by other qualified appraisers; I am unable to find any data or proof that there is a measurable impact on home values due to the proximity of a communication tower, or that property values are diminished due to the ability to see a tower from a property.

Therefore, it is my opinion that the construction at the proposed location identified in this report will have no measurable impact on surrounding property values.

ADDENDUM

General market research

A national e-mail survey of appraisers and assessors was initiated. The purpose of this survey is to obtain input from appraisal and assessment professionals from a broader perspective to see what other professionals have observed. On the following pages is an explanation of how the survey was conducted, quotations received from some of the respondents and a tabular summary of the communities covered by the responses.

The survey information is followed by statements and conclusions from reports prepared by other appraisers who have completed site-specific analysis or general market research to determine if verifiable market data exists supporting the opinion that the presence of a cell tower has a deleterious impact on surrounding property values.

National Survey of Appraisers & Assessors

A national e-mail survey of appraisers and assessors was initiated in 2009. The purpose of this survey is to obtain input from appraisal and assessment professionals from a broader perspective to see what other professionals have observed.

A total of 172 replies were received from 146 communities in 15 states with a total population more than 13,500,000 people. The communities range in size from Waterville Valley NH population 257 to Seattle WA population 3,554,760. This is a very diverse mix of communities with differences in socio-economic and geographic influences.

The survey solicited responses to the follow three questions:

1. *Have you observed or are you aware of any loss in residential property value due to the presence of a cell tower? YES / NO*
2. *Have you observed or are you aware of any appeals filed in the last two years claiming property value loss due to the presence of a cell tower? YES / NO*
3. *Have you observed or are you aware of any property value loss due to the ABILITY to see ANY part of a cell tower from a residential property, regardless of distance? YES / NO.*

All of the respondents answered "NO" to each of the above three questions.

Some of the respondents simply replied "no" without additional comment while others expanded their answers to include local information and experience. The expanded comments start on the following page. The survey data tabulated by State, Community and Population follow the comments.

Janet LePage
Monday, September 07, 2009 11:42 AM
RE: Residential Appraisal Survey from Fellow AI Member

"I just completed an assignment of a manufactured home on acreage with a cell tower. The sales price did not appear to be impacted by the cell tower; in fact, the purchaser told me that it was a plus for him due to the income. It should be noted that the cell tower was VERY far from the house and could hardly be seen from the road."

Dick Harriman,
CEO/Assessor
Town of Orrington

"I have one tower and no problems or complaints"

Michelle Boisjoly,
Assessor
Dayton, Ohio

"No to all three questions; we have 2 towers in town with several sales near 1 of them. Dayton is rural with 1.5-3 acre minimum house lots."

Marilyne Tepper
Certified Residential Appraiser
Westchester, NY

"My experience results in a "no" on all three questions"

Leland T Bookhout MAI, SRA
Rhinebeck, NY

"New buyers tell me in interviews that I have conducted that they did not pay less because of cell towers. I recognize that existing property owners feel they have been invaded thus scream and yell that the world has come to an end.

The bigger issue is that the potential pool of buyers for any home today is so sophisticated that they will use the issue of a nearby cell tower to get the purchase price down but when they resell in a few years - no reduction in asking price to list their property! Those who really do not want to live near a cell tower, or any other conceivable excuse, will go elsewhere, they have choices. We lose sight of the fact that any pool of potential buyers has choices. Ask any developer the question and they will almost always say that a particular buyer backed away from the purchase but someone came along to buy at the full price.

Part of the reaction by buyers is different in a sellers market vs. a buyers market. In the latter the alternatives are greater and the buyers can be picky."

Duane P. Willenbring CGB :GMB: CGP
Willenbring Const. Inc
St. Cloud, MN

"I am a Builder, Developer and Realtor and I serve on the Rockville, Mn. City Council. The answer to all three questions is No. I have not heard of any adverse opinions regarding cell towers"

Melinda Fonda
Assessor
Stratford, CT

1. *Have you observed or are you aware of any loss in residential property value due to the presence of a cell tower? "NO"*
2. *Have you observed or are you aware of any appeals filed in the last two years claiming property value loss due to the presence of a cell tower? "NO we have not had any appeals regarding loss in value due to cell towers"*
3. *Have you observed or are you aware of any property value loss due to the ABILITY to see ANY part of a cell tower from a residential property, regardless of distance? "I have had people claim their value is affected because they have an obstructed view. I have not seen this affect value."*

Alfred D. Jablonski, MAI
Real Estate Appraiser
Washington, DC

"In this market there is no evidence that cell tower, which is not allowed in residential zoning, has a negative effect on residential properties. In Fairfax County the light poles on our high school football fields are being converted to cell monopoles and the school system is receiving money and benefiting from the new monopoles."

From: Orban Winton
Socorro, NM

"I have not had the opportunity to appraise or be associated with questions 1 and 2. The majority of our small town can see a part of a cell tower and have not noted any reduction in sale prices"

Carl Brinegar, SRA, SRPA
San Angelo, TX

"Sorry I can't help much. Answer is no. For all of the properties that can see cell towers in this area, I have never noted any reduction in price, nor had a seller or Realtor tell me that there was a reduction in price due to that situation & some towers are quite visible from new moderate priced residential property subdivisions & builders are continuing to build closer & closer to the towers, apparently without any ill pricing effects yet at least."

Linda Truitt, MAI
Springfield, MO

"Hi - I am not aware of any reduction in value to properties near a cell tower. I know a local appraiser that an assignment to appraise a rural property with a small house before and after a cell tower was installed on their 10 acres. It was his opinion that the property was actually worth more with the tower because of the land lease income. Not much help I'm afraid."

Frederick B. Jones
Abilene, TX

"Hello, a group in an affluent neighborhood on the east side of town fought unsuccessfully to prohibit a cell tower's installation, claiming it would devalue the neighborhood and their individual property. They were unable to show how the property would be devalued and lost the case. The tower was installed several years ago with no apparent value issues. I don't remember the exact dates, but the tower has had no long term devaluation. We had a similar case recently with wind turbines - our area is the wind capital of the nation - with similar results. There is simply insufficient data to extract to show the plaintiff's were damaged. Hope this helps."

Ned Farrone, MAI
Larchmont, NY

"The answer is "NO" to all three questions. We have been doing ongoing studies of neighborhoods with cell towers for more than 10 years. Never once have we found that there was a diminution in value due to being able to see a cell tower."

Survey of New Hampshire, Massachusetts and Vermont Assessors

All assessors were asked the follow three questions:

1. *Have you observed or are you aware of any loss in residential property value due to the presence of a cell tower?*
2. *Have you observed or are you aware of any appeals filed in the last two years claiming property value loss due to the presence of a cell tower?*
3. *Have you observed or are you aware of any property value loss due to the ABILITY to see ANY part of a cell tower from a residential property, regardless of distance?*

In New Hampshire twenty-six communities with populations from 2,000 to 110,000 responded. All twenty-six communities answered "NO" to each of the above three questions.

Population	Town	Population	Town	Population	Town	Population	Town
2,042	Newbury	5,620	Hopkinton	13,040	Durham	28,486	Dover
2,215	Andover	6,561	Newport	13,388	Claremont	29,558	Salem
2,460	Plainfield	7,098	Stratham	15,450	Hampton	42,336	Concord
3,537	Gilmanton	7,322	Belmont	17,060	Laconia	87,321	Nashua
4,463	New London	8,020	Bow	22,778	Keene	109,691	Manchester
4,867	Henniker	8,434	Seabrook	24,568	Hudson		
4,880	New Boston	11,156	Hanover	24,837	Londonderry		

Massachusetts assessor results

Andover	<i>Never seen an abatement for that</i>	Chelmsford	<i>Nothing</i>
Bedford	<i>No</i>	Lexington	<i>None to my knowledge</i>
Belmont	<i>Haven't seen any</i>	Lowell	<i>There were none</i>
Billerica	<i>No haven't seen anything yet</i>	Reading	<i>No</i>
Carlisle	<i>Not in this town</i>	Waltham	<i>Have not had any</i>
		Woburn	<i>No</i>

Vermont assessors / lister results

Bethel	<i>No; Our tower is 2 yrs old, no immediate neighbors; can be seen form Rte 107 & 12.</i>		
Cabot	<i>No; We have 2 towers</i>	Poultney	<i>No</i>
Charoltte	<i>No; not aware of any grievances re cell towers</i>		
So Burlington	<i>No; never had anyone broach the subject</i>	Dover	<i>No</i>
Weathersfield	<i>No to all 3 questions</i>	Mount Tabor	<i>No</i>
Royalton	<i>No; We have 2 towers in remote locations</i>		

The following statements and the conclusions are from reports by other appraisers who have completed site-specific analysis or general market research in order to determine if verifiable market data exists supporting the opinion that the presence of a cell tower has a deleterious impact on surrounding property values.

Edward J. Ferrarone, MAI – September 2008 – Danbury, CT

As you see from the data, the sales prices and price per square foot (a recognized unit of comparison) for those residences situated near a communication facility site are consistent with, and in some cases higher than, the prices achieved in the neighborhood further away from the communication facility site.

I have been conducting surveys of sales prices such as these for the last decade. The areas covered include Westchester, Rockland, Putnam, Dutchess, Orange, and Ulster Counties. In no instance have I ever found that values have been reduced by the presence of communications facilities such as those which are proposed for this site.

As a result of the foregoing analysis, it is our conclusion the installation, presence and/or operation of the proposed Facility on the subject Property, will not result in the diminution of real estate values of nearby properties or reduce the marketability of properties in the immediate area.

U.S. District Court Judge Charles L. Brieant, in a decision dated January 25, 2001, agreed with the conclusion "that the actual experience with similar wireless facilities within ... other communities has not supported a conclusion that these antennae have reduced the value of nearby property." Judge Brieant further states that "generalized concerns about a potential decrease in property values stemming from the construction of the proposed communications antenna, especially in light of the expert reports contained in this record before the Court, are not adequate to support the conclusion that a special use permit should be denied."

See U.S. District Court Southern District of New York (White Plains)
Civil Docket for case #: 7:00-CV-04828-CLB Sprint Spectrum, LP v Cestone et al.

Bill Pastuszek, Jr. SRA, MAI, MRA – December 2007 – Pepperell, Massachusetts

Summary: The preceding analysis demonstrates that cellular telecommunications facilities in competitive residential locations do not affect real estate prices adversely. Research and analysis in other areas supports this conclusion: there is no measurable impact on residential sales prices due to the presence of such facilities. *Conclusion:* Based upon my inspection of the subject site and neighborhood, of comparable sites, my detailed review of the proposed project, and my review of pertinent empirical studies, it is my professional opinion that the construction and operation of the project will not have any adverse effect upon the property values of any real estate located near the site.

Vern J. Gardner Jr. , SRA, MAI – February 2007 – Londonderry, New Hampshire

Based upon the material presented herein it is this appraiser's opinion that the Market Value of the Fee Simple Title to any of the properties in the vicinity of the proposed cell tower will experience no diminution in value resulting from its construction as of February 05, 2007.

Patricia Amadon, MAI - October 2006 – Falmouth ME

In terms of marketing time, I researched sales in the general area to investigate the number of days on the market for residential properties. The marketing time ranged from 0 days to 371 days. When the maximum and minimum values were eliminated, this range narrowed from 11 days to 134 days. The sales of the two properties in proximity to towers took 66 and 72 days to sell, selling times well within the range of residential properties within the area. Therefore, marketing time does not appear to be affected.

Based on my investigation summarized above, I have concluded the following:

The nearest property has sufficient natural coverage and distance from the proposed tower to significantly diminish visibility.

The addition of the proposed tower and associated equipment will have no measurable adverse impact on the value of surrounding property.

From a valuation perspective, the proposed tower is the most appropriate location for a telecommunications facility in the area.

Robert G. Bramley, MAI - May 2006 - Cornish NH

In summary, while the existing tower, if constructed, may be visible at a distance, I know of no instance where local property values in rural locations such as the subject will diminish with the construction of said facilities nor will the region be impacted, except in a positive way, from said facilities because of improved communication facilities.

J. Nathan Godfrey Appraiser October 2002 - West Tisbury, Ma

"The surrounding neighborhood area will be unchanged by the introduction of the proposed wireless communications facility. The equipment shelter and base of the pole will not be visible from Old Courthouse Road and there will be no change to the overall character of the site. My research and investigations have concluded that there would be no diminution of value or difficulty in marketing a residence in the immediate area around the proposed installation."

Donald E. Watson, Certified General Appraiser - June 1998 - 5 communities in Southern NH

The study of sales in Bedford, Nashua, Merrimack, Candia, and Manchester did not indicate any discernible trends or variations in the sale prices of properties in the vicinity of telecommunications towers or similar structures in relation to the overall sales ratios found in each community. The lack of any trend would indicate that in fact there is no diminution of value of properties near these structures. Given federally mandated guidelines, I am of the opinion that as more telecommunications towers are constructed, their presence will become more common, similar to the existing telephone poles. If any diminution of value were to occur, it would be evident during the early stages of placement of telecommunications towers.

Michael P. Wicker, MAI - April 1994 - Sullivan, New York

At your request, we have performed a detailed analysis of the effects of radio communication towers on surrounding property values. It is the conclusion of this analysis that the subject's proposed cell site to contain a 180-foot guyed tower and a 293 square foot prefabricated concrete shelter will have no effect upon surrounding property values. The location, nature, and height of buildings, walls, and fences will not discourage the appropriate development and use of adjacent land and buildings or impair their value.

Enclosed please find the results of this analysis which support the above conclusion.

Robert G. Bramley, MAI - August 1990 - Candia NH

demand. In short, diminution in value of surrounding property was not found in nearby areas of Chester or Candia and, as a matter of fact, in areas surrounding tower sites in more densely populated areas of Hudson and Merrimack, New Hampshire. Conversation with residents in periphery areas suggests that the sites are not objectionable from an aesthetic viewpoint and may in fact contribute somewhat to retaining the undeveloped or sparsely developed character of the area, unless of course development pressures are greater, in which case housing development appears to take place without any real measurable detriment to price or value. Safety is also not a detriment since towers are constructed to withstand hurricane force winds.

Robert H. McKennon, CRE, MAI - Wilmington, Delaware

Robert has researched the impact of telecommunications towers on residential property values in his area. The following summarizes the results of his research.

To all who took the time to respond to my AI forum request for info on the impact of telecommunications towers on residential property values: -Thanks very much for your input.

I looked this time at a potential tower site in a heavily developed and desirable residential area that was slated for a monopole installation behind a supermarket at a major commercial intersection.

After reviewing 8 tower sites in residential locations with varying price ranges, I was unable to find any evidence that there is a measurable impact on value due to the proximity of a tower.

For example: A Toll Brothers development currently underway has three contiguous towers that loom over the residential lots currently being sold. These are being developed with \$700,000 homes that are selling at a similar absorption pace to other similar Toll communities in the area. The site manager indicated that the towers were not a factor in pricing or marketing. The developer did not provide extra buffers, larger lots, or open space nearby to alleviate any potential impact the towers might have.

Another area development has an unsightly latticework tower nearby that can be seen from various points in the development. **There is absolutely no difference in pricing of similar model homes that can see the tower as opposed to those that cannot.** The sales agent who sold the project noted that the tower had no impact on sales. Another agent who has sold several homes in the neighborhood indicated that her daughter lives in the neighborhood, that she has been in the neighborhood many times over the years and had never noticed it during her walks with her granddaughter, and that it was not a factor with buyers.

In another neighborhood, there was some anecdotal evidence from agents that sold houses that were contiguous to a 1960's vintage latticework tower that there was some buyer resistance expressed by some prospects for those particular houses. However, a close analysis of these properties did not produce any evidence of a value diminution. The houses were listed at similar prices to those away from the tower and sold for similar prices, in similar time frames. When this data was discussed with the agents they indicated that although there were some prospective buyers who may have "walked" from the sites next to a tower, they were in fact able to obtain a satisfactory price. I could not reasonably justify any value diminution even in these extreme cases and believe me I looked. These cases are akin to a Rubik's Cube in some ways. 99.9% of the evidence can point one way, but if any stone is left unturned, the Board may disregard the entire study.

Mark Correnti, SRA

P.O. Box 276 ♦ Hollis, NH 03049 ♦ (603) 371-0525 ♦ mark@nhappraiser.com

New Hampshire Certified Residential Appraiser

- Founding partner of Amoskeag Appraisal Company, LLC a residential appraisal firm that provides real property appraisal and consulting services in New Hampshire.
- Conduct real estate appraisals of single and 2-4 family residences, condominium units, land appraisals. Complex residential properties and multi-million dollar residences.
- New Hampshire Real Estate Appraiser Board - Investigative Review Appraiser 2005-2011, Board Member and Grievance Officer 2011-2014
- New Hampshire Chapter of the Appraisal Institute - Chapter President 2011-2012

Real Estate Appraiser since 1997
 Past NRE Real Estate Appraiser Board Member
 Admitted as an expert witness in MA & NH courts
 NRE Real Estate Broker
 Approved HUD-FHA and VA Appraiser
 Awarded CRA Designation from Appraisal Institute

Work Experience

1999 to present *Certified Residential Appraiser NHCR-460*

Residential state certified appraiser specializing in complex residential properties. Fee assignments include appraisal of 1-4 family residences, vacant land, and quality control appraisal review assignments. Admitted as an expert witness in NH court system. Testified as an expert in various ZBA hearings regarding diminution of value cases. Client base includes large regional banks, mortgage companies, real estate agents, and law firms.

1997 to 1999 *Gary Driscoll Appraisal Services, Fremont, NH
 Apprentice Appraiser*

1996-1997 *Citizens Bank, Manchester, NH
 Construction Operations Supervisor*

Review residential construction loan requests, facilitate build out of project. Interact with builder, homeowner, and originator. Oversee construction of home, monitor project to ensure that construction budget is in balance. Resolve discrepancies and manage delinquencies.

1994-1996 *Retail Loan Officer - Citizens Bank (f/k/a First NH Bank)*

Underwrite consumer loan requests generated by 90-branch network. Emphasis on real estate mortgages and equity lines of credit. Assisted branch personnel and loan originators with complex credits. Product underwriting experience includes home equity lending, small unsecured requests, and indirect auto financing and high LTV loans.

1992-1994 *Fleet Bank-NH, Nashua
 Regional Lender*

Responsible for consumer loan volume and small commercial loan portfolio. Originated, processed, and closed all consumer and commercial loans. Process and closed commercial loans up to \$200M, including SBA 504 and 7(a) programs. Responsible for credit training, setting loan goals, and supervising southern NH consumer production staff. Met with local merchants to establish deposit and loan relationships.

1996-1997 First Union, Framingham, MA, loan production office
Asst. Sales Mgr.
Developed and cultivated network of mortgage companies in developing a large loan portfolio.
Conducted property evaluations of 1-4 family properties in MA, RI, and NJ. Identified, corrected, and assisted in managing all risk factors affecting bank's portfolio.

1989-1990 Transamerica Financial, Mansfield, MA
Asst. Manager
Initiated and executed all aspects of consumer finance branch operations.

Education The University of Massachusetts at Amherst, 1989
Bachelor degree - Economics

Appraisal Organizations:

Appraisal Institute - NH Chapter - Board Member 2007-2012, Chapter President, 2011-12
Designated Member of the Appraisal Institute. Awarded SRA designation in 2009.

Committees/Panels

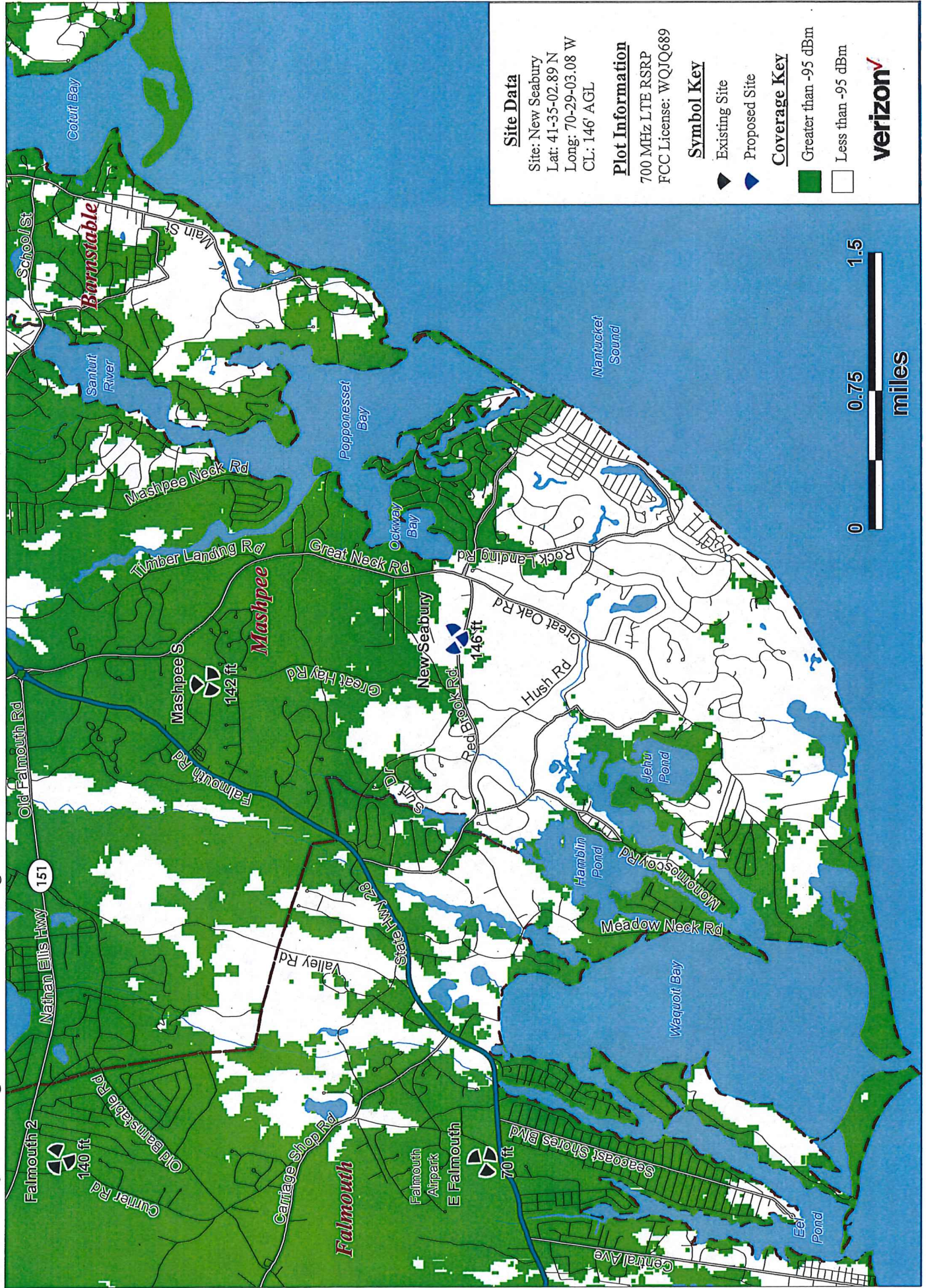
2006 Francesstown Conservation Commission - Committee Member
2004-2008 New Hampshire Real Estate Appraiser Board - Review Panel
2006-2011 NH Real Estate Appraiser Board - Contracted Investigative Review Appraiser
2011-2014 NH Real Estate Appraiser Board - appointed as board member and Grievance Officer.

Appraisal Courses and Seminars (abbreviated list)

Basics of Real Estate Appraisals, January 1999 & February, 2006
Appraising 1-4 Family Properties, March 1998 & March 2006
Appraising Income Properties, April 1999
New Hampshire Current Use Law, March, 2000 and March, 2006
Appraising High Value and Historic Homes, June 2000
Real Estate Fraud and the Appraiser, October, 2001
Appraiser as an Expert Witness, October, 2001
Real Estate Law and the Investor Perspective, October, 2001
Real Estate Development Issues and Land Management, May, 2002
Mobile/Manufactured Home Review, July, 2002
Attacking and Defending an Appraisal in Litigation, September, 2003
Loss Prevention Seminar - October, 2003 and March 2005
Appraisal Reports and USPAP compliance, November, 2003
FHIA/FHA Appraisal Requirements, December, 2003
NH Real Estate Appraiser Board Review Panel Training Seminar, October, 2004
NH Real Estate Appraiser Board Supervisory Appraiser Seminar, September, 2005
Appraisal Institute Business Practice and Ethics, October, 2005
Residential Highest and Best Use, March 2006
Residential Site Valuation and Cost Approach, April 2007
Residential Sales Comparison and Income Approaches, May 2007
Real Estate Finance Statistics and Valuation Modeling, June 2007
Advanced Residential Applications & Case Studies, November 2007
Valuation of Green Housing, January 2008
Advanced Residential Report Writing, January 2008
REO Appraisals: Appraisals of Foreclosed Properties, September, 2008
Appraiser Regulatory Agency (ASC) Investigator Training Level I, August, 2009
Appraiser Regulatory Agency (ASC) Investigator Training Level II, October, 2010
Appraiser Regulatory Agency (ASC) Investigator Training Level III, September, 2014

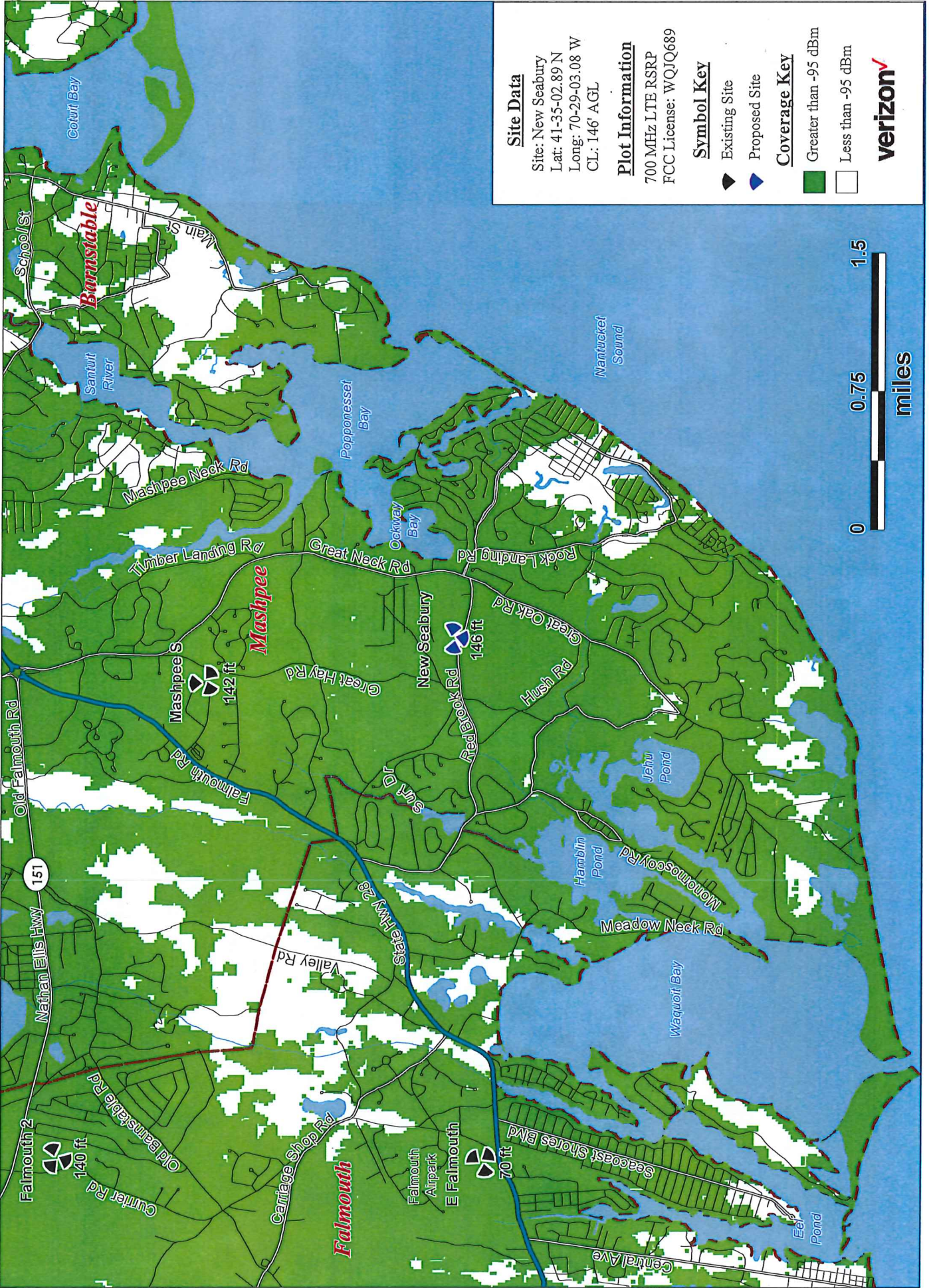
Attachment A:
New Seabury - Existing 700 MHz LTE Coverage

Map Prepared 4/3/2018



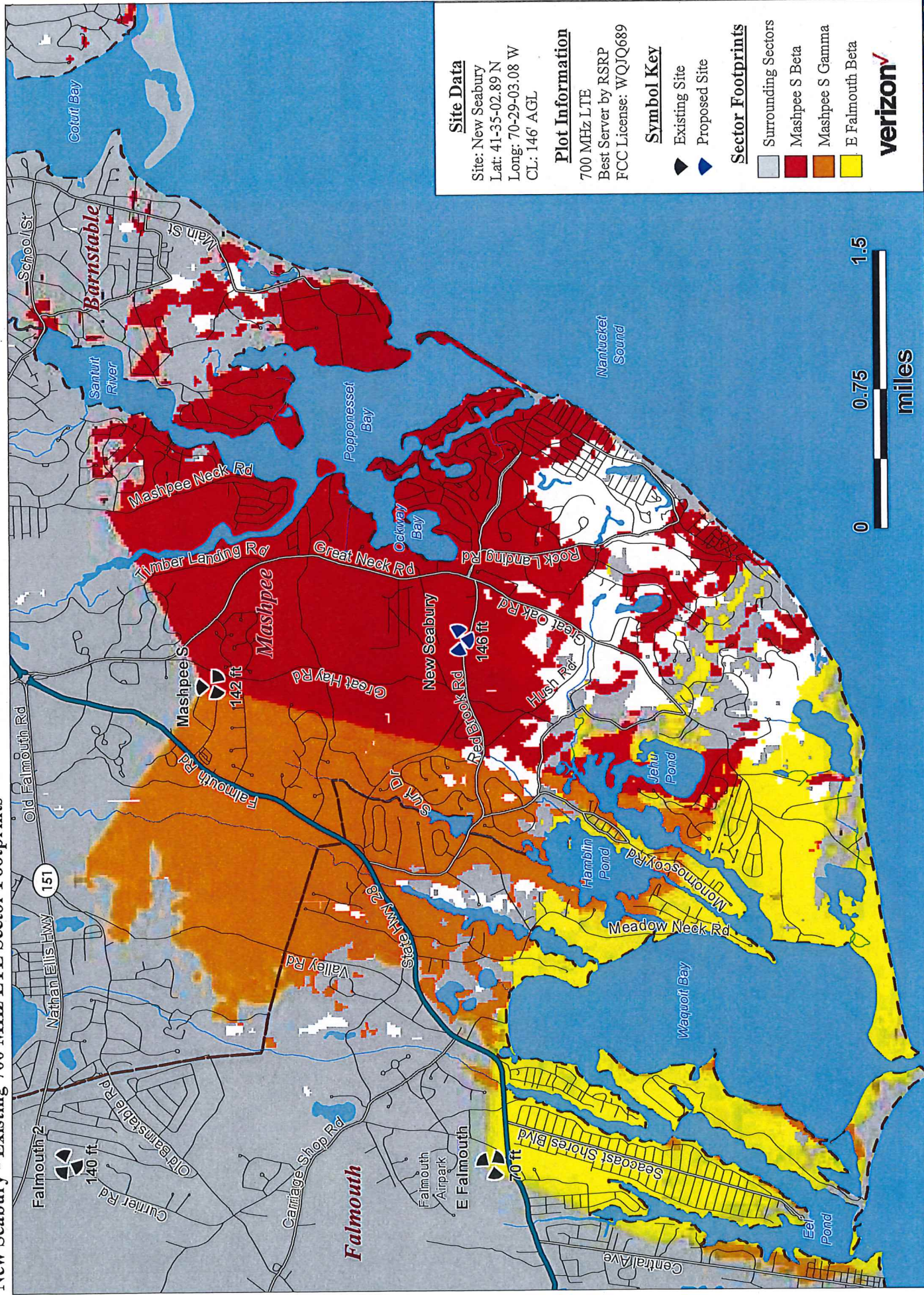
**Attachment B:
New Seabury - 700 MHz LTE Coverage with Proposed Site**

Map Prepared 4/3/2018



**Attachment C:
New Seabury - Existing 700 MHz LTE Sector Footprints**

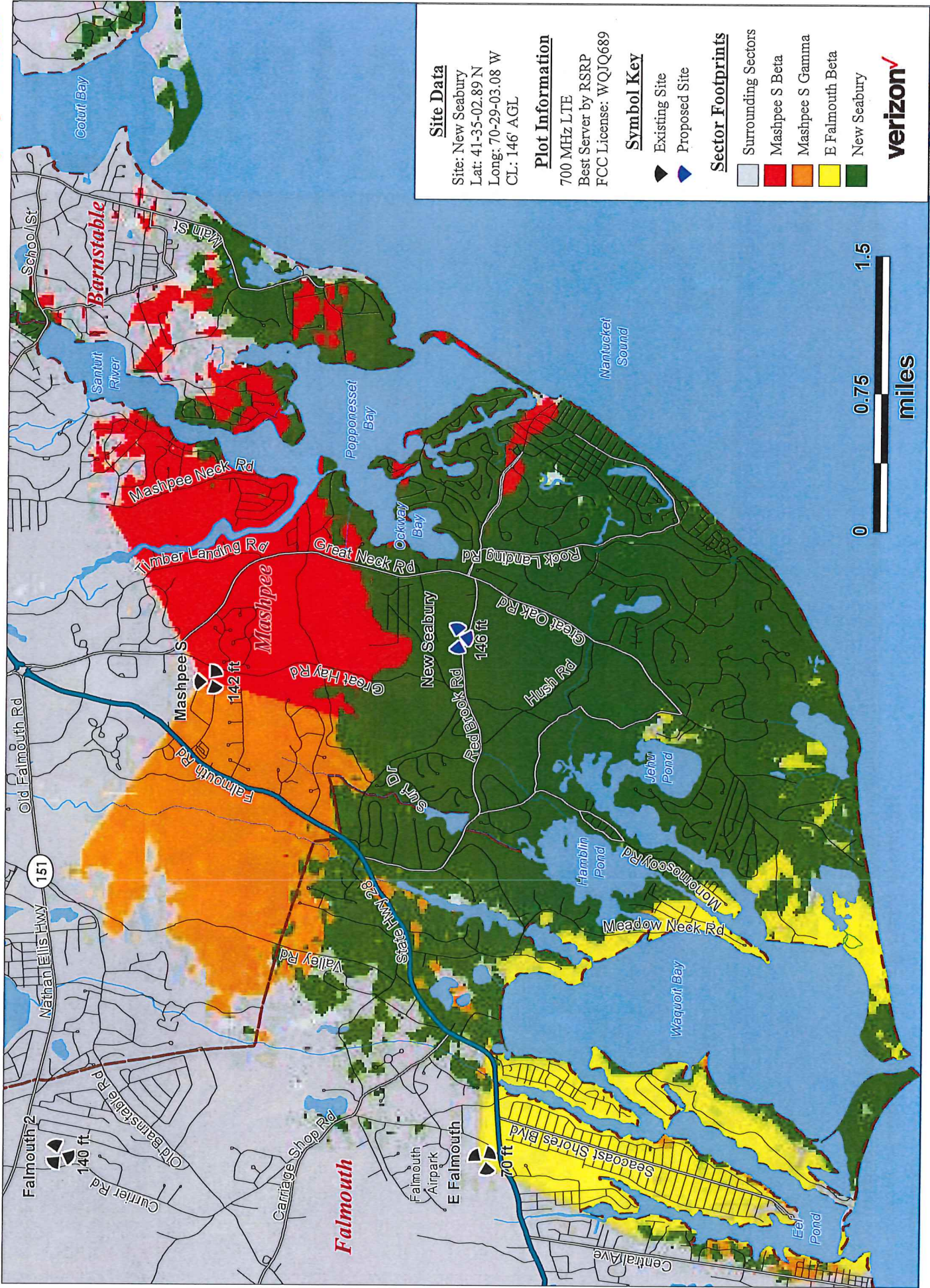
Map Prepared 4/3/2018



Attachment D:

New Seabury - 700 MHz LTE Sector Footprints with Proposed Site

Map Prepared 4/3/2018



Site Data

Site: New Seabury
 Lat: 41-35-02.89 N
 Long: 70-29-03.08 W
 CL: 146' AGL

Plot Information

700 MHz LTE
 Best Server by RSRP
 FCC License: WQJQ689

Symbol Key

- ▲ Existing Site
- ▲ Proposed Site

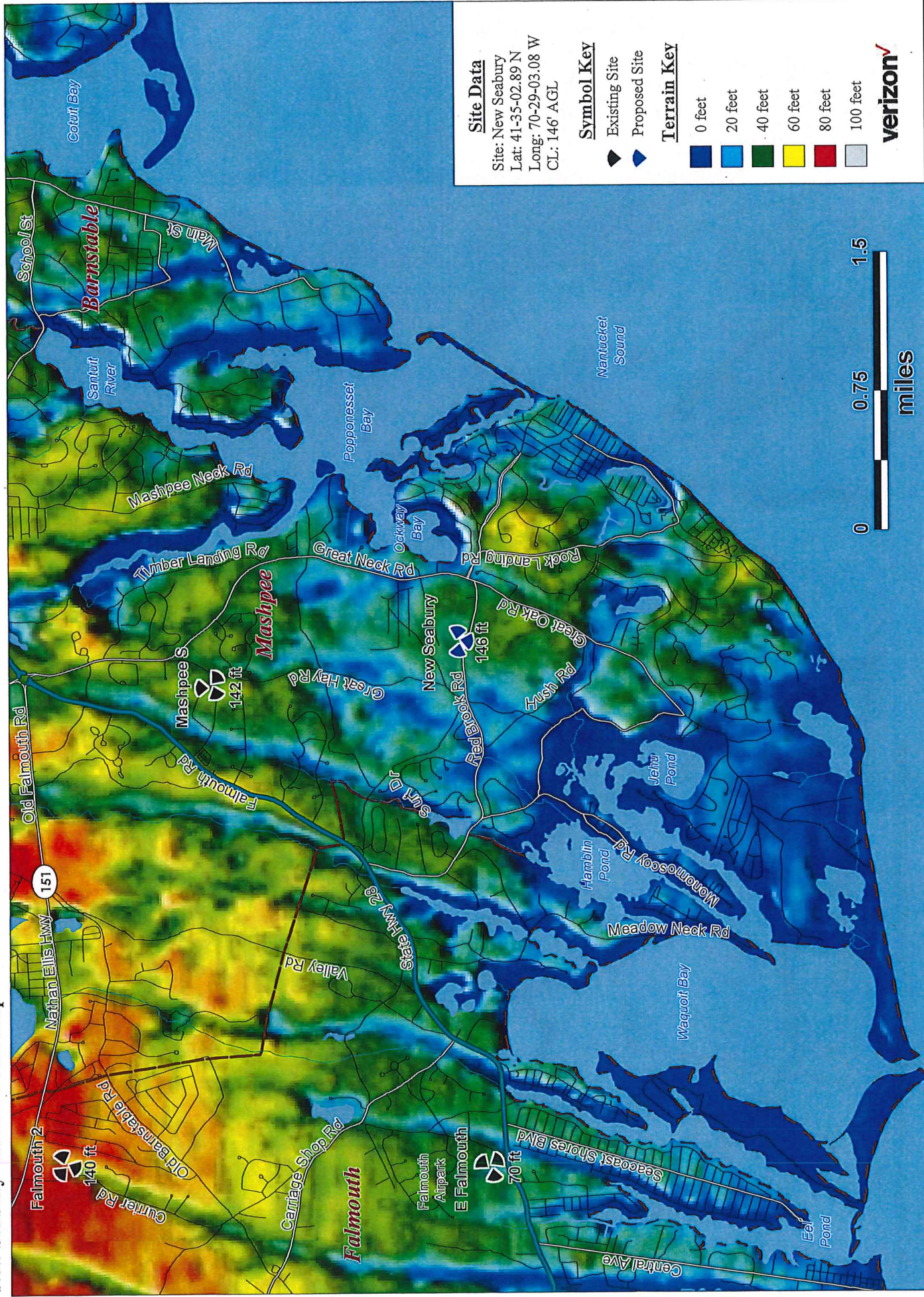
Sector Footprints

- Surrounding Sectors
- Mashpee S Beta
- Mashpee S Gamma
- E Falmouth Beta
- New Seabury



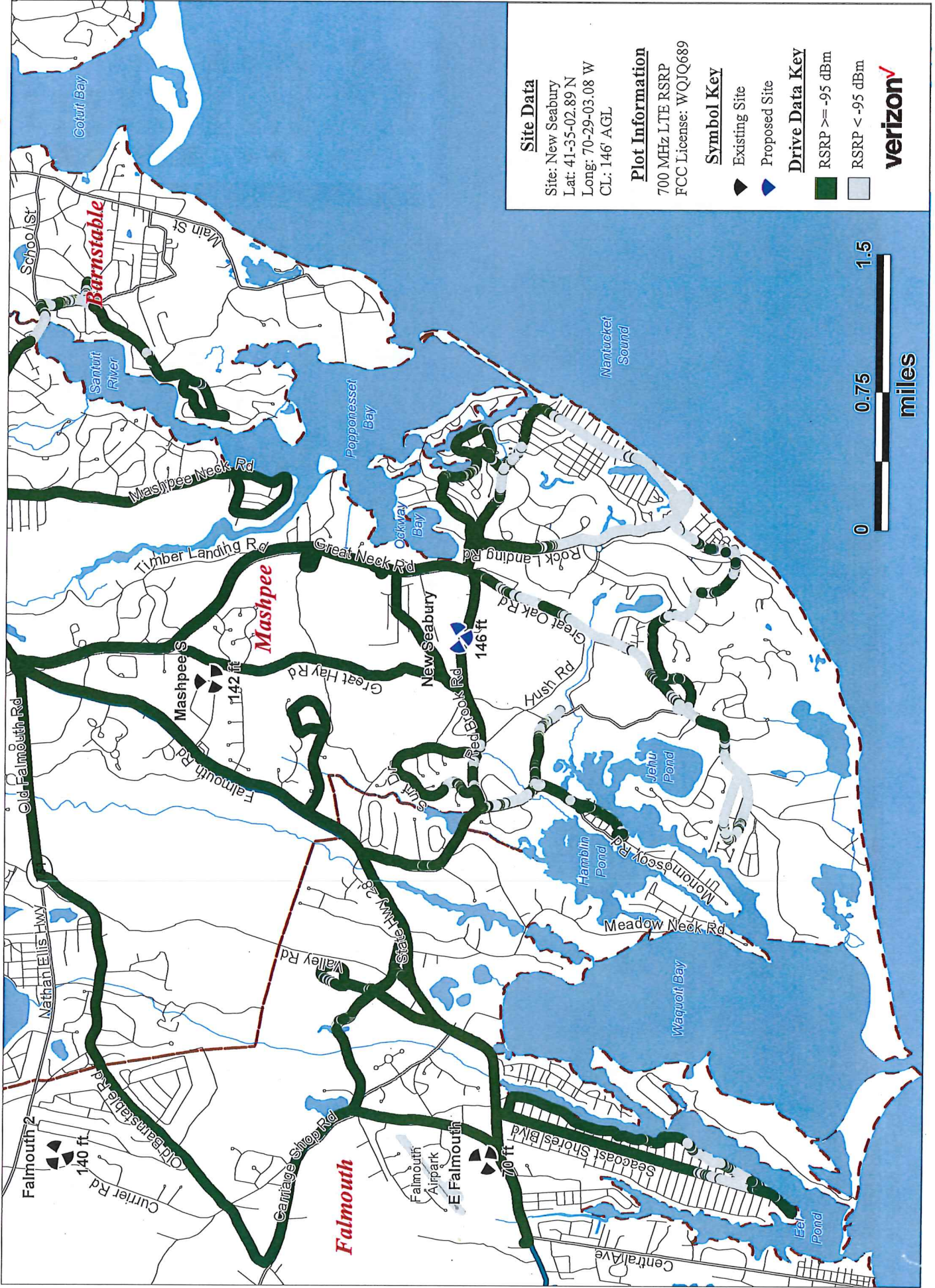
**Attachment E:
New Seabury - Area Terrain Map**

Map Prepared 4/3/2018



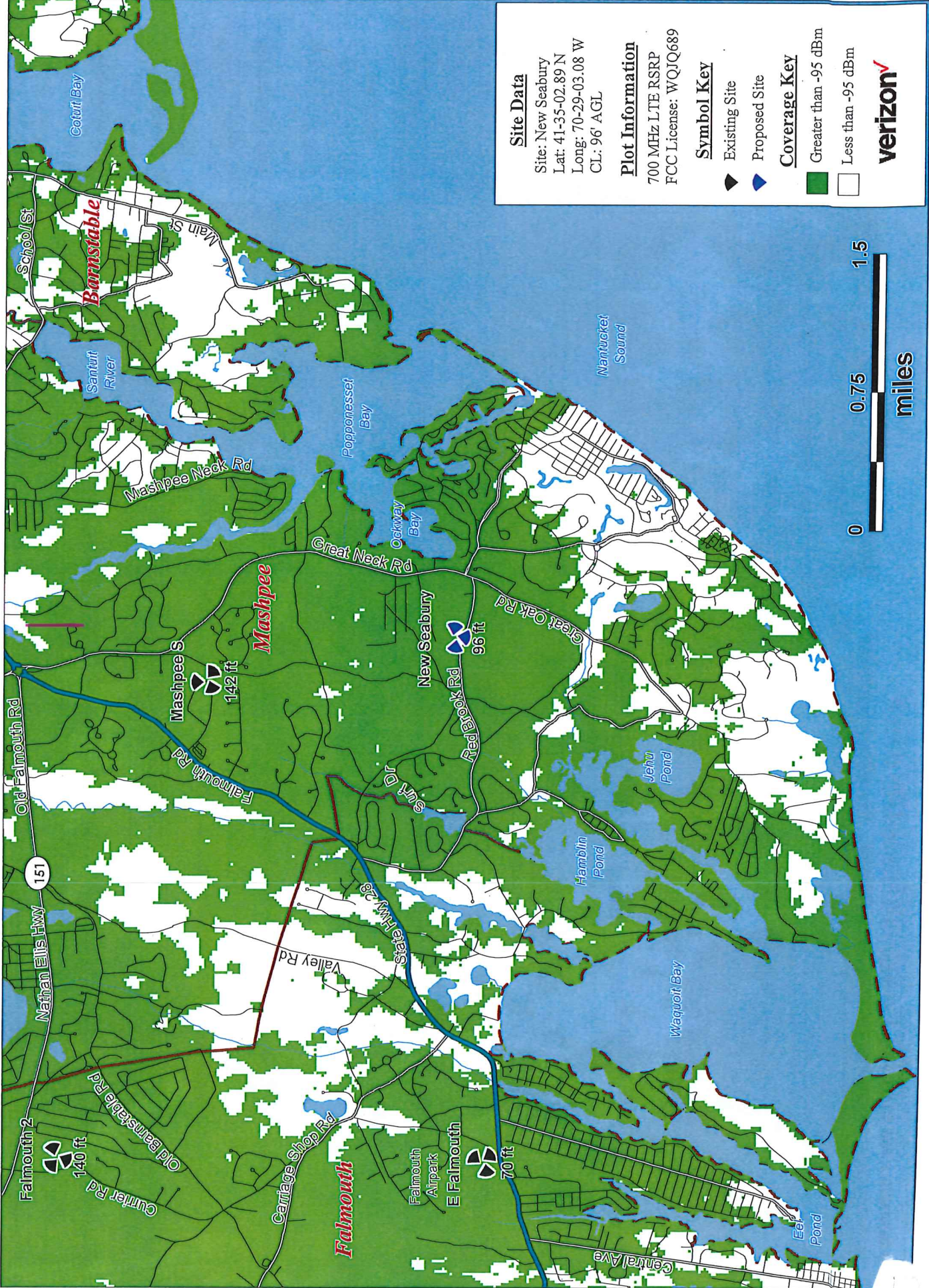
Attachment F:
New Seabury - Existing 700 MHz LTE Drive Data (03/27/2018)

Map Prepared 4/3/2018



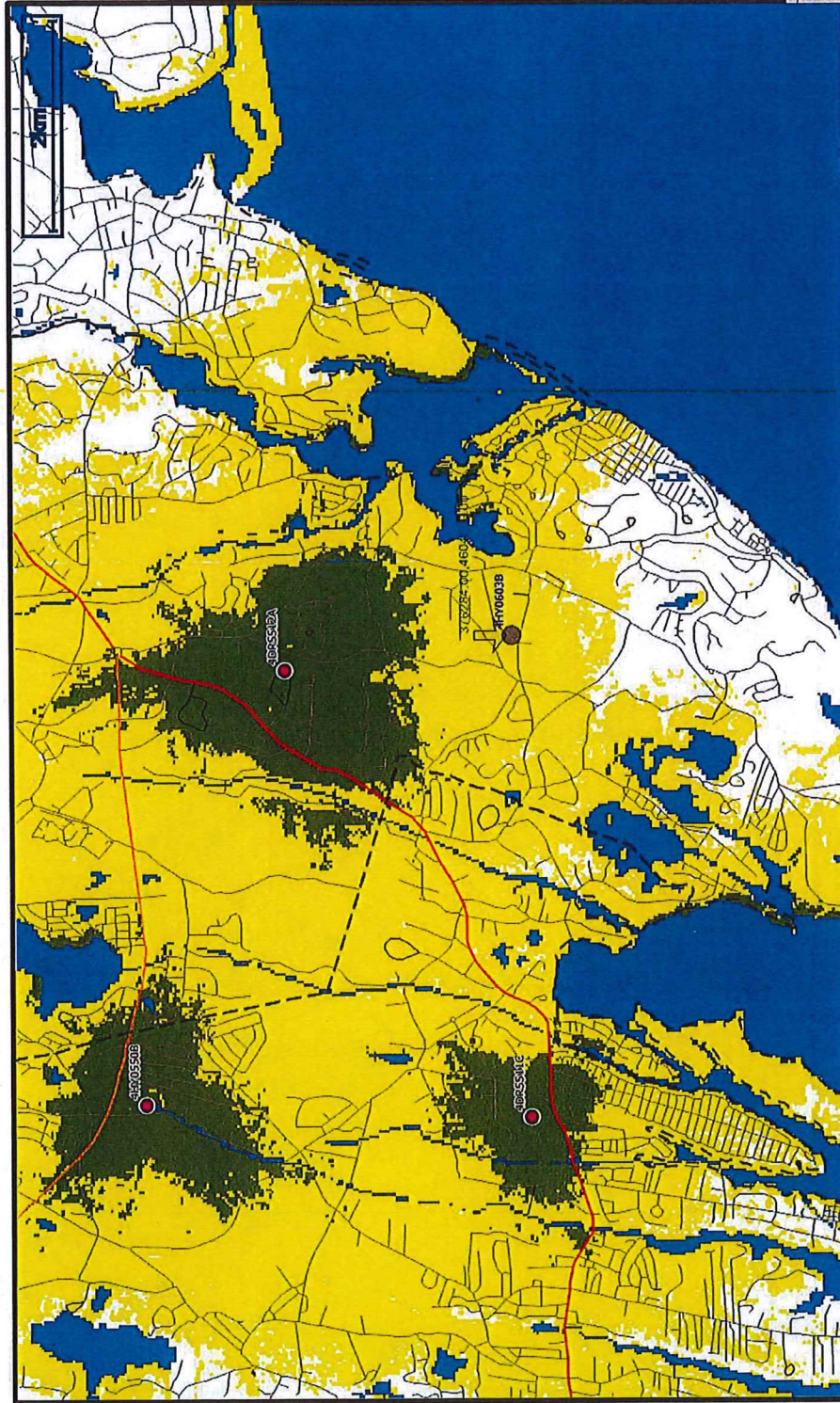
New Seabury - 700 MHz LTE Coverage with Proposed Site at 96 ft

Map Prepared 8/15/2018



5/1/18

Existing LTE 2100 MHz Coverage in Mashpee, MA



- Existing T-Mobile On-Air Site
- Propose T-Mobile Site

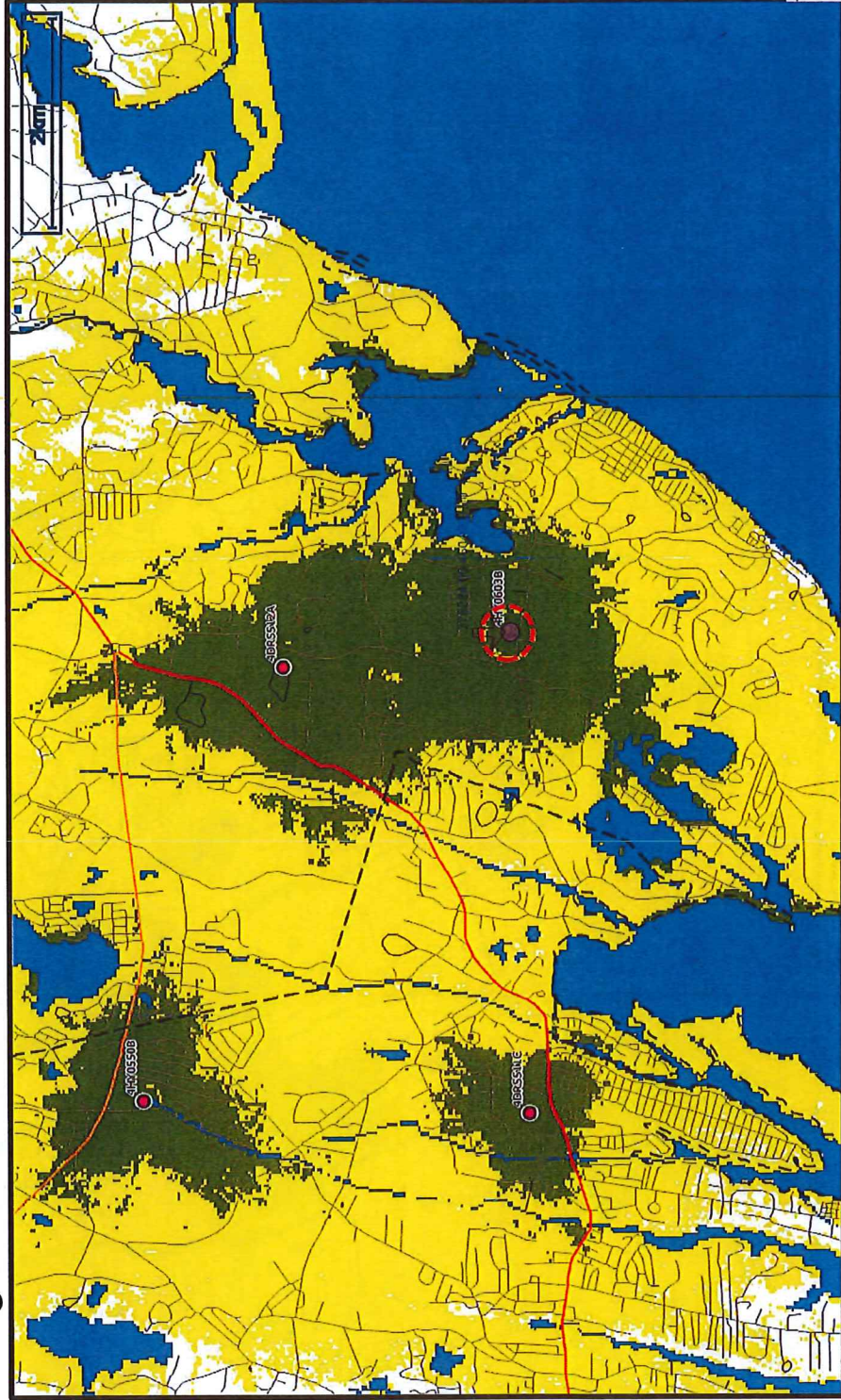
- Other_Road Line 1
- Primary_Road Line 1
- Secondary_Road Line 1
- Neighborhood_Road Line 1

Ranges

Minimum	Maximum	Label	Colour
-114	-97	In-Vehicle	Yellow
-97	0	In-Building	Green

5/1/18

Propose LTE 2100MHz Coverage with Primary Candidate at 101 Red Brook Road, Mashpee, MA at Height of 135 Feet



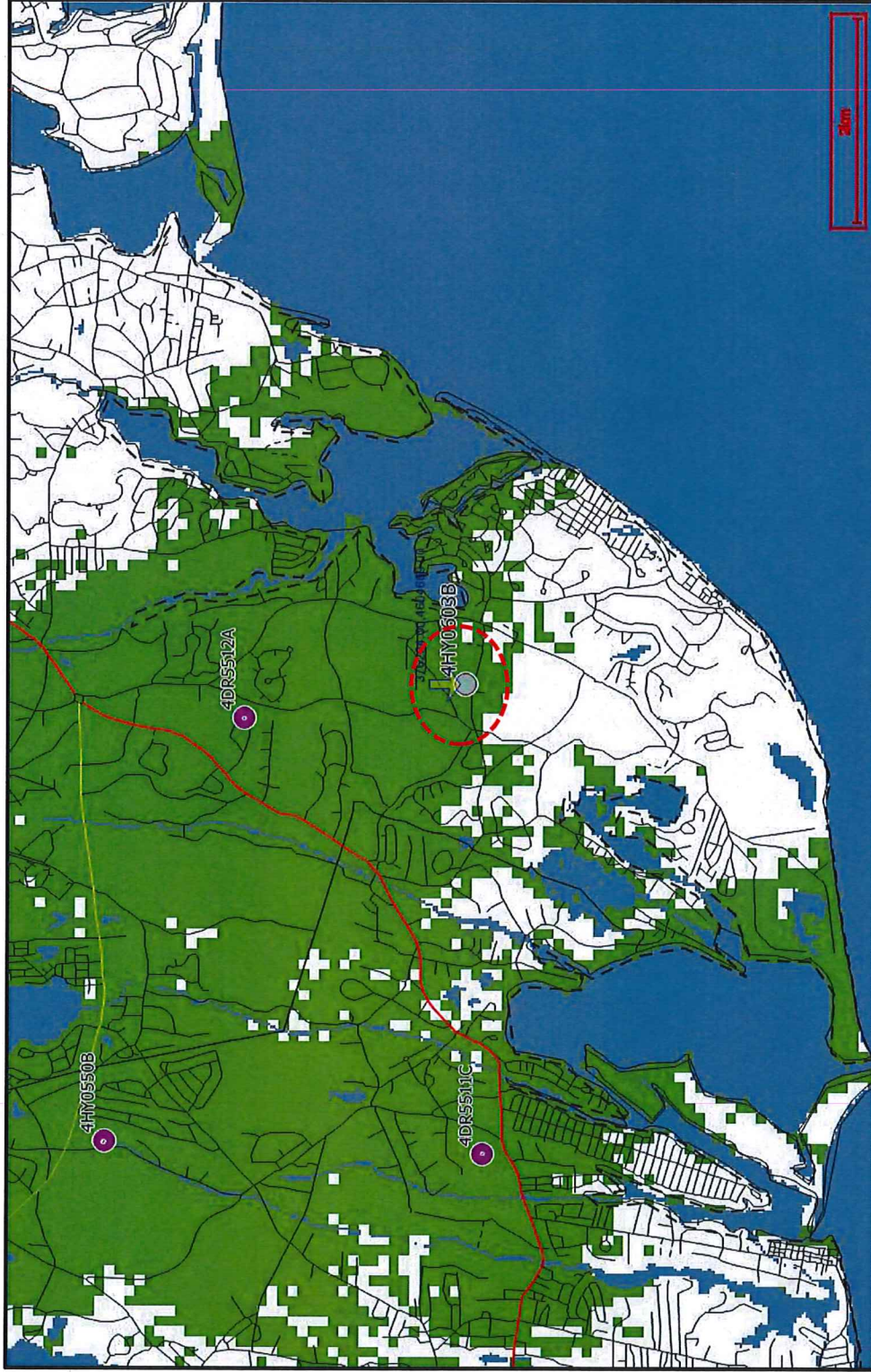
- Existing T-Mobile On-Air Site
- Propose T-Mobile Site

- Other_Road Line
- Primary_Road Line
- Secondary_Road Line
- Neighborhood_Road Line

Ranges		Minimum	Maximum	Label	Colour
	In-Vehicle	-114	-87		
	In-Building	-87	0		

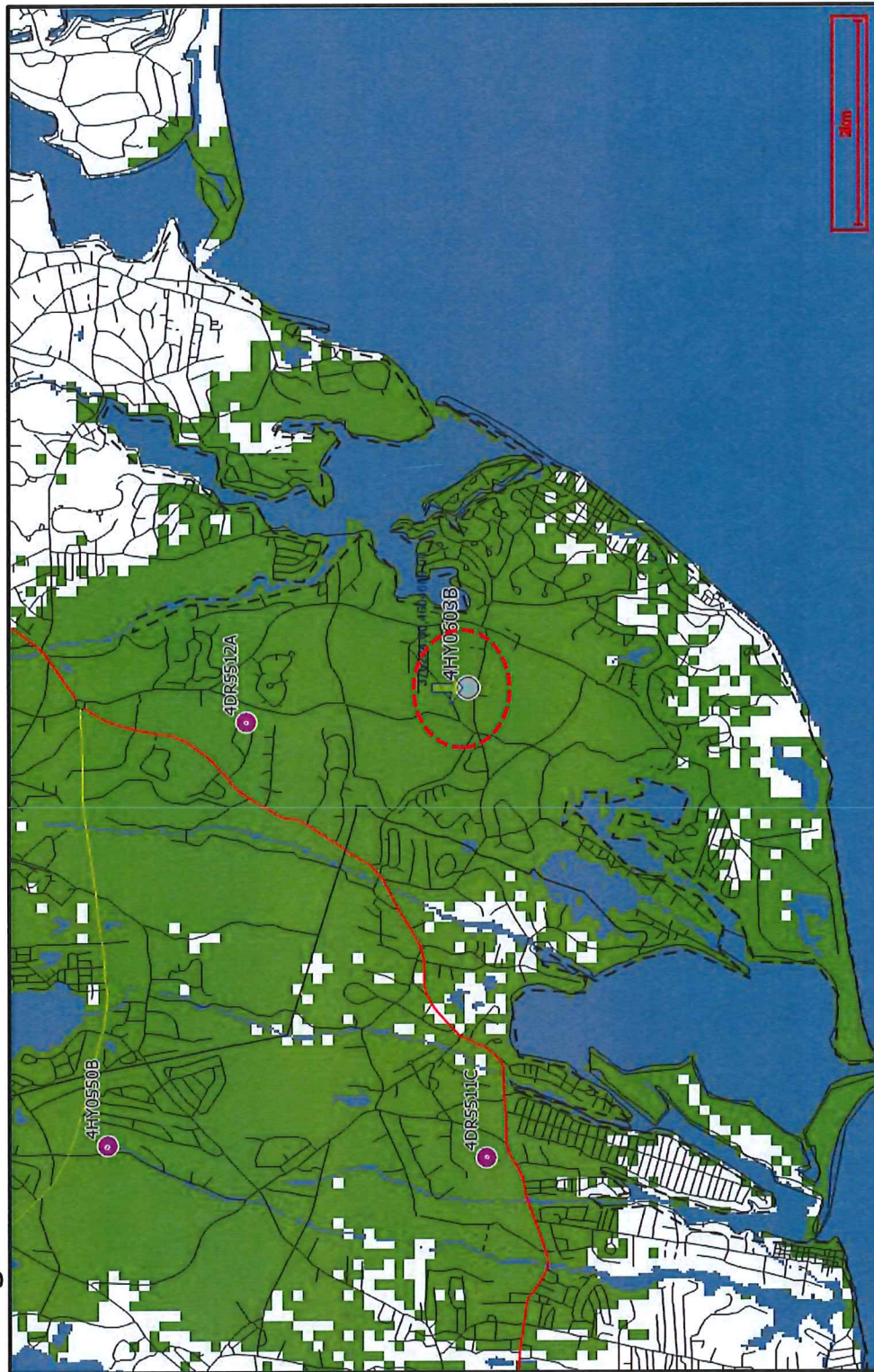
9/5/18

Existing LTE L700 MHz Coverage in Mashpee, MA



9/5/18

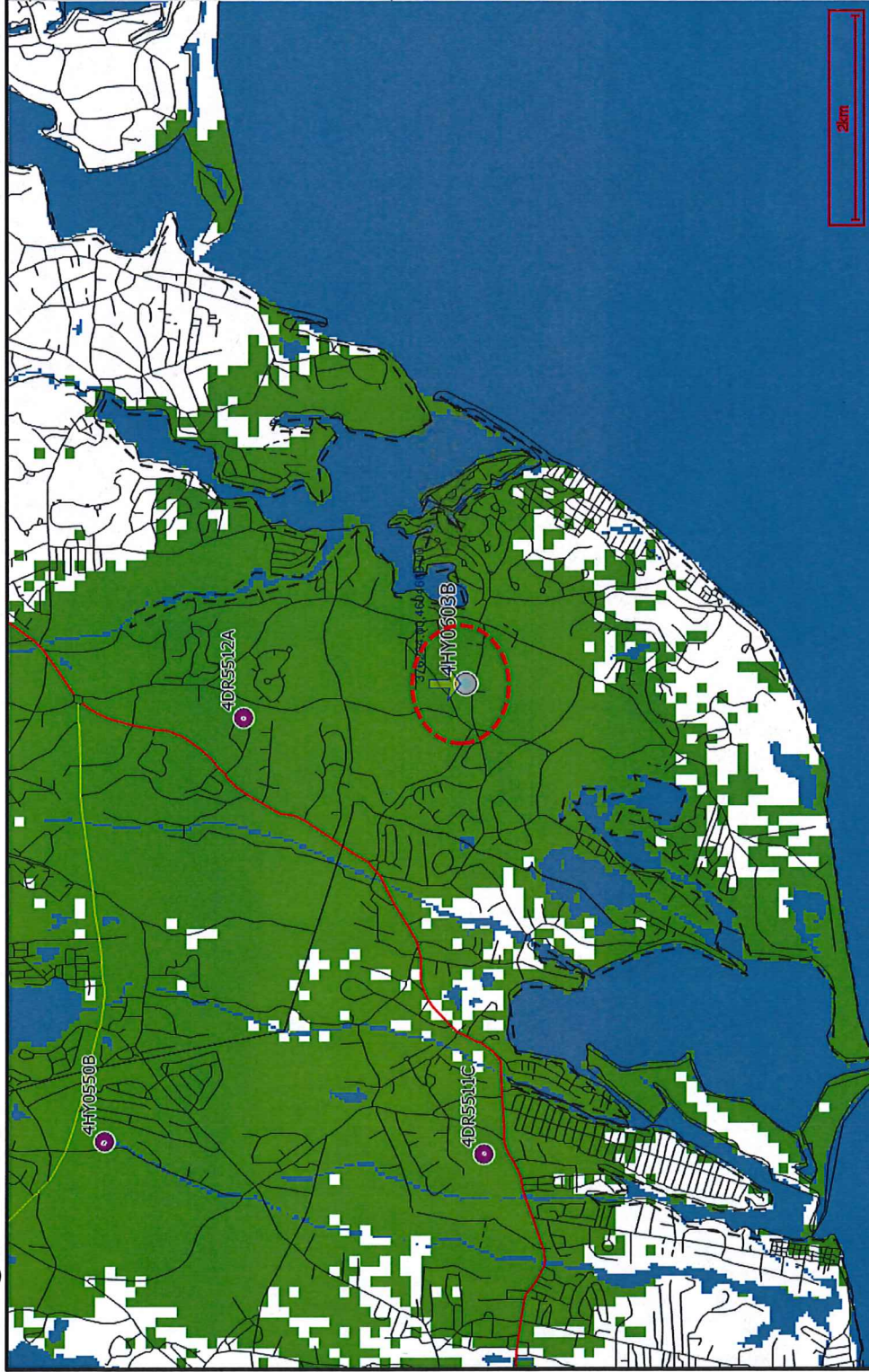
Propose LTE 700 MHz Coverage with Primary Candidate at 101 Red Brook Road, Mashpee, MA at Height of 135 Feet



Minimum	Maximum	Label	Colour
-57	0	In-Building	Green

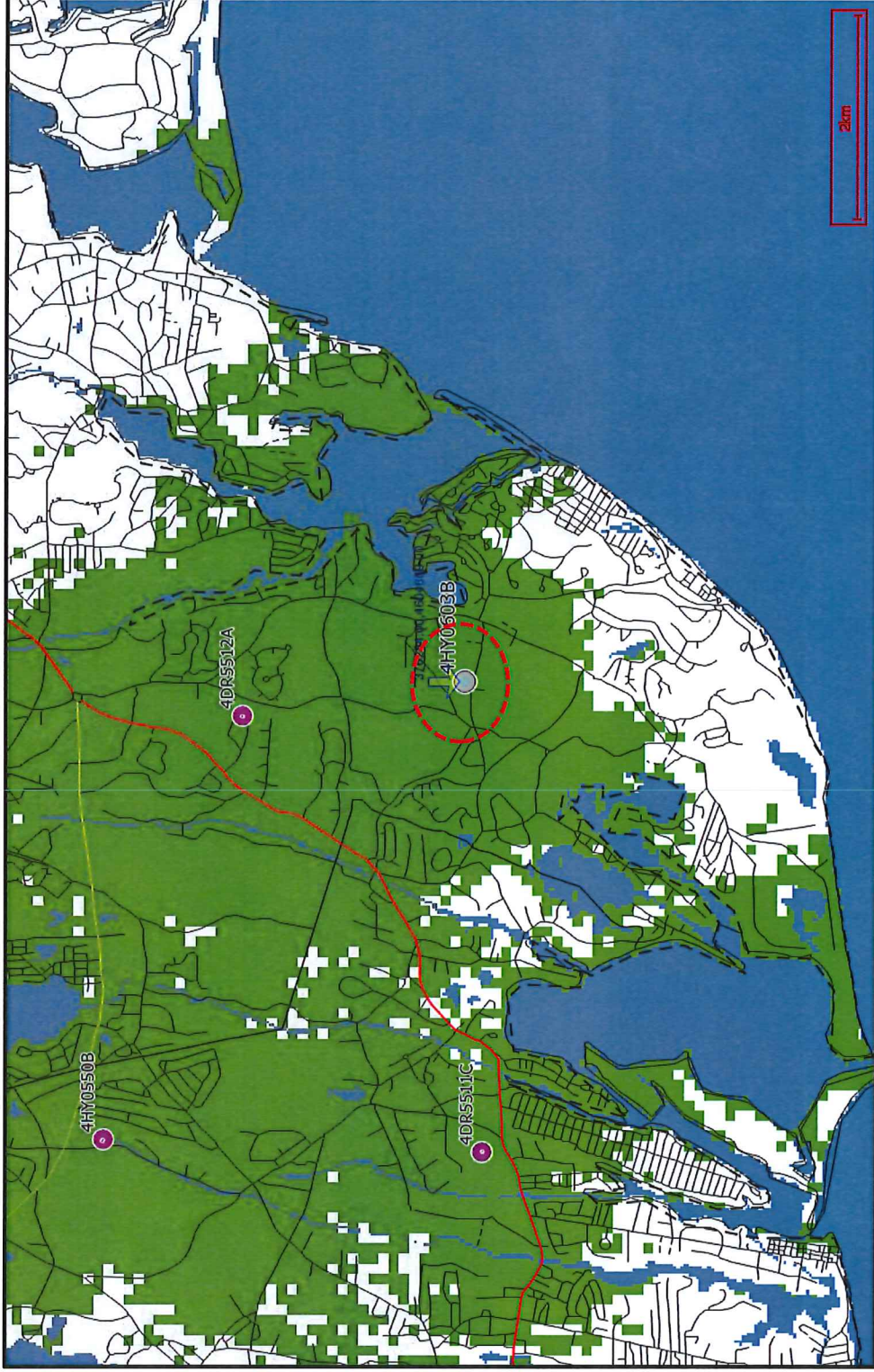
9/5/18

Propose LTE 700 MHz Coverage with Primary Candidate at 101 Red Brook Road, Mashpee, MA at Height of 110 Feet



9/5/18

Propose LTE 700 MHz Coverage with Primary Candidate at 101 Red Brook Road, Mashpee, MA at Height of 85 Feet



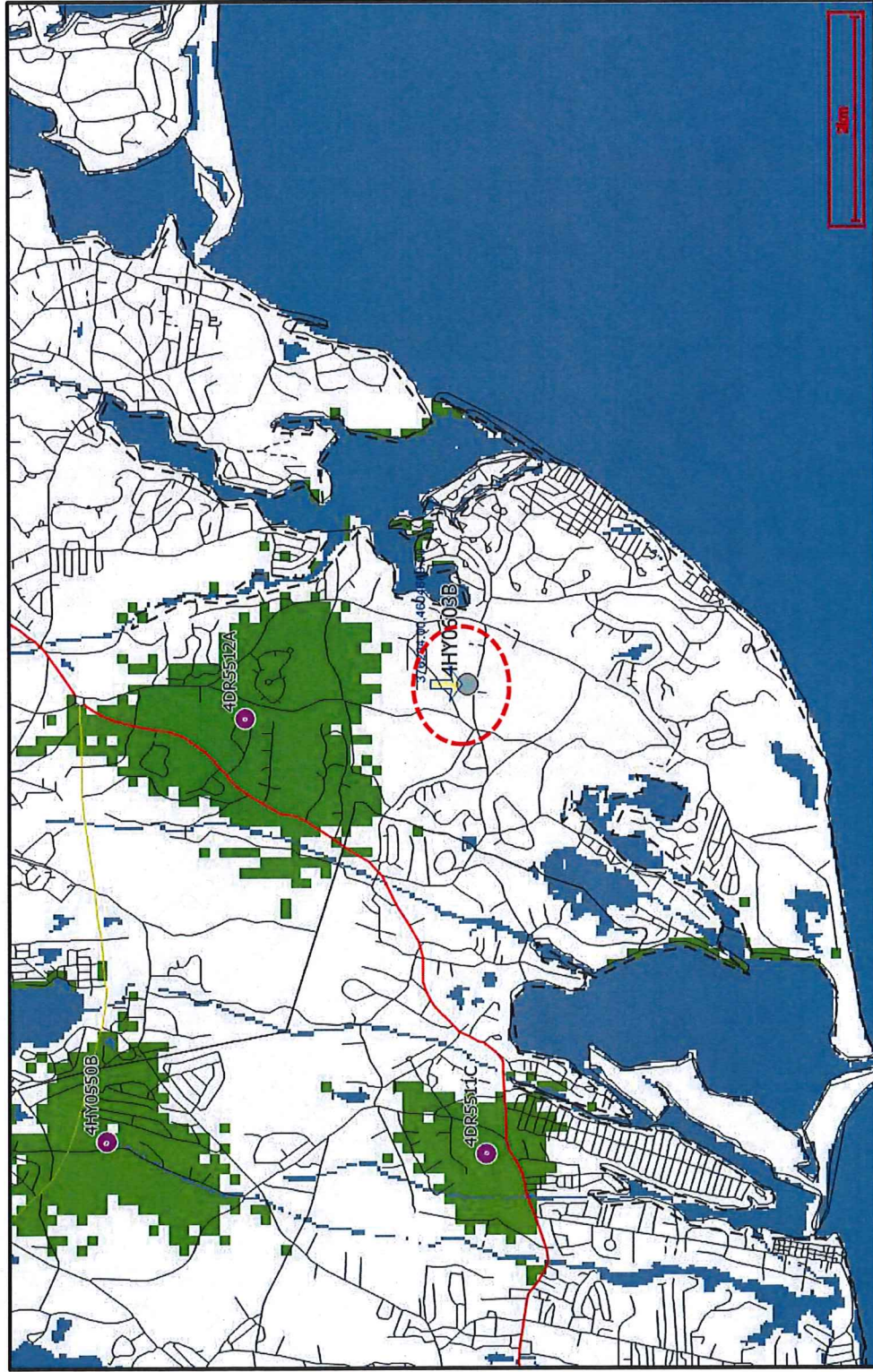
- Existing T-Mobile On-Air Site
- Propose T-Mobile Site

- Other_Road
- Line
- Primary_Road
- Line
- Secondary_Road
- Line
- Neighborhood_Road
- Line

Minimum	Maximum	Label	Colour
-57	0	In-Building	

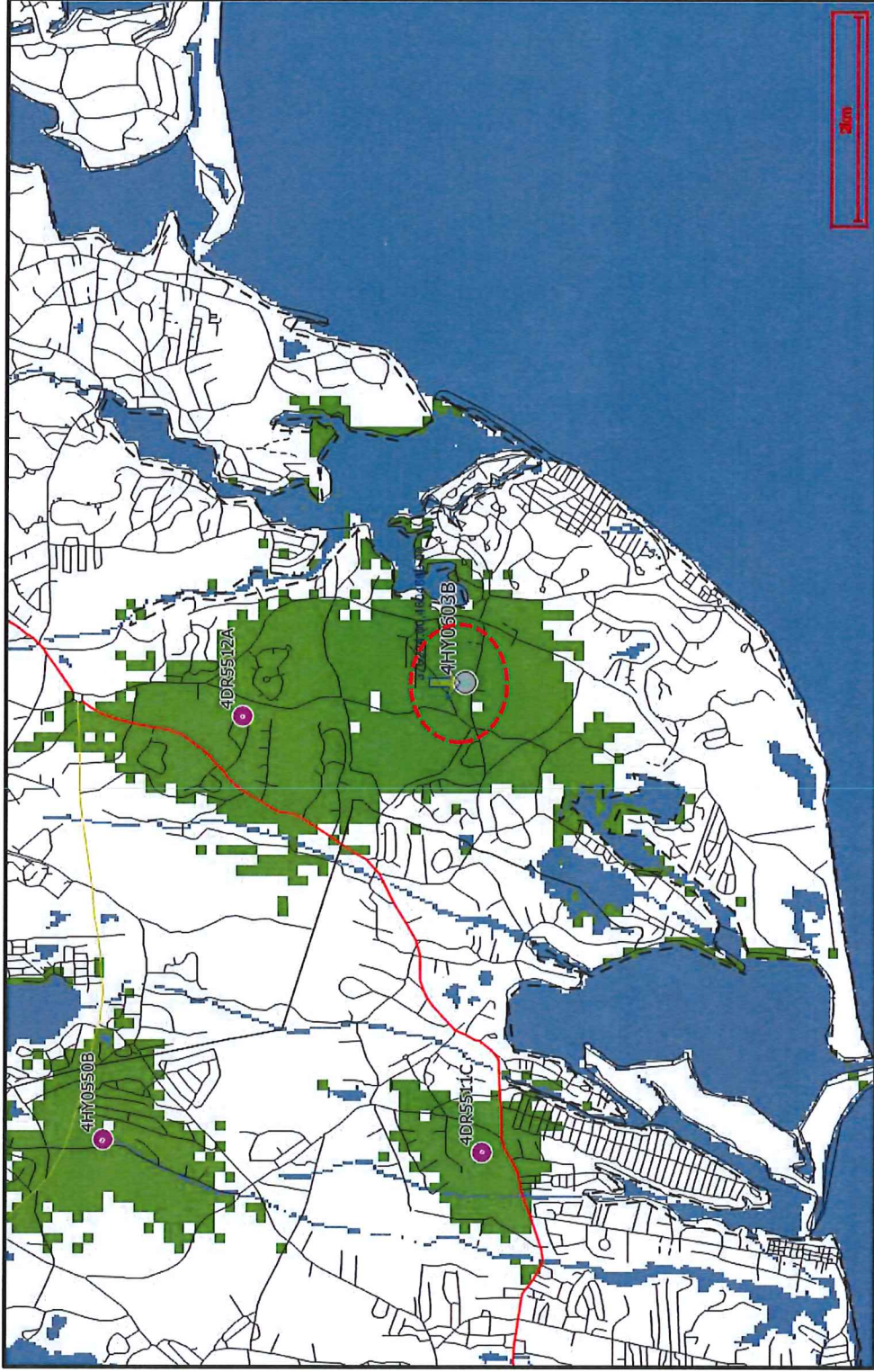
9/5/18

Existing LTE L2100 MHz Coverage in Mashpee, MA



9/5/18

Propose LTE L2100 MHz Coverage with Primary Candidate at 101 Red Brook Road, Mashpee, MA at Height of 135 Feet



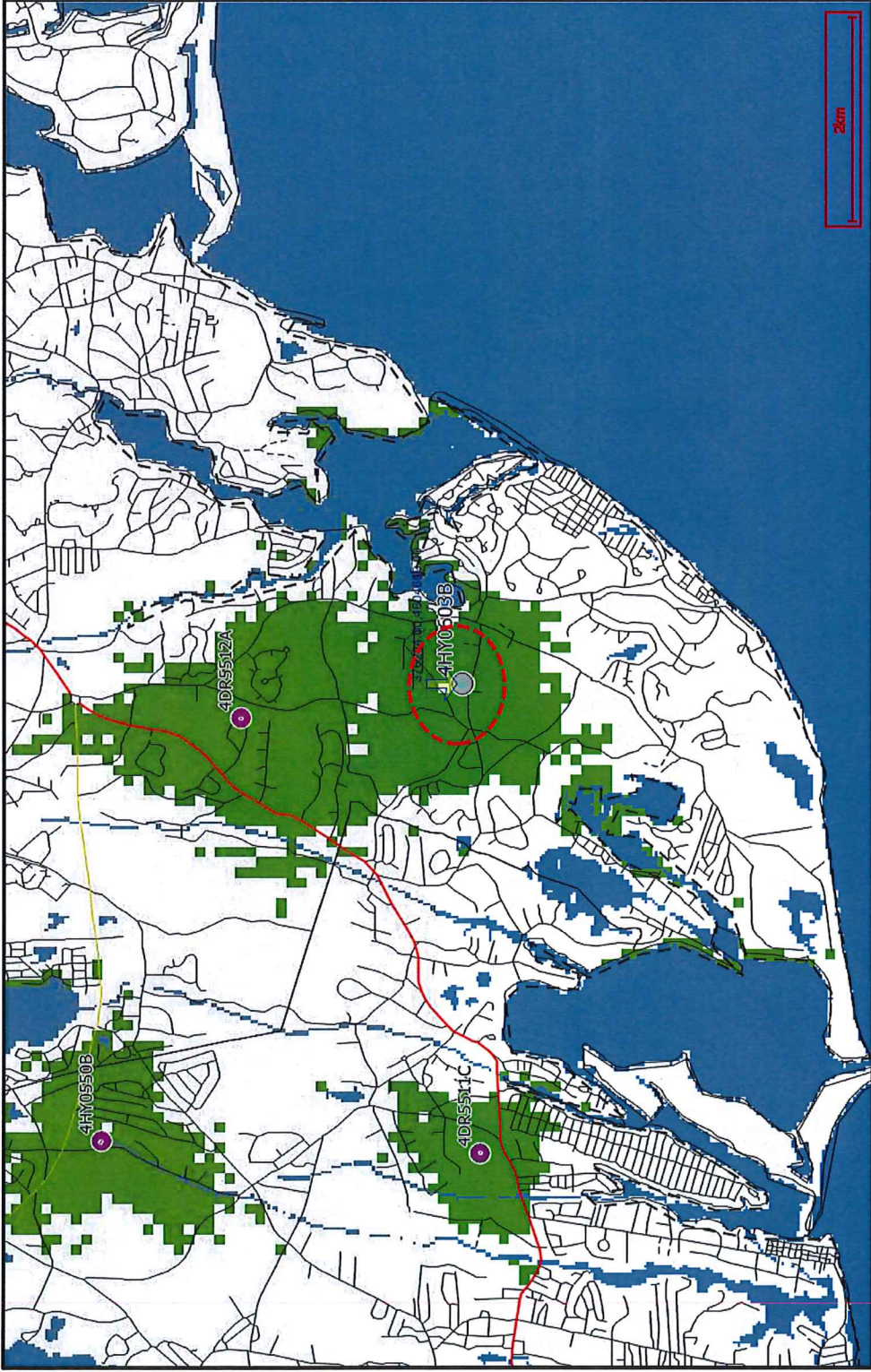
- Existing T-Mobile On-Air Site
- Propose T-Mobile Site

- Other_Road
- Line
- Primary_Road
- Line
- Secondary_Road
- Line
- Neighborhood_Road
- Line

Minimum	Maximum	Label	Colour
-57	0	In-Building	

9/5/18

Propose LTE L2100 MHz Coverage with Primary Candidate at 101 Red Brook Road, Mashpee, MA at Height of 110 Feet



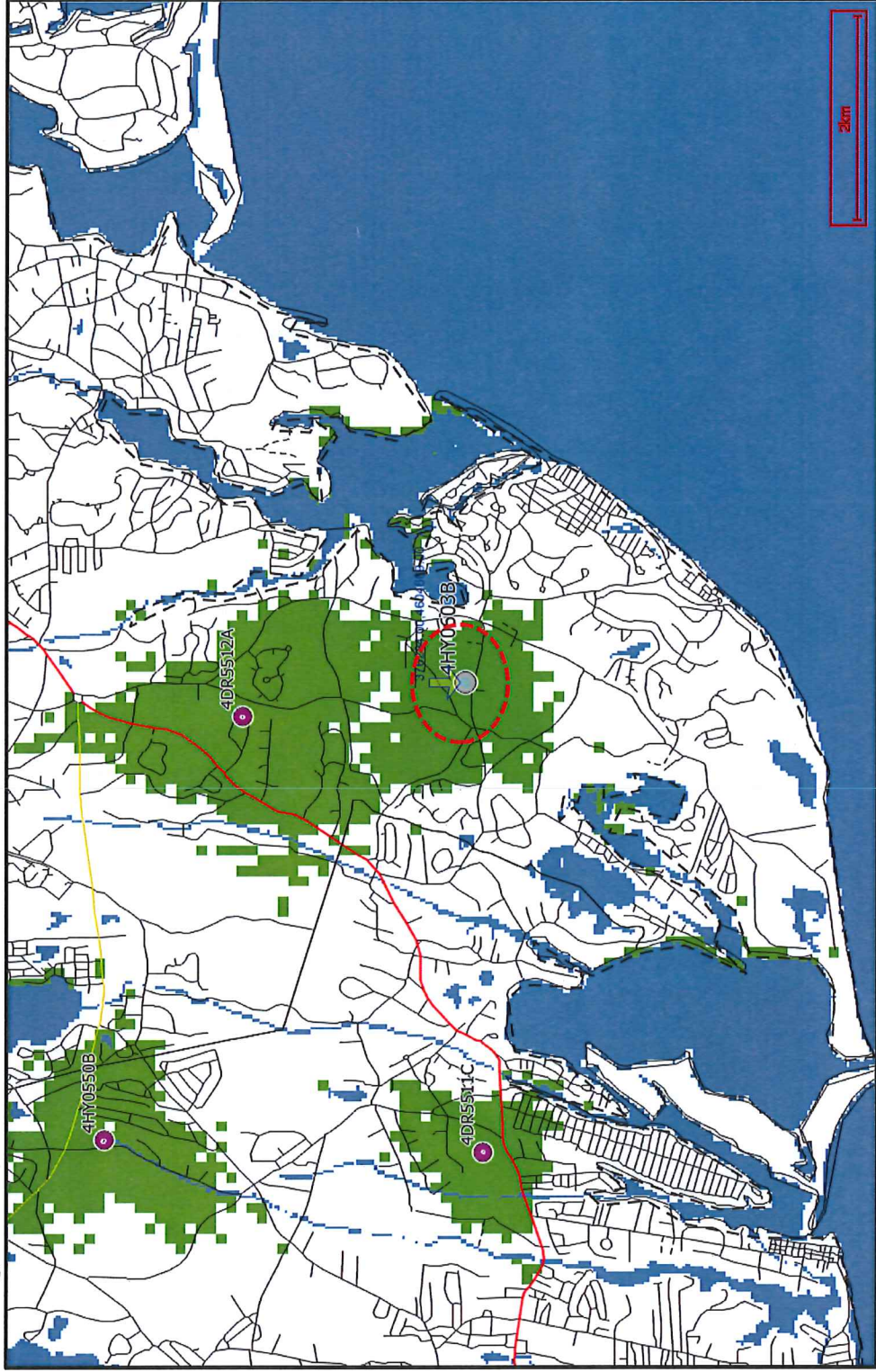
- Existing T-Mobile On-Air Site
- Propose T-Mobile Site

- Dither_Road Line 1
- Primary_Road Line 1
- Secondary_Road Line 1
- Neighborhood_Road Line 1

Minimum	Maximum	Label	Colour
-57	0	In-Building	Green

9/5/18

Propose LTE L2100 MHz Coverage with Primary Candidate at 101 Red Brook Road, Mashpee, MA at Height of 85 Feet



- Existing T-Mobile On-Air Site
- Propose T-Mobile Site

- Other_Road Line
- Primary_Road Line
- Secondary_Road Line
- Neighborhood_Road Line

Minimum	Maximum	Label	Colour
-37	0	In-Building	

Mr. Evan Lehrer, Town Planner
Mashpee Town Hall
16 Great Neck Road North
Mashpee, MA 02649

April 2, 2019

Dear Mr. Lehrer:

I hope my voice is part of a chorus, but since this is not high season, I am not confident that it will be. Nevertheless, I am certain that I speak for the majority of my neighbors in New Seabury, all of us taxpayers, to state unequivocally that we need a cell tower in the Town of Mashpee.

First, and most important, is the issue of safety. There were at least two occasions on our beach last summer when, during emergency situations, mobile access to "911" did not work. In a community such as ours, noted for its seaside location, the need to anticipate and be ready for emergencies is critical.

Second, Mashpee has many residents who depend on their mobile phones for business. Increasingly, people are opting out of landlines and depending solely on their cellular service. One of my neighbors has stated that conducting business from his home is fairly difficult and inconsistent because of the instability of the mobile service. As we look forward to younger people moving to our community, the need for strong mobile service will become more important to prospective home buyers and business owners. We are doing our town a disservice by not providing the optimal cellular reception possible.

Finally, and over the objections of the neighbors who feel that their real estate value will be impacted by a cellular tower, we can opt to use one of the myriad ways to camouflage it (whether it be a fake tree, a flagpole, a church steeple, etc.). And my response to these neighbors is that we must be as forward-thinking as most other towns if we wish to maintain real estate values and attract home buyers. Were we not brought up with telephone poles and wires and other unsightly icons of progress? It is amazing how quickly these became part of our landscape and our ability to move forward.

This town has all the raw materials: its location, its natural resources, and a group of people who are engaged in its stability. However, we must also consider the need to utilize current and future technology to our advantage and maintain our position as one of the premier locations on Cape Cod.

I urge you to vote "yes" on erecting a cellular tower in Mashpee.

Yours truly,

Judy Kahalas
2 Bowsprit Point, Mashpee
ENG2L@aol.com

**TOWN OF MASHPEE PLANNING BOARD
PUBLIC HEARING NOTICE**

Pursuant to Massachusetts General Laws, Chapter 40A, the Mashpee Planning Board will hold a public hearing on Wednesday, May 1, 2019 at 7:10 p.m. at the Mashpee Town Hall, 16 Great Neck Road North, to review the following zoning articles proposed for action at the May 6, 2019 Town Meeting.

Warrant Article 26:

To amend §174-45.6.E Light Industrial Overlay District

This article will require that developments permitted within the Light Industrial Overlay District conform to design guidelines for Cape Cod as approved by the Cape Cod Commission.

The full text of this article may be reviewed in the office of the Town Clerk or Town Planner at Mashpee Town Hall.

Submitted by:

Mary E. Waygan, *Chair*
Mashpee Planning Board

Publication dates: Friday, April 12, 2019
 Friday, April 19, 2019

MASHPEE TOWN CLERK

APR - 5 2019

RECEIVED BY _____

A handwritten signature in black ink, appearing to be the initials 'JA', is written over a horizontal line that follows the 'RECEIVED BY' text.