

CRAIG PAEPRER
Chairman

ANTHONY GIANNICO
Vice Chairman

BOARD MEMBERS
DAVE FURFARO
CARL STONE
KIM KUGLER
RAYMOND COTE
ROBERT FRENKEL

TOWN OF CARMEL
PLANNING BOARD



60 McAlpin Avenue
Mahopac, New York 10541
Tel. (845) 628-1500 – Ext.190
www.ci.carmel.ny.us

MICHAEL CARNAZZA
*Director of Code
Enforcement*

RICHARD FRANZETTI, P.E.
Town Engineer

PATRICK CLEARY,
AICP, CEP, PP, LEED AP
Town Planner

PLANNING BOARD AGENDA
JULY 31, 2019 – 6:30 P.M.

MEETING ROOM #1

EXECUTIVE SESSION – 6:30 PM TO 7:00 PM – POTENTIAL LITIGATION

TAX MAP # PUB. HEARING MAP DATE COMMENTS

PUBLIC HEARING

- | | | | | |
|---|------------|---------|---------|-------------------|
| 1. Downtown Mahopac Properties – 559 Route 6 | 75.12-2-26 | 7/31/19 | 6/17/19 | Amended Site Plan |
| 2. Hudson Valley Federal Credit Union – 150 Route 6 | 86.11-1-1 | 7/31/19 | | Bond Return |

SITE PLAN

- | | | | | |
|--|------------|--|---------|--------------------------|
| 3. Viscovich, Mario – South Lake Blvd | 75.42-1-69 | | 7/23/19 | Special Site Plan (Dock) |
| 4. Taco Bell (Former Friendly's Site)
1081 Stoneleigh Ave | 55.11-1-3 | | 7/16/19 | Amended Site Plan |
| 5. Homeland Towers Lake Casse – 254 Croton Falls Rd | 65.19-1-43 | | 7/12/19 | Site Plan (Cell Tower) |
| 6. Homeland Towers Dixon Lake - 36 Dixon Road | 54.-1-6 | | 7/12/19 | Site Plan (Cell Tower) |

TOWN BOARD REFERRAL

- | | | | | |
|--|-------------|--|--|----------------------------------|
| 7. Centennial Golf Club of New York, LLC. -
Fair St | 44.-2-2,3,4 | | | Change of Zoning
(Discussion) |
|--|-------------|--|--|----------------------------------|



#3

July 24, 2019

Craig Paepre, Carmel Planning Board Chairman & Members of the Board
Town Hall
60 McAlpin Ave
Carmel, NY 10512

RE: Mario Viscovich
South Lake Blvd
Mahopac, NY 10541
TM # 75.42-1-69

Dear Mr. Paepre & Members of the Board,

The following is my response to the memo from Mike Carnazza, Director of Code Enforcement:

1. Lot Depth and Width lines have been ;provided
2. High Water Mark is indicated
3. Wet Land Permit will be applied for
4. A Use Permit will be applied for NYS
5. Will apply to the ZBA for variances
6. No parking can be provided for

The following is my response to the memo from Pat Cleary, AICP, CEP, PP, LEED AP:

1. The necessary variance will be applied for]
2. A Note regarding the use of the property has been added
3. Shore Line has been located
4. Fence has been added to the Site Plan
5. Electric will be provided to the Site
6. The Drainpipe Easement is shown on the Survey and Site Plan
7. We will check with the NYSDEC to determine if a Permit is required
8. A Flood Plain Permit will be applied for
9. We will apply to the ECB

Two Muscoot Road North
Mahopac, New York 10541
P: (845) 628-6613 F: (845) 628-2807
Email: joel.greenberg@arch-visions.com
www.arch-visions.com





The following is my response to Richard Franzetti, P.E., Town Engineer:

1. Survey has been provided
2. Part of the deck is beyond the applicant's property
3. Legend has been provided
4. The Site Plan shows what is existing and proposed. The Survey show the existing conditions
5. A Carmel Flood Plain Permit will be applied for
6. We will apply to the ECB
7. The property is located on Rt 6N, Estate Road not a County Road. Since no work is being proposed on the State Highway, I do not believe we need to apply to NYSDOT
8. Information on the easement was submitted with the original application
9. With regards to details, please note the following
 - a. Construction details and sequence will be provided if we obtain the necessary variances and the project moves forward
 - b. The Site Plan submitted indicates that no parking will be required
 - c. Erosion Control will be added if the project moves forward
 - d. High Water Mark is shown
 - e. Fencing details will be provided if the project moves forward
 - f. No Off-Street Parking is proposed

I look forward to reviewing this project with you at your meeting of Wednesday July 31st, 2019

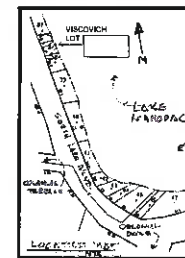
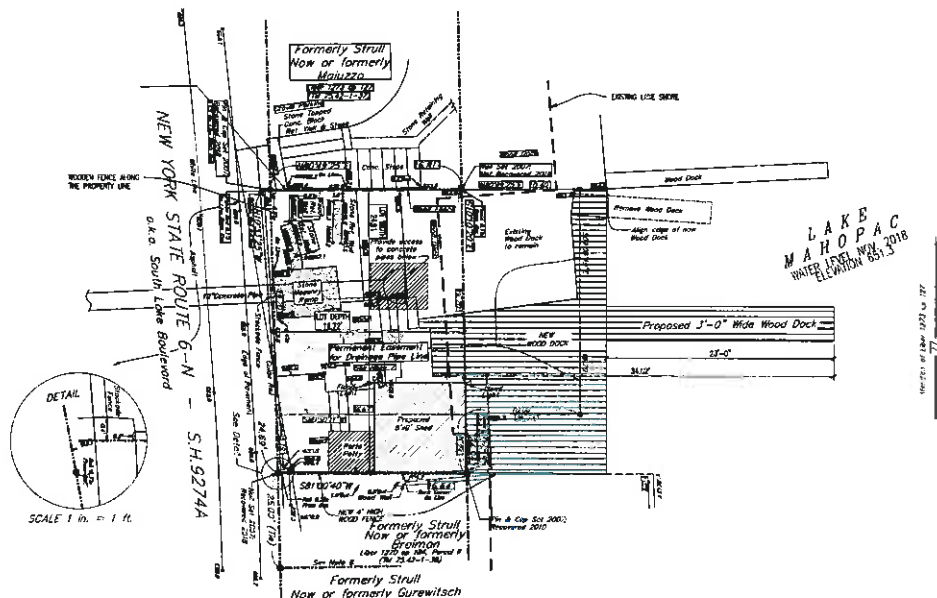
Very truly yours,

A handwritten signature in black ink, appearing to read "Joel Greenberg", is written over a horizontal line. Below the line, the text "Joel Greenberg, AIA, NCARB" is printed.

JLG/BAF

Two Muscoot Road North
Mahopac, New York 10541
P: (845) 628-6613 F: (845) 628-2807
Email: joel.greenberg@arch-visions.com
www.arch-visions.com





SITE DATA NOTES

PROPERTY OWNER: MARIO & ADRIAN VISCIOVICH

PROPERTY LOCATION: SOUTH LAKE BLVD
MAHOPAC, NY 10541

ZONE: R-120

PROPOSED USE: DECKS, DOCKS AND SHED
REQUIREMENTS AS PER SECTION 156-27

TAX MAP NO: 75.42-1-69

WATER/SEWER: NONE

DISTRICTS: MAHOPAC SCHOOL DISTRICT

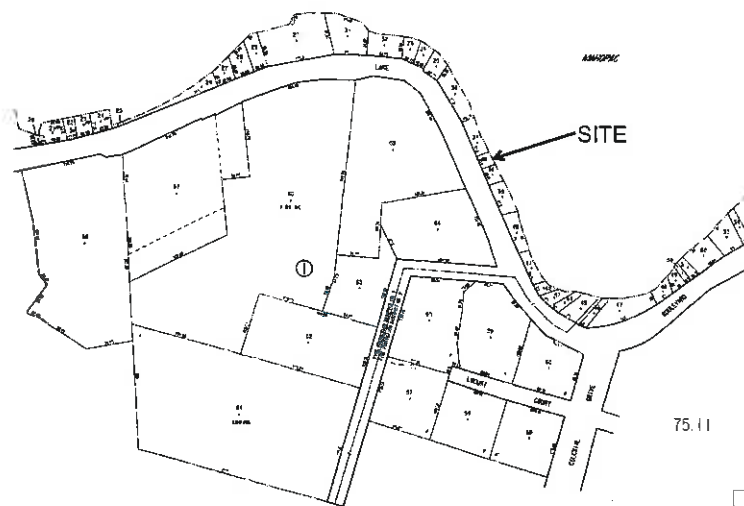
ZONING COMPLIANCE			
ZONING PROVISION (156-27)	REQUIRED	PROVIDED	VARIANCE
LAKE FRONTAGE	50 FT	24.94	25.06 FT
LOT DEPTH	30 FT	16.64	13.36 FT
AREA	3000 SF	417 SF	2583 SF
DOCK	25FT	34.02 FT (PROPOSED)	9.02 FT
PARKING SPACES	1 PS	0 PROVIDED	1 PS

1 SITE PLAN

BASED ON A SURVEY BY BABY & WATSON DATED 05/20/16

LIST OF ADJOINERS:

75.42-1-69 Matti Soper 1 Colonial Dr Mahopac, NY 10541	75.42-1-67 Gurewitsch, Steven 7 Colonial Dr Mahopac, NY 10541	75.42-1-66 Gurewitsch, Steven 7 Colonial Dr Mahopac, NY 10541
75.42-1-65 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-64 Remondy, Liane 244 South Lake Blvd Mahopac, NY 10541	75.42-1-63 Remondy, Liane 244 South Lake Blvd Mahopac, NY 10541
75.42-1-62 Matti Soper PO BOX 244 Mahopac, NY 10541	75.42-1-61 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-60 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541
75.42-1-59 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-58 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-57 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541
75.42-1-56 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-55 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-54 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541
75.42-1-53 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-52 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-51 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541
75.42-1-50 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-49 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-48 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541
75.42-1-47 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-46 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-45 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541
75.42-1-44 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-43 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-42 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541
75.42-1-41 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-40 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-39 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541
75.42-1-38 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-37 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-36 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541
75.42-1-35 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-34 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-33 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541
75.42-1-32 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-31 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-30 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541
75.42-1-29 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-28 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-27 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541
75.42-1-26 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-25 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-24 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541
75.42-1-23 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-22 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-21 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541
75.42-1-20 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-19 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-18 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541
75.42-1-17 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-16 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-15 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541
75.42-1-14 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-13 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-12 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541
75.42-1-11 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-10 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-9 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541
75.42-1-8 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-7 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-6 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541
75.42-1-5 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-4 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-3 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541
75.42-1-2 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-1 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541	75.42-1-0 Lester (Lester) Gurewitsch PO BOX 244 Mahopac, NY 10541



2 MAP OF ADJOINERS

NOTES:

- THE USE OF THIS SITE SHALL BE LIMITED TO THE OWNER AND THE IMMEDIATE FAMILY OR BONA GUESTS OF SUCH OWNER OF THE PARCEL.
- ELECTRIC IS PROPOSED
- EXISTING 18" DIA. CONCRETE PIPE WAS INSTALLED BY NY DOT. THE EASEMENT IS INDICATED ON THE SITE PLAN.

ARCHITECTURAL
VISCIOVICH

2 MUSCOOT ROAD NORTH
MAHOPAC, NY 10541
P 945-828-0543
F 945-828-2007

PROJECT: DECKS, DOCK & SHED FOR MARIO VISCIOVICH

PROJECT ADDRESS: SOUTH LAKE BLVD
MAHOPAC, NY 10541
TAX MAP NO: 75.42-1-69

MAKING ADDRESS: MARIO & ADRIAN VISCIOVICH
100 SOUTH LAKE BLVD
MAHOPAC, NY 10541

SITE PLAN

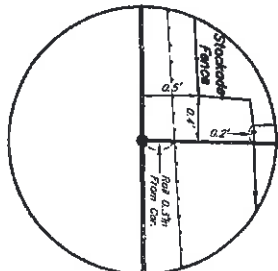
SCALE: AS SHOWN

AS-100

BENCHMARK
WALL CORNER
ELEV. 660.66

NEW YORK STATE ROUTE 6-N - S.H.9274A
a.k.a. South Lake Boulevard

DETAIL



SCALE 1 in. = 1 ft.

Area = 417 Sq. Ft.

This map was prepared for the exclusive use of and is certified only to:

MARIO VISCOVICH
ADRIAN M. VISCOVICH



3063 Route 9
Cold Spring, NY 10516
www.Badey-Watson.com

845.265.9217
845.265.4428 (Fax)
877.3.141.593 (Toll Free)

Formerly Strull
Now or formerly
Maiuzzo

Liber 1273 op 127
(TM 75.42-1-37)

Gravel Parking
Stone Topped
Circ. Block
Ret. Wall & Steps

N80°49'25"E

16.81'

Wood Dock

Wood Fence

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Wood Dock

Formerly Strull
Now or formerly Breiman

Liber 1270 op 184, Parcel II
(TM 75.42-1-38)

Formerly Strull
Now or formerly Gurewitsch

Notes

1. COPYRIGHT "2018" by BADEY & WATSON, Surveying & Engineering, P.C. All Rights Reserved. Unauthorized duplication is a violation of applicable laws.
2. Unauthorized alteration or addition to a document prepared by a licensed land surveyor is a violation of Section 7202, Subdivision 2 of the New York State Education Law.
3. All certifications are valid for this map and copies thereof only if said map or copies bear the endorsement seal of the surveyor whose signature appears hereon.
4. If underground improvements, easements, or encroachments exist and are neither visible during normal field survey operations nor described in instruments provided to these surveyors, they may not be shown on this map.
5. This property may be affected by instruments which have not been provided to these surveyors. Users of this map should verify title with their attorney or a qualified title examiner.
6. This survey is of property described in the Putnam County Clerk's Liber 1721 of deeds at page 408.
7. This easement is as shown on "Onondaga Lake-Mahopac Lake, Part 2, S.H. No. 9274-A, Map No. 73, Parcel No. 63, P.N. 8458.08, Putnam County, N.Y.S.D.G.T. Description and Map for the Acquisition of Property" filed with the NYS Department of Transportation.
8. This line is as shown on a survey entitled "Line Between Lots 3A & 15, Bennett Struck..." dated January 8, 1980 prepared by Charles R. Carpenter, Land Surveyor.
9. The vertical datum hereon is assumed.
10. Revised May 8, 2019 to show new dock located May 3, 2019. Remainder of survey not brought to date.
11. Revised July 8, 2019 to show dock, dock and fence changes along southerly line located July 8, 2019. Survey not otherwise brought to date.

LEGEND

x	SPOT ELEVATION
x12657.2	BOTTOM OF LAKE
x12657.2	TOP & BOTTOM OF WALL

LAKE MAHOPAC
Water Level Nov. 2018
Elevation 651.3

Meridian of Liber 1273 op 127

SURVEY OF PROPERTY
PREPARED FOR

MARIO & ADRIAN M. VISCOVICH

SITUATE IN THE
TOWN OF CARMEL
PUTNAM COUNTY
NEW YORK

SCALE 1 in. = 5 ft. SEPTEMBER 21, 2007

We hereby certify that the survey shown hereon was completed by us on September 21, 2007, that this map was completed on October 2, 2007, and that this survey has been prepared in accordance with the existing Code of Practice for Land Surveys as adopted by The New York State Association of Professional Land Surveyors, Inc. Brought to date November 18, 2018. Revised May 8, 2019. See Note 10. Revised July 8, 2019. See Note 11.

BADEY & WATSON
Surveying & Engineering, P.C.

NEW YORK STATE LICENSED LAND SURVEYOR
LICENSE No. 49789



Site Planning	Environmental Studies
Civil Engineering	Entitlements
Landscape Architecture	Construction Services
Land Surveying	3D Visualization
Transportation Engineering	Laser Scanning

#4

July 17, 2019

Chairman Craig Paepre and Members of the Planning Board
Town of Carmel Planning Board
60 McAlpin Avenue
Mahopac, New York 10541

RE: JMC Project 18188
Proposed Restaurant Redevelopment (Former Friendly's Site)
1081 Stoneleigh Avenue
Town of Carmel, NY

Dear Chairman Paepre and Members of the Board:

On behalf of Kai Carmel LLC, we are pleased to provide the following responses to comments contained in memorandums from the Town Engineer, to your board. Accordingly, we are pleased to provide the materials and responses enumerated below. In addition, enclosed in this submission are revised architectural elevations for the building which have been coordinated with your Board's architectural consultant, Warshauer Mellusi Warshauer Architects (WMW). Based on our meetings with WMW, we received valuable input and we believe we were able to revise the building's architecture to achieve the look desired by your Board in the Route 6 corridor.

Enclosed please find a copy of the below listed materials for your review:

1. JMC PLLC Drawings:

<u>Dwg. No.</u>	<u>Title</u>	<u>Rev. #/Date</u>
C-000	"Cover Sheet"	3 07/16/2019
C-010	"Existing Conditions Map"	4 07/16/2019
C-100	"Layout Plan"	3 07/16/2019
C-101	"Truck Turning Plan"	2 07/16/2019
C-200	"Grading and Erosion & Sediment Control Plan"	3 07/16/2019
C-900	"Construction Details"	3 07/16/2019
C-901	"Construction Details"	3 07/16/2019
C-902	"Construction Details"	3 07/16/2019
L-100	"Landscaping Plan"	3 07/16/2019

2. WAG Architects Drawings:

<u>Dwg. No.</u>	<u>Title</u>	<u>Rev. #/Date</u>
A-3	"Exterior Elevations"	07/17/2019

JMC Planning Engineering Landscape Architecture & Land Surveying, PLLC | JMC Site Development Consultants, LLC

For ease of your review, we have repeated the comments in italics, followed by our responses:

Memorandum from Richard J. Franzetti P.E., Town Engineer

Comment No. 1

The following referrals would appear to be warranted:

- a. *The Town of Carmel Environmental Conservation Board (ECB)*
- b. *Carmel Fire Department*

The applicant has acknowledged this comment.

Response No. 1

This comment is so noted. We have received a wetland permit from the Environmental Conservation Board and the site plan has been provided to the Carmel Fire Department for their review and comment.

Comment No. 2

Permits from the following would appear necessary:

- a. *ECB*

The applicant has acknowledged this comment and will work with this department to determine if this requirement is needed as the wetland delineation validation from the NYSDEC is still in process.

Response No. 2

This comment is so noted. We have had the wetlands associated with the stream flagged by Ecological Solutions and it was determined that the wetlands are locally regulated. We have applied for and received a permit from the Environmental Conservation Board accordingly.

Comment No. 3

Vehicle Movement Plans should be provided which provide the following:

- a. *All turning radii for the site should be graphically provided. This includes the turning radii into the modified site entrances.*

Response No. 3

We have prepared drawing C-101, "Truck Turning Plan", showing a truck turning movement for a typical truck that would be accessing the site. The site entrance is not proposed to be modified with the exception of a painted island adjacent to the building's sidewalk. This island has been taken into account in our turning analysis.

Comment No. 4

The note on Drawing C-100 identifies proposed mill and resurface (typical), however the Pavement resurfacing detail on C-900 has a Truing and leveling as required. Please bring these in conformance with each other. It is recommended that milling be performed.

Response No. 4

We are indeed calling out milling and resurfacing over the entire lot, however in localized areas truing and leveling may be required to provide a quality finished surface; hence the reason the detail is provided. Due to the nature of the milling operation these areas cannot be identified prior to construction.

Comment No. 5

Provide location of and calculations for grease trap sizing.

Applicant has noted that there is a grease trap onsite and that it will be inspected/cleaned. Documentation of this inspection/cleaning should be provided to the Engineering Department.

Response No. 5

This comment is so noted, documentation of the inspection/cleaning will be provided to the Engineering Department when performed. The applicant has engaged the company that previously maintained this trap and will engage them once site plan approval is received.

Comment No. 6

All planting should be verified by the Town of Carmel Wetlands Inspector

Response No. 6

This comment is so noted. A note has been added to JMC drawing L-100, "Landscaping Plan", accordingly.

Comment No. 7

All plantings shall be installed per §142 of the Town of Carmel Town Code.

Response No. 7

A note has been added to JMC drawing L-100, "Landscaping Plan", accordingly.

Comment No. 8

All curbs and asphalts should meet the specifications provided in the Town of Carmel Town Code.

Response No. 8

A note has been added to JMC drawing C-100, "Layout Plan", accordingly.

Comment No. 9

The applicant should provide wind load calculations for the canopy.

Response No. 9

Wind load calculations for all overhanging features will be provided during the permitting phase and will meet the requirements of the New York State and International Building Codes. A note has been added to JMC drawing C-100, "Layout Plan", accordingly.

Comment No. 10

Sidewalks, manholes and guiderails should be installed per §128 of the Town of Carmel Town Code. Applicant has noted comments 5 through 9. Note should be added to the drawings.

Response No. 10

This comment is so noted. Notes have been added to both drawing C-100, "Layout Plan", and L-100, "Landscaping Plan", accordingly.

Comment No. 11

The applicant should provide a water and wastewater use report.

Applicant has provided some basic information. A full report of water/wastewater should be provided as a standalone document.

Response No. 11

As requested, we have prepared an engineering report detailing the proposed water and wastewater usage. It is provided herein for your review.

Comment No. 12

Should any public improvements be deemed necessary as part of the development of the tract, a Performance Bond and associated Engineering Fee must eventually be established for the work.

The applicant has acknowledged this comment.

Response No. 12

This comment is so noted.

We trust that this information is sufficient for you to complete your review of this Application and look forward to discussing this matter with you further. If you have any questions or require additional information with regard to the information provided above, please do not hesitate to contact our office at 914-273-5225. Thank you for your consideration.

Sincerely,

JMC Planning Engineering Landscape Architecture & Land Surveying, PLLC

A handwritten signature in blue ink, appearing to read "James A. Ryan".

James A. Ryan, RLA
Principal

A handwritten signature in blue ink, appearing to read "Paul J. Dumont".

Paul J. Dumont, EIT
Senior Designer

SITE PLAN APPROVAL DRAWINGS

PROPOSED RESTAURANT REDEVELOPMENT

TAX MAP SECTION 55.11 | BLOCK 1 | LOT 3
1081 STONELEIGH AVENUE
TOWN OF CARMEL, NEW YORK

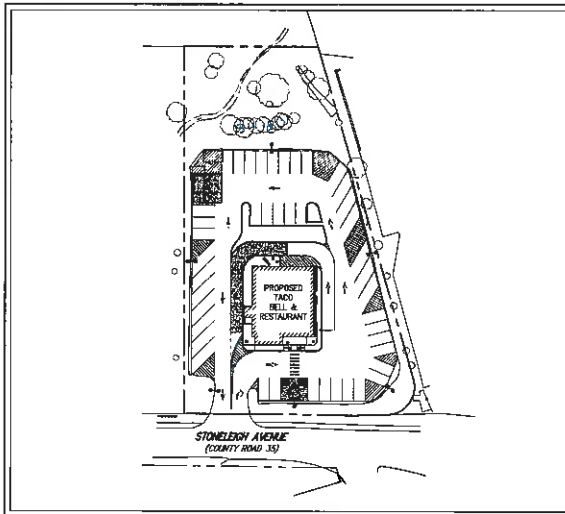


Applicant:
KAI CARMEL, LLC
25 ROUTE 59
NYACK, NY 10960
(201) 315-3670

Owner:
URSTADT BIDDLE PROPERTIES INC.
321 RAILROAD AVE
GREENWICH, CT 06830
(203) 863-8200

Attorney:
HARRIS BEACH, PLLC
445 HAMILTON AVE, SUITE 1206
WHITE PLAINS, NY 10601
(914) 683-1212

Surveyor:
BADEY & WATSON SURVEYING & ENGINEERING, P.C.
3063 ROUTE 9
COLD SPRING, NY 10516
(845) 265-8217



AREA MAP
SCALE: N.T.S.

JMC Drawing List:

- C-000 COVER SHEET
- C-010 EXISTING CONDITIONS MAP
- C-100 LAYOUT PLAN
- C-101 TRUCK TURNING PLAN
- C-200 GRADING AND EROSION & SEDIMENT CONTROL PLAN
- C-900 CONSTRUCTION DETAILS
- C-901 CONSTRUCTION DETAILS
- C-902 CONSTRUCTION DETAILS
- L-100 LANDSCAPING PLAN

TABLE OF LAND USE

SECTION 55.11 BLOCK 1, LOT 3 ZONE "C" - "COMMERCIAL"				
DESCRIPTION	REQUIRED PERMIT	EXISTING	PROPOSED	
LOT AREA (FEET)	40,000	52,841	52,841	
LOT WIDTH (FEET)	200	164 ⁽¹⁾	164	
LOT DEPTH (FEET)	200	323	323	
BUILDING HEIGHT (FEET)	35	<35	<35	
GROSS FLOOR AREA (SQUARE FEET)	5,000	3,500 ⁽²⁾	3,500	
LOT COVERAGE BY BUILDING (PERCENT)	30%	8.6	8.6	
YARDS				
FRONT BUILDING SETBACK (FEET)	40	81.5	81.5	
REAR BUILDING SETBACK (FEET)	30	192.3	192.3	
SIDE BUILDING SETBACK (FEET)	25	52.7	52.7	
PARKING SUMMARY				
TOTAL SPACES (SPACES)	45	55	45	
STANDARD SPACES (SPACES)	43	52	43	
HANDICAP SPACES (SPACES)	2	3	2	

NOTES:

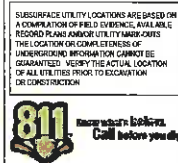
- VARIANCES WERE OBTAINED IN 1984 FOR LOT WIDTH AND MINIMUM FLOOR AREA.
- PER SECTION 158-42 OF THE TOWN OF CARMEL ZONING CODE, FOR RESTAURANT USES, 1 PARKING SPACE IS REQUIRED FOR EACH 3 SEATS, INCLUDING BARSTOOLS, OR 1 PARKING SPACE IS REQUIRED FOR EACH 40 SQUARE FEET OF FLOOR AREA DEDICATED TO PATRON USE, WHICHEVER IS NOT EXCEEDED BY THE NUMBER OF FIXED SEATS.
- THAT-BELL RESTAURANT: 38 SEATS / 3 = 13 PARKING SPACES
FUTURE RESTAURANT SEATING: MAXIMUM 40 SEATS OR MAXIMUM 160 S.F. OF FLOOR AREA DEDICATED TO PATRON USE.
TOTAL: 45 PARKING SPACES REQUIRED



VICINITY MAP
SCALE: 1" = 1,000'
SOURCE: USGS / 2016

GENERAL CONSTRUCTION NOTES APPLY TO ALL WORK HEREIN:

- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CALL AT THE "STREET" (1-800-485-7862) TO HAVE UNDERGROUND UTILITIES LOCATED. EXPLORATORY EXCAVATIONS SHALL COMPLY WITH CITY OF CARMEL REQUIREMENTS. NO WORK SHALL COMMENCE UNTIL ALL UTILITIES HAVE BEEN NOTICED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL PUBLIC AND PRIVATE UNDERGROUND AND SURFACE UTILITIES AND CONSTRUCTED AT OR ADJACENT TO THE SITE OF CONSTRUCTION. BEFORE ANY WORK MAY BE UNDERTAKEN BY THE CONTRACTOR'S OPERATIONS, THIS SHALL BE DONE WHETHER OR NOT THEY ARE SHOWN ON THE CONTRACT DRAWINGS. IF THEY ARE SHOWN ON THE DRAWINGS, SUCH LOCATIONS ARE NOT GUARANTEED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE MOST AVAILABLE RECORDS, AND IN ANY CASE, PRIOR TO ANY WORK, THE CONTRACTOR SHALL, AT HIS OWN RISK, IMMEDIATELY REPAIR OR REPLACE ANY STRUCTURES OR UTILITIES THAT BE DAMAGED AND SHALL CONSIDERATELY PROCEED WITH CAUTION TO PREVENT UNNECESSARY INTERRUPTION OF UTILITY SERVICE.
- CONTRACTOR SHALL HAVE HIS BEST PITS TO MONITOR THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL NOTIFY EXISTING UTILITIES BEFORE ANY WORK IS UNDERTAKEN. IF CONTRACTS ARE IN PLACE, THE CONTRACTOR SHALL MAINTAIN, AND MAINTAIN THE APPLICABLE MUNICIPALITY OR AGENCY SHALL BE NOTICED IN WRITING. THE EXISTING/PROPOSED UTILITIES PROTECTION SHALL BE MONITORED BY ALL PITS.
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY AND ALL LOCAL PERMITS REQUIRED.
- ALL WORK SHALL BE DONE IN STRICT COMPLIANCE WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES, STANDARDS, ORDINANCES, RULES, AND REGULATIONS. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH ALL SAFETY CODES APPLICABLE. SAFETY CODES SHALL BE THE LATEST EDITION. BELLWORKS AND ALL ADJACENT, NEIGHBORING, AND ADJACENT TOWNS TO THE TOWN OF CARMEL, NEW YORK, AND HEALTH ADMINISTRATION OCCUPATIONAL SAFETY AND HEALTH STANDARDS (OSHA) AND APPLICABLE SAFETY HEALTH REGULATIONS AND BUILDING CODES FOR CONSTRUCTION IN THE STATE OF NEW YORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING AND PROTECTING ALL OPEN EXCAVATIONS IN ACCORDANCE WITH THE PROVISIONS OF SECTION 901-1.1 (SAFETY AND HEALTH) REQUIREMENTS OF THE TOWN OF CARMEL. IF THE CONTRACTOR PERFORMS ANY NECESSARY CONSTRUCTION, ALL OPERATIONS IN THE AFFECTED AREA SHALL BE DISCONTINUED AND IMMEDIATE ACTION SHALL BE TAKEN TO CORRECT THE SITUATION TO THE SATISFACTION OF THE APPROVAL AUTHORITY HAVING JURISDICTION.
- CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES ADJACENT TO THE SITE OF WORK. BELLWORKS RESTAURANT AT ALL TIMES TO THE SATISFACTION OF THE OWNERS REPRESENTATIVE. BELLWORKS RESTAURANT TO MAINTAIN ACCESS MAY BE CONSIDERED WITH BELLWORKS RESTAURANT. TEMPORARY ADJACENT CONSTRUCTION SHALL BE PLACED AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SAFE PEDESTRIAN ACCESS AT ALL TIMES.
- CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF EXISTING PAVEMENT TO REMAIN.

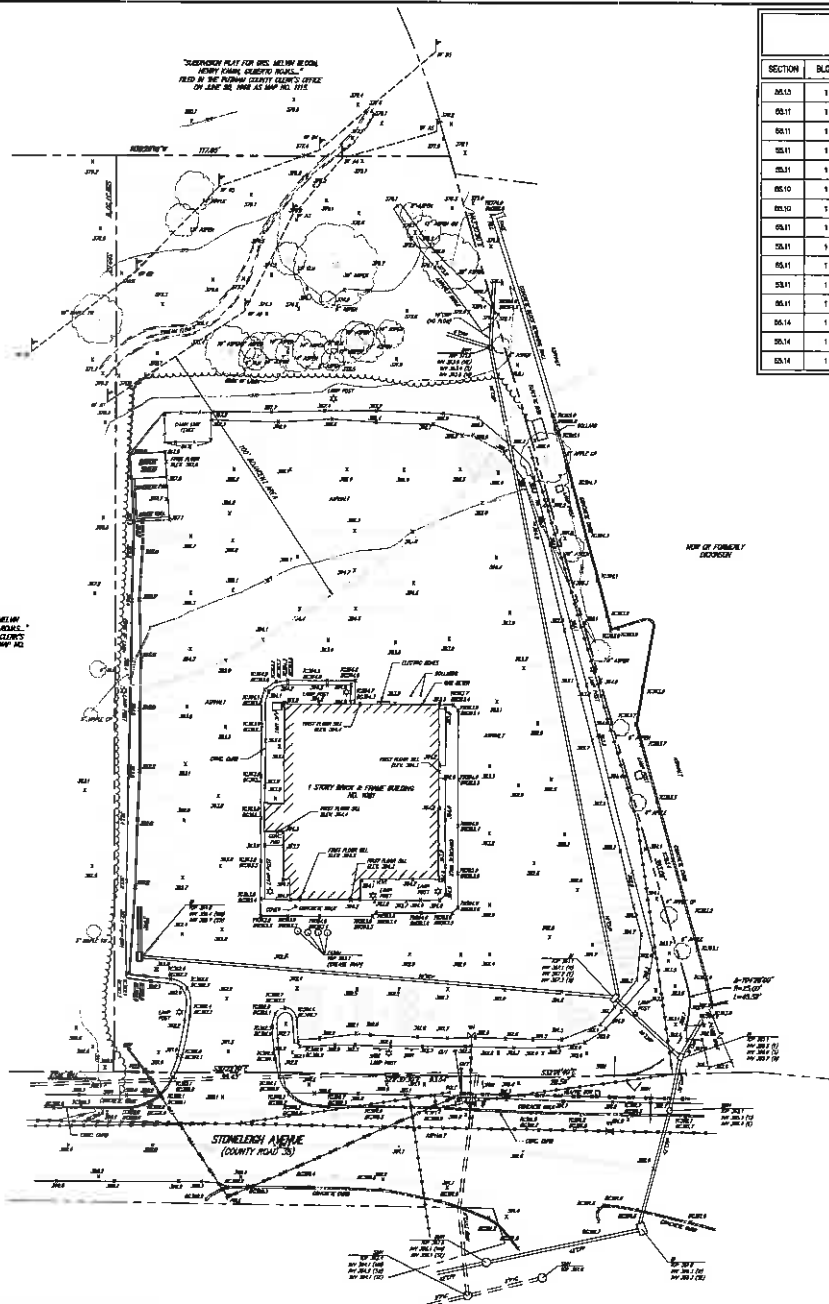


No.	Revision	Date	By
1.	REVISED PER TOWN COMMENTS	05/10/2019	JES
2.	REVISED AND ISSUED FOR THE LAND PERMIT	05/20/2019	JES
3.	REVISED PER TOWN COMMENTS	07/15/2019	PD



"SURVEYOR PLAT FOR ONE HALF ACRES BEING
HERBY CARMEI, CLEVERLY BUILT,"
FILED IN THE PUTNAM COUNTY CLERK'S OFFICE
ON JUNE 26, 1996 AS MAP NO. 111

"SURVEYOR PLAT FOR ONE HALF ACRES BEING
HERBY CARMEI, CLEVERLY BUILT,"
FILED IN THE PUTNAM COUNTY CLERK'S OFFICE
ON JUNE 26, 1996 AS MAP NO. 111



PROPERTY OWNERS WITHIN 500' OF SECTION 55.11, BLOCK 1, LOT 3

SECTION	BLOCK	LOT	PROPERTY OWNER	MAILING ADDRESS
55.13	1	9	LANBETH COMPANY, INC.	N/A
55.11	1	1	ALEXANDER HOURS	1 NORTH ALTE ROAD CARMEI, NY 10013
55.11	1	1	ROBERT HENRY	200 N. DUNHAM ROAD YONKON, NY 10904
55.11	1	2	CARMEI, STEVE REALTY LLC	277 DOW AVENUE ELIZABETH, NJ 07208
55.11	1	4	UNION HILL PROPERTIES	501 BALDWIN AVENUE GREENWICH, CT 06039
55.10	1	12	LD CARMEI, RETAIL, LLC	1240 HADDONSBURG PLAZA, FL. 30 MORRISTOWN, NJ 07960
55.12	1	12	HEMBURG, GREGORY, FIDUCIARY, FIDUCIARY	N/A
55.11	1	5	TOWN OF CARMEI	60 SOUTH AVENUE CARMEI, NY 10013
55.11	1	40	MT. DEARER STATION LLC	235 HADDONSBURG AVENUE WHITE PLAINS, NY 10606
55.11	1	41	MC DONALD'S REAL ESTATE CO.	70 MOORE STREET, FL. 17 BROOKLYN, NY 11201
55.11	1	5	PUTNAM COUNTY CHAPTER	31 INTERNATIONAL BOWLING BOWLING, NY 10008
55.11	1	42	HADDON VALLEY FIDUCIARY LUNCH	128 HADDONSBURG ROAD CARMEI, NY 10013
55.14	1	11.2	THE RETREAT AT CARMEI, HIGH INC.	222 MT. ARRY ROAD, STE. 210 CARMEI, NY 10013
55.14	1	11.3	THE RETREAT AT CARMEI	222 MT. ARRY ROAD, STE. 210 CARMEI, NY 10013
55.14	1	11.3	THE RETREAT AT CARMEI, HIGH INC.	222 MT. ARRY ROAD, STE. 210 CARMEI, NY 10013

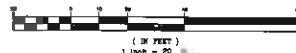
LEGEND

- EXISTING PROPERTY LINE
- EXISTING BEARING LINE
- EXISTING EASEMENT
- EXISTING CURB LINE
- EXISTING DRIVE
- EXISTING SIDEWALK
- EXISTING BACKYARD
- EXISTING FENCING WALL
- EXISTING FENCE
- EXISTING WET AND DRAINAGE
- EXISTING TREE LINE
- EXISTING METAL LINE
- EXISTING METAL ADJUTANT AREA BOUNDARY
- EXISTING DIMENSIONAL ADJUTANT
- EXISTING POINT
- EXISTING PARKING WITH NUMBER OF SPACES
- EXISTING HANDICAP PARKING WITH NUMBER OF SPACES
- EXISTING PEDESTRIAN CROSSING
- EXISTING STORM DRAIN LINE AND SIZE
- EXISTING SANITARY LINE AND SIZE
- EXISTING WATER LINE
- EXISTING GAS LINE
- EXISTING OVERHEAD WIRE
- EXISTING DRIVE INLET
- EXISTING MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING GAS VALVE
- EXISTING WATER VALVE
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SIGN

NOTES

1. EXISTING CONDITIONS SHOWN ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY RECORD, "AS-BUILT" & DEVELOPMENT RECORDS OF PROPERTY, PREPARED BY BARRY & BARRY SURVEYING & ENGINEERING, P.C., DATED 03/18/2014, LAST REVISED 05/01/2014.

GRAPHIC SCALE



ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 209, SUBSECTION 2.

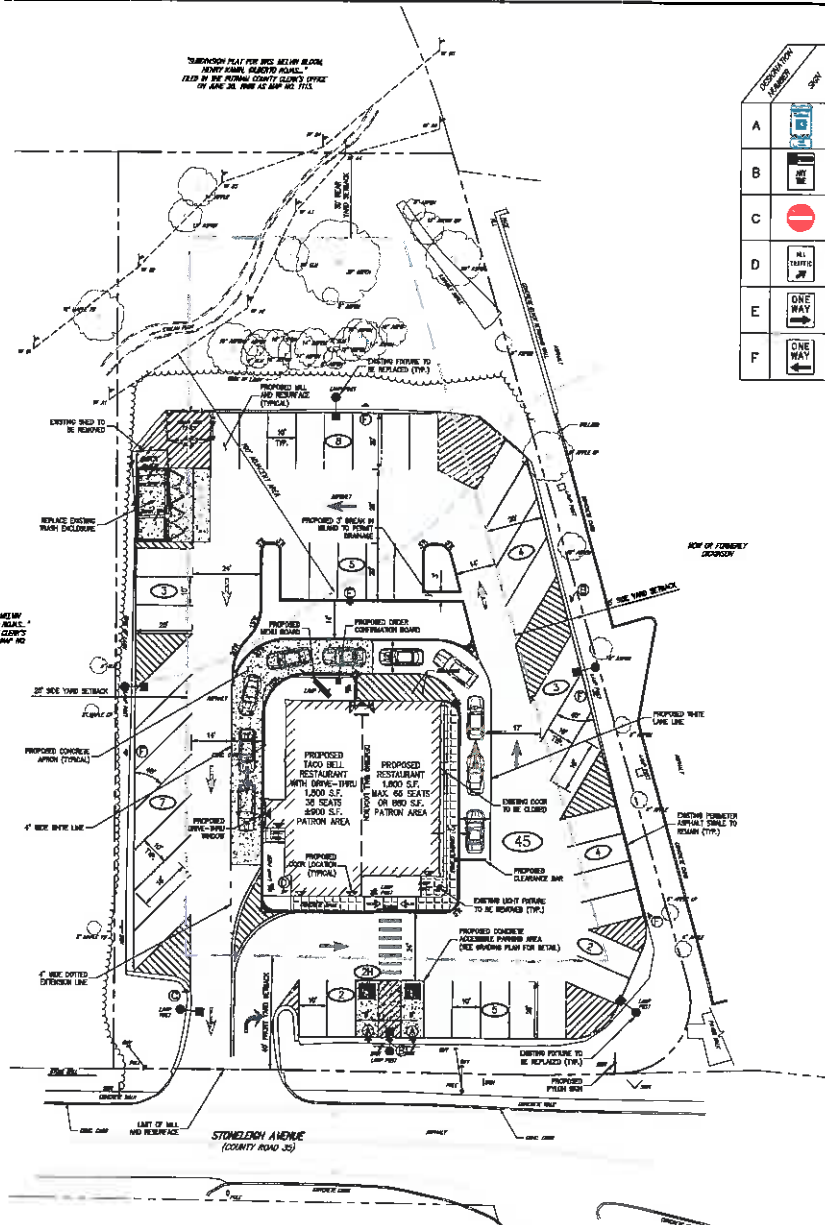
No.	Revision	Date	By	Drawn	PD	Approved	Signature
1.	REVISED FOR TOWN COMMENTS	04/15/2016	PD				
2.	REVISED FOR TOWN COMMENTS	05/10/2016	JSS				
3.	REVISED AND ISSUED FOR NETLAND PERMIT	05/27/2016	JSS				
4.	REVISED FOR TOWN COMMENTS	07/15/2016	PD				

KAI CARMEI LLC
25 ROUTE 59
NYACK, NY 10950

APPLICANT

EXISTING CONDITIONS MAP
PROPOSED RESTAURANT REDEVELOPMENT
1001 STONELEIGH AVENUE
TOWN OF CARMEI, NEW YORK

C-010

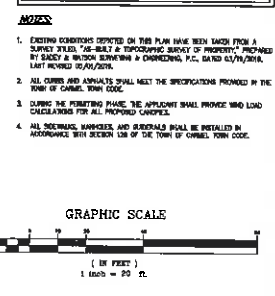


SIGN TABLE

SECTION NUMBER	SIZE	DESCRIPTION	NOTES	REMARKS
A	12"X18"	OPEN IN BLUE ON WHITE	STEEL CHANNEL	7'-0"
B	12"X18"	RED ON WHITE	STEEL CHANNEL	7'-0"
C	30"X20"	RED ON WHITE	STEEL CHANNEL	7'-0"
D	24"X20"	BLACK ON WHITE	STEEL CHANNEL	7'-0"
E	18"X14"	BLACK ON WHITE	STEEL CHANNEL	7'-0"
F	18"X14"	BLACK ON WHITE	STEEL CHANNEL	7'-0"

LEGEND

	EXISTING PROPERTY LINE
	ADJACENT PROPERTY LINE
	EXISTING DRIVEWAY LINE
	EXISTING BUILDING LINE
	EXISTING DRIVEWAY EDGE
	EXISTING CURB LINE
	EXISTING STONE WALL
	EXISTING RETAINING WALL
	EXISTING TREE AND DESIGNATION
	EXISTING TREE LINE
	EXISTING WELAND LINE
	EXISTING WELAND ADJACENT AREA BOUNDARY
	EXISTING PARK
	EXISTING PARKING WITH NUMBER OF SPACES
	EXISTING ACCESSIBLE PARKING WITH NUMBER OF SPACES
	EXISTING UTILITY POLE
	EXISTING LIGHT POLE
	EXISTING SIGN
	PROPOSED CONCRETE CURB
	PROPOSED DROP CURB & RAMP
	PROPOSED ACCESSIBLE PARKING SPACES WITH NUMBER OF SPACES INDICATED (REFER TO STOPPING SIGNALS)
	PROPOSED PARKING SPACES WITH NUMBER OF SPACES INDICATED (REFER TO STOPPING SIGNALS)
	PROPOSED CONCRETE SIDEWALK
	PROPOSED SIDEWALK CONCRETE SIDEWALK & CURB
	PROPOSED DROP CURB & RAMP
	PROPOSED MILL AND RECONSTRUCT
	PROPOSED CONCRETE APRON
	PROPOSED PAVEMENT
	PROPOSED DRIVEWAY MARKING OF PAVEMENT
	TRAFFIC SIGN LOCATION & DESIGNATION
	PEDESTRIAN CROSSING
	EXISTING FEATURE TO BE REMOVED



ANY ALTERATION OF PLANS, SPECIFICATIONS, PLANS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 2208 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 2208, SUBSECTION 3.

No.	Revision	Date	By	Appr.	Appr.
1.	REVISED PER TOWN COMMENTS	06/10/2019	JSS		JAR
2.	REVISED AND ISSUED FOR WELAND PERMIT	06/20/2019	JSS		JAR
3.	REVISED PER TOWN COMMENTS	07/15/2019	JSS		JAR

Previous Edition Deleted

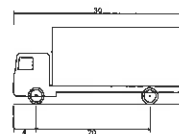
KAI CARMEL LLC
25 ROUTE 59
ATKIN, NY 13004

JMC


LAYOUT PLAN
PROPOSED RESTAURANT REDEVELOPMENT
25 STONELAND AVENUE
TOWN OF CARROLL, NEW YORK

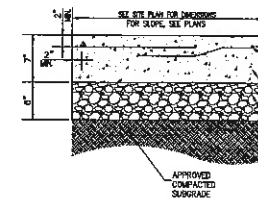
C-100

Consent	FD	Approved	JAR
Date	1 st of 2018		
Code	08/10/2018		
Project No	18108		
WMS-SECRET	TRUCK	L.Lifford	
Drawing No			
C-101			





- | | | | |
|---|--|---|--|
|  | | <p style="text-align: center;">KAI CARMEL LLC
25 ROUTE 59
N'YACK, NY 10980</p> | |
|  | | <p style="text-align: center;">JMC</p> | |
|  | | <p style="text-align: center;">GRADING AND EROSION & SEDIMENT CONTROL PLAN</p> | |
|  | | <p style="text-align: center;">PROPOSED RESTAURANT REDEVELOPMENT</p> | |
|  | | <p style="text-align: center;">1081 STONELIEGH AVENUE
TOWN OF CARMEL, NEW YORK</p> | |
|  | | <p style="text-align: center;">C-200</p> | |



NOTES:

1. PROVIDE $\frac{1}{2}$ " PREWOLDED EXPANSION JOINTS AT 20' INTERVALS, UNLESS OTHERWISE DIRECTED.
2. REINFORCING SHALL NOT EXTEND THROUGH EXPANSION JOINTS.
3. REINFORCING SHALL NOT BE PLACED CLOSER THAN 2" FROM ANY EDGE OF CONCRETE.

SHRUB PLANTING

11

GROUNDCOVER PLANTING

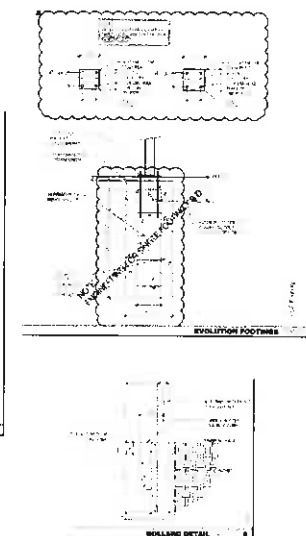
12

TREE PLANTING (DECIDUOUS AND EVERGREEN)

17

CONCRETE PAD

14



TACO BELL MENU BOARD

15

TACO BELL CLEARANCE BAR

16

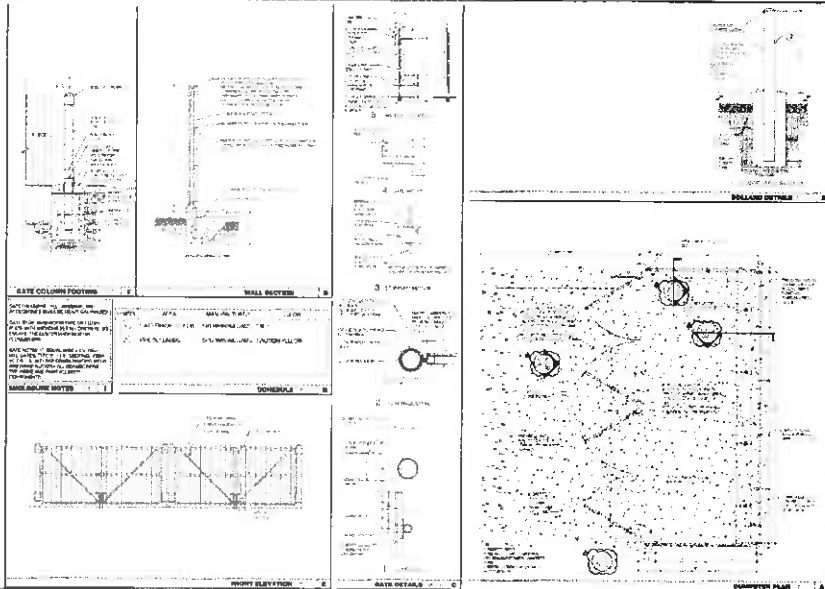
CONSTRUCTION DETAILS

**PROPOSED RESTAURANT
REDEVELOPMENT**
1081 STONELEIGH AVENUE
TOWN OF CARMEL, NEW YORK

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

Crash	PD	Approved	JAN
Case	NOT TO SCALE		
Date	04/10/2018		
Project No	131.06		
Drawn by	C-BH		
Checked by			

C-901



TACO BELL TRASH ENCLOSURE

17

OSQ Series
OSQ-110 110W Floodlight - Luminaire - Medium

Product Description
The OSQ Series Floodlight is a medium beam floodlight designed for use in a variety of applications. It features a die-cast aluminum housing, a polycarbonate lens, and a CREE LED chip. The floodlight is available in two beam angles: 10° and 15°.

Performance Summary
Beam Angle: 10° / 15°
Power: 110W
Lumen Output: 10,000 lm
Beam Diameter: 10.5 ft / 15.5 ft
Mounting: Pole Mount
Housing: Die-cast Aluminum
Lens: Polycarbonate
Chip: CREE LED

Dimensions
Height: 10.5 ft
Width: 15.5 ft
Depth: 10.5 ft

OSQ Series
OSQ-110 110W Floodlight - Luminaire - Medium

Product Description
The OSQ Series Floodlight is a medium beam floodlight designed for use in a variety of applications. It features a die-cast aluminum housing, a polycarbonate lens, and a CREE LED chip. The floodlight is available in two beam angles: 10° and 15°.

Performance Summary
Beam Angle: 10° / 15°
Power: 110W
Lumen Output: 10,000 lm
Beam Diameter: 10.5 ft / 15.5 ft
Mounting: Pole Mount
Housing: Die-cast Aluminum
Lens: Polycarbonate
Chip: CREE LED

Dimensions
Height: 10.5 ft
Width: 15.5 ft
Depth: 10.5 ft

CREE TYPE 3ME LUMINAIRE

18

OSQ Series
OSQ-110 110W Floodlight - Luminaire - Medium

Product Description
The OSQ Series Floodlight is a medium beam floodlight designed for use in a variety of applications. It features a die-cast aluminum housing, a polycarbonate lens, and a CREE LED chip. The floodlight is available in two beam angles: 10° and 15°.

Performance Summary
Beam Angle: 10° / 15°
Power: 110W
Lumen Output: 10,000 lm
Beam Diameter: 10.5 ft / 15.5 ft
Mounting: Pole Mount
Housing: Die-cast Aluminum
Lens: Polycarbonate
Chip: CREE LED

Dimensions
Height: 10.5 ft
Width: 15.5 ft
Depth: 10.5 ft

OSQ Series
OSQ-110 110W Floodlight - Luminaire - Medium

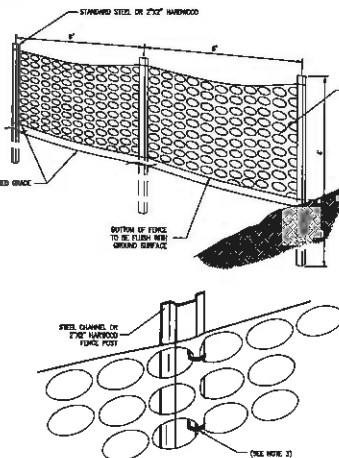
Product Description
The OSQ Series Floodlight is a medium beam floodlight designed for use in a variety of applications. It features a die-cast aluminum housing, a polycarbonate lens, and a CREE LED chip. The floodlight is available in two beam angles: 10° and 15°.

Performance Summary
Beam Angle: 10° / 15°
Power: 110W
Lumen Output: 10,000 lm
Beam Diameter: 10.5 ft / 15.5 ft
Mounting: Pole Mount
Housing: Die-cast Aluminum
Lens: Polycarbonate
Chip: CREE LED

Dimensions
Height: 10.5 ft
Width: 15.5 ft
Depth: 10.5 ft

CREE TYPE 4ME LUMINAIRE

19



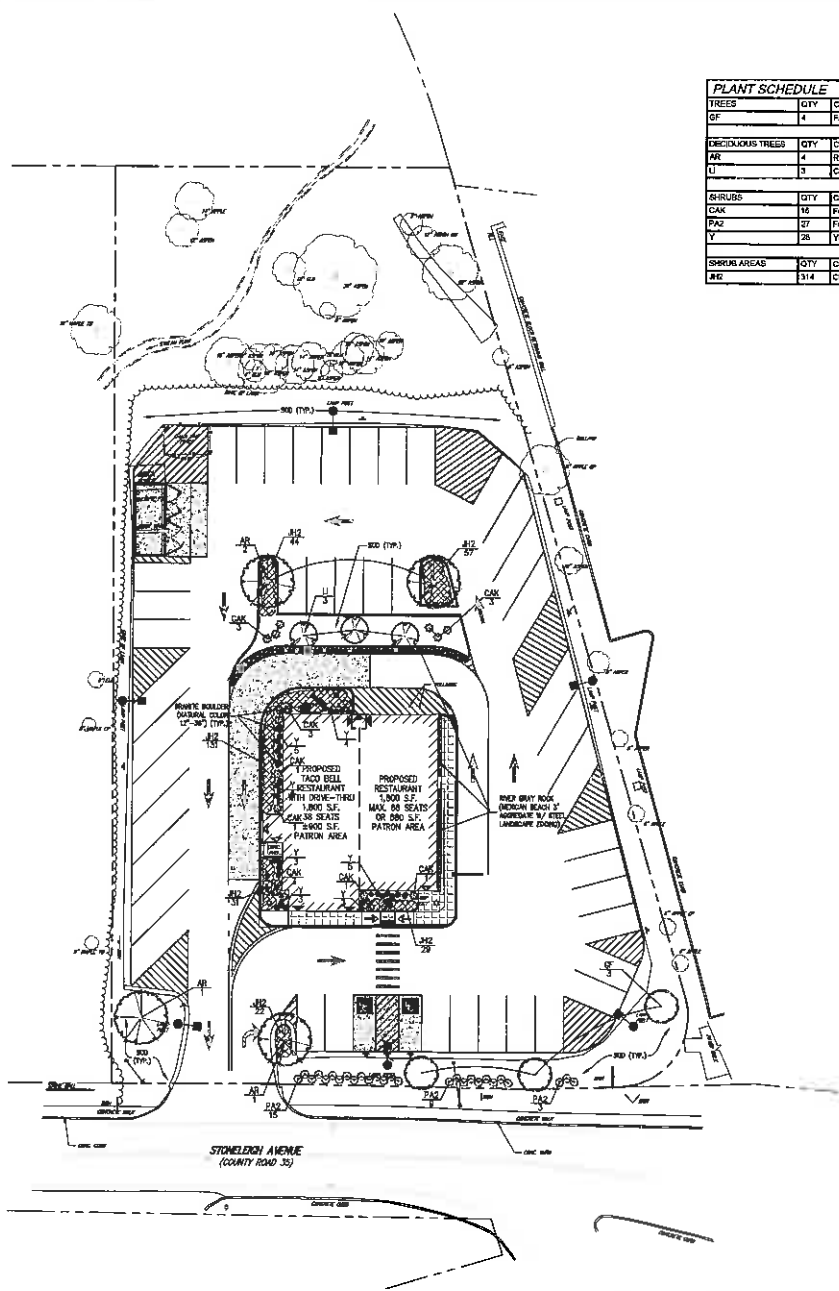
CONSTRUCTION FENCE

20

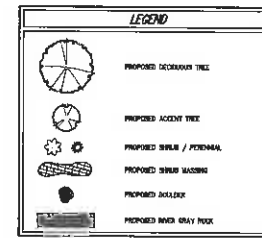
CONSTRUCTION DETAILS
PROPOSED RESTAURANT
REDEVELOPMENT
1001 STONELEIGH AVENUE
TOWN OF CANNEL, NEW YORK

ANY ALTERATION OF PLANS,
SPECIFICATIONS, PLATS AND
REPORTS VIOLATES THE SEAL
OF A LICENSED PROFESSIONAL
ENGINEER OR A LICENSED LAND
SURVEYOR IS A VIOLATION OF
SECTION 1209 OF THE NEW
YORK STATE EDUCATION LAW,
§ 1209.1(1) AS AMENDED, AND
§ 1209.1(2) AS AMENDED.

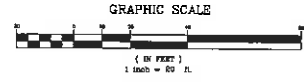
Drawn: [Signature]
Scale: NOT TO SCALE
Date: 05/16/2019
Title: [Signature]
Sheet: C-902



PLANT SCHEDULE					
TREES	QTY	COMMON NAME / BOTANICAL NAME	SIZE	ROOT COND.	REMARKS
SF	4	Fastigiate Shadbush Tree / <i>Gonolobus latifolius</i>	2" - 3 1/2" CAL.	B & B	
DECIDUOUS TREES					
QTY	COMMON NAME / BOTANICAL NAME	SIZE	ROOT COND.	REMARKS	
AR	4	Red Maple / <i>Acer rubrum</i> 'Red Sunset'	2" - 3 1/2" CAL.	B & B	
U	3	Crape Myrtle / <i>Lagerstroemia indica</i>	24" box		
SHRUBS					
QTY	COMMON NAME / BOTANICAL NAME	SIZE	ROOT COND.	REMARKS	
CAK	16	Feather Reed Grass / <i>Calamagrostis Aleutica</i> 'Gold Feather'	2 gal.	Cont.	
PAZ	27	Foundation Grass / <i>Parthenocymbium abietifolium</i>	2 gal.	Cont.	
Y	26	Yellow Adam's Needle / <i>Yucca filamentosa</i> 'Stardust'	2 gal.	Cont.	
SHRUB AREAS					
QTY	COMMON NAME / BOTANICAL NAME	SIZE	ROOT COND.	REMARKS	
RE	314	Creeper / <i>Juniperus horizontalis</i>	1 gal.		



- NOTES**
1. ALL PLANT MATERIAL SHALL BE FIRST QUALITY STOCK, PLANTED IMMEDIATELY UPON DELIVERY TO THE PROJECT SITE. PLANTING SHALL BE DONE BY THE LANDSCAPE ARCHITECT OR HIS REPRESENTATIVE. PLANTING SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION.
 2. ALL AREAS OF THE SITE NOT OCCUPIED BY BUILDING OR PAVEMENT AND NOT SPECIFIED AS BEING PLANTED WITH TREES, SHRUBS OR GRASSES SHALL BE LAWN.
 3. ALL PLANTING SHALL BE DONE WITHIN 2" OF BROWN MELON. LAWN SHALL BE DONE WITHIN 2" OF BROWN MELON. LAWN SHALL BE DONE WITHIN 2" OF BROWN MELON.
 4. PLANT MATERIALS AS SPECIFIED ON THE DRAWINGS AND DELIVERED TO THE SITE SHALL BE INSPECTED AND CERTIFIED TRUE TO THEIR GENUS, SPECIES AND VARIETY. INSPECTIONS ARE NOT PERMITTED WITHOUT THE PROJECT LANDSCAPE ARCHITECT'S WRITTEN APPROVAL.
 5. ALL LANDSCAPING SHALL BE DONE IN A HEALTHY GROWING CONDITION THROUGHOUT THE DURATION OF THE PROJECT. ANY PLANTING NOT SO MAINTAINED SHALL BE REPLACED WITH NEW PLANTS AT THE BEGINNING OF THE YEAR. MAINTENANCE FOLLOWING GROWING SEASON.
 6. ALL TREES AND SHRUBS SHALL BE PRUNED AND SHAPED AND BE SUBJECT TO THE APPROVAL OF THE PROJECT LANDSCAPE ARCHITECT AND GOVERNMENTAL AGENCIES INVOLVED.
 7. PLANTING STOCK SHALL BE WELL-BRANCHED AND WELL-FORMED. SOIL, NUTRIENTS, HEALTHY, FREE FROM DISEASES, AND SHALL HAVE HEALTHY, VIGOROUS, UNIFORM ROOT SYSTEMS. GROWN IN POTS AND SHALL BE MAINTAINED IN A HEALTHY CONDITION. TREES AND SHRUBS SHALL HAVE WELL-DEVELOPED, UNIFORM, HEALTHY, VIGOROUS, UNIFORM ROOT SYSTEMS. GROWN IN POTS AND SHALL BE MAINTAINED IN A HEALTHY CONDITION. TREES AND SHRUBS SHALL HAVE WELL-DEVELOPED, UNIFORM, HEALTHY, VIGOROUS, UNIFORM ROOT SYSTEMS. GROWN IN POTS AND SHALL BE MAINTAINED IN A HEALTHY CONDITION.
 8. ALL STOCK SHALL BE BALLED AND BURLAPPED OR COVERED WITH BURLAP. TREES SHALL BE BALLED AND BURLAPPED OR COVERED WITH BURLAP. TREES SHALL BE BALLED AND BURLAPPED OR COVERED WITH BURLAP.
 9. ALL PLANTING SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL LANDSCAPE ARCHITECTS ASSOCIATION (NLA) STANDARD SPECIFICATIONS FOR PLANTING.
 10. ALL PLANTING SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL LANDSCAPE ARCHITECTS ASSOCIATION (NLA) STANDARD SPECIFICATIONS FOR PLANTING.
 11. ALL PLANTING SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL LANDSCAPE ARCHITECTS ASSOCIATION (NLA) STANDARD SPECIFICATIONS FOR PLANTING.



REVISIONS				DATE		BY		APP. BY	
1.	REVISED PER TOWN COMMENTS			06/10/2019	JES				
2.	REVISED AND ISSUED FOR NEW LAND PERMIT			06/20/2019	JES				
3.	REVISED PER TOWN COMMENTS			07/14/2019	PD				
Previous Edition Obsolete									

LANDSCAPING PLAN

PROPOSED RESTAURANT REDEVELOPMENT

1001 STONELAND AVENUE
TOWN OF CARMEL, NEW YORK

KAI CARMEL LLC
22 ROUTE 89
NYACK, NY 10960

L-100



FINISH SCHEDULE

SYMBOL	AREA	MANUFACTURER	COLOR
1	PARAPET CAP AND ACCENT TRIM	SHERWIN WILLIAMS	DORIAN GRAY SW-7017
2	ACCENT/PARAPET WALLS	SHERWIN WILLIAMS	NATURAL CHOICE SW-7011
3	EXISTING BRICK TO BE PAINTED	SHERWIN WILLIAMS	GAUNTLET GRARY SW-7019
4	ACCENT ON PARAPET WALL	SHERWIN WILLIAMS	CLEMATIS SW-6831
5	TOWER	CORONADO STONE	PRO-LEDGE - HURON
6	ACCENT WALL BY DRIVE-THRU	TACO BELL	G-604 LINEAR SAUCES MURAL
7	TRIM, STOREFRONT, WINDOW MULLIONS, AND CANOPIES		TO MATCH BLACK STEEL CANOPIES

No.	Revision	Date
wiener architecture group,LLC		
VWA Group		
Josiah Wiener, RA Architects		
Architecture Planning Interior Design		
telephone: 973 933 8636 fax: 946 507 9220 info@wag-architects.com 910 Whitehorse - Hamilton Square Road / Hamilton, NJ 08610		

Taco Bell
1081 Stoneleigh Avenue
Carmel, New York

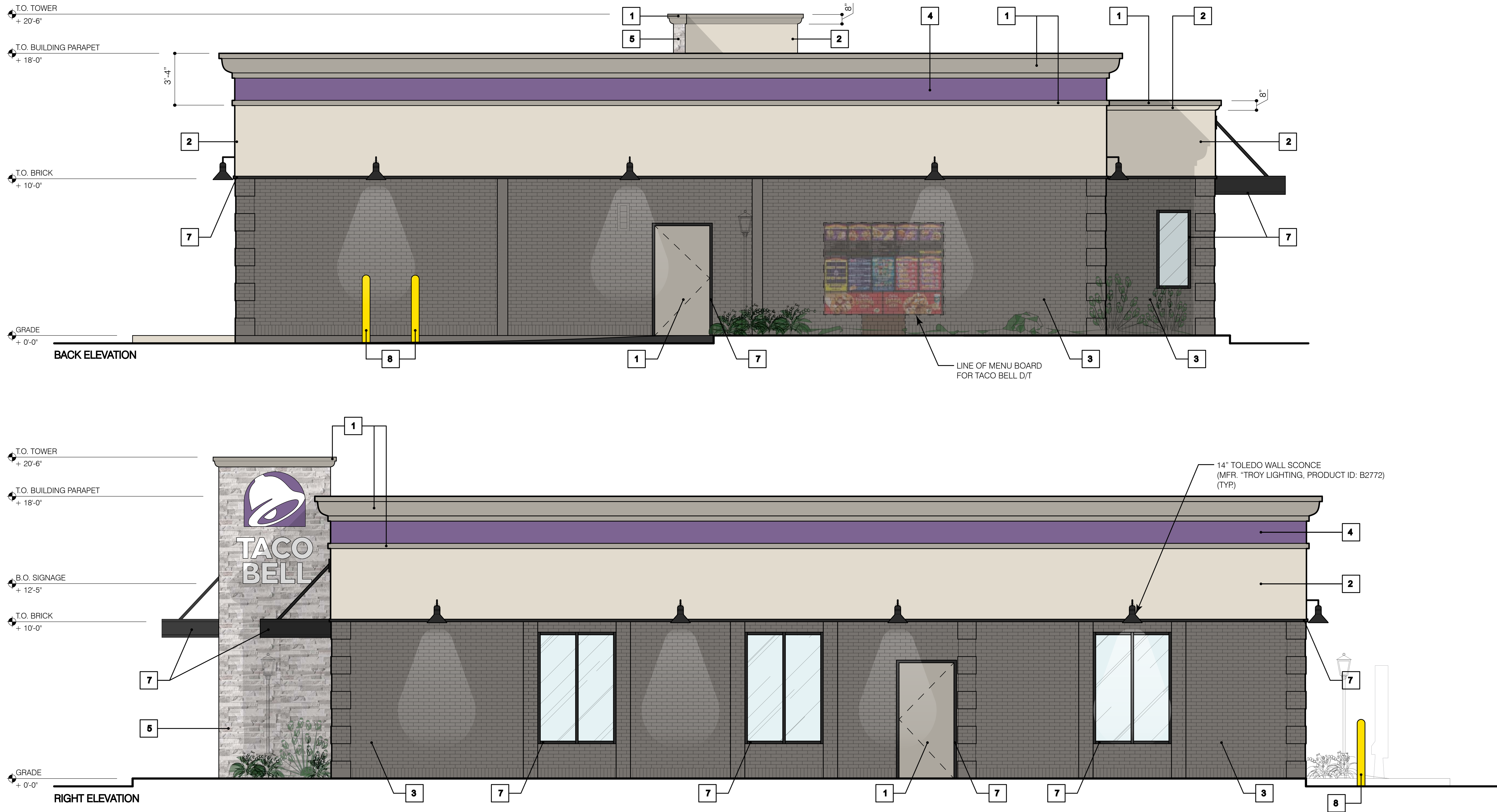
NY LICENSE #
029493

EXTERIOR
ELEVATIONS

Date: 07/25/2019
Drawn By:

Scale: As Noted
Job #: W051-19

A-1



FINISH SCHEDULE

SYMBOL	AREA	MANUFACTURER	COLOR
1	PARAPET CAP AND ACCENT TRIM	SHERWIN WILLIAMS	DORIAN GRAY SW-7017
2	ACCENT/PARAPET WALLS	SHERWIN WILLIAMS	NATURAL CHOICE SW-7011
3	EXISTING BRICK TO BE PAINTED	SHERWIN WILLIAMS	GAUNTLET GRAY SW-7019
4	ACCENT ON PARAPET WALL	SHERWIN WILLIAMS	CLEMATIS SW-6831
5	TOWER	CORONADO STONE	PRO-LEDGE - HURON
6	ACCENT WALL BY DRIVE-THROUGH	TACO BELL	G-604 LINEAR SAUCES MURAL
7	TRIM, STOREFRONT, WINDOW MULLIONS, AND CANOPIES		TO MATCH BLACK STEEL CANOPIES
8	6" DIAMETER BOLLARDS		OSHA YELLOW

No.	Revision	Date
-----	----------	------

wiener architecture group,LLC

WA Group
Josiah Wiener, RA Architects

Architecture
Planning
Interior Design
telephone: 973 933 6636
fax: 646 607 8220
info@wag-architects.com
910 Whitehorse - Hamilton Square Road / Hamilton, NJ 08610

Taco Bell
1081 Stoneleigh Avenue
Carmel, New York

NY LICENSE #
029493

EXTERIOR
ELEVATIONS

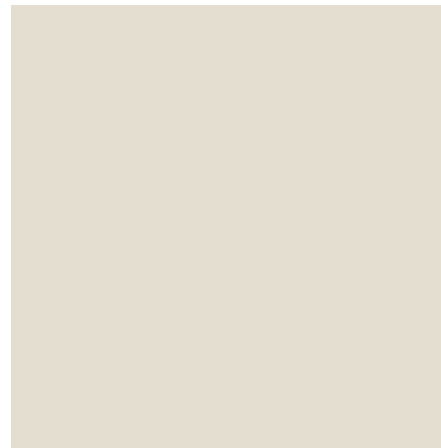
Date: 07/25/2019 Drawn By:	Scale: As Noted Job #: W051-19
-------------------------------	-----------------------------------



SW-7017
DORIAN GRAY



SW-6831
CLEMATIS



SW-7011
NATURAL CHOICE



SW-7019
GAUNTLET GRAY



CORONADO STONE PRODUCTS
PRO-LEDGE - HURON

#5

LAW OFFICES OF
SNYDER & SNYDER, LLP
94 WHITE PLAINS ROAD
TARRYTOWN, NEW YORK 10591

NEW YORK OFFICE
445 PARK AVENUE, 9TH FLOOR
NEW YORK, NEW YORK 10022
(212) 749-1448
FAX (212) 932-2693

LESLIE J. SNYDER
ROBERT D. GAUDIOSO

DAVID L. SNYDER
(1956-2012)

(914) 333-0700
FAX (914) 333-0743

WRITER'S E-MAIL ADDRESS

rgaudioso@snyderlaw.net

NEW JERSEY OFFICE
ONE GATEWAY CENTER, SUITE 2600
NEWARK, NEW JERSEY 07102
(973) 824-9772
FAX (973) 824-9774

REPLY TO:

TARRYTOWN OFFICE

July 14, 2019

Honorable Chairman Craig Paepre
and Members of the Planning Board
Town of Carmel Town Hall
60 McAlpin Avenue
Mahopac, New York 10541

Re: Application for site plan and special permit approval for
Lake Casse: 254 Croton Falls Road, Mahopac, New York

Honorable Chairman Paepre
and Members of the Planning Board:

We are the attorneys for Homeland Towers LLC and New York SMSA Limited Partnership d/b/a Verizon Wireless (collectively, the "Applicants") in connection with their site plan and special permit applications to locate a public utility wireless telecommunications facility ("Facility") at the above captioned property ("Property"). The proposed Facility consists of a 140-foot tower and a fenced 36' x 100' compound for related equipment. Please note that the application has been amended to reduce the height of the tower to 140 feet.


In support of the foregoing and in response to the Town comments, we are pleased to enclose five (5) copies of the following materials and one CD with all documents:

1. Visual Resource Evaluation, prepared by Saratoga Associates;
2. Revised Environmental Assessment Form;
3. Pinnacle Report based on 140 foot tower height;
4. Supplemental Report from PierCon Solutions;
5. DEC report demonstrating no violations related to fill at the Property;
6. Response letter prepared by APT Engineering;
7. Revised Site Plan.

We thank you for your consideration, and look forward to discussing this matter at next Planning Board meeting on July 31, 2019. If you have any questions or require any additional documentation, please do not hesitate to contact me at 914-333-0700.

Snyder & Snyder, LLP

By:



Robert D. Gaudio

RDG:cae

Enclosures

cc: Homeland Towers

Verizon Wireless

z:\ssdata\wpdata\ss3\rdg\homelandtowers\carmel\056 (casse)\pb letter 7.14.2019.rtf

Proposed Wireless Telecommunications Facility

Site Name: Lake Casse, NY- 056
254 Croton Falls Road
Mahopac, NY

VISUAL RESOURCE ASSESSMENT



Prepared for:
Homeland Towers
9 Harmony Street, 2nd Floor
Danbury, CT 06810

Revised June 27, 2019

VISUAL RESOURCE ASSESSMENT

Homeland Towers, LLC ("Project Sponsor") seeks approval from the Town of Carmel, NY to construct a wireless telecommunications facility (the "Facility") to be located on property at 254 Croton Falls Road, Mahopac, NY 10541 ("host property"). To address issues of potential visual impact, Saratoga Associates, Landscape Architects, Architects, Engineers, and Planners, P.C. was retained to conduct a Visual Resource Assessment ("VRA") of the proposed Project.

The study area for this VRA extends to a two-mile radius from the Facility (hereafter referred to as the "2-mile study area"). Because much of the project area is heavily wooded substantial limiting extending distance views of the Facility, detailed analysis is largely focused on viewpoints within a ½-mile radius ("½-mile study area").

PROJECT DESCRIPTION

The Facility will be located at 41° 22' 40.5409" N, 73° 42' 14.0725" W ("Facility site"). The 25.57± acre host property is identified in Putnam County tax records as tax parcel 65.19-1-43. The existing ground elevation at the tower site is approximately 585 feet above mean sea level (amsl).

The Facility includes the construction of a 140-foot-tall telecommunications tower designed to support up to four antenna levels.

Note: Six (6) balloon visibility tests were conducted between January 25 and March 2, 2019 to allow the general public and local decision-makers an opportunity to observe the location and potential visibility of the Facility. During each test, one four-foot diameter red balloon was raised to an elevation of 180 feet above existing grade (measured to the bottom of the balloon). At the time of the balloon tests 180 feet was the proposed height of the Facility. The proposed height has since been reduced to 140 feet. All analysis contained in this VRA is based on the currently proposed tower height of 140 feet.

Associated ground equipment will be located within a 36± foot by 100± foot (3,600± square feet) fenced enclosure at the base of the tower. Access to the Facility site will be directly from an existing gravel driveway/parking area.

The Facility has been designed to minimize adverse visual and aesthetic impact to the maximum extent practicable through camouflaging techniques. The Facility will employ either a traditional steel monopole design with an earth tone tan color paint scheme or a stealth tree (AKA "monopine") type design to minimize visual contrast. The stealth "monopine" tower design option will include a dense non-uniform branching pattern that will help to blend the structure with the visual characteristics of the surrounding woodland hills.

The host property is substantially wooded and the Facility site is proposed within a 1.25± acre cleared area. The existing tree canopy height surrounding the Facility is approximately 70 feet with only two trees to be removed.

LANDSCAPE SETTING

The Facility is located within the Town of Carmel, NY (2018 estimated population 34,360¹). The host property is zoned Residential as defined by the Carmel Town Code.

The ½-mile study area is largely suburban in character comprised of low to moderate density (i.e., ½ to 20+ acre) single-family residential lots and undeveloped woodland open space. Structures are typically single-family homes within organized subdivisions or individual homes setback from main roads. Residential neighborhoods are typically wooded with well landscaped understory areas. Mature trees commonly extend to road edges limiting long distance vistas.

Seven (7) residential structures (including the main house on the host property) are within 1,000 feet of the Facility. The nearest occupied residential structure is approximately 480 feet to the southeast.

The Eleanor Drive residential subdivision is situated on a low ridgeline approximately 1/3 mile southwest of the Facility site. Approximately 40 single family residences are within the Eleanor drive neighborhood. The McLaughlin Acres residential subdivision is located on a north facing slope approximately ½ mile to the south. Approximately 60 single-family residences are within the McLaughlin Acres neighborhood.

The topography within the 2-mile study area is characterized by a rolling and often steeply sloped landscape. The topographic highpoint within the two-mile radius study area is Watermelon Hill (elevation 961± feet amsl). The topographic low point is the Croton Falls Reservoir (elevation 299± feet amsl).

Two existing telecommunications towers are located on a hilltop approximately 1.25 miles north northwest of the Facility site near Lake Casse. These exiting towers are approximately 120 feet tall with a base elevation of approximately 715 and 730 feet amsl – approximately 130 feet higher in elevation than the proposed Facility. One existing tower is a lattice frame design and the other tower is a monopole design. Neither tower incorporates stealth mitigation design. Both existing telecommunications towers are directly visible from portions of the Eleanor Drive residential neighborhood as well as from the water surface and much of the south and east shore of Lake Casse.

¹ <https://www.census.gov/quickfacts/carmeltownputnamcountynynewyork>



Photo 1 – Existing towers viewed from Lake Drive



Photo 2 - Existing towers viewed from Eleanor Drive

Waterbodies within the study area include Croton Falls Reservoir, Lake Mahopac, Lake Casse, Lake Giland several other small lakes, ponds, creeks and streams. The study area is heavily wooded with broad tracts of mature second growth deciduous forest interspersed with stands of mature evergreen species. The tree canopy occupies approximately 5,490 acres of the 8,040-acre two-mile study area (68%).² Mature tree cover generally ranges from 50 to 70 feet in height. An additional 1,034 acres (13%) of the two-mile study area is water surface.

Visual Resources

Scenic Resources of Statewide Significance - To avoid subjectivity in assessing potential visual impact, the New York State Department of Environmental Conservation's ("NYSDEC") Program Policy on Assessing and Mitigating Visual Impact (DEP-00-02) ("DEC Visual Policy") provides guidance in the determination of visual significance under the State Environmental Quality Review Act (SEQRA). Visual impact is defined by the DEC Visual Policy as follows:

"Aesthetic impact occurs when there is a detrimental effect on the perceived beauty of a place or structure. Significant aesthetic impacts are those that may cause a diminishment of the public enjoyment and appreciation of an inventoried resource, or one that impairs the character or quality of such a place."³

The DEC Visual Policy defines an "inventoried resource" as a place recognized for its beauty and designated through federal or state democratic political processes in recognition of its aesthetic value.⁴ Inventoried places are a matter of public record and are not arbitrarily or subjectively determined. The DEC Visual Policy contains specific criteria defining places considered to be aesthetic resources of statewide significance. These places are high value

² Tree cover calculations are based on areas with 50% or greater tree canopy coverage within 30-meter x 30-meter grid cells as presented in the National Land Cover Database (NLCD) 2011 Percent Tree Canopy dataset. <https://viewer.nationalmap.gov/basic/#productSearch>

³ DEC Visual Policy, p.5. (https://www.dec.ny.gov/docs/permits_ej_operations_pdf/visual2000.pdf)

⁴ DEC Visual Policy, p.1.

sites including state parks, scenic roads, wild, scenic and recreational rivers, state forests, wildlife management areas, scenic areas of statewide significance, Heritage Areas, National Natural Landmarks, state or federally designated trails, properties or districts listed on the National Register of Historic Places, among others. There are no places meeting this definition of Scenic Resource of Statewide Significance within the 2-mile study area.

Aesthetic Resources of Local Importance - Aesthetic resources of local importance are publicly accessible places generally recognized and enjoyed by community residents and visitors for their unique aesthetic value. Aesthetic resources of local importance are established through local democratic processes and are not arbitrarily or subjectively determined. Such places are most commonly municipal parks, trails, bikeways, and may also include not-for-profit conservation lands and open space preserves.

Aesthetic resources of local importance within the 2-mile study area include:

- **Putnam County Trailway** (1,820 feet north of tower site at its nearest point) – The Putnam County Trailway is a paved bicycle/pedestrian path located primarily on right-of-way lands of the former Putnam Division of the New York Central Railroad. The Putnam Right-of-Way spans 12.0 linear miles through Putnam County, from the Westchester border at Baldwin Place to Brewster Village. In the vicinity of the Facility the Putnam County Trailway is located in a topographically low and heavily forested area. Views are typically limited to the immediate foreground by trailside vegetation. No views of the Facility from the Putnam County Trailway were found.
- **Chamber Park** (1.6 mile west of tower site) – The Mahopac Chamber Community Park is located in downtown Mahopac at the corner of Routes 6 and 6N. Located on Mahopac lake, it features a gazebo, fountain, playground, walking paths and benches. The project is not visible from Chamber Park.
- **Michael Geary Memorial Roller Hockey Rink** (1.2 miles west of tower site) – Michael Geary Memorial Roller Hockey Rink includes an inline roller hockey rink, concession stand, picnic area, bleachers and restrooms. The project is not visible from the Michael Geary Memorial Roller Hockey Rink.

Resources of local importance are identified on Figures 1 and 2.

Other Areas of Aesthetic Interest

While not rising to the threshold of statewide significance or local importance, other places of local interest have been included in this visual assessment to represent potential Facility views from roadways, residential neighborhoods and adjacent or nearby residential properties. Such locations are not representative of any aesthetically significant place as defined under the DEC Visual Policy and are not directly addressed under SEQRA.

Residential Areas - Within the ½-mile radius study area residential development is largely clustered in planned single-family residential subdivisions. Nearby residential areas include McLaughlin Acres and the Eleanor Drive, Fulmar Road, Stacy Lane and Rebecca Lane neighborhoods. Roadside single-family residential development is found along portions of

Croton Falls, Shear Hill Road, Weber Hill Road and several other local streets within the ½-mile study area. Parcel sizes in these areas generally range from ½ acre to 20 acres or more.

Dense woodland commonly limits views from residential properties to the immediate foreground. From most residential properties views of the Facility will be substantially screened by intervening dense mature woodland vegetation – even during winter leaf-off-season.

The Eleanor Drive, McLaughlin Acres and Odessa Drive residential neighborhoods are situated on hillsides offering views of distant landscape in the direction of the Facility site. Figures A1, A3, A6, A7 & A8 illustrate views from these residential neighborhoods. No views were found from the Stacy Lane and Rebecca Lane neighborhoods.

VIEWSHED ANALYSIS

Viewshed mapping identifies the geographic area within which there is a relatively high probability that some portion of the Facility could be visible.

One viewshed overlay was prepared defining the area within which there would be no visibility of the Facility due to the screening effect of intervening topography. This "bare earth" condition identifies the maximum potential geographic area within which further investigation is appropriate. A second viewshed overlay was prepared illustrating the screening effect of existing mature vegetation and buildings. The more realistic "land cover" condition identifies the geographic area where one would expect to be substantially screened by intervening forest vegetation.

Global Mapper 19.0 GIS software was used to generate viewshed areas based on publicly available topographic and land cover datasets. Topographic data was derived 2-meter resolution digital elevation models (DEM) acquired from the New York State GIS Clearinghouse.⁵ Using Global Mapper's viewshed analysis tool, the proposed Facility location and height were input and a conservative offset of six feet was applied to account for the observer's eye level. The resulting viewshed identifies grid cells with a direct line-of-sight to the Facility high point (140 feet above ground level).

Within one (1) mile of the Facility site existing forest vegetation was manually digitized from ½-foot resolution digital ortho-photographs (2016) acquired from NYS Orthos On-line.⁶ For the remainder of the 2-mile study area existing forest vegetation is based on areas with 75% or greater tree canopy coverage as presented in the National Land Cover Database (NLCD) 2011 Percent Tree Canopy dataset.⁷ Building footprints were manually digitized from ½ -foot resolution digital ortho-photographs.

The screening effect of vegetation and built structures was incorporated by adding 50 feet in vertical height to forest areas and 25 feet to building footprints. Forested areas and building footprints were removed from the viewshed result to account for affected areas located within structures or densely wooded cover.

⁵ <https://orthos.dhSES.ny.gov/>

⁶ <https://orthos.dhSES.ny.gov/>

⁷ <https://viewer.nationalmap.gov/basic/#productSearch>

Based on field observation, most trees in forested portions of the study area are taller than 50 feet. This height therefore represents a conservative estimate of the efficacy of vegetative screening. It is important to note that digitized vegetation is based on interpretation of forest areas that are clearly distinguishable in the source aerial photography. As such, the potential screening value of site-specific vegetative cover such as small hedgerows, street trees and individual trees and other areas of non-forest tree cover may not be represented in the viewshed analysis.

It is noteworthy that untrained reviewers often misinterpret “bare earth” condition viewshed maps to represent wintertime, or leafless condition visibility. In fact, deciduous woodlands provide a substantial visual barrier in all seasons. Since the digitized forest cover overlay generally identifies only larger stands of woodland vegetation that are clearly distinguishable from aerial photography, the land cover viewshed map is substantially representative of both leaf-on and leaf-off seasons. The bare earth condition map is provided only to assist experienced visual analysts identify the maximum potential geographic area within which further investigation is appropriate. Such bare earth viewshed maps are generally not appropriate for public interpretation.

By themselves, the viewshed maps do not determine how much of the proposed wireless telecommunications tower would be visible above intervening landform or vegetation (e.g., 100%, 50%, 10% etc. of total tower height), but rather the geographic area within which some portion of the Facility would theoretically be visible. Their primary purpose is to provide a general understanding of a Facility’s potential visibility and identify areas where further investigation is appropriate.

Figure 1 illustrates areas of potential Facility visibility at a macro scale within the 2-mile study area. Figure 2 provides a more localized assessment of potential Facility visibility within the ½-mile study area.

The land cover viewshed overlay illustrates that of the 8,040 acres within the 2-mile study area, a direct view (e.g., not screened or filtered by intervening vegetation) of the Facility is theoretically possible from approximately 43 acres (0.5%). Of this, approximately 12 acres falls on the surface of a waterbody. Of the 502 acres within the 1/2-mile study area, a direct view of the Facility is possible from approximately 18 acres (4%), of which approximately 1.8 acres is on the host property.

Aside from a 12-acre area on the surface of the Croton Falls Reservoir more than 1.5 miles east of the Facility location, there are no large geographic areas where Facility views will occur. Places within the public right-of-way where Facility views are found are isolated locations where narrow view corridors exist through small openings in roadside vegetation and between residential structures. Such conditions are not common.

Of the 98 miles of public roads within the 2-mile study area, potential Facility views are found along approximately 1.6 linear miles (1.6%). Of the 6.6 miles of public roads within the 1/2-mile study area, potential Facility views are found along approximately 0.72 miles (10.9%). In all cases affected road segments are short and facility views will be brief and intermittent through roadside vegetation or between structures. Given the complex visual stimuli encountered by

motorists travelling in a moving vehicle, even if the Facility is visible it is probable viewer recognition of the Facility would be limited to a fraction of the total available viewing time. As the tendency of motorists is to focus down the road peripheral views of the Facility may go largely unnoticed by most travelers.

The only notable locations within the public right-of-way where an unobstructed view of the Facility was found was from Eleanor Drive approximately 1,800 feet southeast of the Facility site (refer to Figures A6 & A7) and from a short stretch of McLaughlin Drive approximately (2,000 feet south of the Facility site) where the road alignment is oriented toward the Facility (refer to Figures A1 & A3).

Roadways - Approximately 98 miles of public roadways are within the 2-mile study area. Croton Falls Road is the most heavily travelled roadway within one (1) mile of the Facility. Croton Falls Road near the Facility site has an average daily traffic volume (AADT) of approximately 6,816 vehicles. Webber Hill Road north of the Facility has an AADT of approximately 3,513 vehicles.

From most public roads the project will be substantially or fully screened by dense roadside vegetation. A brief and isolated and intermittent glimpse of the Facility may occur through foreground trees to eastbound motorists on Croton Falls Road as it passes in the vicinity of the facility. Visibility during summer leaf-on season will be substantially or completely screened by roadside deciduous vegetation. No direct visibility of the proposed tower was found from any portion of Croton Falls Road.

Study Area Reconnaissance

Balloon Visibility Tests – The Town of Carmel required balloon visibility tests be conducted on 6 days to allow the general public and local decision-makers an opportunity to observe the location and potential visibility of the Facility. Tests were originally scheduled for Friday January 25, 2019, Saturday January 26, 2019, Monday January 28, 2019, Friday February 1, 2019, Saturday February 2, 2019, and Monday February 4, 2019. The balloon test scheduled for Friday January 25, 2019 was postponed due to inclement weather and successfully completed on Friday March 1, 2019. On each day the balloon was launched at approximately 8am and remained aloft until at least 12pm. In all cases the balloon test was conducted when the weather forecast published on several prominent websites (i.e., weather.com, accuweather.com and wunderground.com) at 12pm the day before the scheduled test predicted winds to be 5mph or less for the duration of the test.

On the dates of the tests wind speeds between 8am and 12pm were as follows:

January 25, 2019: 7-9 mph⁸

January 28, 2019: 6-9 mph

February 1, 2019: 4-6 mph⁹

⁸ On January 25, 2019 the tie-down location of the balloon was moved approximately 100 feet to the northeast of the proposed tower center point to prevent the balloon tether from drifting into nearby tree branches during occasional wind gusts.

⁹ On February 1, 2019 the tie-down position location of the balloon was moved approximately 100 feet to the northeast of the proposed tower center point to prevent the balloon tether from drifting into nearby tree branches during occasional wind gusts.

February 2, 2019: 3-7 mph
February 4, 2019: 1-4 mph
March 2, 2019: 4-6 mph

On the dates where winds remained near or below 5mph balloons were generally stable and at or near the intended altitude. On the dates where winds increased above the forecast 5 mph for some portion of the test the balloon occasionally dropped below the intended altitude. In all cases balloons were most stable during the early hours of the test when winds were most calm.

The balloon test was conducted during winter leaf-off season to represent the worst-case (i.e., most exposed) visual condition. Project visibility will be substantially less during summer leaf-on season.

During each balloon visibility test, one four-foot diameter red balloon was raised to an elevation of 180 feet above existing grade (measured to the bottom of the balloon). At the time of the balloon tests 180 feet was the proposed height of the Facility. The proposed height has since been reduced to 140 feet.

In addition, a construction crane was positioned at the Facility site on Saturday February 23, 2019 to for the purpose of conducting a signal test. The crane was in place between 8am and 4pm. Signal tests were conducted at 3 different heights (including 180 feet and 140 feet). To further demonstrate potential Facility visibility a 5-foot diameter balloon was tied to the crane boom to represent the tower high point.

During the February 4, 2019 balloon test an experienced visual analyst drove public roads to inventory those areas where viewshed mapping identified potential Facility visibility. Photographs were taken from multiple vantage points to document the views in the direction of the Facility from places where a theoretical view was identified by viewshed analysis. Photos were also taken from locations where balloon visibility was less than worst-case or where the balloons were not visible to balance the photo record and document visual conditions representative of less affected areas on the subject property. Emphasis was placed on locations considered to be of scenic, cultural, and/or social importance to the community. Such places include recreation and conservation areas, historic resources, open spaces, local roadways, and residential neighborhoods.

Photographs were taken using identical Canon EOS D6 Mark II digital single lens reflex ("DSLR") 26-mega pixel cameras with a fixed 50mm lens (full frame sensor). The precise coordinate of each photo location was recorded in the field using a handheld global positioning system (GPS) unit. The Canon EOS D6 Mark II also has a built in GPS sensor which imbeds photo coordinates in the photo file meta data.

Photographs taken during the field reconnaissance are provided as Figures 3-25. Photographs were taken from the following places:

Map ID	Location Description	Direction to Tower	Distance to Tower (feet)	Theoretical View Indicated by Land Cover Viewshed - (See Figure 2)	Balloon Visible*	Photo/Simulation Provided as
1	Croton Falls Reservoir near Croton Falls Rd	NW	9,340	No	Yes	Figure A1 A, B & C
2	Vic Pass near #15	WNW	3,010	No	No	
3	Tanya Ln near #1	S	2,080	No	No	
4	Pigott Rd near #61	N	3,400	Yes	No	
5	Pigott Rd near #86	N	2,800	Yes	Yes	Figure A2 A, B & C
6	McLaughlin Dr near #100	N	2,230	Yes	Yes	
7	McLaughlin Dr near #125	NNW	1,860	No	Filtered**	
8	McLaughlin Dr near Croton Falls Rd	NNW	1,260	No	Filtered**	Figure A3 A, B & C
9	Rebecca Ln near #70	W	2,800	No	No	
10	Stebbins Rd and Croton Falls Rd	NW	2,940	No	No	
11	Croton Falls Rd	NW	1,970	No	No	
12	Croton Falls Rd	NW	1,320	No	No	
13	Bayberry Hill Rd and Pigott Rd	N	3,440	No	No	
14	Bayberry Hill Rd near #4	N	3,520	No	No	
15	Bayberry Hill Rd near #14	N	3,490	No	No	
16	Bayberry Hill Rd near #43	N	2,910	No	Filtered**	
17	Pigott Rd near #26	N	2,970	Yes	Filtered**	Figure A4 A, B & C
18	Pigott Rd and McLaughlin Dr	N	2,470	No	Filtered**	
19	McLaughlin Dr near #45	NNE	2,290	Yes	Yes	
20	McLaughlin Dr	NNE	1,920	Yes	Yes	Figure A5 A, B & C
21	McLaughlin Dr and Croton Falls Rd	NNE	1,340	No	No	
22	Croton Falls Rd	NNE	1,080	No	Filtered**	Figure A6 A, B & C
23	Croton Falls Rd near #398	ENE	1,050	Yes	Filtered**	
24	Old County Rd and Croton Falls Rd	E	2,290	No	No	
25	Eleanor Dr near #131	NNE	3,250	Yes	Filtered**	
26	Eleanor Dr near #90	NNE	2,530	No	No	
27	Eleanor Dr near #82	NNE	2,360	Yes	Filtered**	
28	Eleanor Dr near #76	NNE	2,330	Yes	Yes	
29	Kathryn Ln near #3	NE	2,670	No	No	
30	Kathryn Ln and Eleanor Dr	NE	2,330	Yes	Filtered**	
31	Eleanor Dr near #50	NE	2,120	Yes	Yes	Figure A7 A, B & C
32	Eleanor Dr near #40	NE	1,920	Yes	Filtered**	Figure A8 A, B & C
33	Eleanor Dr near #26	ENE	1,720	Yes	Filtered**	
34	Eleanor Dr near #22	ENE	1,740	Yes	Yes	
35	Shana Ln and Eleanor Dr	ENE	1,950	Yes	Yes	
36	Shana Ln near #28	NE	2,240	No	No	
37	Shana Ln near #14	ENE	2,110	No	Filtered**	
38	Eleanor Dr and Watermelon Hill Rd	ENE	2,240	No	No	
39	Old County Rd near #13	E	2,640	Yes	Filtered**	
40	Stacey Ln near #18	S	1,540	No	No	
41	Weber Hill Rd and Shear Hill Rd	ENE	1,790	No	No	
42	Odessa Rd near #40	E	2,280	Yes	Yes	Figure A9 A, B & C
43	Odessa Rd and Fulmar Rd	SE	3,020	No	No	
44	Fulmar Rd near #22	SSE	2,640	Yes	Filtered**	
45	Fulmar Rd and Shear Hill Rd	SSE	2,270	No	No	
46	Croton Falls Rd and Shear Hill Rd	E	1,800	No	No	
47	Croton Falls Rd near #398	ENE	960	No	No	
48	Lake Dr near #70	SSE	3,720	Yes	Yes	
49	Putnam Trailway near Lake Dr	SE	3,290	No	No	
50	Lake Dr and Shear Hill Rd	SSE	2,470	No	No	
51***	Putnam Trailway at mile marker 46.6	SW	2,320	No	NA	Appendix B

* "Balloon Visible" differs from "Theoretical View Indicated by Land Cover Viewshed" due to the use of a highly conservative estimate of tree height in viewshed calculation (50 feet). In most cases mature woodland vegetation is significantly taller resulting in reduced project visibility.

** "Filtered" visibility indicates photo locations where the balloon was visible through intervening deciduous vegetation during winter leaf-off season. Such views will likely be fully screened during summer leaf-on season.

*** Viewpoint P51 was added subsequent to the balloon tests to address a question concerning potential visibility of the Facility from this portion of the Putnam County Trailway. This location was visited and photographed on April 24, 2019. A photograph provided in Appendix B herein demonstrates that existing dense trailside vegetation will fully screen the view of the Facility from this portion of the trail.

Photo Simulations

To illustrate how the alternative tan color monopole and monopine design wireless telecommunications towers will appear photo simulations were prepared from nine (9) affected photo locations. Photo simulations were developed by superimposing a rendering of a three-dimensional computer model of the proposed Facility into the base photograph taken from each corresponding visual receptor. The three-dimensional computer model was developed using *3D Studio Max Design®* software (3D Studio Max).

Simulated perspectives (camera views) were matched to the corresponding base photograph for each simulated view by replicating the precise coordinates of the field camera position (as recorded by handheld GPS) and the focal length of the camera lens used (e.g. 50mm). Precisely matching these parameters assures scale accuracy between the base photograph and the subsequent simulated view. The camera's elevation (Z) value is derived from digital elevation model (DEM) data plus the camera's height above ground level. The camera's target position was set to match the bearing of the corresponding existing condition photograph as recorded in the field. With the existing conditions photograph displayed as a "viewport background," and the viewport properties set to match the photograph's pixel dimensions, minor camera adjustments were made (horizontal and vertical positioning, and camera roll) to align the horizon in the background photograph with the corresponding features of the 3D model.

To verify the camera alignment, elements visible within the photograph (e.g., balloon, existing buildings, utility poles, topography, etc.) were identified and digitized from digital orthophotos as needed. Each element was assigned a Z value based on DEM data and then imported to 3D Studio Max. A 3D terrain model was also created (using DEM data) to replicate the existing local topography. The digitized elements were then aligned with corresponding elements in the photograph by adjusting the camera target. If necessary, slight camera adjustments were made for accurate alignment.

A daylight system was created matching the exact date and time of each baseline photograph to assure proper shading and shadowing of modeled elements.

Once the camera alignment was verified, a to-scale 3D model of the proposed 140-foot-tall telecommunications tower was merged into the model space. The 3D model of both the stealth tree and tan color alternative tower types were constructed in sufficient detail to accurately convey visual character and reveal impacts. The scale, alignment, elevations and location of the visible elements of the proposed tower are true to the conceptual design. Post production editing (i.e., airbrush out portion of tower that falls below or behind foreground topography and vegetation) was completed using Adobe Photoshop software. The methodology accurately represents the location, height and visual character of the proposed tower.

Photo simulations are provided in Appendix A.

Summary and Conclusions

The study area is characterized by a rolling and steeply sloped landscape and heavily wooded with broad tracts of mature second growth deciduous forest that effectively block or screen views of the Facility from most locations. Of the 8,042 acres within the 2-mile study area, a view of the proposed telecommunications tower is theoretically possible from approximately 43 acres (0.5%). Of this, approximately 12 acres falls on the surface of a waterbody. Of the 502 acres within the 1/2-mile study area, a view of the proposed tower is possible from approximately 18 acres (4%).

Of the 98 miles of public roads within the 2-mile radius Study Area, potential project views are found along approximately 1.6 linear miles (1.6%). Of the 6.6 miles of public roads within the 1/2-mile radius study area, potential project views are found along approximately 0.72 (10.9%). In all cases affected road segments are short and facility views will be brief and intermittent through roadside vegetation. Given the complex visual stimuli encountered by motorists travelling in a moving vehicle, even if the Facility is visible it is probable viewer recognition of the Facility would be limited to a fraction of the total available viewing time. As the tendency of motorists is to focus down the road peripheral views of the Facility may go largely unnoticed by most travelers.

Aside from a 14-acre area on the surface of the Croton Falls Reservoir more than 1.5 miles east of the Facility location, there are no large geographic areas where Facility views will occur. Places within the public right-of-way where Facility views are found are isolated locations where narrow view corridors exist through small openings in roadside vegetation. Such conditions are not common. The only notable locations within the public right-of-way where an unobstructed view of the Facility was found was from Eleanor Drive approximately 1,800 feet southeast of the Facility site (refer to Figures A6 & A7) and from a short stretch of McLaughlin Drive approximately (2,000 feet south of the Facility site) where the road alignment is oriented toward the Facility (refer to Figures A1 & A3).

Seven (7) residential structures (including the main house on the host property) are within 1,000 feet of the Facility. The nearest occupied residential structure is approximately 480 feet to the southeast. Adjacent residences may experience seasonal visibility through intervening deciduous branches during leaf-off season. Where project views occur, visibility is commonly filtered through foreground vegetation which will substantially screen or completely block views during summer leaf-on season.

Six (6) balloon visibility tests were conducted between January 25 and March 2, 2019. On each of these dates one four-foot diameter red balloon was raised to an elevation of 180 feet above existing grade (measured to the bottom of the balloon). At the time of the balloon tests 180 feet was the proposed height of the Facility. The proposed height has since been lowered to 140 feet thereby reducing Facility visibility from the balloon visibility presented in Figures 3-27 – Photo Log.

The proposed Facility is not a new visual condition in the study area. Two existing telecommunications towers are located on a hilltop approximately 1.25 miles north northwest of the Facility site near Lake Casse. These exiting towers are approximately 120 feet tall with a base elevation of approximately 715 and 730 feet amsl – approximately 130 feet higher in

elevation than the proposed Facility. One existing tower is a lattice frame design and the other tower is a monopole design. Neither tower incorporates stealth mitigation design. Both existing telecommunications towers are directly visible from portions of the Eleanor Drive residential neighborhood as well as from the water surface and much of the south and east shore of Lake Casse.

There are no aesthetic resources of statewide significance located within the two-mile study area. Visual impact is defined by the NYS Department of Environmental Conservation as follows:

"Aesthetic impact occurs when there is a detrimental effect on the perceived beauty of a place or structure. Mere visibility, even startling visibility of a project proposal, should not be a threshold for decision making."¹⁰ Significant aesthetic impacts are those that may cause a diminishment of the public enjoyment and appreciation of an inventoried resource, or one that impairs the character or quality of such a place. Proposed large facilities by themselves should not be a trigger for a declaration of significance."¹¹

In other words, the DEC Visual Policy recognizes that not everything that is visible rises to the level of an Aesthetic Impact, and not all Aesthetic Impacts rise to the level of a Significant Aesthetic Impact that may diminish public enjoyment of the resource.

Based on the degree of Facility visibility and proposed mitigation measures presented in the application, it is clear that any remaining project visibility is not of a size or extent that it would constitute an unacceptable magnitude. Nor does the Facility affect a sufficient number of public viewers or geographic area where the Facility can reasonably be deemed to be visually important as defined by SEQRA.

Furthermore, when considered within the framework of the DEC Visual Policy's definition of "significant adverse visual impact", it is clear the Facility will not cause a diminishment of the public enjoyment and appreciation of any scenic or historic resource, or one that impairs the character or quality of such a place. As such the proposed Project will not result in an adverse visual impact.

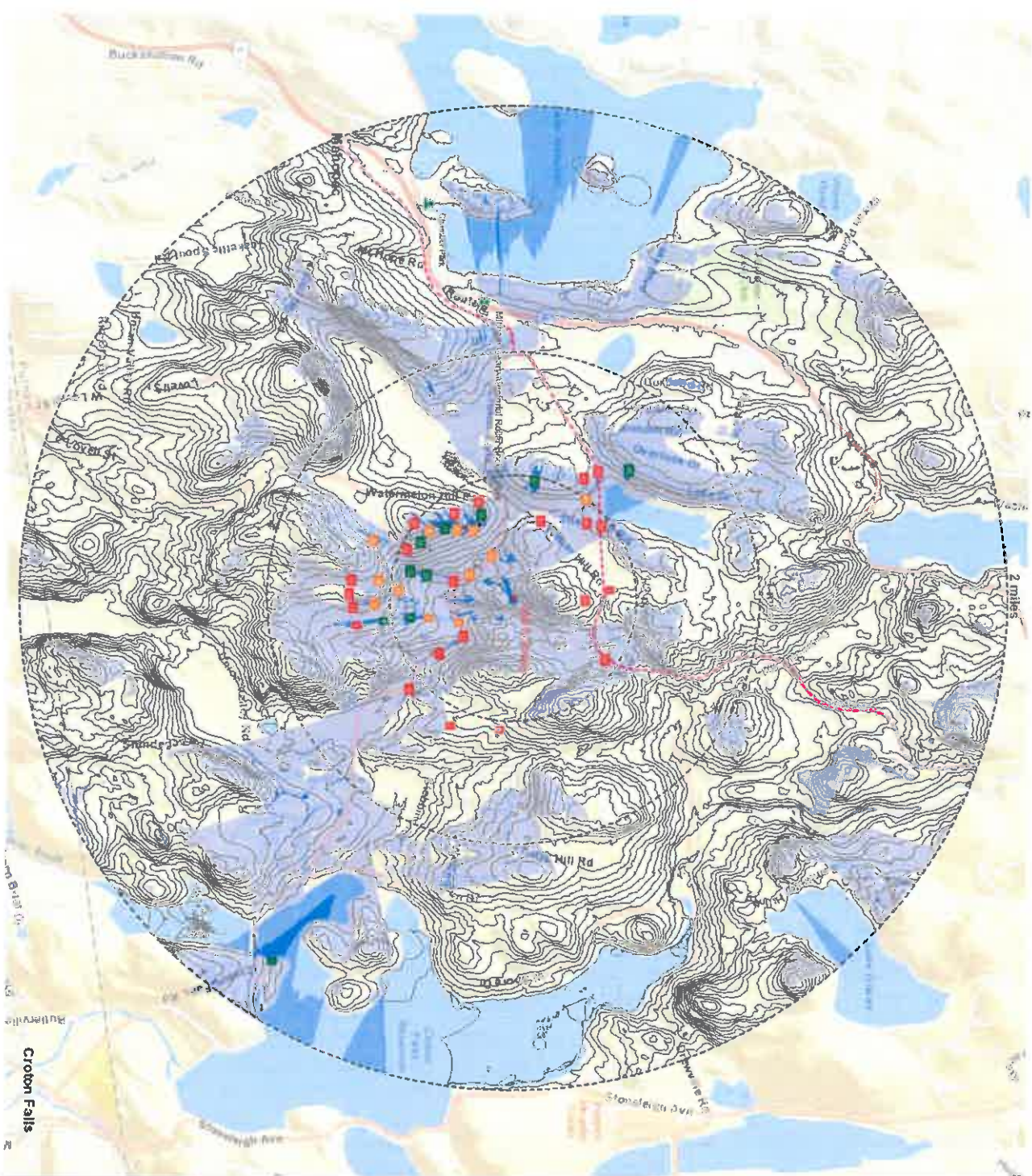
Submitted by:



Matthew W. Allen, RLA

¹⁰ NYSDEC Visual Policy (DEP-00-2), p.9.

¹¹ *Id.* p.5.

[illegible]



VP1 - Croton Falls Reservoir near Croton Falls Rd

Distance: 9,340 Feet



VP2 - Vic Pass near #15

Distance: 3,010 Feet

PHOTO LOG

Figure 3

Note: At the time of the balloon tests 180 feet was the proposed height of the Facility. The proposed height has since been reduced to 140 feet.

Visual Resource Assessment Proposed Telecommunications Tower

SARATOGA
ASSOCIATES



Lake Castle Site (NY056)
254 Croton Falls Road
Mahopac, NY 10541



VP3 - Tanya Ln near #1

Distance: 2,080 Feet



VP4 - Pigott Rd near #61

Distance: 3,400 Feet

PHOTO LOG

Note - At the time of the balloon tests 180 feet was the proposed height of the Facility. This proposed height has since been reduced to 140 feet.

SARATOGA
ASSOCIATES

Visual Resource Assessment Proposed Telecommunications Tower



Lake Cassa Site (NY058)
254 Croton Falls Road
Mahopac, NY 10541

Figure 4



VP5 - Pigott Rd near #86

Distance: 2,800 Feet



VP6 - McLaughlin Dr near #100

Distance: 2,230 Feet

PHOTO LOG

Note: At the time of the balloon tests 180 feet was the proposed height of the Facility. The proposed height has since been reduced to 140 feet.

SARATOGA
ASSOCIATES



Visual Resource Assessment Proposed Telecommunications Tower

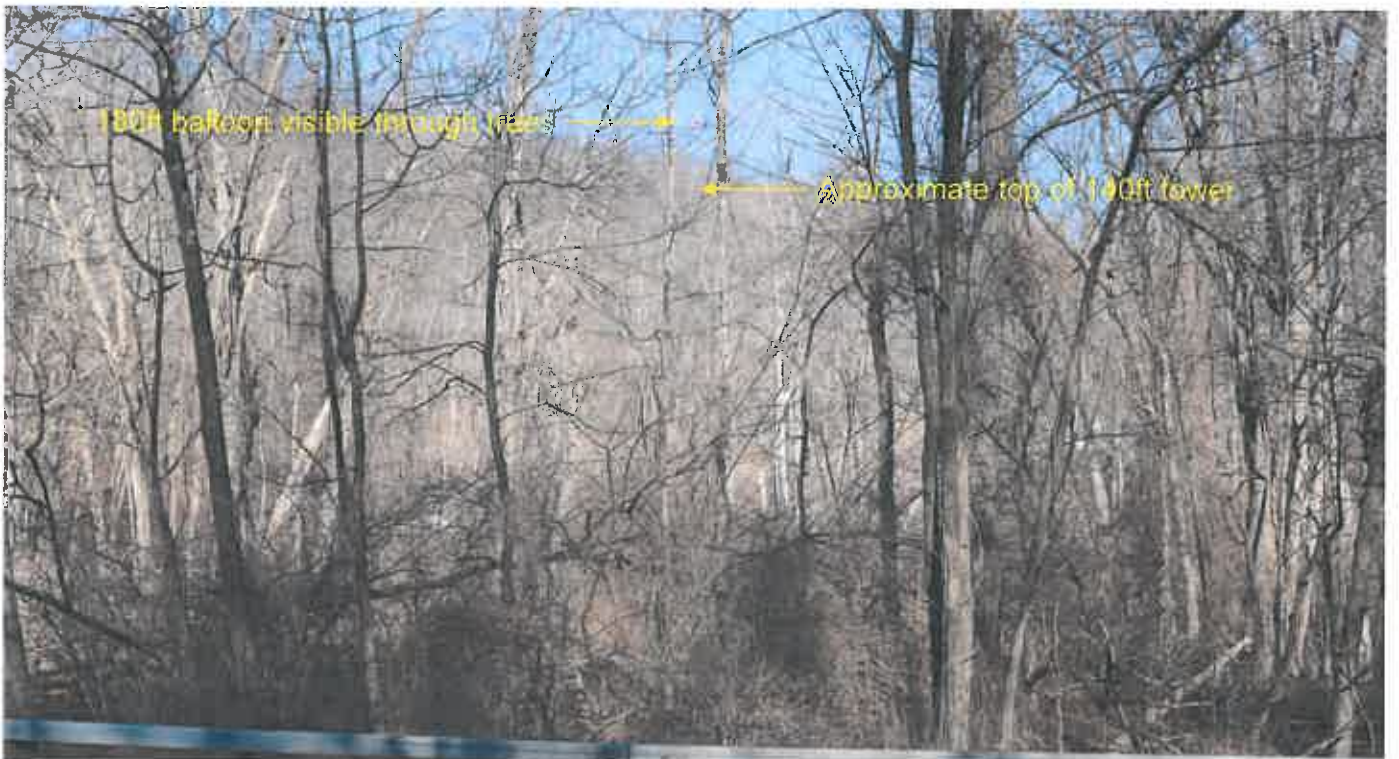
Lake Cassa Site (NY058)
254 Croton Falls Road
Maltopac, NY 10541

Figure 5



VP7 - McLaughlin Dr near #125

Distance: 1,860 Feet



VP8 - McLaughlin Dr near Croton Falls Rd

Distance: 1,260 Feet

PHOTO LOG

Note: At the time of the balloon tests 180 feet was the proposed height of the Facility. The proposed height has since been reduced to 140 feet.

SARATOGA
ASSOCIATES



Figure 6

Visual Resource Assessment Proposed Telecommunications Tower

Lake Cassa Site (NY056)
254 Croton Falls Road
Mahopac, NY 10541



VP9 - Rebecca Ln near #70

Distance: 2,800 Feet



VP10 - Stebbins Rd and Croton Falls Rd

Distance: 2,940 Feet

PHOTO LOG

Note: At the time of the balloon tests, 180 feet was the proposed height of the Facility. The proposed height has since been reduced to 140 feet.

SARATOGA
ASSOCIATES



HOMELAND TOWERS

Figure 7

Visual Resource Assessment Proposed Telecommunications Tower

Lake Cassa Site (NYC56)
254 Croton Falls Road
Mandac, NY 10541



VP11 - Croton Falls Rd

Distance: 1,970 Feet



VP12 - Croton Falls Rd

Distance: 1,320 Feet

PHOTO LOG

Note: At the time of the balloon tests 180 feet was the proposed height of the Facility. The proposed height has since been reduced to 140 feet.

SARATOGA
ASSOCIATES



Visual Resource Assessment Proposed Telecommunications Tower

Lake Caske Site (NY066)
354 Croton Falls Road
Malabar, NY 10541

Figure 8



VP13 - Bayberry Hill Rd and Pigott Rd

Distance: 3,440 Feet



VP14 - Bayberry Hill Rd near #4

Distance: 3,520 Feet

PHOTO LOG

Note: At the time of the balloon tests 180 feet was the proposed height of the Facility. The proposed height has since been reduced to 140 feet.

SARATOGA
ASSOCIATES



Figure 9

Visual Resource Assessment Proposed Telecommunications Tower

Lake Cassa Site (NY056)
254 Groton Falls Road
Mahopac, NY 10541



VP15 - Bayberry Hill Rd near #14

Distance: 3,490 Feet



VP16 - Bayberry Hill Rd near #43

Distance: 2,910 Feet

PHOTO LOG

Note: At the time of the balloon tests 160 feet was the proposed height of the Facility. The proposed height has since been reduced to 140 feet.

SARATOGA
ASSOCIATES



HOMETOWN TOWERS

Figure 10

Visual Resource Assessment Proposed Telecommunications Tower

Lake Gasse Site (NY056)
254 Croton Falls Road
Mahopac, NY 10541



VP17 - Pigott Rd near #26

Distance: 2,970 Feet



VP18 - Pigott Rd and McLaughlin Dr

Distance: 2,470 Feet

PHOTO LOG

Note: At the time of the balloon tests 180 feet was the proposed height of the Facility. The proposed height has since been reduced to 140 feet.

SARATOGA
ASSOCIATES



Visual Resource Assessment Proposed Telecommunications Tower

Lake Cassa Site (NY056)
254 Croton Falls Road
Mahopac, NY 10541

Figure 11



VP19 - McLaughlin Dr near #45

Distance: 2,290 Feet



VP20 - McLaughlin Dr

Distance: 1,920 Feet

PHOTO LOG

Note: At the time of the balloon tests, 180 feet was the proposed height of the Facility. The proposed height has since been reduced to 140 feet.

SARATOGA
ASSOCIATES



HOMELAND TOWERS

Figure 12

Visual Resource Assessment Proposed Telecommunications Tower

Lake Cassie Site (NY056)
254 Croton Falls Road
Mahopac, NY 10541



VP21 - McLaughlin Dr and Croton Falls Rd

Distance: 1,340 Feet



VP22 - Croton Falls Rd

Distance: 1,080 Feet

PHOTO LOG

Note: At the time of the balloon tests 180 feet was the proposed height of the Facility. The proposed height has since been reduced to 140 feet

SARATOGA
ASSOCIATES



Visual Resource Assessment Proposed Telecommunications Tower

Lake Cassie Site (NY058)
254 Croton Falls Road
Mahopac, NY 10541

Figure 13



VP23 - Croton Falls Rd near #398

Distance: 1,050 Feet



VP24 - Old County Rd and Croton Falls Rd

Distance: 2,290 Feet

PHOTO LOG

Note: At the time of the balloon tests, 180 feet was the proposed height of the Facility. The proposed height has since been reduced to 140 feet.

SARATOGA
ASSOCIATES



Visual Resource Assessment Proposed Telecommunications Tower

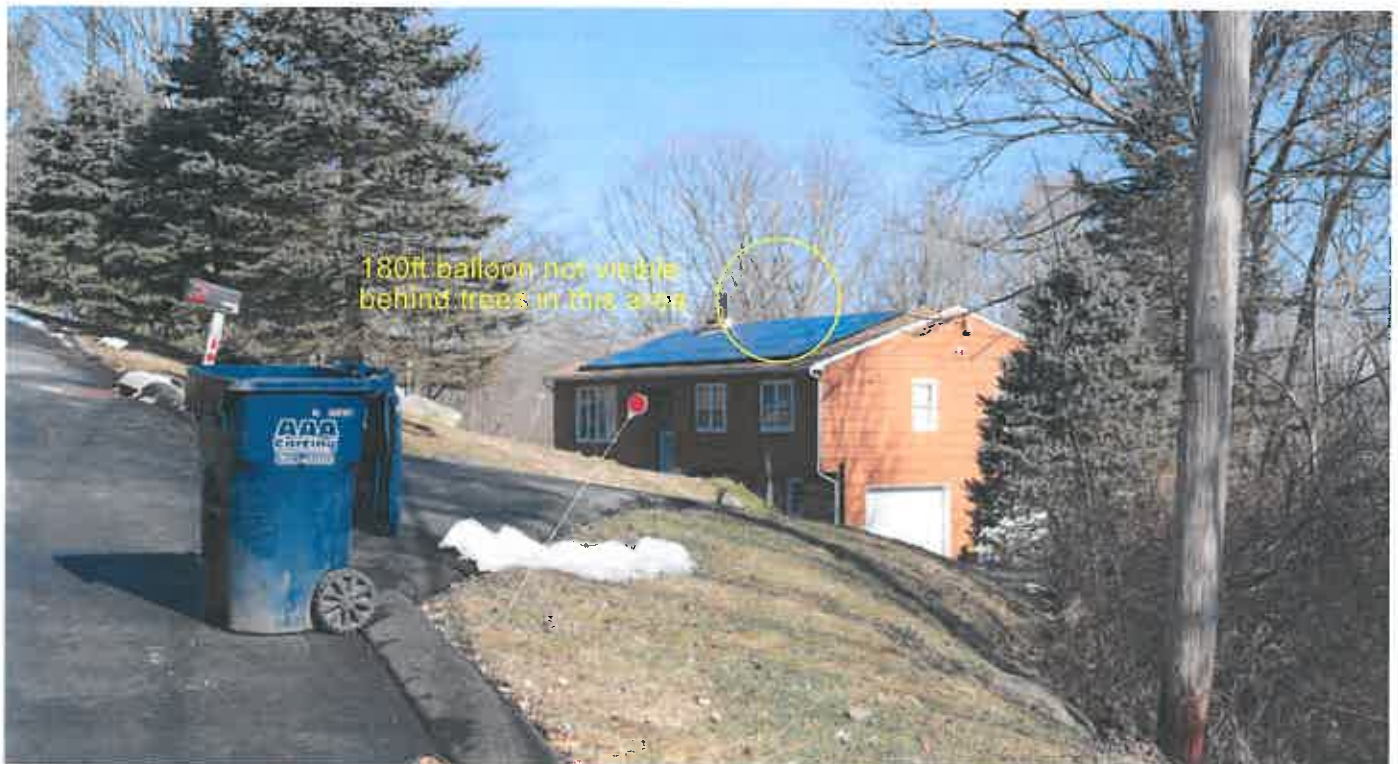
Lake Cassa Site (NY056)
254 Croton Falls Road
Mahopac, NY 10541

Figure 14



VP25 - Eleanor Dr near #131

Distance: 3,250 Feet



VP26 - Eleanor Dr near #90

Distance: 2,530 Feet

PHOTO LOG

Note: At the time of the balloon tests 180 feet was the proposed height of the Facility. The proposed height has since been reduced to 140 feet.

SARATOGA
ASSOCIATES



Figure 15

Visual Resource Assessment Proposed Telecommunications Tower

Lake Cassa Site (NY056)
254 Croton Falls Road
Mahopac, NY 10541



VP27 - Eleanor Dr near #82

Distance: 2,360 Feet



VP28 - Eleanor Dr near #76

Distance: 2,330 Feet

PHOTO LOG

Note: At the time of the balloon tests 180 feet was the proposed height of the Facility. The proposed height has since been reduced to 140 feet.

SARATOGA
ASSOCIATES



Visual Resource Assessment Proposed Telecommunications Tower

Lake Cassa Site (NY056)
254 Croton Falls Road
Mahopac, NY 10541

Figure 16



VP29 - Kathryn Ln near #6

Distance: 2,670 Feet



VP30 - Kathryn Ln and Eleanor Dr

Distance: 2,330 Feet

PHOTO LOG

Note: At the time of the balloon tests 180 feet was the proposed height of the Facility. The proposed height has since been reduced to 140 feet.

SARATOGA
ASSOCIATES



Visual Resource Assessment Proposed Telecommunications Tower

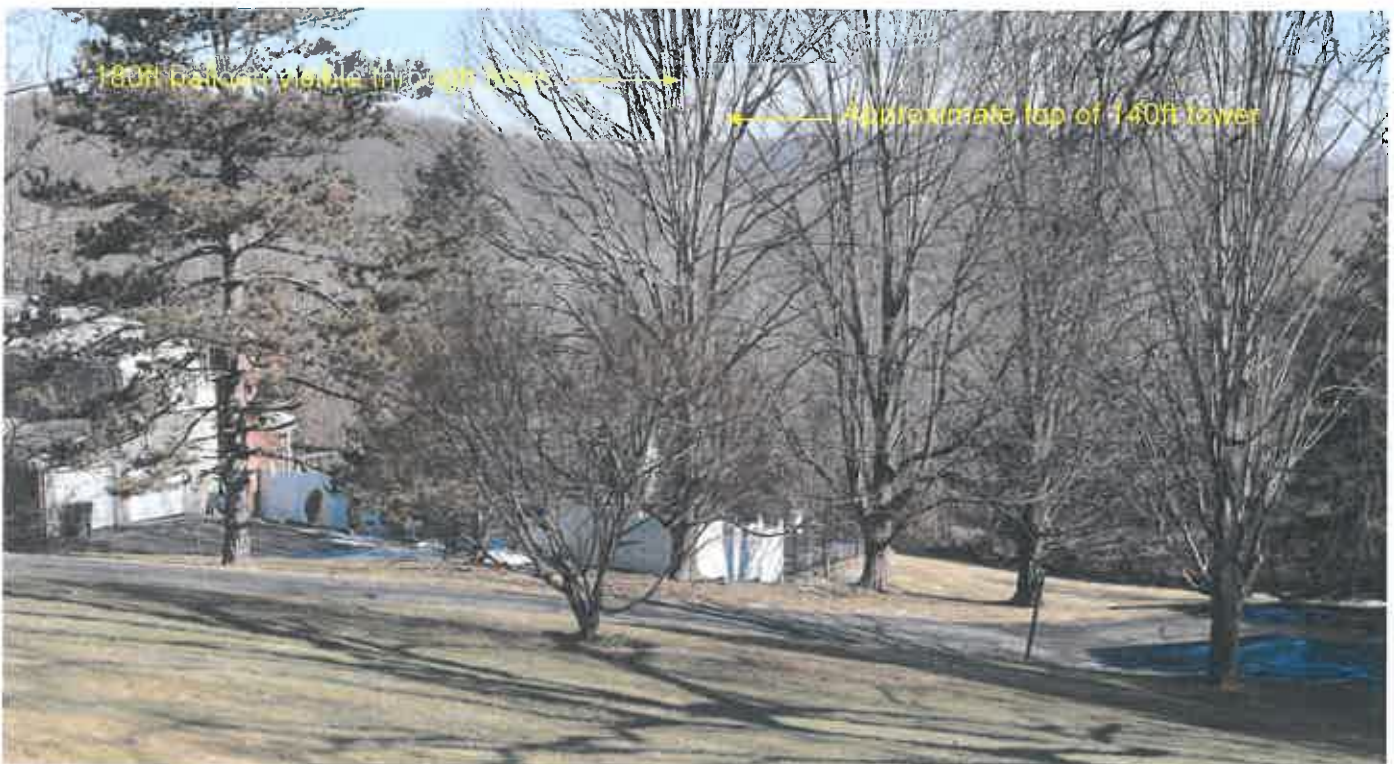
Lake Casse Site (NY056)
254 Croton Falls Road
Mahopac, NY 10541

Figure 17



VP31 - Eleanor Dr near #50

Distance: 2,120 Feet



VP32 - Eleanor Dr near #40

Distance: 1,920 Feet

PHOTO LOG

Note: At the time of the balloon tests, 180 feet was the proposed height of the Facility. The proposed height has since been reduced to 140 feet.

SARATOGA
ASSOCIATES



Visual Resource Assessment Proposed Telecommunications Tower

Lake Cassie Site (NY058)
254 Croton Falls Road
Mahopac, NY 10541

Figure 18



VP33 - Eleanor Dr near #26

Distance: 1,720 Feet



VP34 - Eleanor Dr near #22

Distance: 1,740 Feet

PHOTO LOG

NOTE: At the time of the balloon tests 180 feet was the proposed height of the Facility. The proposed height has since been reduced to 140 feet.

SARATOGA
ASSOCIATES

Visual Resource Assessment Proposed Telecommunications Tower



Lake Castle Site (NY056)
254 Croton Falls Road
Mahopac, NY 10541

Figure 19



VP35 - Shana Ln and Eleanor Dr

Distance: 1,950 Feet



VP36 - Shana Ln near #26

Distance: 2,240 Feet

PHOTO LOG

Note: At the time of the balloon tests 180 feet was the proposed height of the Facility. The proposed height has since been reduced to 140 feet.

SARATOGA
ASSOCIATES



Visual Resource Assessment Proposed Telecommunications Tower

Lake Cassa Site (NY055)
254 Croton Falls Road
Mahopac, NY 10541

Figure 20



VP37 - Shana Ln near #14

Distance: 2,110 Feet



VP38 - Eleanor Dr and Watermelon Hill Rd

Distance: 2,240 Feet

PHOTO LOG

Note: At the time of the balloon tests, 180 feet was the proposed height of the Facility. The proposed height has since been reduced to 140 feet.

SARATOGA
ASSOCIATES



Visual Resource Assessment Proposed Telecommunications Tower

Lake Cassa Site (NY056)
254 Croton Falls Road
Mahopac, NY 10541

Figure 21



VP39 - Old Country Rd near #13

Distance: 2,640 Feet



VP40 - Stacey Ln near #18

Distance: 1,540 Feet

PHOTO LOG

Note: At the time of the balloon tests 180 feet was the proposed height of the Facility. The proposed height has since been reduced to 140 feet.

SARATOGA
ASSOCIATES

Proposed Telecommunications Tower



Eagle Castle Site (NY0556)
254 Croton Falls Road
Mahopac, NY 10541

Figure 22

Visual Resource Assessment



VP41 - Weber Hill Rd and Shear Hill Rd

Distance: 1,790 Feet



VP42 - Odessa Rd near #40

Distance: 2,280 Feet

PHOTO LOG

Note: At the time of the balloon tests 180 feet was the proposed height of the Facility. The proposed height has since been reduced to 140 feet.

SARATOGA
ASSOCIATES



Visual Resource Assessment Proposed Telecommunications Tower

Lake Castle Site (NY056)
254 Croton Falls Road
Mahopac, NY 10541

Figure 23



VP43 - Odessa Rd and Fulmar Rd

Distance: 3,020 Feet



VP44 - Fulmar Rd near #22

Distance: 2,640 Feet

PHOTO LOG

Note: At the time of the balloon tests 180 feet was the proposed height of the Facility. The proposed height has since been reduced to 140 feet.

SARATOGA
ASSOCIATES



Visual Resource Assessment Proposed Telecommunications Tower

Lake Cassa Site (NY055)
254 Croton Falls Road
Mahopac, NY 10541

Figure 24



VP45 - Fulmar Rd and Shear Hill Rd

Distance: 2,270 Feet



VP46 - Croton Falls Rd and Shear Hill Rd

Distance: 1,800 Feet

PHOTO LOG

Figure 25

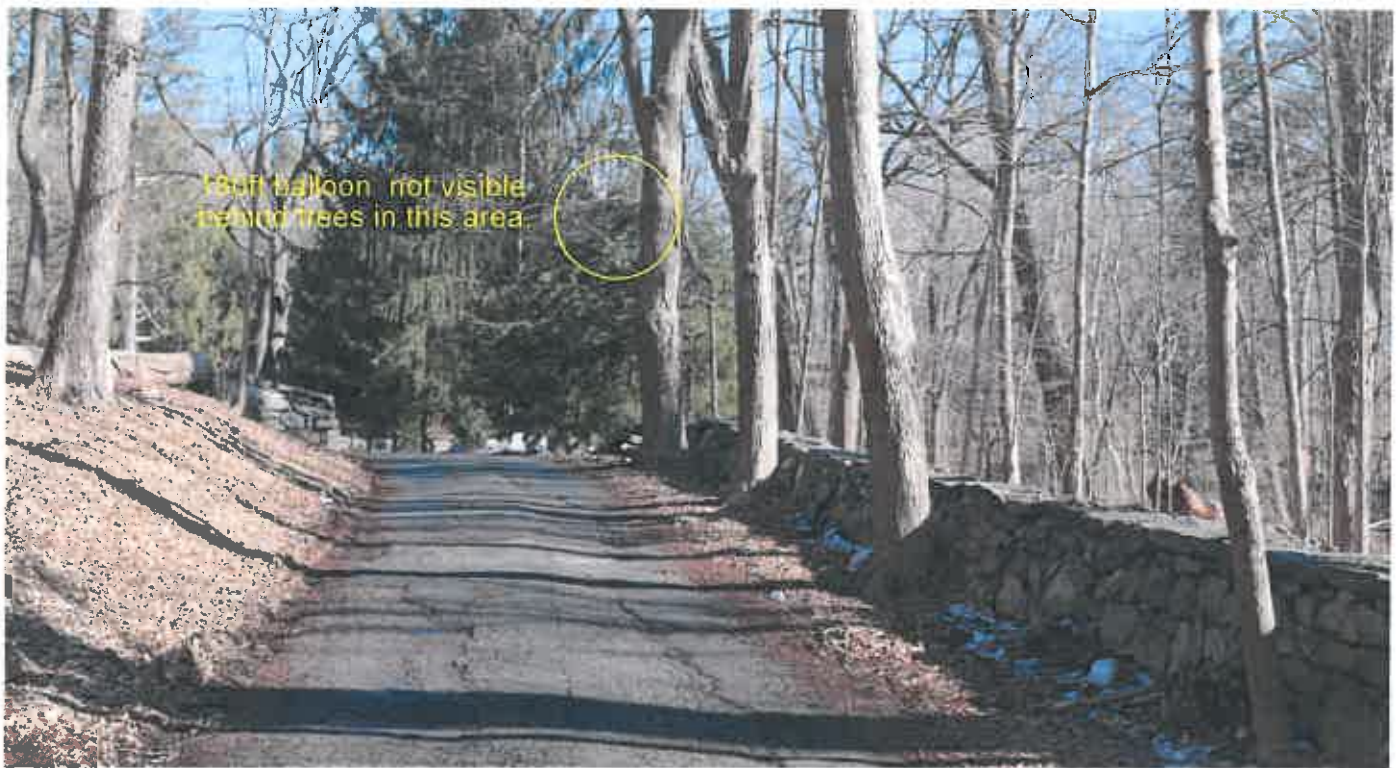
Note: At the time of the balloon tests 180 feet was the proposed height of the Facility. The proposed height has since been reduced to 140 feet.

Visual Resource Assessment Proposed Telecommunications Tower

SARATOGA
ASSOCIATES



Lake Cassa Site (NY056)
254 Croton Falls Road
Mahopac, NY 10541



180ft balloon not visible
behind trees in this area

VP47 - Croton Falls Rd near #398

Distance: 960 Feet



180ft balloon visible

top of ridge top of 145ft tower

VP48- Lake Dr near #70

Distance: 3,720 Feet

PHOTO LOG

Note: At the time of the balloon tests 180 feet was the proposed height of the Facility. The proposed height has since been reduced to 140 feet.

SARATOGA
ASSOCIATES



Figure 26

Visual Resource Assessment Proposed Telecommunications Tower

Lake Cassa Site (NY056)
254 Croton Falls Road
Mahopac, NY 10541



VP49 - Putnam County Trailway near Lake Dr

Distance: 3,290 Feet



VP50 - Lake Dr and Shear Hill Rd

Distance: 2,470 Feet

PHOTO LOG

Note: At the time of the balloon tests 160 feet was the proposed height of the Facility. The proposed height has since been reduced to 140 feet.

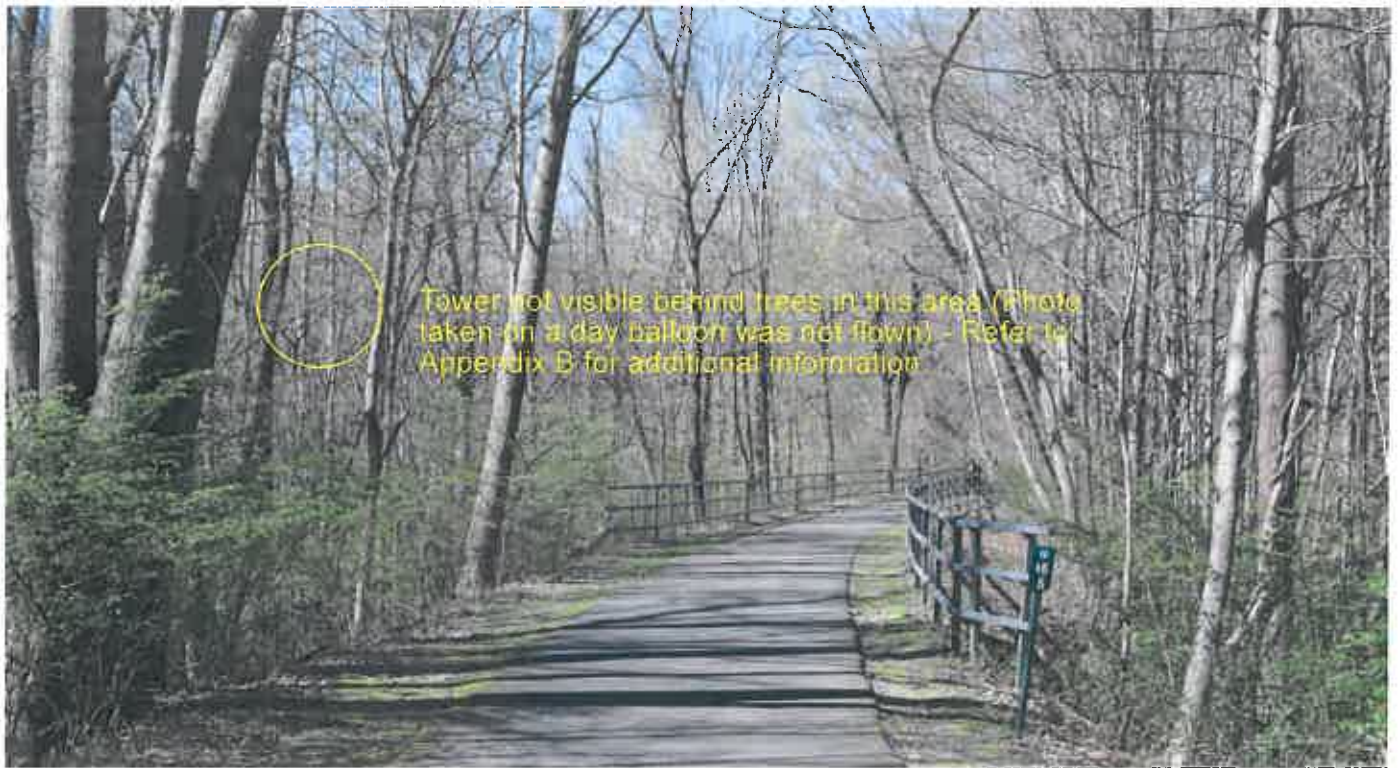
SARATOGA
ASSOCIATES



Visual Resource Assessment Proposed Telecommunications Tower

Lake Cassa-Site (NY056)
254 Croton Falls Road
Mahopac, NY 10541

Figure 27



VP51 - Putnam County Trailway at Milepost 46.6

Distance: 2,320 Feet

PHOTO LOG

Note: At the time of the balloon tests 180 feet was the proposed height of the Facility. The proposed height has since been reduced to 140 feet.

SARATOGA
ASSOCIATES



Figure 28

Visual Resource Assessment Proposed Telecommunications Tower

Lake Cassa Site (NY066)
254 Croton Falls Road
Mahopac, NY 10541

APPENDIX A

Photo Simulations



Photograph Information

Date: February 4, 2019
 Time: 9:00 am
 Focal Length: 50mm
 Camera: Canon 6D Mark II
 Photo: 41° 21' 48.8664" N
 Location: 73° 40' 32.6532" W
 Distance: 9,340 Feet

To appear at the correct scale this
 photograph is intended to be viewed
 18 inches from the reader's eye when
 printed on 11"x17" paper.

Existing Condition

VP1- Croton Falls Reservoir near Croton Falls Road

SARINOGA
 ASSOCIATES

Figure A1-A

Visual Resource Assessment

Proposed Telecommunications Tower



Lake Carme Site (NY 068)
 254 Croton Falls Road
 Malverne, NY 10541



Photograph Information

Date: February 4, 2019
Time: 9:00 am
Focal Length: 50mm
Camera: Canon 6D Mark II
Photo: 41° 21' 48.8864" N
Location: 73° 40' 32.6532" W
Distance: 9,340 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Simulated Condition - 140 ft Monopole Alternative
VP1- Croton Falls Reservoir near Croton Falls Road

SARATOGA
ASSOCIATES

Figure A1-B
Visual Resource Assessment
Proposed Telecommunications Tower



Lake Cassa City (NYCSD)
254 Croton Falls Road
Natick, NY 10551



Photograph Information

Date: February 4, 2019
Time: 9:00 am
Focal Length: 50mm
Camera: Canon 6D Mark II
Photo: 41° 21' 48.8664" N
Location: 73° 40' 32.6532" W
Distance: 9,340 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Simulated Condition - 140 ft Monopine Alternative
VP1- Croton Falls Reservoir near Croton Falls Road

SYNTHESIS
ASSOCIATES

Figure A1-C
Visual Resource Assessment
Proposed Telecommunications Tower



Lake Catch Site (NY056)
374 Croton Falls Road
Middletown, NY 10941



Photograph Information

Date: February 4, 2019
 Time: 10:08 am
 Focal Length: 50mm
 Camera: Canon 6D Mark II
 Photo: 41° 22' 13.1484" N
 Location: 73° 42' 08.2656" W
 Distance: 2,800 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Existing Condition
 VPS- Pigott Rd near #86

SABATINI
 ASSOCIATES

Figure A2-A
 Visual Resource Assessment
 Proposed Telecommunications Tower



Low Case Site (NY000)
 254 Griffin Falls Road
 Malabar, NY 10541



Photograph Information

Date: February 4, 2019
 Time: 10:08 am
 Focal Length: 50mm
 Camera: Canon 6D Mark II
 Photo Location: 41° 22' 13.1484" N
 73° 42' 08.2656" W
 Distance: 2,800 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Simulated Condition - 140 ft Monopole Alternative
 VP5- Pigott Rd near #86

SANITOCIA
 ASSOCIATES

Figure A2-B
 Visual Resource Assessment
 Proposed Telecommunications Tower



Lake Cassa Site (NY 006)
 254 Griggs Falls Road
 Madison, NY 10041



Photograph Information

Date: February 4, 2019
 Time: 10:08 am
 Focal Length: 50mm
 Camera: Canon 6D Mark II
 Photo: 41° 22' 13.1484° N
 Location: 73° 42' 08.2656° W
 Distance: 2,800 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Simulated Condition - 140 ft Monopine Alternative
 VP5- Pigott Rd near #86

SAATCHI
 ASSOCIATES

Figure A2-C
 Visual Resource Assessment
 Proposed Telecommunications Tower



Lake Cassa Site (NY0001)
 254 Crown Falls Road
 Melrose, NY 10541



Photograph Information

Date: February 4, 2019
Time: 10:13 am
Focal Length: 50mm
Camera: Canon 6D Mark II
Photo Location: 41° 22' 28.9668" N
73° 42' 07.8192" W
Distance: 1,260 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Existing Condition
VP8- McLaughlin Dr near Croton Falls Rd

SARATOGA
ASSOCIATES

Figure A3-A
Visual Resource Assessment
Proposed Telecommunications Tower



Lake Circle Site (NY056)
254 Croton Falls Road
Malverle, NY 10541



Photograph Information

Date: February 4, 2019
Time: 10:13 am
Focal Length: 50mm
Camera: Canon 6D Mark II
Photo: 41° 22' 28.9668" N
Location: 73° 42' 07.8192" W
Distance: 1,260 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Simulated Condition - 140 ft Monopole Alternative
VP8- McLaughlin Dr near Croton Falls Rd

SANADIA
ASSOCIATES

Figure A3-B
Visual Resource Assessment
Proposed Telecommunications Tower



Lake Carmel Site (NY054)
254 Croton Falls Road
Mandipac, NY 10543



Photograph Information

Date: February 4, 2019
Time: 10:13 am
Focal Length: 50mm
Camera: Canon 6D Mark II
Photo Location: 41° 22' 28.9668" N
73° 42' 07.8192" W
Distance: 1,260 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Simulated Condition - 140 ft Monopine Alternative
VP8- McLaughlin Dr near Croton Falls Rd

SARAVI
ASSOCIATES

Figure A3-C
Visual Resource Assessment
Proposed Telecommunications Tower



Lake Carmel Site (NY058)
254 Croton Falls Road
Macedon, NY 10551



Photograph Information

Date: February 4, 2019
 Time: 10:38 am
 Focal Length: 50mm
 Camera: Canon 6D Mark II
 Photo Location: 41° 22' 11.1252" N
 73° 42' 13.0176" W
 Distance: 2,970 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Existing Condition
 VP17- Pigott Rd near #26

SARANTOLA
 ASSOCIATES

Figure A4-A
 Visual Resource Assessment
 Proposed Telecommunications Tower

H
 HOMELAND TOWERS

Lake Carme Hill (NY 056)
 254 Oriskany Falls Road
 Mariposa, NY 10541



Photograph Information

Date: February 4, 2019
 Time: 10:38 am
 Focal Length: 50mm
 Camera: Canon 6D Mark II
 Photo Location: 41° 22' 11.1252" N
 73° 42' 13.0176" W
 Distance: 2,970 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Simulated Condition - 140 ft Monopole Alternative
 VP17- Pigott Rd near #26

SAVITZKY
 ASSOCIATES

Figure A4-B
 Visual Resource Assessment
 Proposed Telecommunications Tower



LOCAL CARRIER SITE (NY058)
 254 Crocker Falls Road
 Montpelier, NY 10854



Photograph Information

Date: February 4, 2019
 Time: 10:38 am
 Focal Length: 50mm
 Camera: Canon 6D Mark II
 Photo: 41° 22' 11.1252" N
 Location: 73° 42' 13.0176" W
 Distance: 2,970 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Simulated Condition - 140 ft Monopine Alternative
 VP17- Pigott Rd near #26

LAKEVIEW
 ASSOCIATES

Figure A4-C
 Visual Resource Assessment
 Proposed Telecommunications Tower



Lake Cater Site (NY024)
 254 Cooper Falls Road
 Mahanog, NY 10541



Photograph Information

Date: February 4, 2019
 Time: 10:44 am
 Focal Length: 50mm
 Camera: Canon 6D Mark II
 Photo Location: 41° 22' 22.2708" N
 73° 42' 21.0744" W
 Distance: 1,920 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Existing Condition
 VP20- McLaughlin Dr

SAVITZKY
 ASSOCIATES

Figure A5-A
 Visual Resource Assessment
 Proposed Telecommunications Tower



LEWIS COUNTY, NY 13350
 254 Clinton Falls Road
 Mohawk, NY 13541



Photograph Information

Date: February 4, 2019
Time: 10:44 am
Focal Length: 50mm
Camera: Canon 6D Mark II
Photo: 41° 22' 22.2708" N
Location: 73° 42' 21.0744" W
Distance: 1,920 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Simulated Condition - 140 ft Monopole Alternative
VP20- McLaughlin Dr

TAKATOKA
ASSOCIATES

Figure A6-B
Visual Resource Assessment
Proposed Telecommunications Tower



Lake County Site (N1050)
254 Emmet Falls Road
Mendota, IL 61841



Photograph Information

Date: February 4, 2019
 Time: 10:44 am
 Focal Length: 50mm
 Camera: Canon 6D Mark II
 Photo Location: 41° 22' 22.2708" N
 73° 42' 21.0744" W
 Distance: 1,920 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Simulated Condition - 140 ft Monopine Alternative
 VP20- McLaughlin Dr

STANTEC
 ASSOCIATES

Figure A5-C
 Visual Resource Assessment
 Proposed Telecommunications Tower



Lake Cayuga State (NYS) 1000
 254 Green Falls Road
 Hamlet, NY 13346



Photograph Information

Date: February 4, 2019
 Time: 10:48 am
 Focal Length: 50mm
 Camera: Canon 8D Mark II
 Photo Location: 41° 22' 31.2816 N
 73° 42' 21.1428 W
 Distance: 1,080 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Existing Condition
 VP22- Croton Falls Rd

ASSOCIATES

Figure A6-A
 Visual Resource Assessment
 Proposed Telecommunications Tower



Lake Cassa Site (NY55A)
 254 Croton Falls Road
 Monticello, NY 10551



Photograph Information

Date: February 4, 2019
Time: 10:48 am
Focal Length: 50mm
Camera: Canon 6D Mark II
Photo Location: 41° 22' 31.2816 N
73° 42' 21.1428 W
Distance: 1,080 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Simulated Condition - 140 ft Monopole Alternative
VP22- Croton Falls Rd

PARADIGMA
ASSOCIATES

Figure A6-6
Visual Resource Assessment
Proposed Telecommunications Tower



Lake Cayce Site (NY056)
204 Croton Falls Road
Malone, NY 12041



Photograph Information

Date: February 4, 2019
 Time: 10:48 am
 Focal Length: 50mm
 Camera: Canon 6D Mark II
 Photo Location: 41° 22' 31.2816 N
 73° 42' 21.1428 W
 Distance: 1,080 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Simulated Condition - 140 ft Monopine Alternative
 VP22- Croton Falls Rd

SARATOGA
 ASSOCIATES

Figure A6-C
 Visual Resource Assessment
 Proposed Telecommunications Tower



Lake Cayce Site (NY 654)
 224 Croton Falls Road
 Mahopac, NY 10541



Photograph Information

Date: February 4, 2019
 Time: 11:10 am
 Focal Length: 50mm
 Camera: Canon 6D Mark II
 Photo Location: 41° 22' 26.0868" N
 73° 42' 34.2504" W
 Distance: 2,120 Feet

To appear at the correct scale this
 photograph is intended to be viewed
 18 inches from the reader's eye when
 printed on 11"x17" paper.

Existing Condition
 VP31- Eleanor Dr near #50

SARATOGA
 ASSOCIATES

Figure A7-A
 Visual Resource Assessment
 Proposed Telecommunications Tower



Lake Cayuga Site (NYSDEC)
 254 Crown Falls Road
 Mahwah, NY 10943



Photograph Information

Date: February 4, 2019
Time: 11:10 am
Focal Length: 50mm
Camera: Canon 6D Mark II
Photo: 41° 22' 26.0868" N
Location: 73° 42' 34.2504" W
Distance: 2,120 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Simulated Condition - 140 ft Monopole Alternative
VP31- Eleanor Dr near #50

SARATOGA
ASSOCIATES

Figure A7.1b
Visual Resource Assessment
Proposed Telecommunications Tower



Site Case Site (N1650)
224 Green Falls Road
Marble, NY 10841



Photograph Information

Date: February 4, 2019
 Time: 11:10 am
 Focal Length: 50mm
 Camera: Canon 6D Mark II
 Photo: 41° 22' 26.0868" N
 Location: 73° 42' 34.2504" W
 Distance: 2,120 Feet

To appear at the correct scale this
 photograph is intended to be viewed
 18 inches from the reader's eye when
 printed on 11"x17" paper.

Simulated Condition - 140 ft Monopine Alternative
 VP31- Eleanor Dr near #50

LANDSCAPE
 ASSOCIATES

Figure A7-C
 Visual Resource Assessment
 Proposed Telecommunications Tower



Lake Cassie Site (NYC96)
 234 Grout Path Road
 Mahopac, NY 10541



Photograph Information

Date: February 4, 2019
 Time: 11:11 am
 Focal Length: 50mm
 Camera: Canon 6D Mark II
 Photo Location: 41° 22' 28.6896" N
 73° 42' 33.8798" W
 Distance: 1,920 Feet

To appear at the correct scale this
 photograph is intended to be viewed
 18 inches from the reader's eye when
 printed on 11"x17" paper.

Existing Condition
 VP32- Eleanor Dr near #40

TAVATCA
 ASSOCIATES

Figure A8/A
 Visual Resource Assessment
 Proposed Telecommunications Tower



Lake Carme Pk (NY256)
 254 Grinn Falls Road
 Mahopack, NY 10541



Photograph Information

Date: February 4, 2019
 Time: 11:11 am
 Focal Length: 50mm
 Camera: Canon 6D Mark II
 Photo Location: 41° 22' 28.6866" N
 73° 42' 33.8788" W
 Distance: 1,920 Feet

To appear at the correct scale this
 photograph is intended to be viewed
 18 inches from the reader's eye when
 printed on 11"x17" paper.

Simulated Condition - 140 ft Monopole Alternative
 VP32- Eleanor Dr near #40

SARATOGA
 ASSOCIATES

Figure A6-B
 Visual Resource Assessment
 Proposed Telecommunication Towers Tower



Lake Cassa Co. (NY006)
 254 Canton Fair Road
 Maniacus, NY 10541



Photograph Information

Date: February 4, 2019
 Time: 11:11 am
 Focal Length: 50mm
 Camera: Canon 6D Mark II
 Photo Location: 41° 22' 28.6896" N
 73° 42' 33.8798" W
 Distance: 1,920 Feet

To appear at the correct scale this
 photograph is intended to be viewed
 18 inches from the reader's eye when
 printed on 11"x17" paper.

Simulated Condition - 140 ft Monopine Alternative
 VP32- Eleanor Dr near #40

SAKATTA
 ASSOCIATES

Figure A6-C
 Visual Resource Assessment
 Proposed Telecommunications Tower



Lake Castle Ave. OY0061
 224 Canton Falls Road
 Mendon, NY 10041



Photograph Information

Date: February 4, 2019
 Time: 11:33 am
 Focal Length: 50mm
 Camera: Canon 6D Mark II
 Photo: 41° 22' 45.0948 N
 Location: 73° 42' 47.3652" W
 Distance: 2,280 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Existing Condition
 VP42- Odessa Rd near #40

SARANTOLA
 ASSOCIATES

Figure A9-A
 Visual Resource Assessment
 Proposed Telecommunications Tower



1000 Depot One (NY1000)
 224 Gilbert Farm Road
 Monticello, NY 10551



Photograph Information

Date: February 4, 2019
 Time: 11:33 am
 Focal Length: 50mm
 Camera: Canon 6D Mark II
 Photo: 41° 22' 45.0948 N
 Location: 73° 42' 47.3652" W
 Distance: 2,280 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Simulated Condition - 140 ft Monopole Alternative
 VP42- Odessa Rd near #40

SARATOGA
 ASSOCIATES

Figure AS-B
 Visual Resource Assessment
 Proposed Telecommunications Tower



Link, Cassie Site (NY056)
 254 Croton Falls Road
 Mahopac, NY 10541



Photograph Information

Date: February 4, 2019
 Time: 11:33 am
 Focal Length: 50mm
 Camera: Canon 6D Mark II
 Photo Location: 41° 22' 45.0948 N
 73° 42' 47.3652" W
 Distance: 2,280 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Simulated Condition - 140 ft Monopole Alternative
 VP42- Odessa Rd near #40

SARANTINCA
 ASSOCIATES

Figure A8-C
 Visual Resource Assessment
 Proposed Telecommunications Tower



Local Cable One (NY) Inc.
 254 Clinton Falls Road
 Malaga, NY 10541

APPENDIX B

Putnam County Trailway Analysis



Photograph Information

Date: April 24, 2019
 Time: 9:58 am
 Focal Length: 50mm
 Camera: Canon 6D Mark II
 Photo Location: 41° 22' 59.6913" N
 73° 41' 57.4162" W
 Distance: 2,320 Feet (0.44 mile)

In response to a comment received by the Project Sponsor in a letter dated April 10, 2019 to the Planning Board by Cleary Consulting Saratoga Associates visited the Putnam County Trailway on April 24, 2019 to determine if vistas in the direction of the Facility are present. Dense woodland borders the Trailway for most of its length within the two-mile study area. No open vistas in the direction of the Facility were identified.

To further evaluate potential project visibility from the Trailway, Saratoga Associates photographed the Trailway view referenced in the Cleary memo. This photograph demonstrates the character, density and screening value of the bordering woodland. Although a short segment of the Trailway bends westerly in the direction of the Facility, this dense roadside vegetation provides a substantial visual barrier preventing distant views, even during leaf-off season.

To confirm the proposed tower will not extend above the tree line Saratoga Associates prepared a supplemental photo simulation of this view using the same 3D computer model and methodology used to create the photo simulations that are included in the VRA. To prepare this visualization the 3D model was superimposed into the existing condition photograph. To accomplish this the simulated perspective (camera view) was matched to the existing condition photograph by replicating the precise coordinates of the field camera position and the focal length of the camera lens used (i.e., 50mm). Precisely matching these parameters assures scale accuracy between the base photograph and the subsequent simulated view. The camera's elevation (Z) value is derived from digital elevation model (DEM) data plus the camera's height above ground level. The camera's target position was set to match the bearing of the corresponding existing condition photograph as recorded in the field. With the existing conditions photograph displayed as a "viewport background," and the viewport properties set to match the photograph's pixel dimensions, minor camera adjustments were made (horizontal and vertical positioning, and camera roll) to align the horizon in the background photograph with the corresponding features of this 3D model.

The 3D modeling method accurately represents the location and height of the proposed tower. The location and scale of the Facility is highlighted by a dashed line in this Figure. From this vantage point the Facility falls well below the visible tree line and is fully blocked from view by more than 2,300 of intervening woodland vegetation.

Simulated Condition
 Putnam County Trailway at Milepost 46.6

SARATOGA
 ASSOCIATES

Figure B.1
 Visual Resource Assessment
 Proposed Telecommunications Tower



SARA CARRIE SITE (NY059)
 254 Canton Fair Road
 Milford, NY 10543

Full Environmental Assessment Form
Part 1 - Project and Setting

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the project sponsor to verify that the information contained in Part 1 is accurate and complete.

A. Project and Sponsor Information.

Name of Action or Project: Lake Casse / NY056		
Project Location (describe, and attach a general location map): 254 Croton Falls Road, Mahopac, Putnam County, NY 10541		
Brief Description of Proposed Action (include purpose or need): Homeland Towers, LLC proposes to construct a new telecommunications facility at the Subject Property. The proposed facility will consist of a 140-foot tall monopole and support equipment placed within a 36-foot by 100-foot fenced compound within a wider 56-foot by 100-foot lease area. Access will be gained via an existing access road extending northeast from Croton Falls Road to the proposed tower compound. Utilities are proposed to be sourced from an existing utility pole located across Croton Falls Road and be routed underground to the northeast along the existing access road for approximately 1,198 feet to the proposed tower compound.		
Name of Applicant/Sponsor: Homeland Towers, LLC		Telephone: (914) 490-0124
		E-Mail: rv@homelandtowers.us
Address: 9 Harmony Street, 2nd Floor		
City/PO: Danbury	State: CT	Zip Code: 06810
Project Contact (if not same as sponsor; give name and title/role): Mr. Ray Vergati		Telephone:
		E-Mail:
Address:		
City/PO:	State:	Zip Code:
Property Owner (if not same as sponsor): Richard and Rosemarie Diehl		Telephone:
		E-Mail:
Address: 254 Croton Falls Road		
City/PO: Mahopac	State: NY	Zip Code:10541

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Council, Town Board, <input type="checkbox"/> Yes <input type="checkbox"/> No or Village Board of Trustees		
b. City, Town or Village <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Planning Board or Commission	Site plan and Special permit approval	
c. City Council, Town or <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Village Zoning Board of Appeals	Possible variance as directed by town	
d. Other local agencies <input type="checkbox"/> Yes <input type="checkbox"/> No		
e. County agencies <input type="checkbox"/> Yes <input type="checkbox"/> No		
f. Regional agencies <input type="checkbox"/> Yes <input type="checkbox"/> No		
g. State agencies <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	DEC 6P-0-15-002	
h. Federal agencies <input type="checkbox"/> Yes <input type="checkbox"/> No		
i. Coastal Resources.		
i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
iii. Is the project site within a Coastal Erosion Hazard Area?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐ Yes ☒ No

- If Yes, complete sections C, F and G.
- If No, proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☒ Yes ☐ No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☐ Yes ☒ No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☒ Yes ☐ No

If Yes, identify the plan(s):
NYC Watershed Boundary

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐ Yes ☒ No

If Yes, identify the plan(s):

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☒ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
Residential

b. Is the use permitted or allowed by a special or conditional use permit? ☒ Yes ☐ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☒ No

If Yes,

i. What is the proposed new zoning for the site?

C.4. Existing community services.

a. In what school district is the project site located? Mahopac Central School District

b. What police or other public protection forces serve the project site?
Carmel Police Department

c. Which fire protection and emergency medical services serve the project site?
Mahopac Volunteer Fire Department

d. What parks serve the project site?
Mahopac Airport Park, located approximately 3 miles west of the Subject Property.

D. Project Details**D.1. Proposed and Potential Development**

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)? Commercial / Public utility

b. a. Total acreage of the site of the proposed action? 0.35 acres

b. Total acreage to be physically disturbed? 0.35 acres

c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 0.35 acres

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☒ No

i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % Units:

d. Is the proposed action a subdivision, or does it include a subdivision? ☐ Yes ☒ No

If Yes,

i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)

ii. Is a cluster/conservation layout proposed? ☐ Yes ☐ No

iii. Number of lots proposed?

iv. Minimum and maximum proposed lot sizes? Minimum Maximum

e. Will proposed action be constructed in multiple phases? ☐ Yes ☒ No

i. If No, anticipated period of construction: +/- 3 months

ii. If Yes:

- Total number of phases anticipated

- Anticipated commencement date of phase 1 (including demolition) month year

- Anticipated completion date of final phase month year

- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases:

f. Does the project include new residential uses? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
If Yes, show numbers of units proposed.			
<u>One Family</u>	<u>Two Family</u>	<u>Three Family</u>	<u>Multiple Family (four or more)</u>
Initial Phase	_____	_____	_____
At completion	_____	_____	_____
of all phases	_____	_____	_____

g. Does the proposed action include new non-residential construction (including expansions)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
If Yes,	
i. Total number of structures _____ 1	
ii. Dimensions (in feet) of largest proposed structure: _____ 140 height; _____ N/A width; and _____ N/A length	
iii. Approximate extent of building space to be heated or cooled: _____ N/A square feet	

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
If Yes,	
i. Purpose of the impoundment: _____	
ii. If a water impoundment, the principal source of the water: <input type="checkbox"/> Ground water <input type="checkbox"/> Surface water streams <input type="checkbox"/> Other specify: _____	
iii. If other than water, identify the type of impounded/contained liquids and their source. _____	
iv. Approximate size of the proposed impoundment. Volume: _____ million gallons; surface area: _____ acres	
v. Dimensions of the proposed dam or impounding structure: _____ height; _____ length	
vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete): _____	

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? (Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
If Yes:	
i. What is the purpose of the excavation or dredging? _____	
ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?	
• Volume (specify tons or cubic yards): _____	
• Over what duration of time? _____	
iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them. _____	
iv. Will there be onsite dewatering or processing of excavated materials? <input type="checkbox"/> Yes <input type="checkbox"/> No	
If yes, describe. _____	
v. What is the total area to be dredged or excavated? _____ acres	
vi. What is the maximum area to be worked at any one time? _____ acres	
vii. What would be the maximum depth of excavation or dredging? _____ feet	
viii. Will the excavation require blasting? <input type="checkbox"/> Yes <input type="checkbox"/> No	
ix. Summarize site reclamation goals and plan: _____	

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
If Yes:	
i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): _____	

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

iii. Will proposed action cause or result in disturbance to bottom sediments? ☐ Yes ☐ No
If Yes, describe: _____

iv. Will proposed action cause or result in the destruction or removal of aquatic vegetation? ☐ Yes ☐ No
If Yes:

- acres of aquatic vegetation proposed to be removed: _____
- expected acreage of aquatic vegetation remaining after project completion: _____
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): _____
- proposed method of plant removal: _____
- if chemical/herbicide treatment will be used, specify product(s): _____

v. Describe any proposed reclamation/mitigation following disturbance: _____

c. Will the proposed action use, or create a new demand for water? ☐ Yes ☒ No
If Yes:

i. Total anticipated water usage/demand per day: _____ gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☐ Yes ☐ No
If Yes:

- Name of district or service area: _____
- Does the existing public water supply have capacity to serve the proposal? ☐ Yes ☐ No
- Is the project site in the existing district? ☐ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☐ No
- Do existing lines serve the project site? ☐ Yes ☐ No

iii. Will line extension within an existing district be necessary to supply the project? ☐ Yes ☐ No
If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____
- Source(s) of supply for the district: _____

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐ Yes ☐ No
If Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- Proposed source(s) of supply for new district: _____

v. If a public water supply will not be used, describe plans to provide water supply for the project: _____

vi. If water supply will be from wells (public or private), maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes? ☐ Yes ☒ No
If Yes:

i. Total anticipated liquid waste generation per day: _____ gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each): _____

iii. Will the proposed action use any existing public wastewater treatment facilities? ☐ Yes ☐ No
If Yes:

- Name of wastewater treatment plant to be used: _____
- Name of district: _____
- Does the existing wastewater treatment plant have capacity to serve the project? ☐ Yes ☐ No
- Is the project site in the existing district? ☐ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☐ No

<ul style="list-style-type: none"> • Do existing sewer lines serve the project site? _____ • Will line extension within an existing district be necessary to serve the project? _____ <p>If Yes:</p> <ul style="list-style-type: none"> • Describe extensions or capacity expansions proposed to serve this project: _____ 	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? _____	
If Yes: <ul style="list-style-type: none"> • Applicant/sponsor for new district: _____ • Date application submitted or anticipated: _____ • What is the receiving water for the wastewater discharge? _____ 	
v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge, or describe subsurface disposal plans): _____	
vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____	
e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? _____	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
If Yes: <ul style="list-style-type: none"> i. How much impervious surface will the project create in relation to total size of project parcel? <div style="margin-left: 20px;"> _____ Square feet or _____ acres (impervious surface) _____ Square feet or _____ acres (parcel size) </div> ii. Describe types of new point sources. _____ 	
iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)? _____	
<ul style="list-style-type: none"> • If to surface waters, identify receiving water bodies or wetlands: _____ 	
<ul style="list-style-type: none"> • Will stormwater runoff flow to adjacent properties? _____ 	
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No	
iv. Does proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? _____	
f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? _____	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
If Yes, identify: <ul style="list-style-type: none"> i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles) Temporary construction vehicles. ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers) N/A iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation) Emergency propane-fired emergency generator on concrete slab inside shelter 	
g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? _____	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
If Yes: <ul style="list-style-type: none"> i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) _____ ii. In addition to emissions as calculated in the application, the project will generate: <ul style="list-style-type: none"> • _____ Tons/year (short tons) of Carbon Dioxide (CO₂) • _____ Tons/year (short tons) of Nitrous Oxide (N₂O) • _____ Tons/year (short tons) of Perfluorocarbons (PFCs) • _____ Tons/year (short tons) of Sulfur Hexafluoride (SF₆) • _____ Tons/year (short tons) of Carbon Dioxide equivalent of Hydrofluorocarbons (HFCs) • _____ Tons/year (short tons) of Hazardous Air Pollutants (HAPs) 	
<input type="checkbox"/> Yes <input type="checkbox"/> No	

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐ Yes ☒ No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐ Yes ☒ No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust): _____

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☐ Yes ☒ No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐ Weekend
☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of semi-trailer truck trips/day: _____

iii. Parking spaces: Existing _____ Proposed _____ Net increase/decrease _____

iv. Does the proposed action include any shared use parking? ☐ Yes ☐ No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe: _____

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐ Yes ☐ No

vii. Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐ Yes ☐ No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐ Yes ☐ No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☒ Yes ☐ No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action:
 Minimal increase for telecommunications equipment for approximately 800 amps to a maximum of 1200 amps

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):
 Via local grid

iii. Will the proposed action require a new, or an upgrade to, an existing substation? ☐ Yes ☒ No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: _____ Normal business hours
- Saturday: _____
- Sunday: _____
- Holidays: _____

ii. During Operations:

- Monday - Friday: _____ Unmanned facility operates 24/7
- Saturday: _____
- Sunday: _____
- Holidays: _____

<p>m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If yes:</p> <p>i. Provide details including sources, time of day and duration:</p> <p>_____</p>	
<p>ii. Will proposed action remove existing natural barriers that could act as a noise barrier or screen? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Describe: _____</p>	
<p>n.. Will the proposed action have outdoor lighting? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If yes:</p> <p>i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures: _____</p> <p>Timed lighting sources inside compound. _____</p>	
<p>ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Describe: No, trees surrounding compound and access road are to remain, blocking light. _____</p>	
<p>o. Does the proposed action have the potential to produce odors for more than one hour per day? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: _____</p> <p>_____</p>	
<p>p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If Yes:</p> <p>i. Product(s) to be stored _____</p> <p>ii. Volume(s) _____ per unit time _____ (e.g., month, year)</p> <p>iii. Generally describe proposed storage facilities: _____</p>	
<p>q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If Yes:</p> <p>i. Describe proposed treatment(s): _____</p> <p>_____</p>	
<p>ii. Will the proposed action use Integrated Pest Management Practices? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	
<p>r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If Yes:</p> <p>i. Describe any solid waste(s) to be generated during construction or operation of the facility:</p> <ul style="list-style-type: none"> • Construction: _____ tons per _____ (unit of time) • Operation : _____ tons per _____ (unit of time) <p>ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:</p> <ul style="list-style-type: none"> • Construction: _____ • Operation: _____ <p>iii. Proposed disposal methods/facilities for solid waste generated on-site:</p> <ul style="list-style-type: none"> • Construction: _____ • Operation: _____ 	

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☒ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☒ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility: _____

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☐ Industrial ☐ Commercial ☒ Residential (suburban) ☐ Rural (non-farm)

☒ Forest ☐ Agriculture ☐ Aquatic ☐ Other (specify): _____

ii. If mix of uses, generally describe:
Surrounding area generally forested with residential development to the north, west, and south.

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces			
• Forested	0.35	0	- 0.35
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)			
• Agricultural (includes active orchards, field, greenhouse etc.)			
• Surface water features (lakes, ponds, streams, rivers, etc.)			
• Wetlands (freshwater or tidal)			
• Non-vegetated (bare rock, earth or fill)			
• Other Describe: Telecommunications Facility and existing access road	0	0.35	+ 0.35

c. Is the project site presently used by members of the community for public recreation? ☐ Yes ☒ No
i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☐ Yes ☒ No
If Yes,
i. Identify Facilities: _____

e. Does the project site contain an existing dam? ☐ Yes ☒ No
If Yes:
i. Dimensions of the dam and impoundment:
• Dam height: _____ feet
• Dam length: _____ feet
• Surface area: _____ acres
• Volume impounded: _____ gallons OR acre-feet
ii. Dam's existing hazard classification: _____
iii. Provide date and summarize results of last inspection: _____

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐ Yes ☒ No
If Yes:
i. Has the facility been formally closed? ☐ Yes ☐ No
• If yes, cite sources/documentation: _____
ii. Describe the location of the project site relative to the boundaries of the solid waste management facility: _____

iii. Describe any development constraints due to the prior solid waste activities: _____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☐ Yes ☒ No
If Yes:
i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred: _____

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☐ Yes ☒ No
If Yes:
i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☐ Yes ☐ No
☐ Yes – Spills Incidents database Provide DEC ID number(s): _____
☐ Yes – Environmental Site Remediation database Provide DEC ID number(s): _____
☐ Neither database
ii. If site has been subject of RCRA corrective activities, describe control measures: _____

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☐ Yes ☐ No
If yes, provide DEC ID number(s): _____
iv. If yes to (i), (ii) or (iii) above, describe current status of site(s): _____

v. Is the project site subject to an institutional control limiting property uses? ☐ Yes ☒ No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☐ No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? _____ > 6 feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☒ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____ 100 %

c. Predominant soil type(s) present on project site:

Chattfield-Charlton complex	_____	41 %
Charlton-Chatfield complex	_____	25 %
Sutton loam & Charlton loam	_____	34 %

d. What is the average depth to the water table on the project site? Average: _____ > 6 feet

e. Drainage status of project site soils: ☒ Well Drained: _____ 75 % of site
☒ Moderately Well Drained: _____ 25 % of site
☐ Poorly Drained _____ % of site

f. Approximate proportion of proposed action site with slopes: ☒ 0-10%: _____ 75 % of site
☒ 10-15%: _____ 25 % of site
☐ 15% or greater: _____ % of site

g. Are there any unique geologic features on the project site? ☐ Yes ☒ No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☐ Yes ☒ No

ii. Do any wetlands or other waterbodies adjoin the project site? ☒ Yes ☐ No
If Yes to either i or ii, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☒ Yes ☐ No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name _____ Classification _____
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name Riverine (R3UBH) (located 550' E and NE) Approximate Size 8.35
- Wetland No. (if regulated by DEC) _____

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☐ Yes ☒ No
If yes, name of impaired water body/bodies and basis for listing as impaired: _____
Note: Project located in NYSDEC Wetland Checkzone, however, site is wooded, no hydric indicators and no hydric soils within 300 feet

i. Is the project site in a designated Floodway? ☐ Yes ☒ No

j. Is the project site in the 100 year Floodplain? ☐ Yes ☒ No

k. Is the project site in the 500 year Floodplain? ☐ Yes ☒ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☐ Yes ☒ No
If Yes:
i. Name of aquifer: _____

<p>m. Identify the predominant wildlife species that occupy or use the project site: The Project Site is consists of _____ the Project Site is located in the vicinity _____ undisturbed natural forested habitat. _____ of the Indiana Bat and the Northern _____ Based upon a review of available data _____ Long-eared Bat. (see "o" below) _____</p>	
<p>n. Does the project site contain a designated significant natural community? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes: i. Describe the habitat/community (composition, function, and basis for designation): _____ ii. Source(s) of description or evaluation: _____ iii. Extent of community/habitat: _____ • Currently: _____ acres • Following completion of project as proposed: _____ acres • Gain or loss (indicate + or -): _____ acres</p>	
<p>o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species?</p> <p>The Project Site is in the vicinity of the Indiana Bat (Endangered) and the Northern Long-eared Bat (Threatened). It should be noted, no critical habitat was identified, however, as the area is wooded it is recommended that tree clearing be restricted from April 1 to September 30 to avoid potential roosting bats. Additionally, the Bog Turtle (Threatened) was identified within the vicinity of the Project Site, however suitable habitat was not identified. No mapped wetlands were identified at the Project Site.</p>	
<p>p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No special concern?</p>	
<p>q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, give a brief description of how the proposed action may affect that use: _____ _____</p>	
<p>E.3. Designated Public Resources On or Near Project Site</p>	
<p>a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Agriculture and Markets Law, Article 25-AA, Section 303 and 304? If Yes, provide county plus district name/number: _____</p>	
<p>b. Are agricultural lands consisting of highly productive soils present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No i. If Yes: acreage(s) on project site? _____ ii. Source(s) of soil rating(s): _____</p>	
<p>c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Natural Landmark? If Yes: i. Nature of the natural landmark: <input type="checkbox"/> Biological Community <input type="checkbox"/> Geological Feature ii. Provide brief description of landmark, including values behind designation and approximate size/extent: _____ _____ _____</p>	
<p>d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes: i. CEA name: _____ ii. Basis for designation: _____ iii. Designating agency and date: _____</p>	

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on, or has been nominated by the NYS Board of Historic Preservation for inclusion on, the State or National Register of Historic Places?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If Yes: <div style="margin-left: 20px;"> i. Nature of historic/archaeological resource: <input type="checkbox"/> Archaeological Site <input type="checkbox"/> Historic Building or District </div> <div style="margin-left: 20px;"> ii. Name: _____ </div> <div style="margin-left: 20px;"> iii. Brief description of attributes on which listing is based: _____ </div>	
f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
g. Have additional archaeological or historic site(s) or resources been identified on the project site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If Yes: <div style="margin-left: 20px;"> i. Describe possible resource(s): _____ </div> <div style="margin-left: 20px;"> ii. Basis for identification: _____ </div>	
h. Is the project site within five miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If Yes: <div style="margin-left: 20px;"> i. Identify resource: _____ </div> <div style="margin-left: 20px;"> ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): _____ </div> <div style="margin-left: 20px;"> iii. Distance between project and resource: _____ miles. </div>	
i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If Yes: <div style="margin-left: 20px;"> i. Identify the name of the river and its designation: _____ </div> <div style="margin-left: 20px;"> ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? </div>	
<input type="checkbox"/> Yes <input type="checkbox"/> No	

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

Applicant/Sponsor Name Homeland Towers LLC Date March 13, 2019

Signature  Title Consultant for Applicant

June 8, 2018

Ray Vergati
Homeland Towers, LLC
9 Harmony Street, 2nd Floor
Danbury, CT 06810

*Re: Wetland Delineation
254 Croton Falls Road Site
Town of Carmel, Putnam County, New York*

Dear Ray:

Ecological Solutions, LLC completed a wetland assessment at the proposed cell tower site located at 254 Croton Falls Road in accordance with the Army Corps of Engineers (USACE) Wetlands Delineation Manual (January 1987), Routine Determination Method and Northcentral/Northeast supplement and Town of Carmel Code Chapter 89 on May 26, 2018. There is no New York State Department of Environmental Conservation (NYSDEC) regulated wetland in the project area.

The detailed field investigation included:

1. Identification of vegetation species to determine whether there was a dominance of hydrophytic plants and areas containing transitional but primarily wetland-oriented species.
2. Determination of soil features for hydric (poorly and very poorly drained) natural soils.
3. Observation of site features displaying evidence of wetland hydrology based on the presence of inundated areas, apparent high seasonal water tables, and evidence of saturation within 12 inches of the surface (considered the root zone) during sufficient periods during the growing season to provide for anaerobic/hydric soil conditions.

No wetlands were observed on the project site. A wetland area is located on an adjacent property to the east at the driveway entrance from Croton Falls Road which appears greater than 100 feet away. Also a watercourse exists on the south side of Croton Falls Road and is estimated to be greater than 100 feet from the driveway entrance from Croton Falls Road.

If you need any additional information, please contact me.

Sincerely,
ECOLOGICAL SOLUTIONS, LLC

A handwritten signature in black ink, appearing to read "Michael Nowicki".

Michael Nowicki
Biologist

Suzanne Derrick

From: towernotifyinfo@fcc.gov
Sent: Friday, October 26, 2018 3:15 PM
To: Alexis Green
Subject: Section 106 Notification of SHPO/THPO Concurrence- Email ID #3259318

This is to notify you that the Lead SHPO/THPO has concurred with the following filing:

Date of Action: 10/26/2018

Direct Effect: No Historic Properties in Area of Potential Effects (APE)

Visual Effect: No Historic Properties in Area of Potential Effects (APE)

Comment Text: Reviewed by Daniel Bagrow, NY SHPO, dan.bagrow@parks.ny.gov

File Number: 0008397071

TCNS Number: 175453

Purpose: New Tower Submission Packet

Notification Date: 7AM EST 10/11/2018

Applicant: Homeland Towers, LLC

Consultant: EnviroBusiness, Inc. d/b/a EBI Consulting (EBI #6118002744)

Positive Train Control Filing Subject to Expedited Treatment Under Program Comment: No

Site Name: Lake Casse / NY056

Site Address: 254 Croton Falls Road

Detailed Description of Project: 6118002744 Proposed construction of a new telecommunications monopole and compound resulting in ground disturbance

Site Coordinates: 41-22-40.5 N, 73-42-14.1 W

City: Mahopac

County: PUTNAM

State: NY

Lead SHPO/THPO: New York State Historic Preservation Office

NOTICE OF FRAUDULENT USE OF SYSTEM, ABUSE OF PASSWORD AND RELATED MISUSE

Use of the Section 106 system is intended to facilitate consultation under Section 106 of the National Historic Preservation Act and may contain information that is confidential, privileged or otherwise protected from disclosure under applicable laws. Any person having access to Section 106 information shall use it only for its intended purpose. Appropriate action will be taken with respect to any misuse of the system.

June 8, 2018

Ray Vergati
Homeland Towers, LLC
9 Harmony Street, 2nd Floor
Danbury, CT 06810

*Re: Wetland Delineation
254 Croton Falls Road Site
Town of Carmel, Putnam County, New York*

Dear Ray:

Ecological Solutions, LLC completed a wetland assessment at the proposed cell tower site located at 254 Croton Falls Road in accordance with the Army Corps of Engineers (USACE) Wetlands Delineation Manual (January 1987), Routine Determination Method and Northcentral/Northeast supplement and Town of Carmel Code Chapter 89 on May 26, 2018. There is no New York State Department of Environmental Conservation (NYSDEC) regulated wetland in the project area.

The detailed field investigation included:

1. Identification of vegetation species to determine whether there was a dominance of hydrophytic plants and areas containing transitional but primarily wetland-oriented species.
2. Determination of soil features for hydric (poorly and very poorly drained) natural soils.
3. Observation of site features displaying evidence of wetland hydrology based on the presence of inundated areas, apparent high seasonal water tables, and evidence of saturation within 12 inches of the surface (considered the root zone) during sufficient periods during the growing season to provide for anaerobic/hydric soil conditions.

No wetlands were observed on the project site. A wetland area is located on an adjacent property to the east at the driveway entrance from Croton Falls Road which appears greater than 100 feet away. Also a watercourse exists on the south side of Croton Falls Road and is estimated to be greater than 100 feet from the driveway entrance from Croton Falls Road.

If you need any additional information, please contact me.

Sincerely,
ECOLOGICAL SOLUTIONS, LLC

A handwritten signature in dark ink, appearing to read "Michael Nowicki". The signature is fluid and cursive, with the first name "Michael" and last name "Nowicki" clearly distinguishable.

Michael Nowicki
Biologist



United States Department of the Interior

FISH AND WILDLIFE SERVICE
3817 Luker Road
Cortland, New York 13015



June 8, 2018

Ms. Tama Troutman
Mr. Bill Arnerich
EBI Consulting
21 B Street
Burlington, MA 01803

Dear Ms. Troutman and Mr. Arnerich:

This responds to your May 31, 2018, letter regarding a telecommunications facility proposed at 254 Croton Falls Road, Hamlet of Mahopac, Putnam County, New York. As you are aware, federal agencies, such as the Federal Communications Commission (FCC), have responsibilities under section 7 of the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) to consult with the U.S. Fish and Wildlife Service (Service) regarding projects that may affect federally listed species or designated critical habitat, and confer with the Service regarding projects that are likely to jeopardize federally proposed species or adversely modify proposed critical habitat. We understand that all FCC licensees, applicants, tower companies, and their representatives have been designated the FCC's non-federal representative for the purposes of completing informal consultation pursuant to Section 7(a)(2) of the ESA.

On behalf of the FCC, EBI Consulting determined that the proposed project "may affect, but is not likely to adversely affect," the federally listed Indiana bat (*Myotis sodalis*; Endangered). The Service concurs with your determination given the location (no known summer or winter habitat nearby), a small amount of trees (approximately 0.129 acre) containing potential suitable roosting habitat are proposed for removal, and tree removal will occur between October 1 and March 31 when bats are in hibernation.

EBI Consulting made a "may affect" determination for the federally listed northern long-eared bat (*Myotis septentrionalis*; Threatened). Given the project description and location (no known roosts within 150 feet or hibernacula within 0.25 mile) of the proposed project, any taking that may occur incidental to the proposed project is not prohibited under the ESA Section 4(d) rule¹ for this species (50 CFR § 17.40(o)).

¹ For more information about the 4(d) rule, please see:

<http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/FRnlebFinal4dRule14Jan2016.pdf>.

EBI Consulting also determined that the proposed project will have no impact on the federally listed bog turtle (*Clemmys* [= *Glyptemys*] *muhlenbergii*; Threatened) as no suitable habitat was present for this species. The Service acknowledges this determination.

Should project plans change, or if additional information on listed or proposed species or critical habitat becomes available, this determination may be reconsidered. The most recent compilation of federally-listed and proposed endangered and threatened species in New York is available for your information. Until the proposed project is complete, we recommend that you check our website regularly from the date of this letter to ensure that listed species presence/absence information for the proposed project is current.*

Any additional information regarding the proposed project and its potential to impact listed species should be coordinated with both this office and with the New York State Department of Environmental Conservation.

Thank you for your time. If you require additional information or assistance please contact Noelle Rayman-Metcalf at (607) 753-9334. Future correspondence with us on this project should reference project file 18I2123.

Sincerely,

Anne D. Secord

for David A. Stilwell
Field Supervisor

*Additional information referred to above may be found on our website at:
<http://www.fws.gov/northeast/nyfo/es/section7.htm>

cc: NYSDEC, New Paltz, NY (Env. Permits)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Fish and Wildlife, New York Natural Heritage Program
625 Broadway, Fifth Floor, Albany, NY 12233-4757
P: (518) 402-8935 | F: (518) 402-8925
www.dec.ny.gov

June 19, 2018

Tama Troutman
EBI Consulting
21 B Street
Burlington, MA 01803

Re: NY056 / Lake Casse Proposed Communications Facility, 254 Croton Falls Road,
Mahopac (EBI 6118002744)
County: Putnam Town/City: Carmel

Dear Tama Troutman:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

We have no records of rare or state-listed animals or plants, or significant natural communities directly at the project site.

Within three miles of the project site is a documented winter hibernaculum of **Northern long-eared bat** (*Myotis septentrionalis*, state and federally listed as Threatened). These bats may travel five miles or more from documented locations. The main impact of concern for bats is the cutting or removal of potential roost trees. For information about any permit considerations for your project, contact the Permits staff at the NYSDEC Region 3 Office at dep.r3@dec.ny.gov, (845) 256-3054. For information about potential impacts of your project on this species and how to avoid, minimize, or mitigate any impacts, contact the Region 3 Wildlife staff at Wildlife.R3@dec.ny.gov, (845) 256-3098.

For most sites, comprehensive field surveys have not been conducted. We cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other resources may be required to fully assess impacts on biological resources.

For information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the NYS DEC Region 3 Office, Division of Environmental Permits, as described above.

Sincerely,



Nicholas Conrad
Information Resources Coordinator
New York Natural Heritage Program



Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form

Federal agencies should use this form for the optional streamlined consultation framework for the northern long-eared bat (NLEB). This framework allows federal agencies to rely upon the U.S. Fish and Wildlife Service's (USFWS) January 5, 2016, intra-Service Programmatic Biological Opinion (BO) on the final 4(d) rule for the NLEB for section 7(a)(2) compliance by: (1) notifying the USFWS that an action agency will use the streamlined framework; (2) describing the project with sufficient detail to support the required determination; and (3) enabling the USFWS to track effects and determine if reinitiation of consultation is required per 50 CFR 402.16.

This form is not necessary if an agency determines that a proposed action will have no effect to the NLEB or if the USFWS has concurred in writing with an agency's determination that a proposed action may affect, but is not likely to adversely affect the NLEB (i.e., the standard informal consultation process). Actions that may cause prohibited incidental take require separate formal consultation. Providing this information does not address section 7(a)(2) compliance for any other listed species.

Information to Determine 4(d) Rule Compliance:	YES	NO
1. Does the project occur wholly outside of the WNS Zone ¹ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Have you contacted the appropriate agency ² to determine if your project is near known hibernacula or maternity roost trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Could the project disturb hibernating NLEBs in a known hibernaculum?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Could the project alter the entrance or interior environment of a known hibernaculum?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Does the project remove any trees within 0.25 miles of a known hibernaculum at any time of year?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Would the project cut or destroy known occupied maternity roost trees, or any other trees within a 150-foot radius from the maternity roost tree from June 1 through July 31.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

You are eligible to use this form if you have answered yes to question #1 or yes to question #2 and no to questions 3, 4, 5 and 6. The remainder of the form will be used by the USFWS to track our assumptions in the BO.

Agency and Applicant³ (Name, Email, Phone No.): EBI Consulting, Tama Troutman,
ttroutman@ebiconsulting.com, (717) 991-9541

Project Name: Lake Casse / NY056

Project Location (include coordinates if known): 254 Croton Falls Road, Mahopac, Putnam County, NY 10541 (41-22-40.74 N / 73-42-13.46 W)

Basic Project Description (provide narrative below or attach additional information): Homeland Towers LLC proposes to construct a new communications facility. The proposed facility will consist of a 180-foot tall monopole and support equipment placed within a 36-foot by 100-foot fenced compound within a wider 56-foot by 100-foot lease area. Access will be gained via an existing access road extending northeast from Croton Falls Road to the proposed tower compound. Utilities are proposed to be sourced from an existing utility pole located across Croton Falls Road and be routed underground to the northeast along the existing access road for approximately 1,198 feet to the proposed tower compound.

¹ <http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf>

² See <http://www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html>

³ If applicable - only needed for federal actions with applicants (e.g., for a permit, etc.) who are party to the consultation.

General Project Information	YES	NO
Does the project occur within 0.25 miles of a known hibernaculum?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does the project occur within 150 feet of a known maternity roost tree?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does the project include forest conversion ⁴ ? (if yes, report acreage below)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Estimated total acres of forest conversion	0.129	
If known, estimated acres ⁵ of forest conversion from April 1 to October 31		
If known, estimated acres of forest conversion from June 1 to July 31 ⁶		
Does the project include timber harvest? (if yes, report acreage below)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Estimated total acres of timber harvest		
If known, estimated acres of timber harvest from April 1 to October 31		
If known, estimated acres of timber harvest from June 1 to July 31		
Does the project include prescribed fire? (if yes, report acreage below)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Estimated total acres of prescribed fire		
If known, estimated acres of prescribed fire from April 1 to October 31		
If known, estimated acres of prescribed fire from June 1 to July 31		
Does the project install new wind turbines? (if yes, report capacity in MW below)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Estimated wind capacity (MW)		

Agency Determination:

By signing this form, the action agency determines that this project may affect the NLEB, but that any resulting incidental take of the NLEB is not prohibited by the final 4(d) rule.

If the USFWS does not respond within 30 days from submittal of this form, the action agency may presume that its determination is informed by the best available information and that its project responsibilities under 7(a)(2) with respect to the NLEB are fulfilled through the USFWS January 5, 2016, Programmatic BO. The action agency will update this determination annually for multi-year activities.

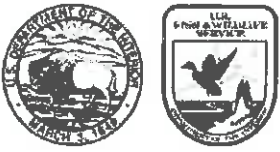
The action agency understands that the USFWS presumes that all activities are implemented as described herein. The action agency will promptly report any departures from the described activities to the appropriate USFWS Field Office. The action agency will provide the appropriate USFWS Field Office with the results of any surveys conducted for the NLEB. Involved parties will promptly notify the appropriate USFWS Field Office upon finding a dead, injured, or sick NLEB.

Signature: Tama Troutman  Date Submitted: May 21, 2018

⁴ Any activity that temporarily or permanently removes suitable forested habitat, including, but not limited to, tree removal from development, energy production and transmission, mining, agriculture, etc. (see page 48 of the BO).

⁵ If the project removes less than 10 trees and the acreage is unknown, report the acreage as less than 0.1 acre.

⁶ If the activity includes tree clearing in June and July, also include those acreage in April to October.



**Key to the Northern Long-Eared Bat 4(d) Rule
for Federal Actions that May Affect Northern Long-Eared Bats**
A separate key is available for non-Federal Activities

Federal agency actions that involve incidental take not prohibited under the final 4(d) rule may result in effects to individual northern long-eared bats. Per section 7 of the Act, if a federal agency's action may affect a listed species, consultation with the Service is required. This requirement does not change when a 4(d) rule is implemented. However, for this 4(d) rule, the Service proposed a framework to streamline section 7 consultations when federal actions may affect the northern long-eared bat but will not cause prohibited take. Federal agencies have the option to rely upon the finding of the programmatic biological opinion for the final 4(d) rule to fulfill their project-specific section 7 responsibilities by using the framework. This key will help federal agencies determine if their actions may cause prohibited incidental take of northern long-eared bats as defined in the 4(d) rule under the Endangered Species Act and if separate section 7 consultation may be necessary. Also, the framework for streamlining northern long-eared bat section 7 consultation is provided.

1. Is the action area (i.e., the area affected by all direct and indirect project effects) located wholly **outside the White-nose Syndrome Zone**? For the most current version of the White-nose Syndrome Zone map, please see www.fws.gov/midwest/endangered/mammals/nleeb/pdf/WNSZone.pdf

Yes, the action area is located wholly outside the white-nose syndrome zone.
Incidental take (see Definitions below) of northern long-eared bats is not prohibited in areas outside the White-nose Syndrome Zone. The federal agency can rely upon the finding of the programmatic biological opinion for the final 4(d) rule to fulfill their project-specific section 7 responsibilities if they use the framework described below. This framework is optional, if the federal agency chooses not to follow the framework, standard section 7 consultation procedures apply.

No, the action area is located partially or wholly inside the white-nose syndrome zone.
Continue to #2

2. Will the action take place **within a cave or mine where northern long-eared bats hibernate** (i.e., hibernaculum) or **could it alter the entrance or the environment (physical or other alteration)** of a hibernaculum?

Yes, the action will take place within a northern long-eared bat hibernaculum or it could alter the entrance or the environment (physical or other alteration) of a hibernaculum.

Take (see Definitions below) of northern long-eared bats within hibernacula is prohibited, including actions that may change the nature of the hibernaculum's environment or entrance to it, even when the bats are not present. If your activity includes work in a hibernaculum or it could alter its entrance or environment, please contact the Service's

Ecological Services Field Office located nearest to the project area. To find contact information for the Ecological Services Field Offices, please see www.fws.gov/offices.

No, the action will not take place within a northern long-eared bat hibernaculum or alter its entrance or environment.

Continue to #3

3. Will the action involve **tree removal** (see definition below)?

No, the action does not include tree removal.

Incidental take (see Definitions below) from activities that do not involve tree removal and do not take place within hibernacula or would not alter the hibernaculum's entrance or environment (see Question #3), is not prohibited. The federal agency can rely upon the finding of the programmatic biological opinion for the final 4(d) rule to fulfill their project-specific section 7 responsibilities if they use the framework described below. This framework is optional, if the federal agency chooses not to follow the framework, standard section 7 consultation procedures apply.

Yes - continue to #4

4. Is the action the **removal of hazardous trees** for protection of human life or property?

Yes, the action is removing hazardous trees.

Incidental take (see Definitions below) of northern long-eared bats as a result of hazardous tree removal is not prohibited. The federal agency can rely upon the finding of the programmatic biological opinion for the final 4(d) rule to fulfill their project-specific section 7 responsibilities if they use the framework described below. This framework is optional, if the federal agency chooses not to follow the framework, standard section 7 consultation procedures apply.

No, the action is not removing hazardous trees.

Continue to #5

5. Will the action include one or both of the following: 1) **removing a northern long-eared bat known occupied maternity roost tree or any trees within 150 feet of a known occupied maternity roost tree from June 1 through July 31; or 2) removing any trees within 0.25 miles of a northern long-eared bat hibernaculum at any time of year?**

No

Incidental take (see Definitions below) from tree removal activities is not prohibited unless it results from removing a known occupied maternity roost tree or from tree removal activities within 150 feet of a known occupied maternity roost tree from June 1 through July 31 or results from tree removal activities within 0.25 mile of a hibernaculum at any time. The federal agency can rely upon the finding of the programmatic biological opinion for the final 4(d) rule to fulfill their project-specific section 7 responsibilities if they use the framework described below. This framework is optional, if the federal

agency chooses not to follow the framework, standard section 7 consultation procedures apply.

Yes

Incidental take (see Definitions below) of northern long-eared bats is prohibited if it occurs as a result of removing a known occupied maternity roost tree or removing trees within 150 feet of a known occupied maternity roost tree during the pup season from June 1 through July 31 or as a result of removing trees from within 0.25 mile of a hibernaculum at any time of year. This does not mean that you cannot conduct your action; however, standard section 7 consultation procedures apply. Please contact your nearest Ecological Services Field Office. To find contact information for the Ecological Services Field Offices, please see www.fws.gov/offices

How do I know if there is a maternity roost tree or hibernacula in the action area?

We acknowledge that it can be difficult to determine if a maternity roost tree or a hibernaculum is in your project area. Location information for both resources is generally kept in state Natural Heritage Inventory databases – the availability of this data varies state-by-state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited. A web page with links to state Natural Heritage Inventory databases is available at www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html.

When looking for information on the presence of maternity roost trees or hibernacula within your project area, our expectation is that the federal action agency will complete due diligence to determine if data is available. If information is not available, document your attempt to find the information and send it with your determination under step 1 of the framework (see below).

We do not require federal agencies to conduct surveys; however, we recommend that surveys be conducted whenever possible. Surveys will help federal agencies meet their responsibilities under section 7(a)(1) of the Act. Active participation of federal agencies in survey efforts will lead to a more effective conservation strategy for the northern long-eared bat. In addition, should the Service reclassify the species as endangered in the future, an agency with a good understanding of how the species uses habitat based on surveys within its action areas could have greater flexibility under section 7(a)(2) of the Act. Recommended survey methods are available at www.fws.gov/midwest/endangered/mammals/nleb.

**Optional Framework to Streamline Section 7 Consultation
for the Northern Long-Eared Bat:**

The primary objective of the framework is to provide an efficient means for U.S. Fish and Wildlife Service verification of federal agency determinations that their proposed actions are consistent with those evaluated in the programmatic intra-Service consultation for the final 4(d) rule and do not require separate consultation. Such verification is necessary because incidental take is prohibited in the vicinity of known hibernacula and known roosts, and these locations are continuously updated. Federal agencies may rely on this Biological Opinion to fulfill their project-specific section 7(a)(2) responsibilities under the following framework:

1. For all federal activities that may affect the northern long-eared bat, the action agency will provide project-level documentation describing the activities that are excepted from incidental take prohibitions and addressed in this consultation. The federal agency must provide written documentation to the appropriate Service Field Office when it is determined their action may affect (i.e., not likely to adversely affect or likely to adversely affect) the northern long-eared bat, but would not cause prohibited incidental take. This documentation must follow these procedures:
 - a. In coordination with the appropriate Service Field Office, each action agency must make a determination as to whether their activity is excepted from incidental taking prohibitions in the final 4(d) rule. Activities that will occur within 0.25 mile of a known hibernacula or within 150 feet of known, occupied maternity roost trees during the pup season (June 1 to July 31) are not excepted pursuant to the final 4(d) rule. This determination must be updated annually for multi-year activities.
 - b. At least 30 days in advance of funding, authorizing, or carrying out an action, the federal agency must provide written notification of their determination to the appropriate Service Field Office.
 - c. For this determination, the action agency will rely on the definitions of prohibited activities provided in the final 4(d) rule and the activities considered in this consultation.
 - d. The determination must include a description of the proposed project and the action area (the area affected by all direct and indirect project effects) with sufficient detail to support the determination.
 - e. The action agency must provide its determination as part of a request for coordination or consultation for other listed species or separately if no other species may be affected.
 - f. Service concurrence with the action agency determination is not required, but the Service may advise the action agency whether additional information indicates consultation for the northern long-eared bat is required; i.e., where the proposed project includes an activity not covered by the 4(d) rule and thus not addressed in the Biological Opinion and is subject to additional consultation.
 - g. If the Service does not respond within 30 days under (f) above, the action agency may presume its determination is informed by best available information and consider its project responsibilities under section 7(a)(2) with respect to the northern long-eared bat fulfilled through this programmatic Biological Opinion.

2. Reporting

- a. For monitoring purposes, the Service will assume all activities are conducted as described. If an agency does not conduct an activity as described, it must promptly report and describe such departures to the appropriate Service Field Office.
- b. The action agency must provide the results of any surveys for the northern long-eared bat to the appropriate Service Field Office within their jurisdiction.
- c. Parties finding a dead, injured, or sick northern long-eared bat must promptly notify the appropriate Service Field Office.

If a Federal action agency chooses not to follow this framework, standard section 7 consultation procedures will apply.

Section 7(a)(1) of the Act directs Federal agencies, in consultation with and with the assistance of the Secretary (a function delegated to the Service), to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Service Headquarters provides to federal action agencies who choose to implement the framework described above several conservation recommendations for exercising their 7(a)(1) responsibility in this context. Conservation recommendations are discretionary federal agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. Service Headquarters recommends that the following conservation measures to all Federal agencies whose actions may affect the northern long-eared bat:

1. Perform northern long-eared bat surveys according to the most recent Range-wide Indiana Bat/ northern long-eared bat Summer Survey Guidelines. Benefits from agencies voluntarily performing northern long-eared bat surveys include:
 - a. Surveys will help federal agencies meet their responsibilities under section 7(a)(1) of the Act. The Service and partners will use the survey data to better understand habitat use and distribution of northern long-eared bats, track the status of the species, evaluate threats and impacts, and develop effective conservation and recovery actions. Active participation of federal agencies in survey efforts will lead to a more effective conservation strategy for the northern long-eared bat.
 - b. Should the Service reclassify the species as endangered in the future, an agency with a good understanding of how the species uses habitat based on surveys within its action areas could inform greater flexibility under section 7(a)(2) of the Act. Such information could facilitate an expedited consultation and incidental take statement that may, for example, exempt taking associated with tree removal during the active season, but outside of the pup season, in known occupied habitat.
2. Apply additional voluntary conservation measures, where appropriate, to reduce the impacts of activities on northern long-eared bats. Conservation measures include:
 - a. Conduct tree removal activities outside of the northern long-eared bat pup season (June 1 to July 31) and/or the active season (April 1 to October 31). This will minimize impacts to pups at roosts not yet identified.

- b. Avoid clearing suitable spring staging and fall swarming habitat within a 5-mile radius of known or assumed northern long-eared bat hibernacula during the staging and swarming seasons (April 1 to May 15 and August 15 to November 14, respectively).
- c. Manage forests to ensure a continual supply of snags and other suitable maternity roost trees.
- d. Conduct prescribed burns outside of the pup season (June 1 to July 31) and/or the active season (April 1 to October 31). Avoid high-intensity burns (causing tree scorch higher than northern long-eared bat roosting heights) during the summer maternity season to minimize direct impacts to northern long-eared bat.
- e. Perform any bridge repair, retrofit, maintenance, and/or rehabilitation work outside of the northern long-eared bat active season (April 1 to October 31) in areas where northern long-eared bats are known to roost on bridges or where such use is likely.
- f. Do not use military smoke and obscurants within forested suitable northern long-eared bat habitat during the pup season (June 1 to July 31) and/or the active season (April 1 to October 31).
- g. Minimize use of herbicides and pesticides. If necessary, spot treatment is preferred over aerial application.
- h. Evaluate the use of outdoor lighting during the active season and seek to minimize light pollution by angling lights downward or via other light minimization measures.
- i. Participate in actions to manage and reduce the impacts of white-nose syndrome on northern long-eared bat. Actions needed to investigate and manage white-nose syndrome are described in a national plan the Service developed in coordination with other state and federal.

Definitions

“Incidental take” is defined by the Endangered Species Act as take that is "incidental to, and not the purpose of, the carrying out of an otherwise lawful activity." For example, harvesting trees can kill bats that are roosting in the trees, but the purpose of the activity is not to kill bats.

“Known hibernacula” are defined as locations where one or more northern long-eared bats have been detected during hibernation or at the entrance during fall swarming or spring emergence. Given the challenges of surveying for northern long-eared bats in the winter, any hibernacula with northern long-eared bats observed at least once, will continue to be considered “known hibernacula” as long as the hibernacula remains suitable for northern long-eared bat.

“Known occupied maternity roost trees” is defined in the 4(d) rule as trees that have had female northern long-eared bats or juvenile bats tracked to them or the presence of female or juvenile bats is known as a result of other methods. Once documented, northern-long eared bats are known to continue to use the same roosting areas. Therefore, a tree will be considered to be a “known occupied maternity roost” as long as the tree and surrounding habitat remain suitable for northern long-eared bat. The incidental take prohibition for known occupied maternity roosts trees applies only during the during the pup season (June 1 through July 31).

“Take” is defined by the ESA as ‘to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect’ any endangered species. Purposeful take is when the reason for the activity or action is to conduct some form of take. For instance, conducting a research project that includes collecting and putting bands on bats is a form of purposeful take.

“Tree removal” is defined in the 4(d) rule as cutting down, harvesting, destroying, trimming, or manipulating in any other way the trees, saplings, snags, or any other form of woody vegetation likely to be used by northern long-eared bats.



PINNACLE TELECOM GROUP

Professional and Technical Services

**ANTENNA SITE FCC RF COMPLIANCE
ASSESSMENT AND REPORT**

HOMELAND TOWERS, LLC

**SITE "NY056 – LAKE CASSE"
254 CROTON FALLS ROAD
MAHOPAC, NY**

JUNE 12, 2019

CONTENTS

INTRODUCTION AND SUMMARY	3
ANTENNA AND TRANSMISSION DATA	5
COMPLIANCE ANALYSIS	8
COMPLIANCE CONCLUSION	12

CERTIFICATION

APPENDIX A. BACKGROUND ON THE FCC MPE LIMIT

APPENDIX B. SUMMARY OF EXPERT QUALIFICATIONS

INTRODUCTION AND SUMMARY

At the request of Homeland Towers, LLC, Pinnacle Telecom Group has performed an independent expert assessment of radiofrequency (RF) levels and related FCC compliance for proposed wireless antenna operations on a proposed 140-foot monopole to be located at 254 Croton Falls Road in Mahopac, NY.

Homeland Towers refers to the prospective site as “NY056 – Lake Casse”, and the proposed pole will accommodate the directional panel antennas of up to four wireless carriers. At this time, Verizon Wireless plans to occupy the highest antenna mounting position on the pole.

The FCC requires wireless antenna operators to perform an assessment of the RF levels from all the transmitting antennas at a site whenever antenna operations are added or modified, and ensure compliance with the FCC Maximum Permissible Exposure (MPE) limit in areas of unrestricted public access, i.e., at street level around the site.

In this case, the compliance assessment will include the RF effects of a worst-case hypothetical collocation of three wireless carriers’ antennas. By worst case, we mean that the carriers whose maximum capacity relates to higher emitted power levels will be hypothetically assumed to occupy the lower mounting positions on the monopole, thus matching higher power and smaller distances to ground-level around the site.

The analysis will conservatively assume all the wireless carriers are operating at maximum capacity and maximum power in each of their FCC-licensed frequency bands. With that extreme degree of conservatism incorporated in the analysis, we can have great confidence that the actual RF effects from any combination of wireless operators, however they might actually be positioned on the pole, would be in compliance with the FCC’s MPE limit.

This assessment of antenna site compliance is based on the FCC limit for general population “maximum permissible exposure” (MPE), a limit established

as safe for continuous exposure to RF fields by humans of either sex, all ages and sizes, and under all conditions.

The result of an FCC compliance assessment can be described in layman's terms by expressing the calculated RF levels as simple percentages of the FCC MPE limit. In that way, the figure 100 percent serves as the reference for compliance, and calculated RF levels below 100 percent indicate compliance with the MPE limit. An equivalent way to describe the calculated results is to relate them to a "times-below-the-limit" factor. Here, we will apply both descriptions.

The result of the FCC compliance assessment in this case is as follows:

- ❑ At street level around the site, the conservatively calculated maximum RF level caused by the combination of the wireless carriers' panel antenna operations is 1.7635 percent of the FCC general population MPE limit, well below the 100-percent reference for compliance. In other words, even with calculations designed to significantly overstate the RF levels versus those that could actually occur at the site, the worst-case calculated RF level in this case is still more than 55 times below the limit defined by the federal government as safe for continuous exposure of the general public.
- ❑ The results of the calculations provide a clear demonstration that the RF levels from as many as four wireless carriers, even under worst-case collocation circumstances, would satisfy the FCC requirement for controlling potential human exposure to RF fields. Moreover, because of the conservative methodology and assumptions applied in this analysis, RF levels actually caused by any combination of wireless operators' antenna operations at this site will be even less significant than the calculation results here indicate.

The remainder of this report provides the following:

- ❑ relevant technical data on the parameters for the four wireless carriers;

- ❑ a description of the applicable FCC mathematical model for assessing compliance with the MPE limit, and application of the relevant technical data to that model; and
- ❑ analysis of the results of the calculations, and the compliance conclusion for the proposed site.

In addition, two Appendices are included. Appendix A provides background on the FCC MPE limit, along with a list of key references. Appendix B provides a summary of the qualifications of the author of this report.

ANTENNA AND TRANSMISSION DATA

As described, the proposed 140-foot pole will be able to accommodate as many as four wireless carriers' antennas. Verizon Wireless proposes to occupy the highest mounting position on the pole, and this analysis will include an assumption of "worst-case" collocation by three other wireless carriers – AT&T, Sprint and T-Mobile.

The worst-case collocation methodology basically involves taking the carriers with the most available spectrum and the opportunity for higher power levels and hypothetically positioning them at the lower points on the monopole – thus matching the most power with the shorter distances to the ground.

Typically, the vertical spacing between different wireless carriers' antennas on a pole is 10 feet. In this case, the Verizon Wireless antennas will mount at a center line of 136 feet and we will assign antenna centerline-heights to the three other assumed wireless collocators at 126 feet, 116 feet and 106 feet.

The transmission parameters for each of the wireless carriers are described below.

Verizon Wireless is licensed to operate in the 746, 869, 1900 and 2100 MHz frequency bands. In the 746 MHz band, Verizon uses four 40-watt channels per antenna sector. In the 869 MHz band, Verizon uses seven 20-watt channels and

four 40-watt channels per antenna sector. In the 1900 MHz band, Verizon uses three 16-watt channels and four 40-watt channels per antenna sector. In the 2100 MHz band, Verizon uses four 40-watt channels per sector.

AT&T is licensed to operate in the 700, 850, 1900 and 2300 MHz frequency bands. In the 700 MHz band, AT&T uses four 40-watt RF channels per sector. In the 850 MHz band, AT&T uses two 30-watt channels and one 40-watt channel per sector. In the 1900 MHz band, AT&T uses four 30-watt channels per sector. In the 2300 MHz band, AT&T uses four 25-watt channels per sector.

Sprint is licensed to operate in the 800, 1900 and 2500 MHz frequency bands. In the 800 MHz band, Sprint uses two 50-watt channels per antenna sector. In the 1900 MHz band, Sprint uses four 40-watt channels per sector. In the 2500 MHz band, Sprint uses three 40-watt channels per sector.

T-Mobile is licensed to operate in the 600 MHz, 700 MHz, 1900 MHz and 2100 MHz frequency bands. In the 600 MHz band, T-Mobile uses four 40-watt channels per sector. In the 700 MHz band, T-Mobile uses one 40-watt channel per sector. In the 1900 MHz band, T-Mobile uses five 30-watt channels per sector. In the 2100 MHz band, T-Mobile uses one 40-watt channel and two 80-watt channels per sector.

Based on the proposed mounting heights and then followed by overall available power levels, we will hypothetically assign the mounting heights (to the centerline of the antennas) as follows:

- Verizon Wireless: 136 feet
- Sprint: 126 feet
- AT&T: 116 feet
- T-Mobile: 106 feet

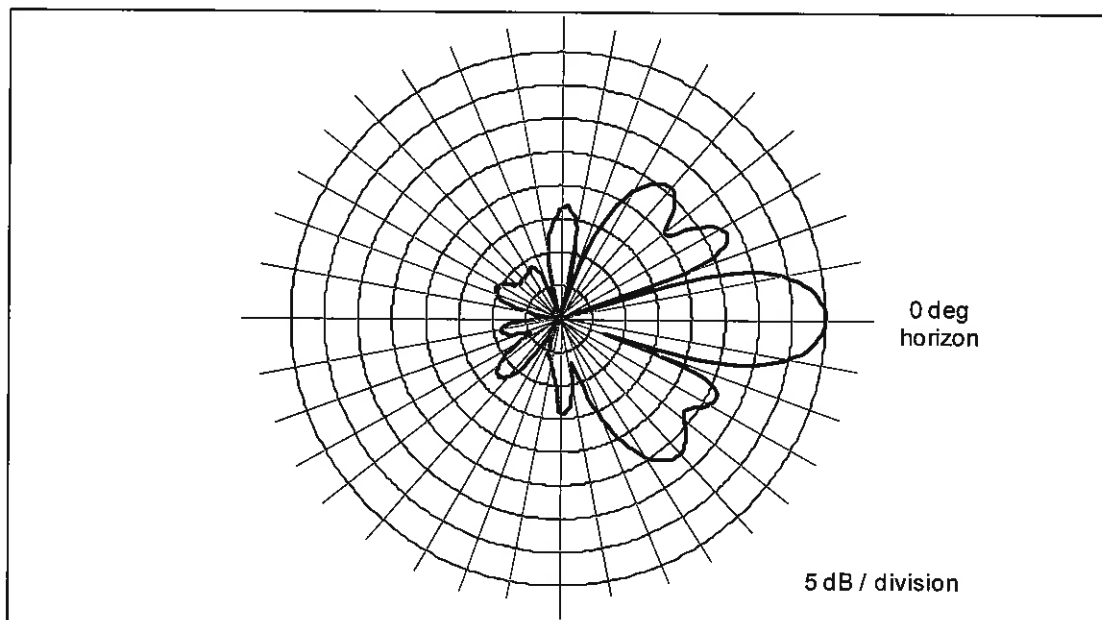
The area below the antennas, at street level, is of interest in terms of potential “uncontrolled” exposure of the general public, so the antenna’s vertical-plane emission characteristic is used in the calculations, as it is a key determinant in

the relative level of RF emissions in the “downward” direction.

By way of illustration, Figure 1, below, shows the vertical-plane pattern of a typical 1900 MHz panel antenna. The antenna is effectively pointed at the three o'clock position (the horizon) and the pattern at different angles is described using decibel units. The use of a decibel scale in incidentally visually understates the relative directionality characteristic of the antenna in the vertical plane. Where the antenna pattern reads 20 dB, the relative RF energy emitted at the corresponding downward angle is 1/100th of the maximum that occurs in the main beam (at 0 degrees); at 30 dB, the energy is 1/1000th of the maximum.

Note that the automatic pattern-scaling feature of our internal software may skew side-by-side visual comparisons of different antenna models, or even different parties' depictions of the same antenna model.

Figure 1. 1900 MHz Directional Panel Antenna – Vertical-plane Pattern



Compliance Analysis

FCC Office of Engineering and Technology Bulletin 65 ("OET Bulletin 65") provides guidelines for mathematical models to calculate potential RF exposure levels at various points around transmitting antennas.

Around an antenna site at ground level (in what is called the "far field" of the antennas), the RF levels are directly proportional to the total antenna input power and the relative antenna gain (focusing effect) in the downward direction of interest – and the levels are otherwise inversely proportional to the square of the straight-line distance to the antenna. Conservative calculations also assume the potential RF exposure is enhanced by reflection of the RF energy from the intervening ground. Our calculations will assume a 100% "perfect", mirror-like reflection, which is the absolute worst-case approach.

The formula for ground-level MPE compliance assessment of any given wireless antenna operation is as follows:

$$\text{MPE\%} = (100 * \text{TxPower} * 10^{(\text{Gmax-Vdisc})/10} * 4) / (\text{MPE} * 4\pi * R^2)$$

where

MPE%	=	RF level, expressed as a percentage of the FCC MPE limit applicable to continuous exposure of the general public
100	=	factor to convert the raw result to a percentage
TxPower	=	maximum net power into antenna sector, in milliwatts, a function of the number of channels per sector, the transmitter power per channel, and line loss
$10^{(\text{Gmax-Vdisc})/10}$	=	numeric equivalent of the relative antenna gain in the direction of interest downward toward ground level
4	=	factor to account for a 100-percent-efficient energy reflection from the ground, and the squared relationship between RF field strength and power density ($2^2 = 4$)
MPE	=	FCC general population MPE limit
R	=	straight-line distance from the RF source to the point of interest, centimeters

The MPE% calculations are normally performed out to a distance of 500 feet from the facility to points 6.5 feet (approximately two meters, the FCC-recommended standing height) off the ground, as illustrated in Figure 2, below.

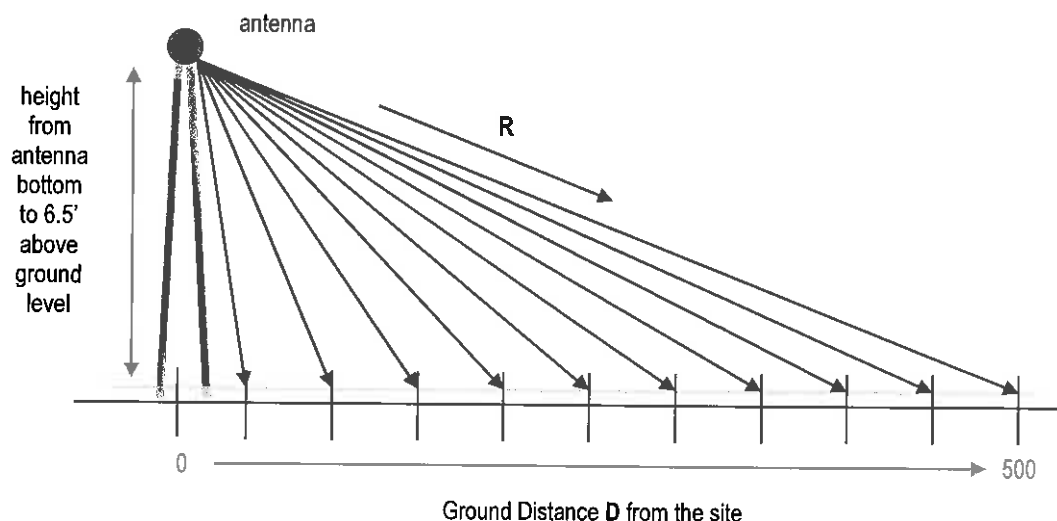


Figure 2. Street-level MPE% Calculation Geometry

It is popularly thought that the farther away one is from an antenna, the lower the RF level – which is generally but not universally correct. The results of MPE% calculations fairly close to the site will reflect the variations in the vertical-plane antenna pattern as well as the variation in straight-line distance to the antennas. Therefore, RF levels may actually increase slightly with increasing distance within the range of zero to 500 feet from the site. As the distance approaches 500 feet and beyond, though, the antenna pattern factor becomes less significant, the RF levels become primarily distance-controlled and, as a result, the RF levels generally decrease with increasing distance. In any case, the RF levels more than 500 feet from a wireless antenna site are well understood to be sufficiently low and always in compliance.

FCC compliance for a collocated antenna site is assessed in the following manner. At each distance point away from the site, an MPE% calculation is made for each antenna operation, including the individual components of dual-

band operations. Then, at each point, the sum of the individual MPE% contributions is compared to 100 percent, where the latter figure serves as a normalized reference for compliance with the MPE limit. We refer to the sum of the individual MPE% contributions as “total MPE%”, and any calculated total MPE% result exceeding 100 percent is, by definition, higher than the limit and represent non-compliance and a need to take action to mitigate the RF levels. If all results are below 100 percent, that indicates compliance with the federal regulations on controlling exposure.

Note that the following conservative methodology and assumptions are incorporated into the MPE% calculations on a general basis:

1. The antennas are assumed to be operating continuously at maximum RF power – i.e., with the maximum number of channels and the maximum transmitter power per channel.
2. The power-attenuation effects of any shadowing or visual obstruction to a line-of-sight path from the antennas to the points of interest at ground level are ignored.
3. The calculations intentionally minimize the distance factor (R) by assuming a 6’6” human and performing the calculations from the bottom (rather than the centerline) of the antenna.
4. The potential RF exposure at ground level is assumed to be 100-percent enhanced (increased) via a “perfect” field reflection from the intervening ground.

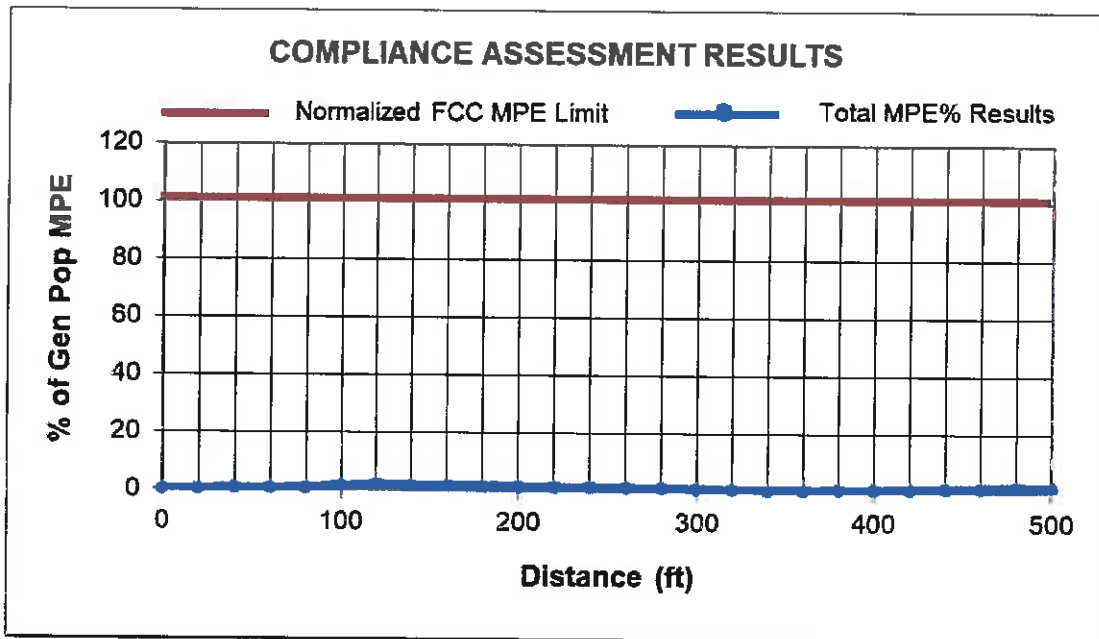
The net result of these assumptions is to intentionally and significantly overstate the calculated RF levels relative to the RF levels that will actually occur – and the purpose of this conservatism is to allow “safe-side” conclusions about compliance with the MPE limit.

The table on the following page provides the results of the MPE% calculations for each operator, with the worst-case overall result highlighted in bold in the last column.

Ground Distance (ft)	Verizon MPE%	AT&T MPE%	Sprint MPE%	T-Mobile MPE%	Total MPE%
0	0.0266	0.0639	0.0347	0.0065	0.1317
20	0.0308	0.0763	0.0126	0.0136	0.1333
40	0.0519	0.1449	0.0145	0.1819	0.3932
60	0.0762	0.2027	0.0536	0.1115	0.4440
80	0.1155	0.3187	0.0705	0.2344	0.7391
100	0.1353	0.4158	0.0777	0.6566	1.2854
120	0.0989	0.8100	0.0832	0.7714	1.7635
140	0.1735	0.8022	0.1876	0.2514	1.4147
160	0.3073	0.6883	0.1737	0.1235	1.2928
180	0.3385	0.6448	0.0784	0.1333	1.1950
200	0.4247	0.6125	0.0428	0.0902	1.1702
220	0.4879	0.4385	0.0746	0.0741	1.0751
240	0.5065	0.3121	0.1072	0.1311	1.0569
260	0.4343	0.2041	0.0972	0.2557	0.9913
280	0.3153	0.2197	0.1136	0.2992	0.9478
300	0.2431	0.2144	0.0951	0.2128	0.7654
320	0.1512	0.1959	0.0615	0.1302	0.5388
340	0.1087	0.1808	0.0288	0.0948	0.4131
360	0.0824	0.2012	0.0193	0.0825	0.3854
380	0.0677	0.2833	0.0372	0.1167	0.5049
400	0.0745	0.2575	0.0394	0.1931	0.5645
420	0.1107	0.3896	0.0618	0.2136	0.7757
440	0.1016	0.5498	0.0837	0.2496	0.9847
460	0.1660	0.5055	0.0770	0.2970	1.0455
480	0.2624	0.6365	0.0894	0.2737	1.2620
500	0.2431	0.5888	0.0827	0.2978	1.2124

As indicated, the overall worst-case calculated result is 1.7635 percent of the FCC general population MPE limit – well below the 100-percent reference for compliance, particularly given the significant conservatism incorporated in the analysis.

A graph of the overall calculation results, shown on the next page, provides perhaps a clearer *visual* illustration of the relative compliance of the calculated RF levels. The line representing the overall calculation shows an obviously clear, consistent margin to the FCC MPE limit.



Compliance Conclusion

The FCC MPE limit has been constructed in such a manner that continuous human exposure to RF fields up to and including 100 percent of the MPE limit is acceptable and completely safe.

The conservatively calculated maximum RF effect at street level from the assumed worst-case collocation of as many as four wireless carriers is 1.7635 percent of the FCC general population MPE limit. In other words, even with an extremely conservative analysis intended to dramatically overstate the RF effects of any wireless collocation scenario at the site, the calculated worst-case RF level is still more than 55 times below the FCC MPE limit.

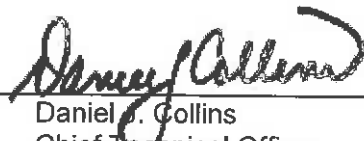
The results of the calculations indicate clear compliance with the FCC regulations and the related MPE limit, even for a worst-case collocation scenario. Because of the conservative calculation methodology and operational assumptions applied in this analysis, the RF levels actually caused by any more realistic collocation of

antennas at this site would be even less significant than the calculation results here indicate, and compliance would be achieved by an even larger margin.

CERTIFICATION

It is the policy of Pinnacle Telecom Group that all FCC RF compliance assessments are reviewed, approved, and signed by the firm's Chief Technical Officer who certifies as follows:

1. I have read and fully understand the FCC regulations concerning RF safety and the control of human exposure to RF fields (47 CFR 1.1301 *et seq*).
2. To the best of my knowledge, the statements and information disclosed in this report are true, complete and accurate.
3. The analysis of site RF compliance provided herein is consistent with the applicable FCC regulations, additional guidelines issued by the FCC, and industry practice.
4. The results of the analysis indicate that the subject antenna operations will be in compliance with the FCC regulations concerning the control of potential human exposure to the RF emissions from antennas.



Daniel J. Collins
Chief Technical Officer
Pinnacle Telecom Group, LLC

06/12/19

Date

Appendix A. Background on the FCC MPE Limit

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

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

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

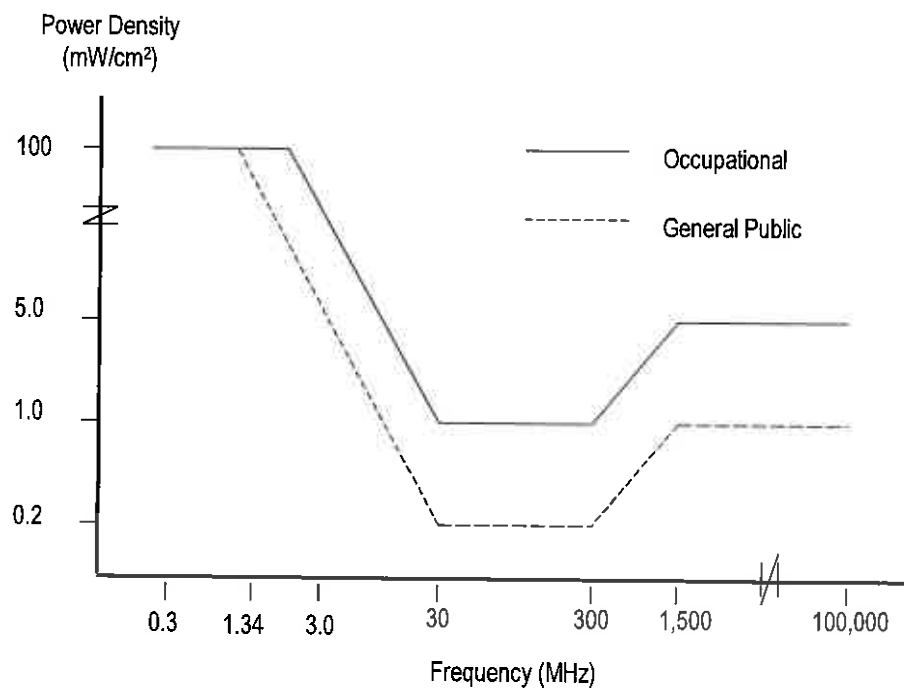
The specified continuous exposure MPE limits are based on known variation of human body susceptibility in different frequency ranges, and a Specific Absorption Rate (SAR) of 4 watts per kilogram, which is universally considered to accurately represent human capacity to dissipate incident RF energy (in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

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

The FCC's RF exposure limits are expressed in two equivalent forms, using alternative units of field strength (expressed in volts per meter, or V/m), and power density (expressed in milliwatts per square centimeter, or mW/cm²). The table on the next page lists the FCC limits for both occupational and general population exposures, using the mW/cm² reference, for the different radio frequency ranges.

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

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



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

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

For potential exposure from multiple systems, the respective percentages of the MPE limits are added, and the total percentage compared to 100 (percent of the limit). If the result is less than 100, the total exposure is in compliance; if it is more than 100, exposure mitigation measures are necessary to achieve compliance.

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

FCC References on RF Compliance

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

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

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

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

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

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

Appendix B. SUMMARY of EXPERT QUALIFICATIONS

Daniel J. Collins, Chief Technical Officer, Pinnacle Telecom Group, LLC

Synopsis:	<ul style="list-style-type: none"> • 40+ years of experience in all aspects of wireless system engineering, related regulation, and RF exposure • Has performed or led RF exposure compliance assessments on more than 20,000 antenna sites since the latest FCC regulations went into effect in 1997 • Has provided testimony as an RF compliance expert more than 1,500 times since 1997 • Have been accepted as an FCC compliance expert in New York, New Jersey, Connecticut, Pennsylvania and more than 40 other states, as well as by the FCC
Education:	<ul style="list-style-type: none"> • B.E.E., City College of New York (Sch. Of Eng.), 1971 • M.B.A., 1982, Fairleigh Dickinson University, 1982 • Bronx High School of Science, 1966
Current Responsibilities:	<ul style="list-style-type: none"> • Leads all PTG staff work involving RF safety and FCC compliance, microwave and satellite system engineering, and consulting on wireless technology and regulation
Prior Experience:	<ul style="list-style-type: none"> • Edwards & Kelcey, VP – RF Engineering and Chief Information Technology Officer, 1996-99 • Bellcore (a Bell Labs offshoot after AT&T's 1984 divestiture), Executive Director – Regulation and Public Policy, 1983-96 • AT&T (Corp. HQ), Division Manager – RF Engineering, and Director – Radio Spectrum Management, 1977-83 • AT&T Long Lines, Group Supervisor – Microwave Radio System Design, 1972-77
Specific RF Safety / Compliance Experience:	<ul style="list-style-type: none"> • Involved in RF exposure matters since 1972 • Have had lead corporate responsibility for RF safety and compliance at AT&T, Bellcore, Edwards & Kelcey, and PTG • While at AT&T, helped develop the mathematical models for calculating RF exposure levels • Have been relied on for compliance by all major wireless carriers, as well as by the federal government, several state and local governments, equipment manufacturers, system integrators, and other consulting / engineering firms
Other Background:	<ul style="list-style-type: none"> • Author, <i>Microwave System Engineering</i> (AT&T, 1974) • Co-author and executive editor, <i>A Guide to New Technologies and Services</i> (Bellcore, 1993) • National Spectrum Management Association (NSMA) – former three-term President and Chairman of the Board of Directors; was founding member, twice-elected Vice President, long-time member of the Board, and was named an NSMA Fellow in 1991 • Have published more than 35 articles in industry magazines



Supplemental Report
In Response to Ronald E. Graiff, PE April 25,
2019 Letter & Comments

Site ID: "Lake Casse NY056"

254 Croton Falls Road
Hamlet of Mahopac, NY
Putnam County

Prepared for
New York SMSA Limited Partnership d/ b/ a Verizon Wireless

By

Pier Con Solutions, LLC
June 24, 2019

Index

- I. PURPOSE AND SCOPE**
- II. RESPONSE to GRAIFF's COMMENTS REGARDING THE SUPPLEMENTAL REPORT DRIVE TEST ANALYSIS**
- III. Verizon Wireless's Significant Gap and Service and Performance Goals as Demonstrated by Key Performance Indicator (KPI) data**
 - 1. Verizon Wireless's 700 & 2100 MHz 4G KPI Data**
- IV. CONCLUSION**
- V. APPENDIX**

I. PURPOSE AND SCOPE

1. PierCon Solutions LLC, an engineering firm specializing in wireless communications, reviewed the report dated April 25th, 2019 by Mr. Ronald E. Graiff, PE. This report addresses comments and requests raised by Mr. Graiff to the Town of Carmel Planning Board.

II. RESPONSE to GRAIFF's COMMENTS REGARDING SUPPLEMENTAL REPORT DRIVE TEST ANALYSIS

2. PierCon's level of 8 dB for the foliage factor is calculated based on the proposed site location, and the foliage between receiving points. The value of 8 dB was calculated using a diffraction loss (commonly known as shadow loss) formula found in William C. Lee's highly respected industry standard book called Mobile Cellular Communications. The formulas which were used are attached to this letter. The location referenced for the foliage factor was the intersection of Shear Hill Road and Croton Falls Road which resulted in a diffraction loss of 8.19 dB, using an average tree height of 65ft. Other locations evaluated resulted in lower or greater than 8 dB.
3. CW test factor was applied to the CW signal strength to convert to RSRP. RSRP (Reference Signal Received Power) is by definition the average received power of a single resource element (RE). There are 84 resource elements in a single resource block in LTE. RSSI (Receive signal strength indicator) is defined as the power measured over the entire bandwidth of occupied resource blocks. RSRP is equal to $RSSI - 10 \log(12 \cdot N)$ where N is the number of resource blocks as per Channel Bandwidth. The channel bandwidth per frequency can vary per wireless carrier. The formula with the values for N per Bandwidth is attached to this letter.
4. In regards to more roads driven in the 156ft plot than in the 176ft plot, there is nothing curious. Simply in driving such a large area over several hours it was not always possible to take the exact same route, for safety reasons, traffic etc., additional roads were driven as a go around instead of making U-turns or roads avoided for the same reasons.
5. In comparing Exhibits F-1 and G-1 for the 2100 MHz CW drive test at 156ft and 136ft respectively, there is a loss of in-vehicle coverage along Croton Falls Road and Sandy Street as well as Shears Hill Road and Weber Hill Road. However, in evaluating these same areas at the 700 MHz, these roads will be covered at 136ft in the 700 MHz band for in-vehicle. Mr. Graiff is correct when stating this is a coverage need as indicated in previous PierCon reports.

III. Verizon Wireless's Significant Gap and Service and Performance Goals as Demonstrated by Key Performance Indicator (KPI) data

6. In addition to confirming that Verizon Wireless has a significant gap in 4G LTE coverage with Drive Test Maps and Coverage Maps, an evaluation of Verizon Wireless's Key System Performance Indicator Data ("KPI Data") has been provided. The KPIs utilized consist of call drop call failure rates and access failure rates from Verizon's existing antennas providing signal facing the gap area identified in and surrounding the proposed site NY056 Lake Casse.
7. The drop call rate and call access failure rate are two performance indicators of a wireless network having a gap in reliable service. Dropped calls, meaning calls that are prematurely ended by the network rather than the customer, are an indicator that the signal strength and/or signal quality is unreliable such that voice calls or data connections are disconnected. Call access failures, or setup failures, meaning the inability for a customer to place a call, are indicators that the signal strength and/or quality are unreliable such that calls or data sessions

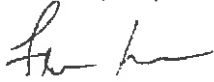
are unable to be established at the will of the customer.

8. From a review of the terrain features, antenna height and distance away from the subject gap area, the sites providing signal toward the gap include Carmel, Putnam Valley Hospital, Croton Falls, Heritage Hills, Mahopac Falls and Lake Mahopac sites. All other facilities are located too far away or have substantial terrain features blocking the signal to the area. Therefore, the following analysis includes KPI data from the Putnam Valley Hospital, Croton Falls, Lake Mahopac, Mahopac Falls and Heritage Hills sites only. The data consists of current last 3 months of data from February 15th to May 15th 2019. Please note on April 19, there was a fiber outage confirmed by Verizon Wireless and was not taken into account in review of the KPI data.
9. The KPI charts include 4G dropped call performance data and access failure data for the Verizon's facilities surrounding the proposed site. As previously indicated for 3G, most of the surrounding sites do not have 3G active due to re-farming and serves a small area of coverage as shown in the "Supplemental Report Drive test Analysis". Therefore, it is not provided. The drop call percentages and the access failure percentages indicate that Verizon has a significant gap in reliable wireless service in the areas surrounding the proposed Site. Any dropped call or access failure can be deemed unacceptable to a wireless customer, particularly in an emergency situation. Verizon has established a dropped call rate of greater than 1% or an access failure rate of greater than 2% is a measure of unreliable wireless coverage. Please refer to the following exhibits attached hereto for the 4G KPI data:
 1. Exhibit Z – 1 "4G Access Failure Rate and 4G Drop Failure Rate"
10. The KPI exhibits demonstrate that Verizon's 4G network on the 700 MHz licensed frequency bands is not able to provide reliable service due to a significant gap in the area. It is important to note that due to the unreliable coverage from the 2100 MHz frequency band, most of the users will transfer to the 700 MHz frequency band as the user travels toward the proposed site. As the user enters the gap in coverage, calls will drop. The KPI for drop call rate and access failure rates greatly exceed 1% and 2% which are the industry standard metrics for reliable performance. The data presented is a clear indicator of the lack of reliable service. This presented along with the drive test maps and coverage maps further substantiates the specific location of the gap area.

IV. CONCLUSION

11. PierCon Solutions provided additional information as requested in Mr. Graiff's report. As noted, the 8db is a reasonable level of attenuation of foliage. The conversion for the CW signal strength to RSRP for LTE has also been provided.
12. Therefore, based upon the responses herein, review of Mr. Graiff's report and drive test data, PierCon concludes that Verizon Wireless' significant gap in service can be filled with a minimum tower height of 140ft (136ft antenna center line) in order to provide reliable service. At this height, space for at least one collocating carrier will be potentially feasible, therefore PierCon recommends for collocation a future tower extension with 10ft separation per carrier. Without the proposed facility, Verizon Wireless will be materially inhibited from providing its services at a height below 140ft.

Report Prepared by:

A handwritten signature in black ink, appearing to read 'Frances Boschulte', written in a cursive style.

Frances Boschulte
June 24, 2019

V. APPENDIX

Diffraction Loss Formulas

$$v = -hp \sqrt{\frac{2}{\lambda} \left(\frac{1}{r_1} + \frac{1}{r_2} \right)}$$

$$1 \leq v \quad L = 0 \text{ dB}$$

$$0 \leq v < 1 \quad L = 20 \log(0.5 + 0.62v)$$

$$-1 \leq v < 0 \quad L = 20 \log(0.5e^{0.95v})$$

$$-2.4 \leq v < -1 \quad L = 20 \log(0.4 - \sqrt{0.1184 - (0.1v + 0.38)^2})$$

$$v < -2.4 \quad L = 20 \log\left(-\frac{0.225}{v}\right)$$

$$\text{RSRP} = \text{RSSI} - 10 \log(12 \cdot N)$$

Where,

N = Number of RBs as per Channel Bandwidth

= 6 (for 1.4 MHz), 15 (for 3 MHz), 25 (for 5 MHz),

50 (for 10 MHz), 75 (for 15 MHz), 100 (for 20 MHz)

Exhibit Z-1

4G LTE KPI Charts

4G Access Failure Rate and 4G Drop Failure Rate

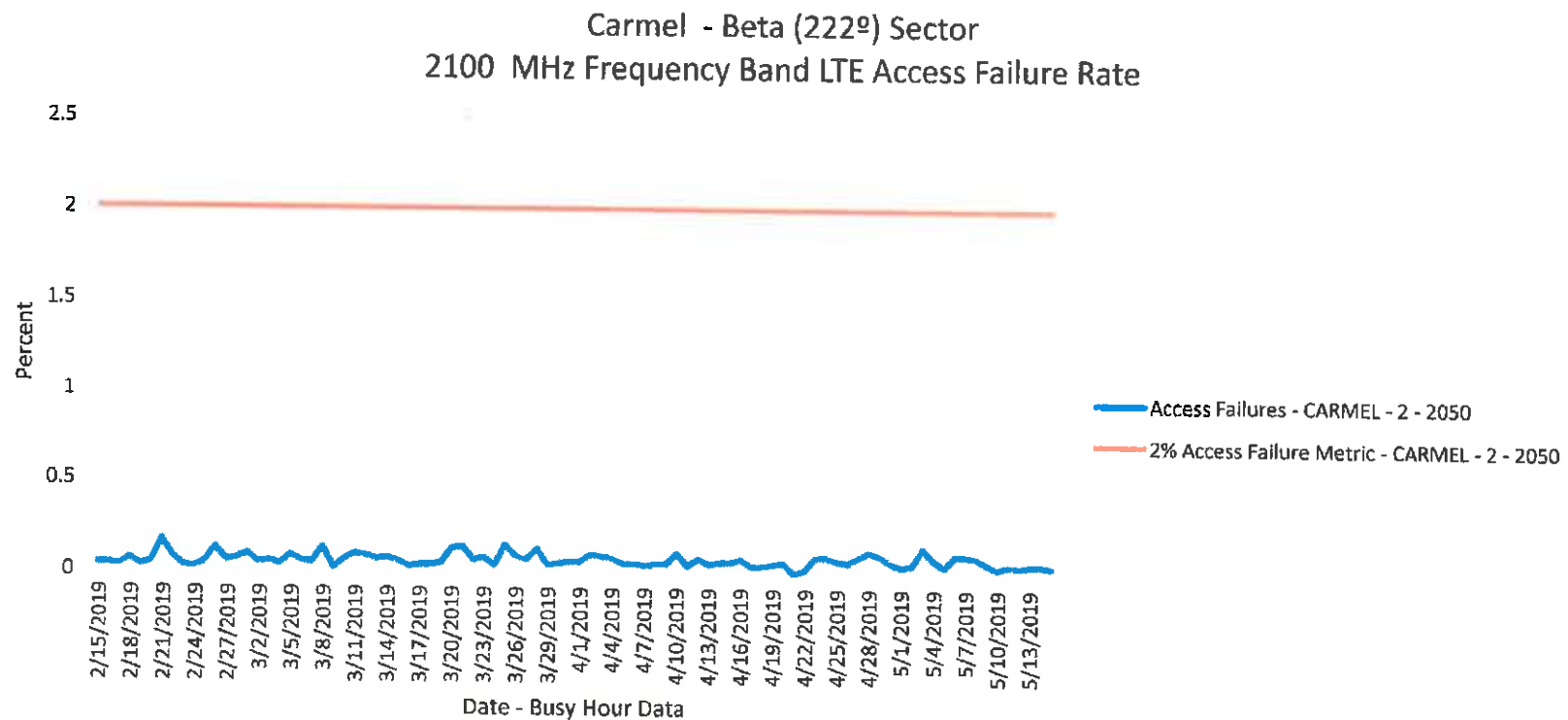


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2% metric which is acceptable. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz frequency band charts to follow. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage.

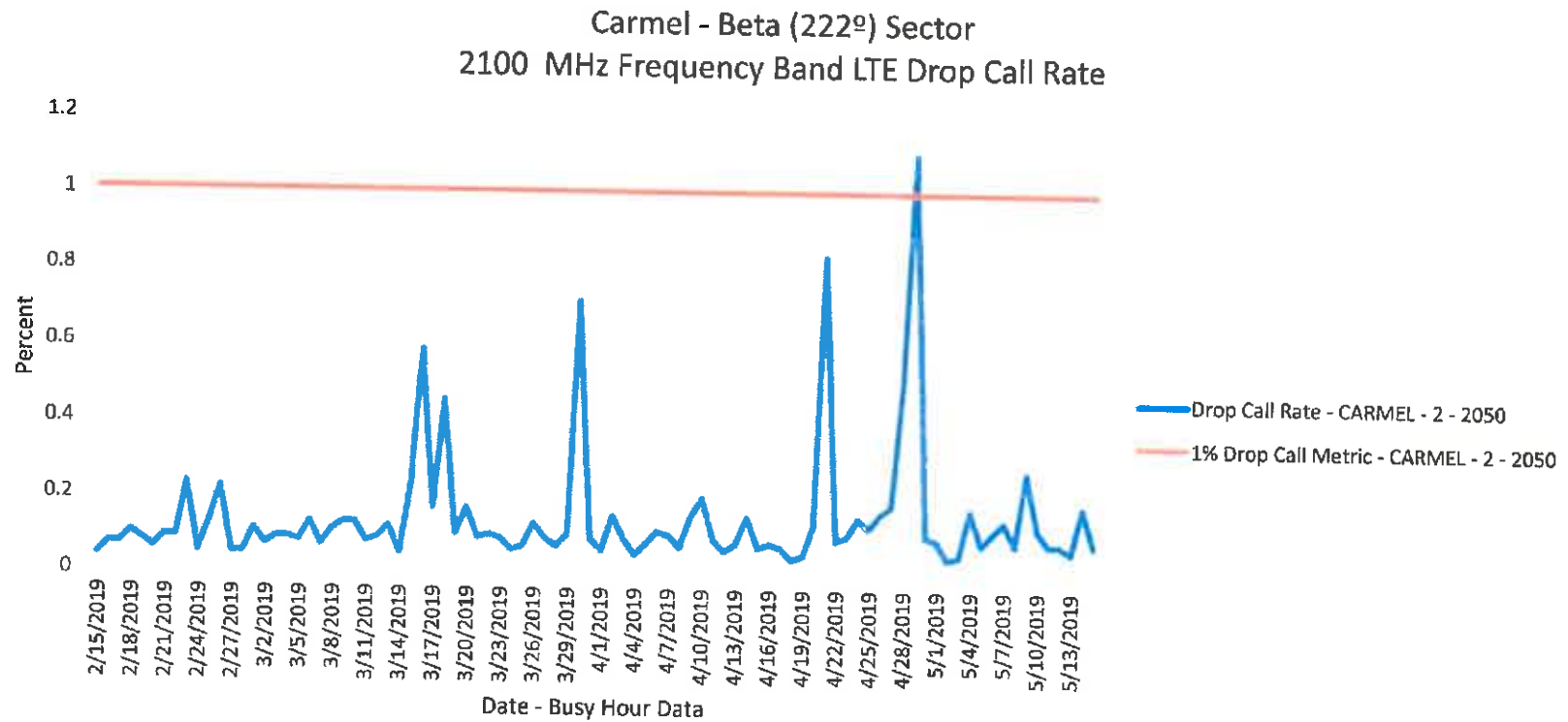


Chart demonstrates the LTE drop rate for the 2100 MHz frequency band from the sector. The drop rate in this chart is within Verizon's performance goal of 1% with the exception of a drop call rate of 1.1 on April 29, 2019. However, a call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz charts to follow.

Carmel - Beta (222nd) Sector 700 MHz Frequency Band LTE Access Failure Rate

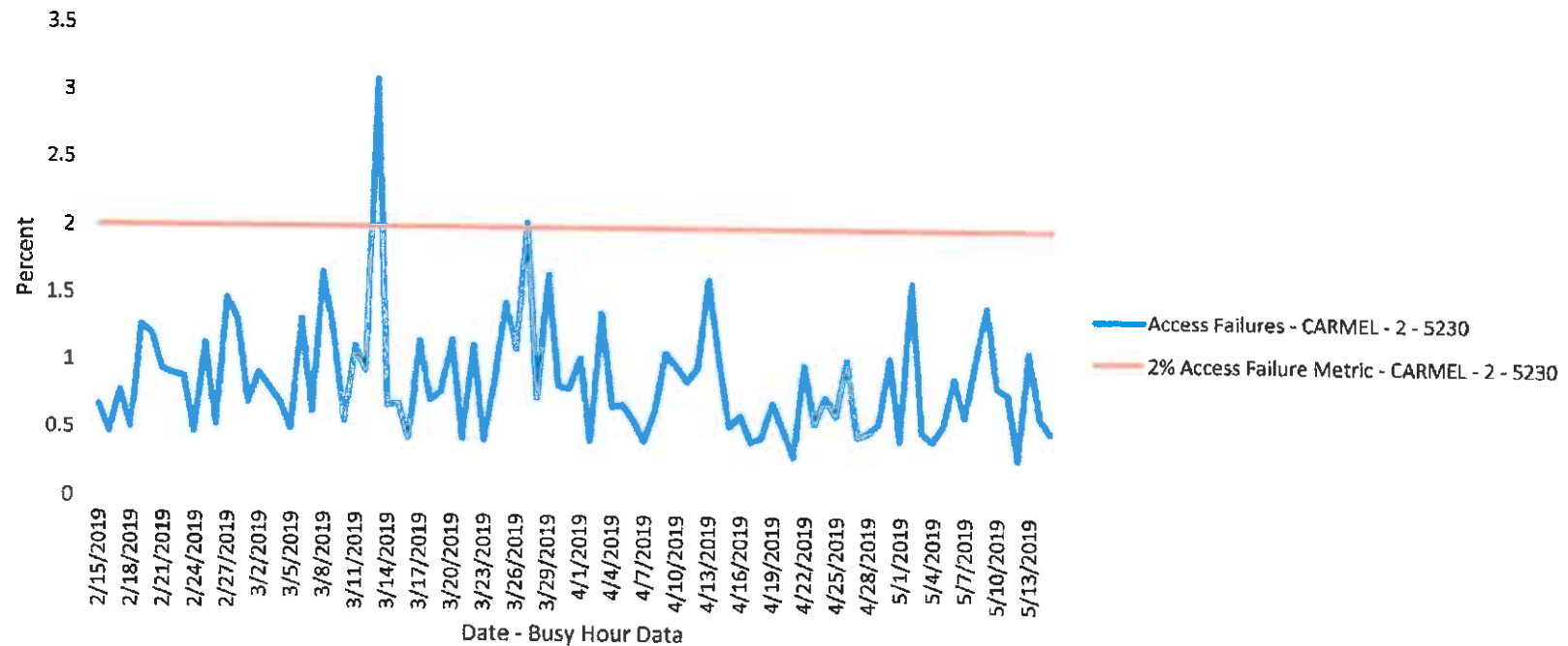


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2%, with exception to a 3% access failure that occurred on March 13, 2019. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the chart to follow.

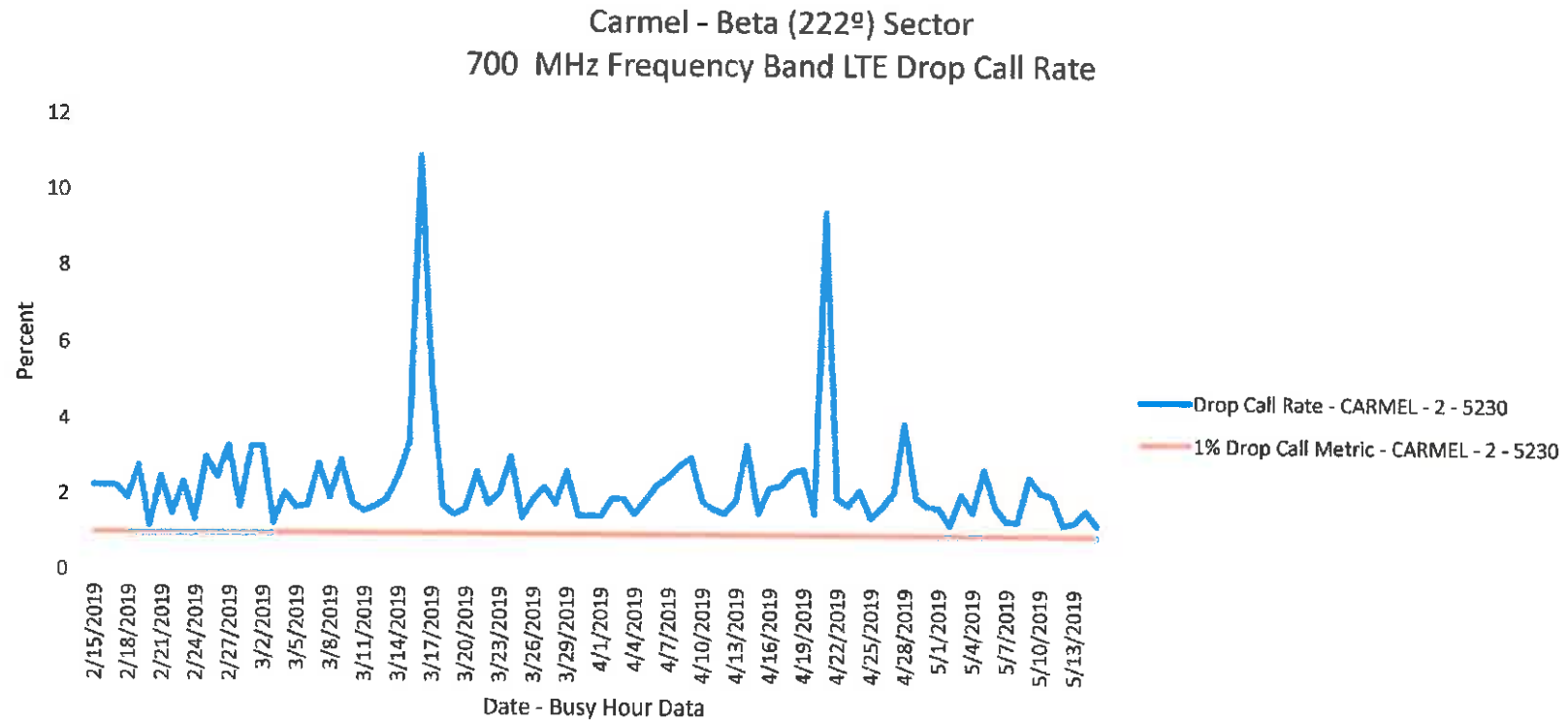


Chart demonstrates the LTE drop rate for the 700 MHz frequency band from the sector. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The chart demonstrates that as users travel south west from the Carmel facility, they experience a drop rate in excess of the industry standard, and in excess of Verizon's performance goal of 1%. The data in the chart over the three-month time period demonstrate drop rates over 3%. The drop call KPI data further substantiates the significant gap in service when used in conjunction with the drive test data and coverage maps.

Carmel - Alpha (1029) Sector 2100 MHz Frequency Band LTE Access Failure Rate

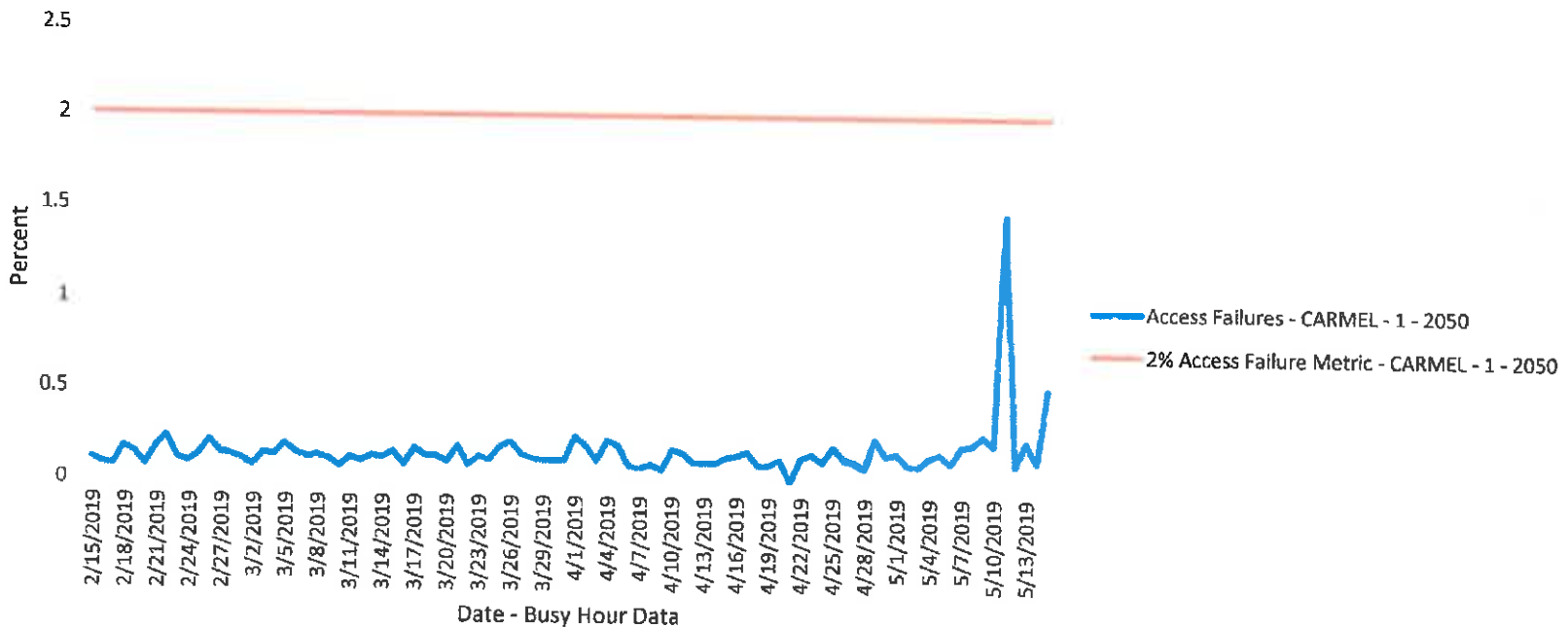


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2% metric which is acceptable. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz frequency band charts to follow. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage.

Carmel - Alpha (102nd) Sector 2100 MHz Frequency Band LTE Drop Call Rate

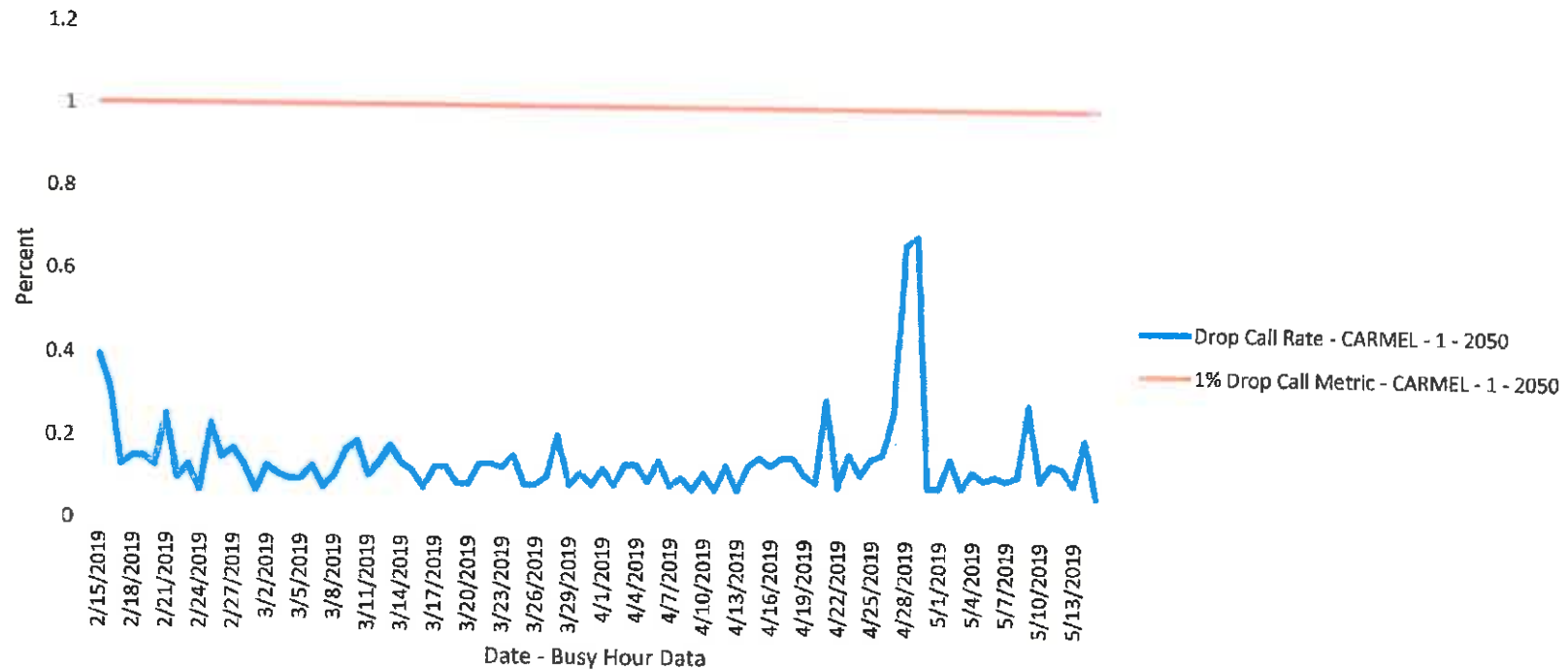


Chart demonstrates the LTE drop rate for the 2100 MHz frequency band from the sector. The drop rate in this chart is within Verizon's performance goal of 1%. However, a call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz charts to follow.

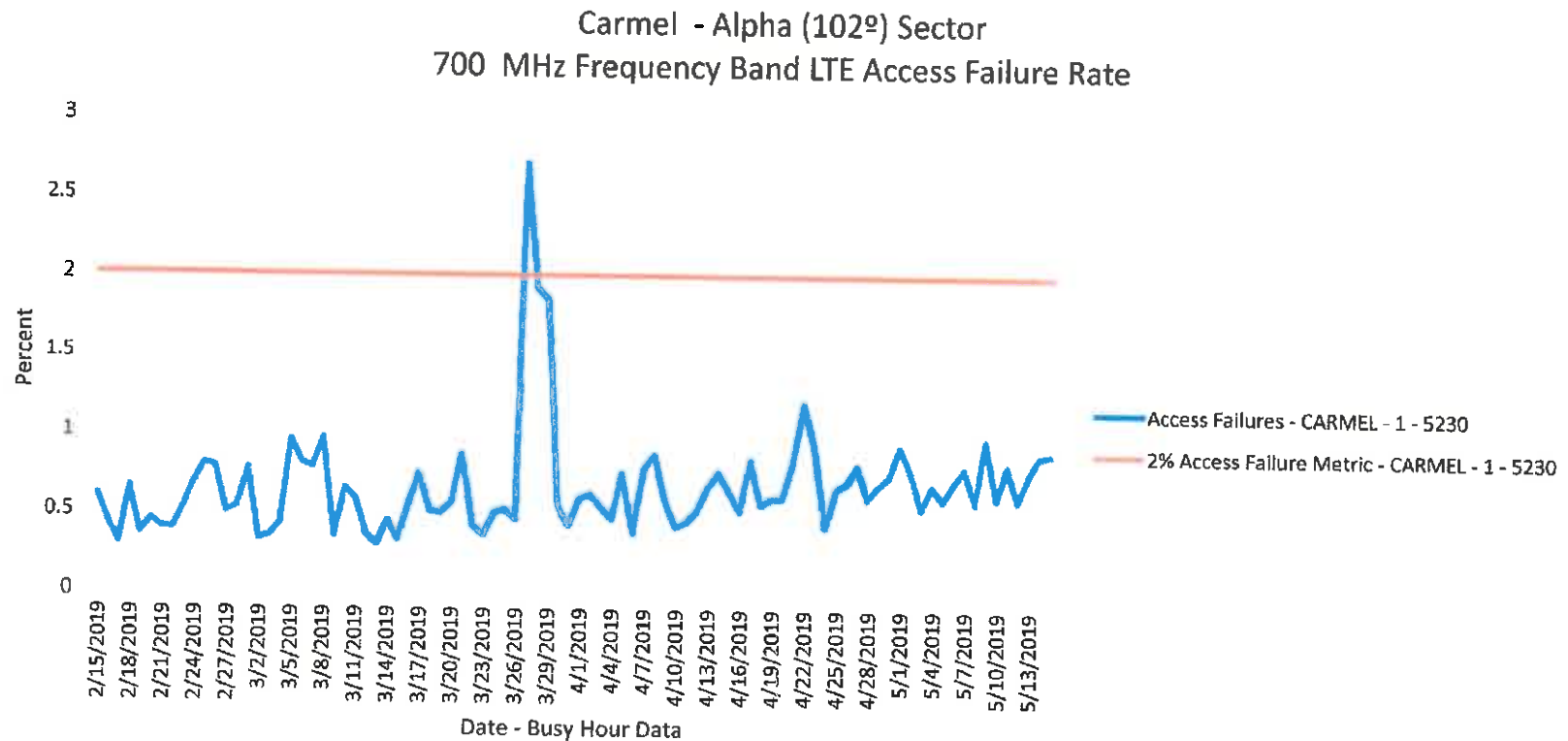


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2%, with exception to a 2.7% access failure that occurred on March 27, 2019. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the chart to follow.

Carmel - Alpha (102°) Sector 700 MHz Frequency Band LTE Drop Call Rate

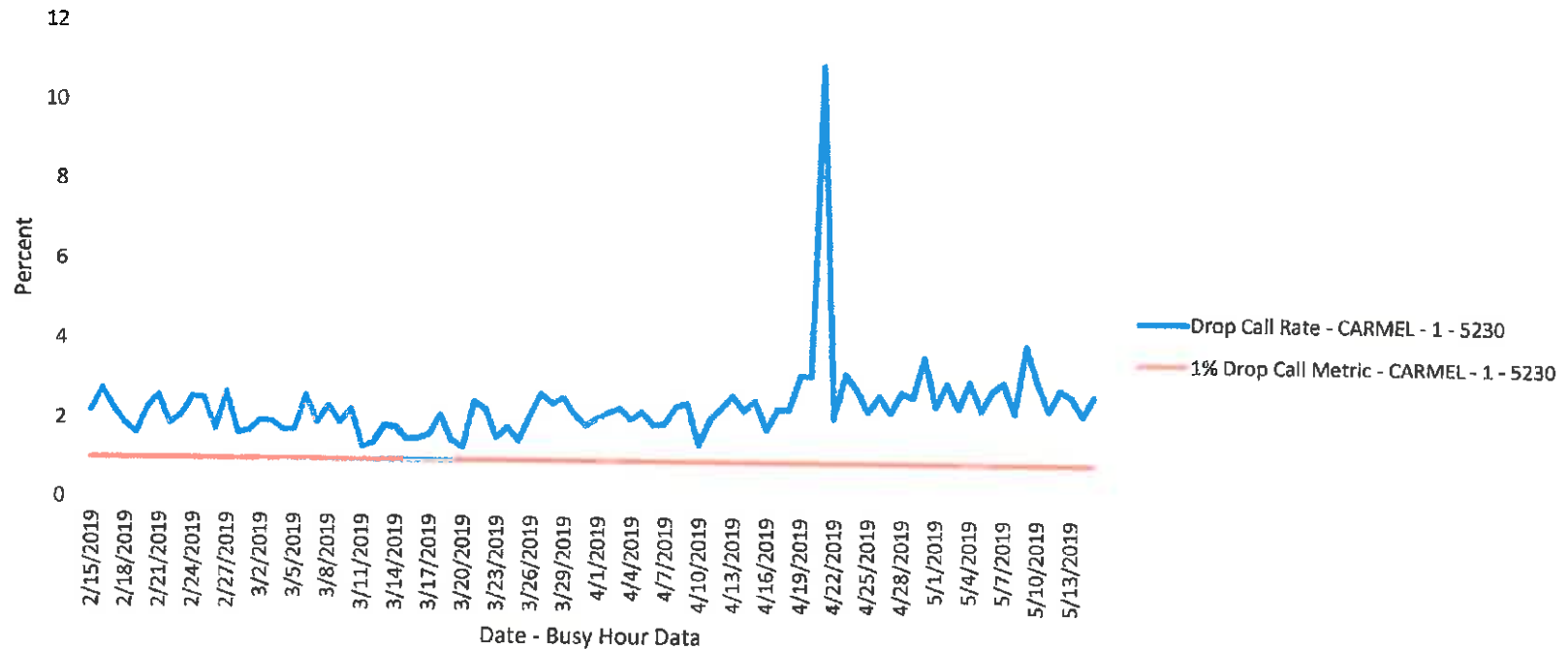


Chart demonstrates the LTE drop rate for the 700 MHz frequency band from the sector. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The chart demonstrates that as users travel south east from the Carmel facility, they experience a drop rate in excess of the industry standard, and in excess of Verizon's performance goal of 1%. The data in the chart over the three-month time period demonstrate drop rates over 2%. The drop call KPI data further substantiates the significant gap in service when used in conjunction with the drive test data and coverage maps.

Putnam Valley Hospital - Gamma (320^g) Sector 2100 MHz Frequency Band LTE Access Failure Rate

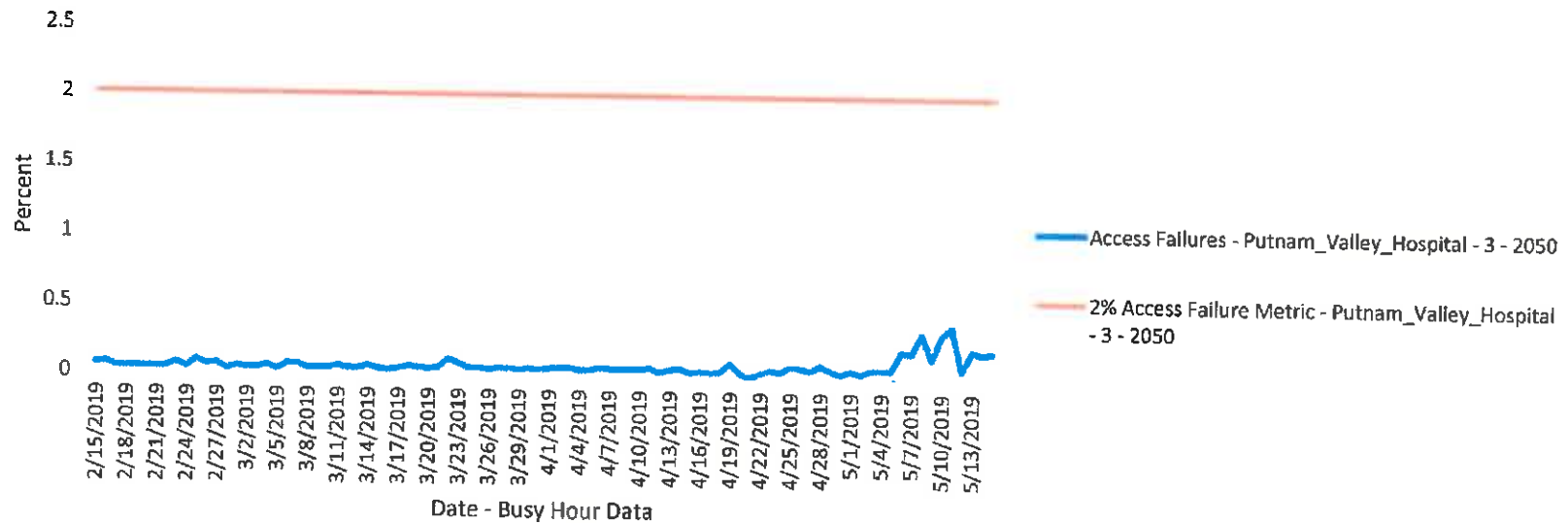


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2% metric which is acceptable. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz frequency band charts to follow. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage.

Putnam Valley Hospital - Gamma (3209) Sector 2100 MHz Frequency Band LTE Drop Call Rate

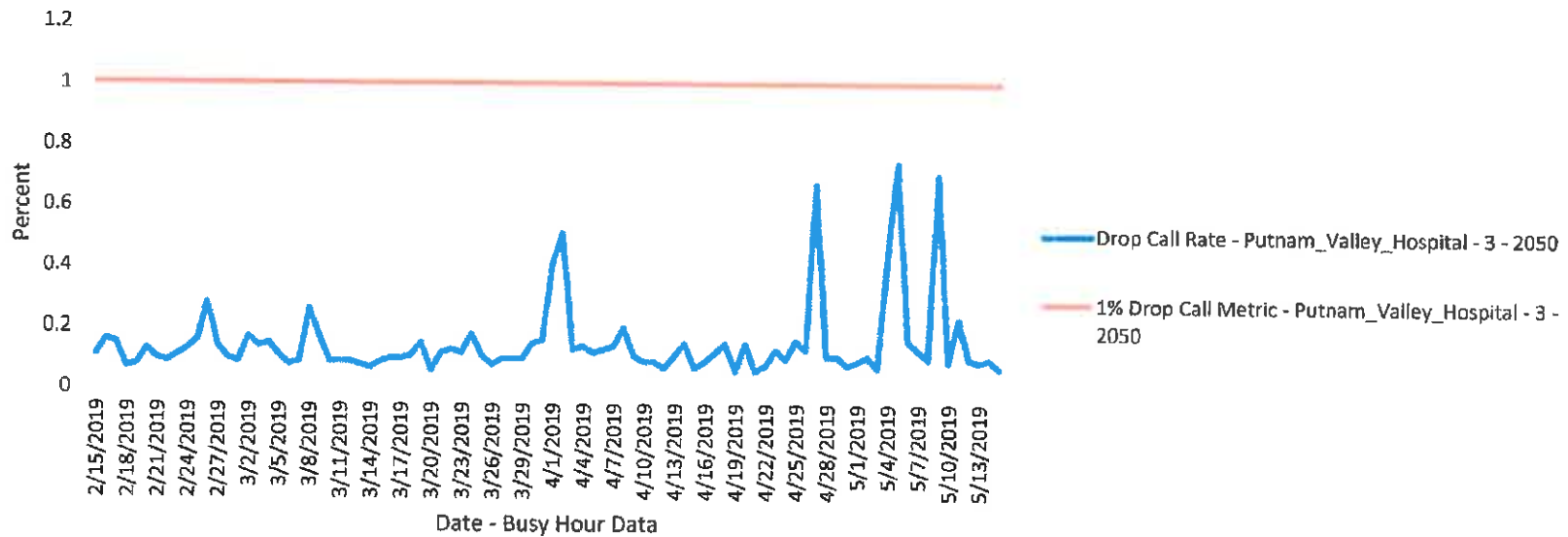


Chart demonstrates the LTE drop rate for the 2100 MHz frequency band from the sector. The drop rate in this chart is within Verizon's performance goal of 1%. However, a call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz charts to follow.

Putnam Valley Hospital - Gamma (320°) Sector 700 MHz Frequency Band LTE Access Failure Rate

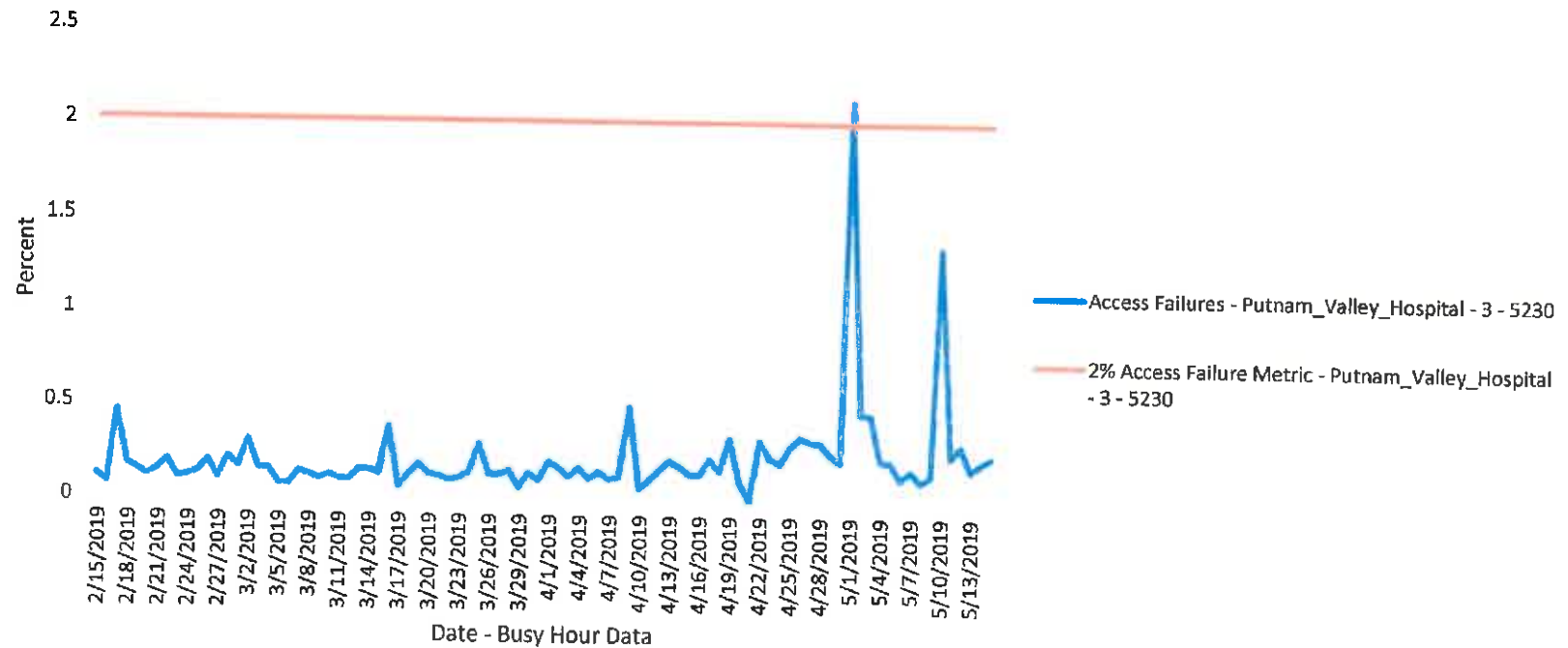


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2%, with exception to a 2% access failure that occurred on May,1, 2019. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the chart to follow.

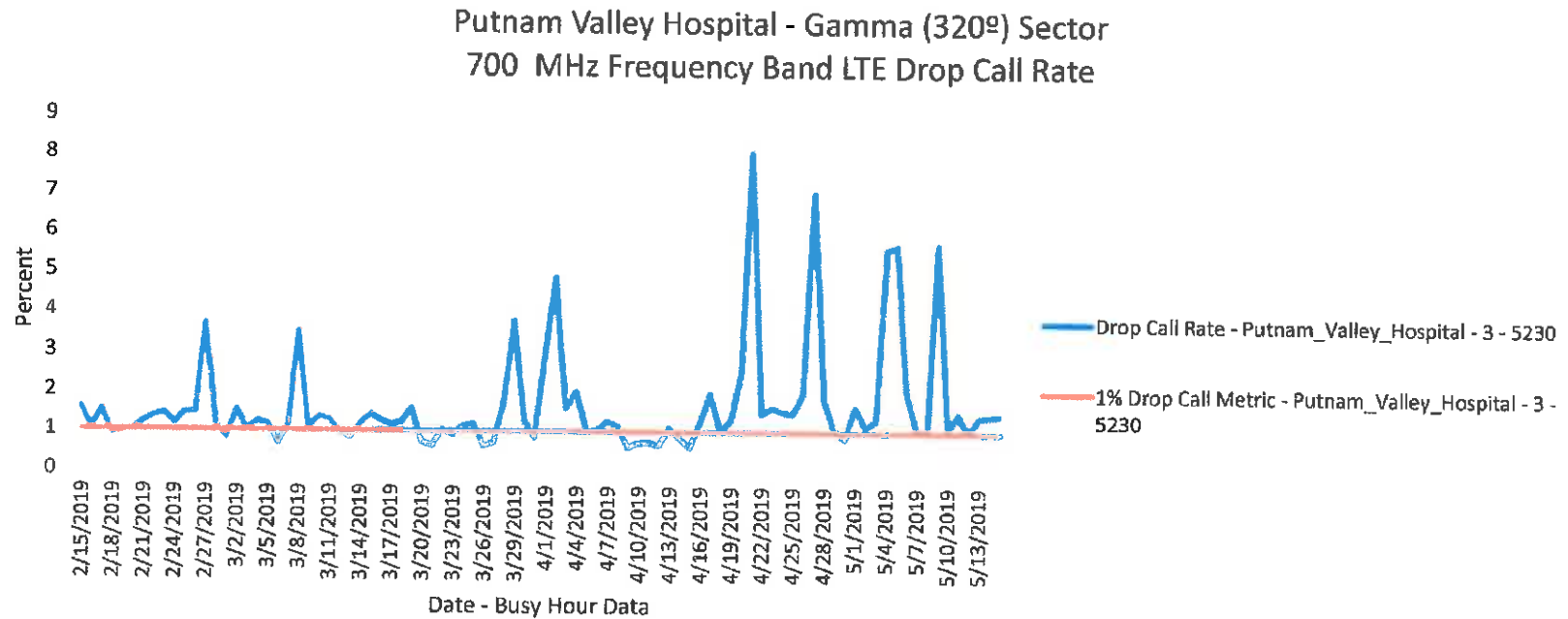


Chart demonstrates the LTE drop rate for the 700 MHz frequency band from the sector. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The chart demonstrates that as users travel north west from the Putnam Valley Hospital facility, they experience a drop rate in excess of the industry standard, and in excess of Verizon's performance goal of 1%. The data in the chart over the three-month time period demonstrate drop rates over 1%. The drop call KPI data further substantiates the significant gap in service when used in conjunction with the drive test data and coverage maps.

Putnam Valley Hospital - Beta (200th) Sector 2100 MHz Frequency Band LTE Access Failure Rate

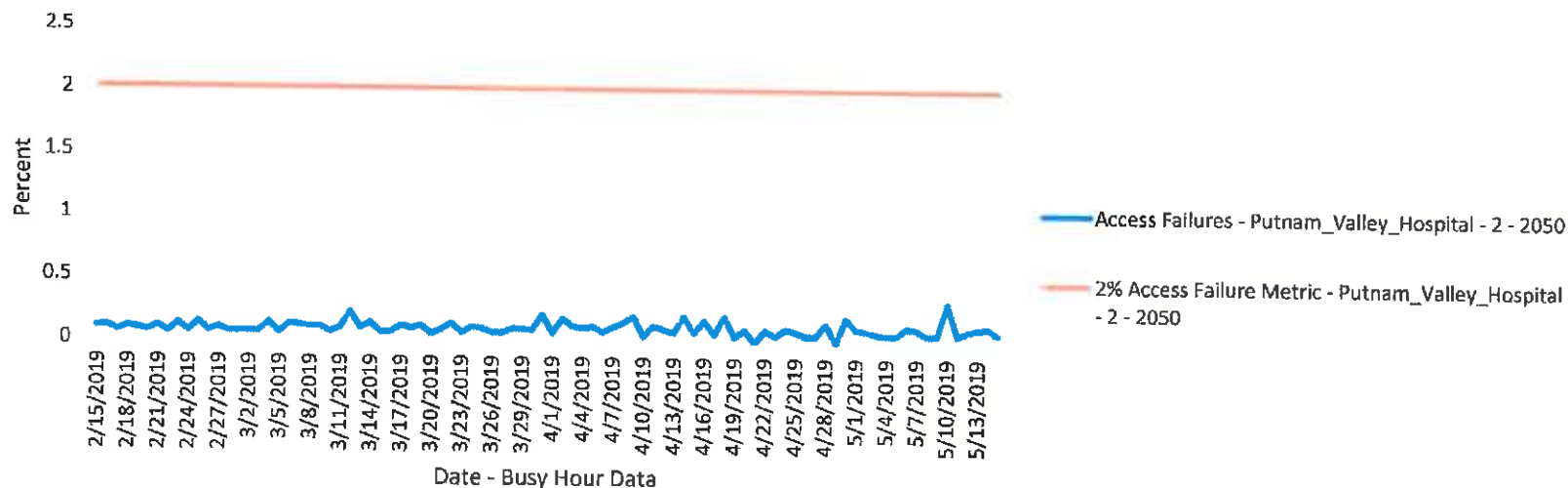


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2% metric which is acceptable. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz frequency band charts to follow. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage.

Putnam Valley Hospital - Beta (200⁹) Sector 2100 MHz Frequency Band Drop Call Rate

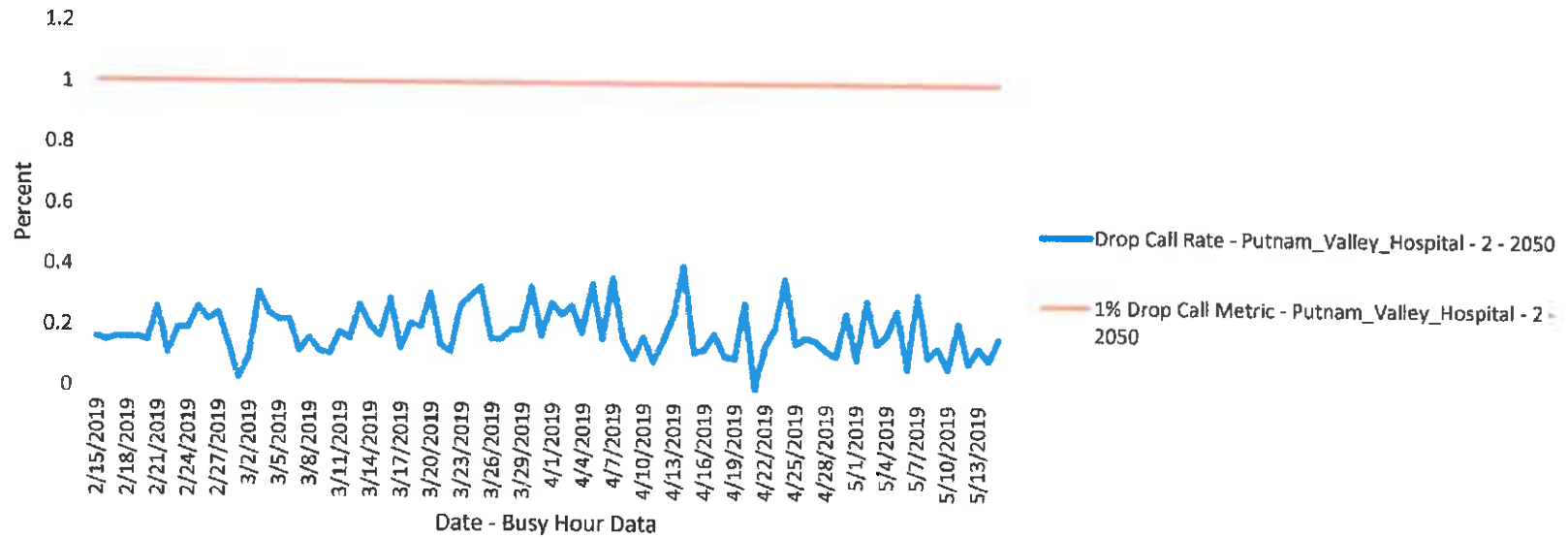


Chart demonstrates the LTE drop rate for the 2100 MHz frequency band from the sector. The drop rate in this chart is within Verizon's performance goal of 1%. However, a call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz charts to follow.

Putnam Valley Hospital - Beta (200^g) Sector 700 MHz Frequency Band LTE Access Failure Rate

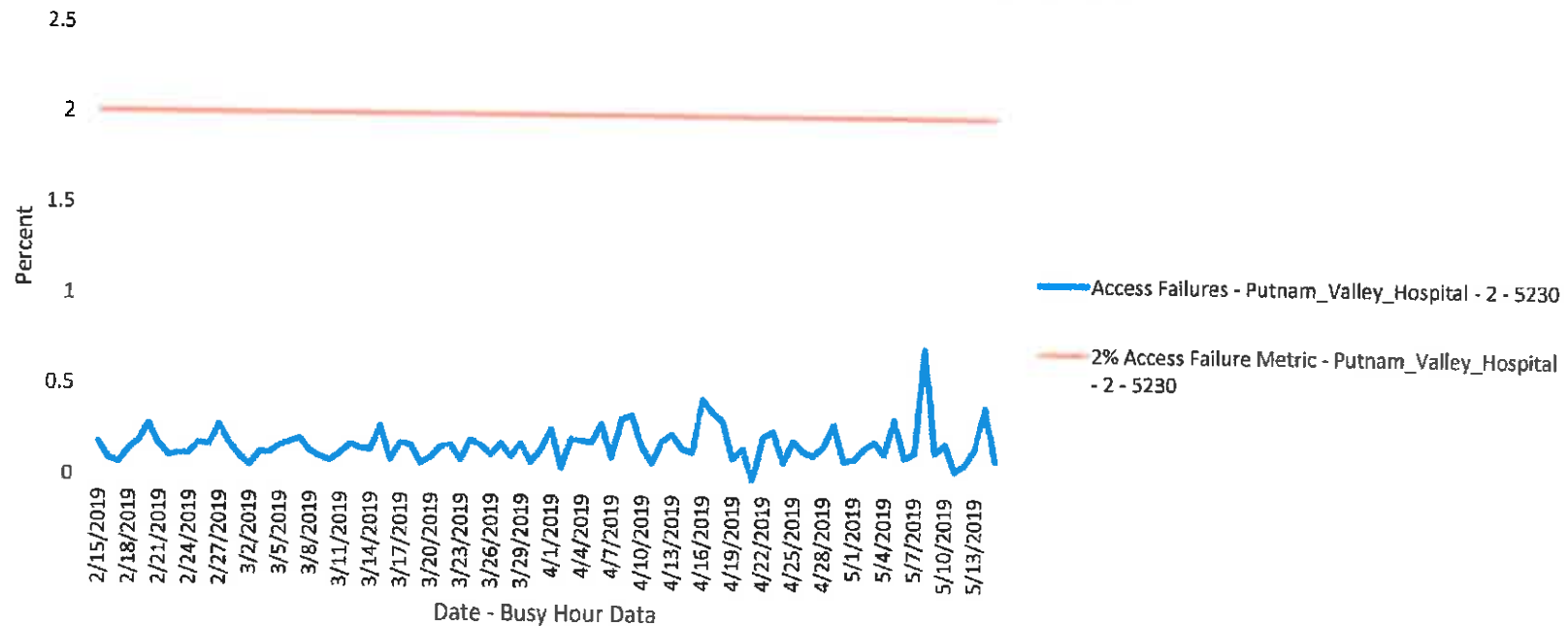


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2%. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the chart to follow.

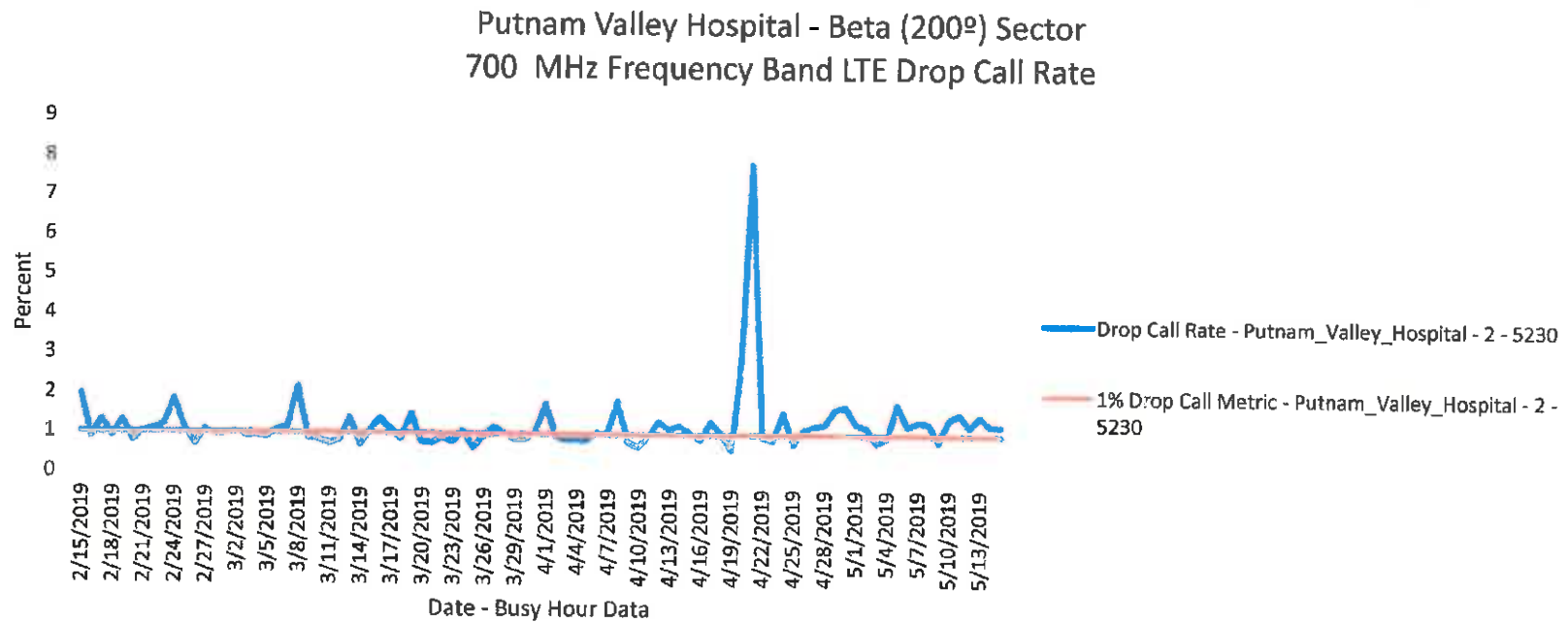


Chart demonstrates the LTE drop rate for the 700 MHz frequency band from the sector. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The chart demonstrates that as users travel south west from the Putnam Valley Hospital facility, they experience a drop rate in excess of the industry standard, and in excess of Verizon's performance goal of 1%. The data in the chart over the three-month time period demonstrate drop rates over 1%. The drop call KPI data further substantiates the significant gap in service when used in conjunction with the drive test data and coverage maps.

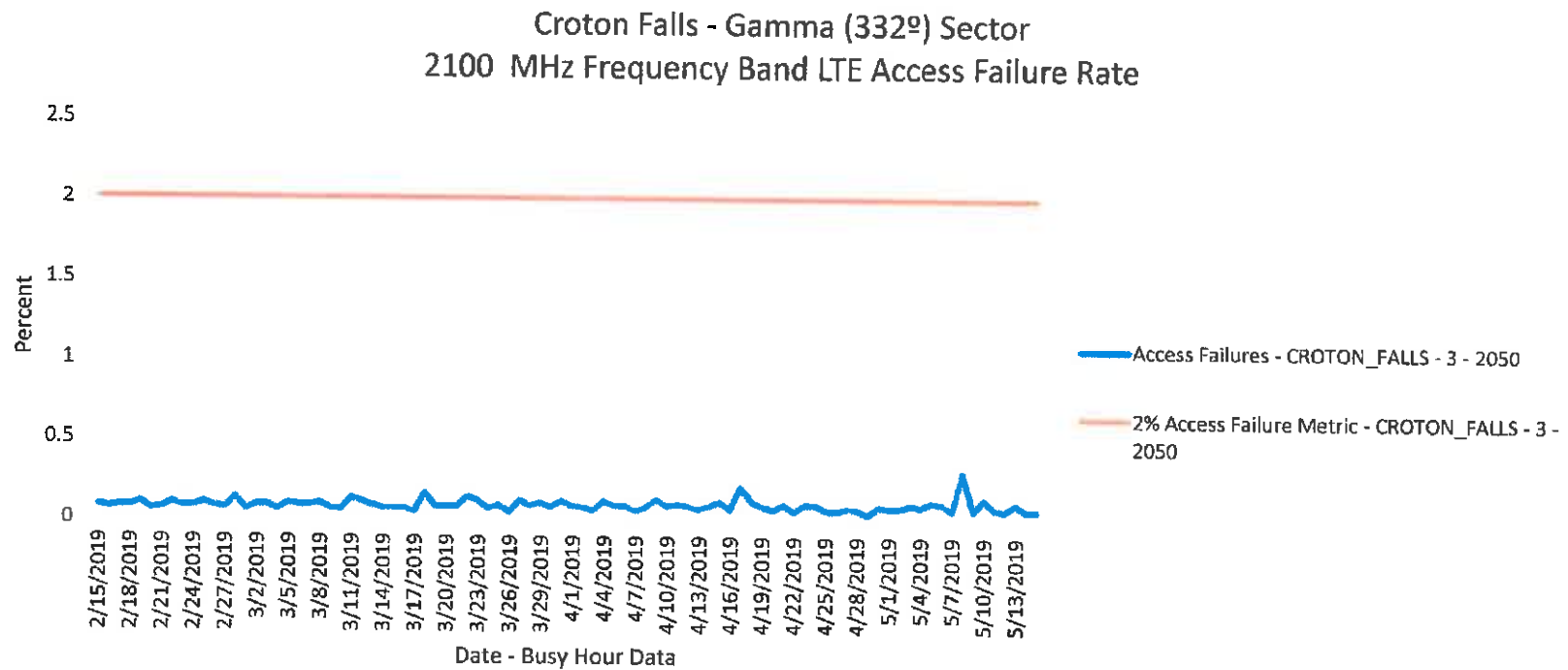


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2% metric which is acceptable. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz frequency band charts to follow. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage.

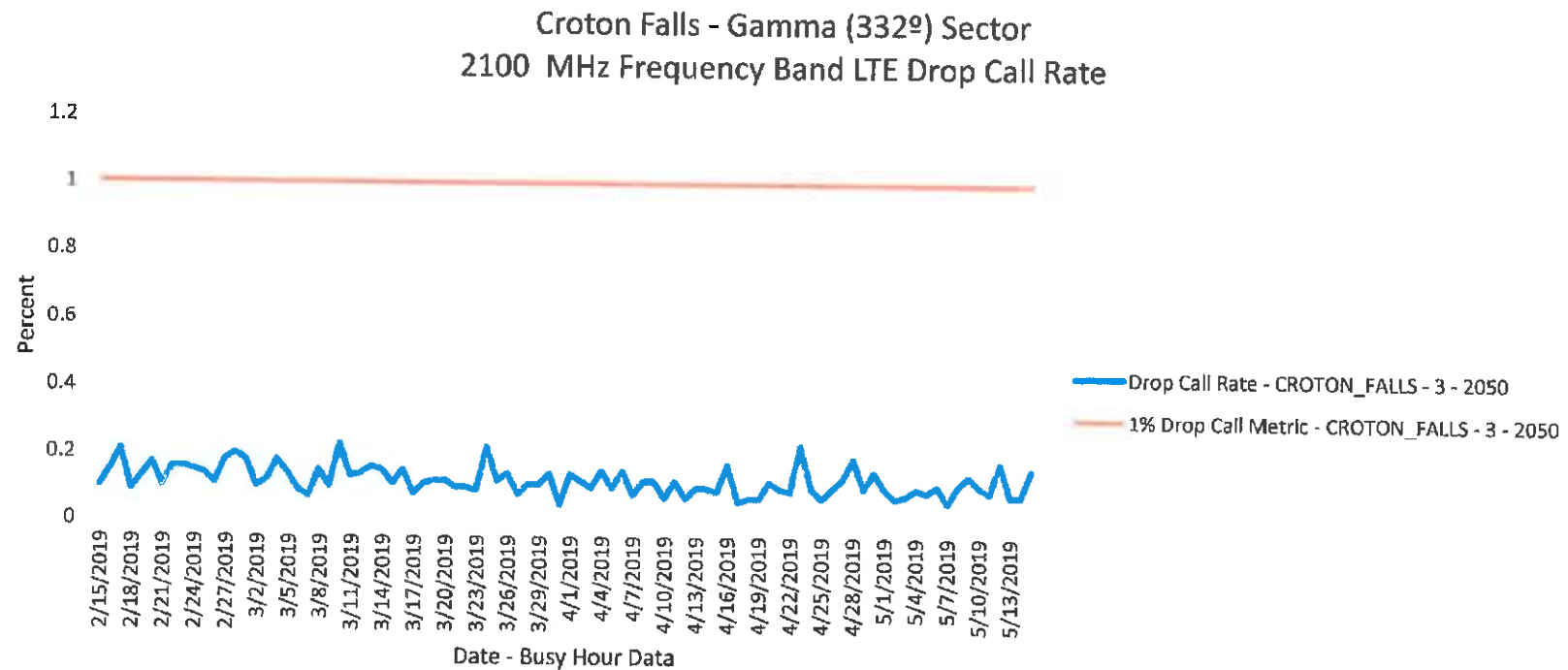


Chart demonstrates the LTE drop rate for the 2100 MHz frequency band from the sector. The drop rate in this chart is within Verizon's performance goal of 1%. However, a call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz charts to follow.

Croton Falls - Gamma (332nd) Sector 700 MHz Frequency Band LTE Access Failure Rate

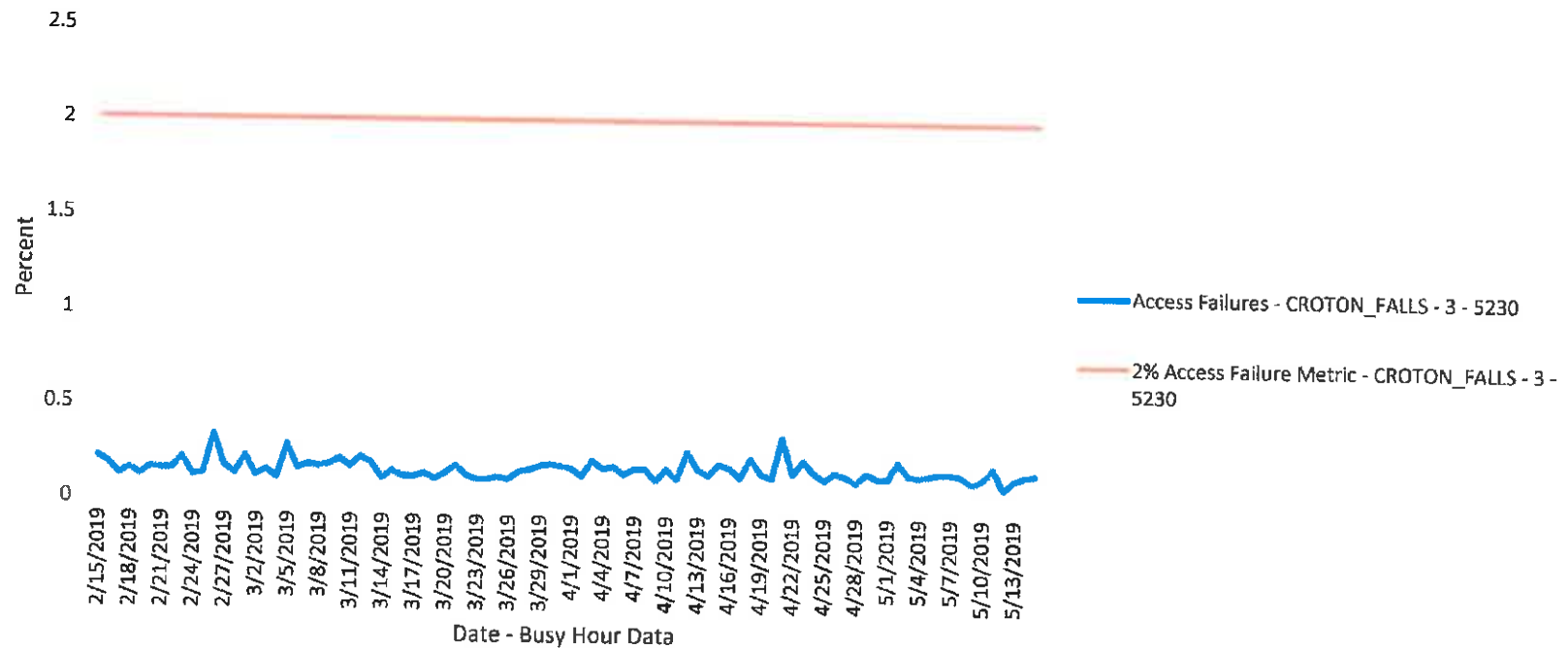


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2%. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the chart to follow.

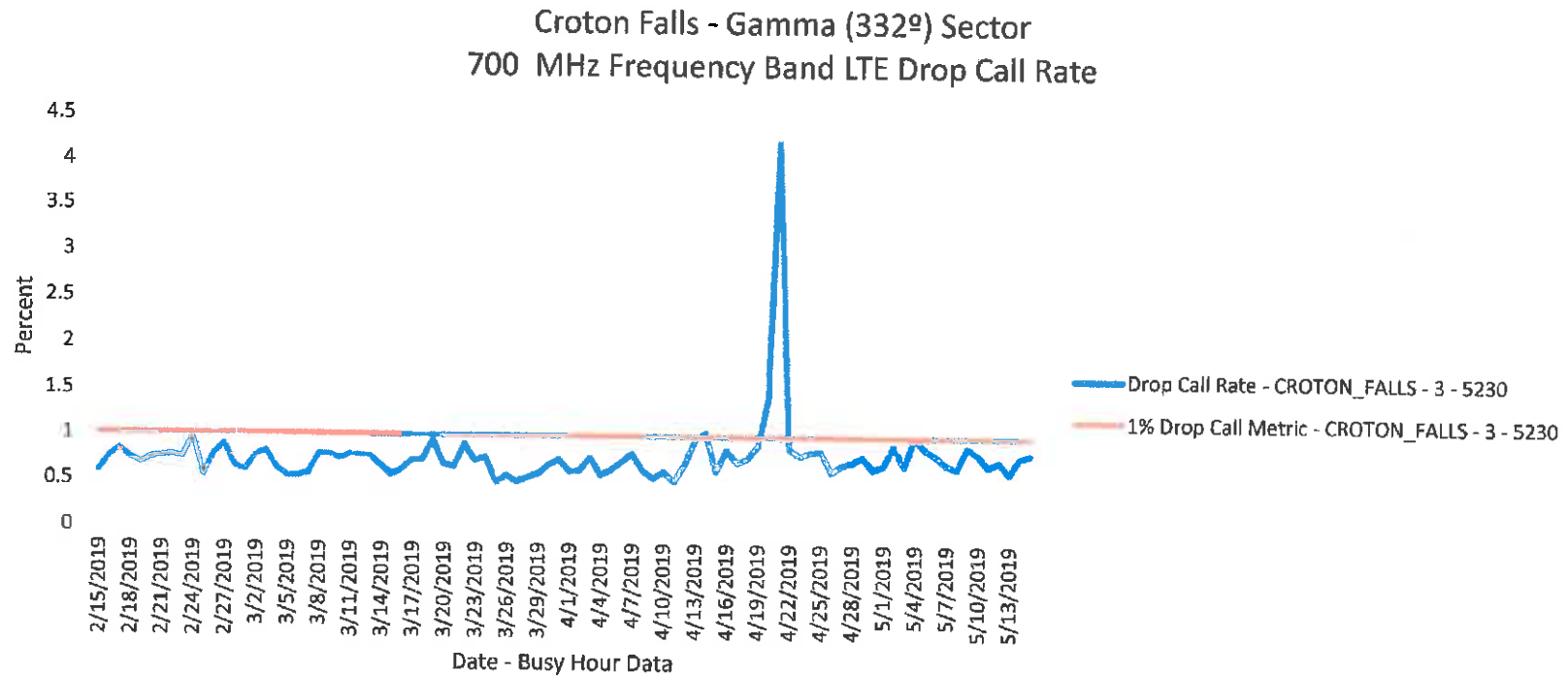


Chart demonstrates the LTE drop rate for the 700 MHz frequency band from the sector. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The chart demonstrates that as users travel north west from the Croton Falls facility, they experience a drop rate close to or at the industry standard and of Verizon's performance goal of 1%. The data in the chart over the three-month time period demonstrate drop rates at 1%. The drop call KPI data further substantiates the significant gap in service when used in conjunction with the drive test data and coverage maps.

Croton Falls - Beta (212°) Sector 2100 MHz Frequency Band LTE Access Failure Rate

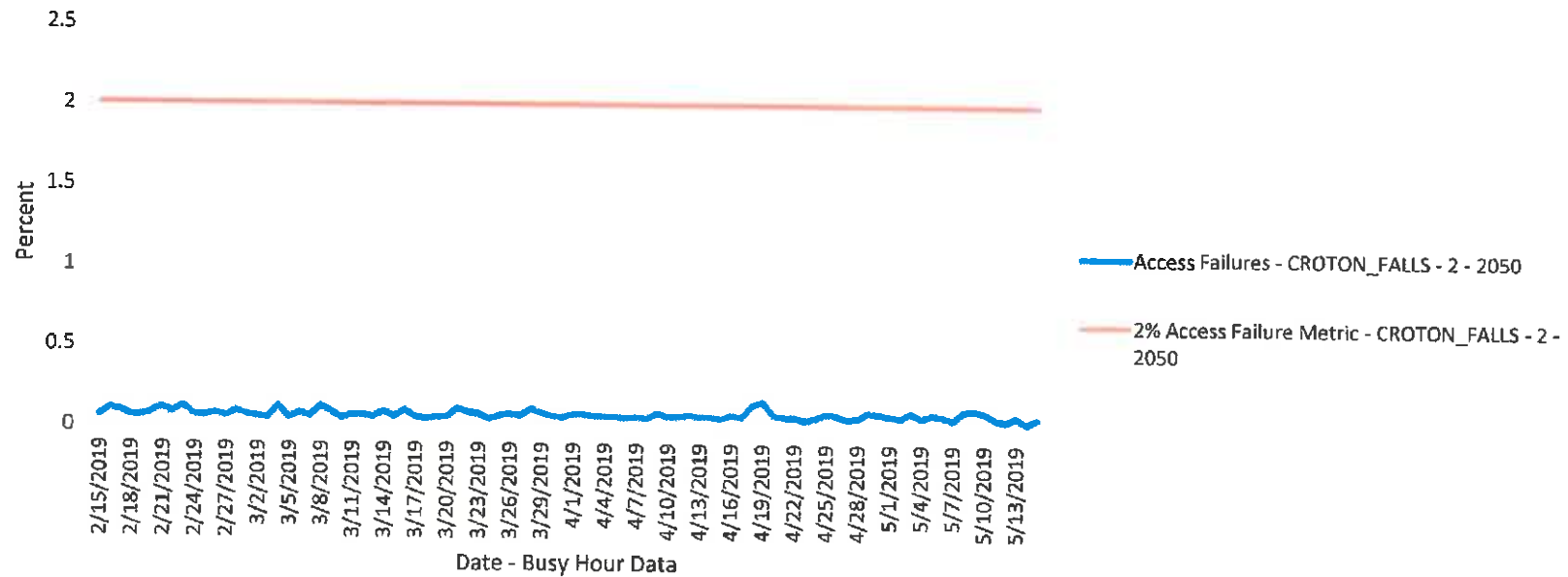


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2% metric which is acceptable. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz frequency band charts to follow. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage.

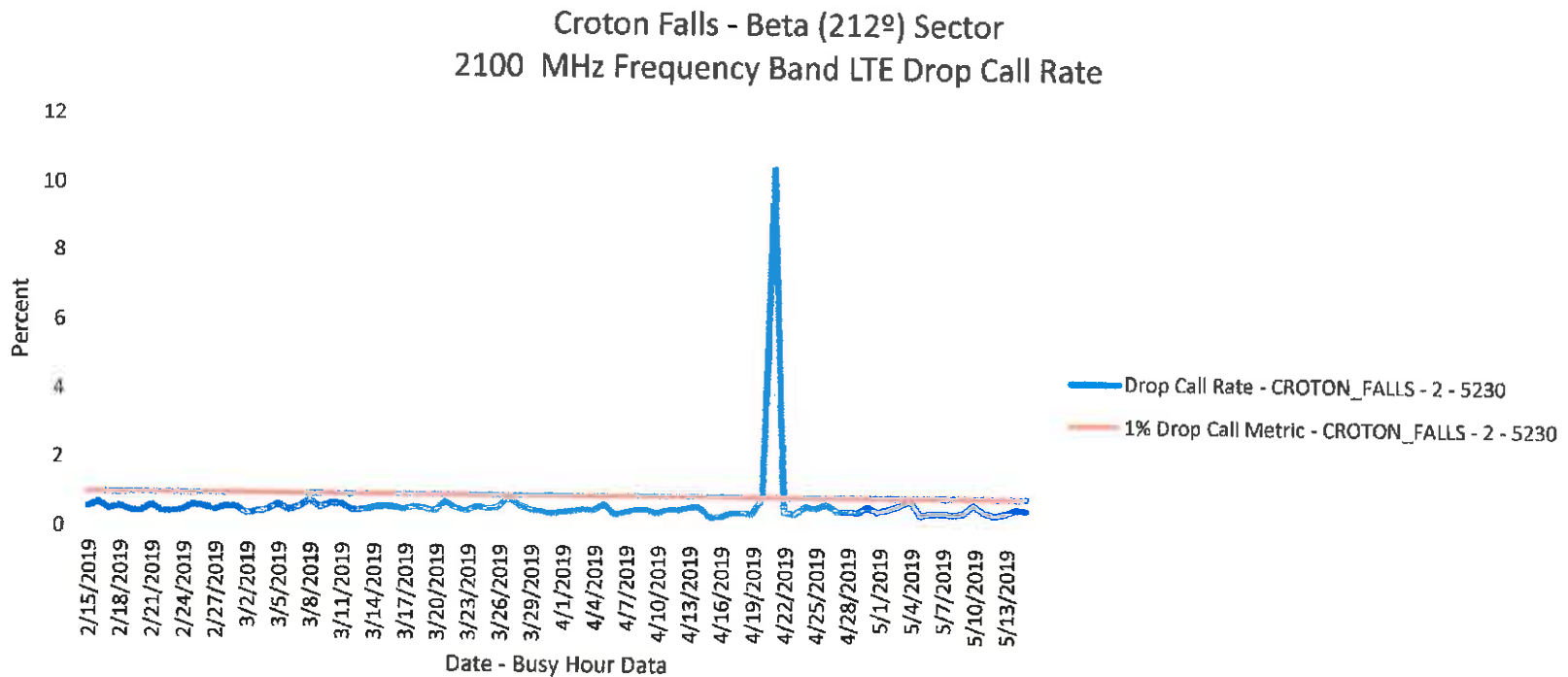


Chart demonstrates the LTE drop rate for the 2100 MHz frequency band from the sector. The drop rate in this chart is within Verizon's performance goal of 1% with the exception of a drop call rate of 10.5 on April 21, 2019. However, a call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz charts to follow.

Croton Falls - Beta (212^o) Sector 700 MHz Frequency Band LTE Access Failure Rate

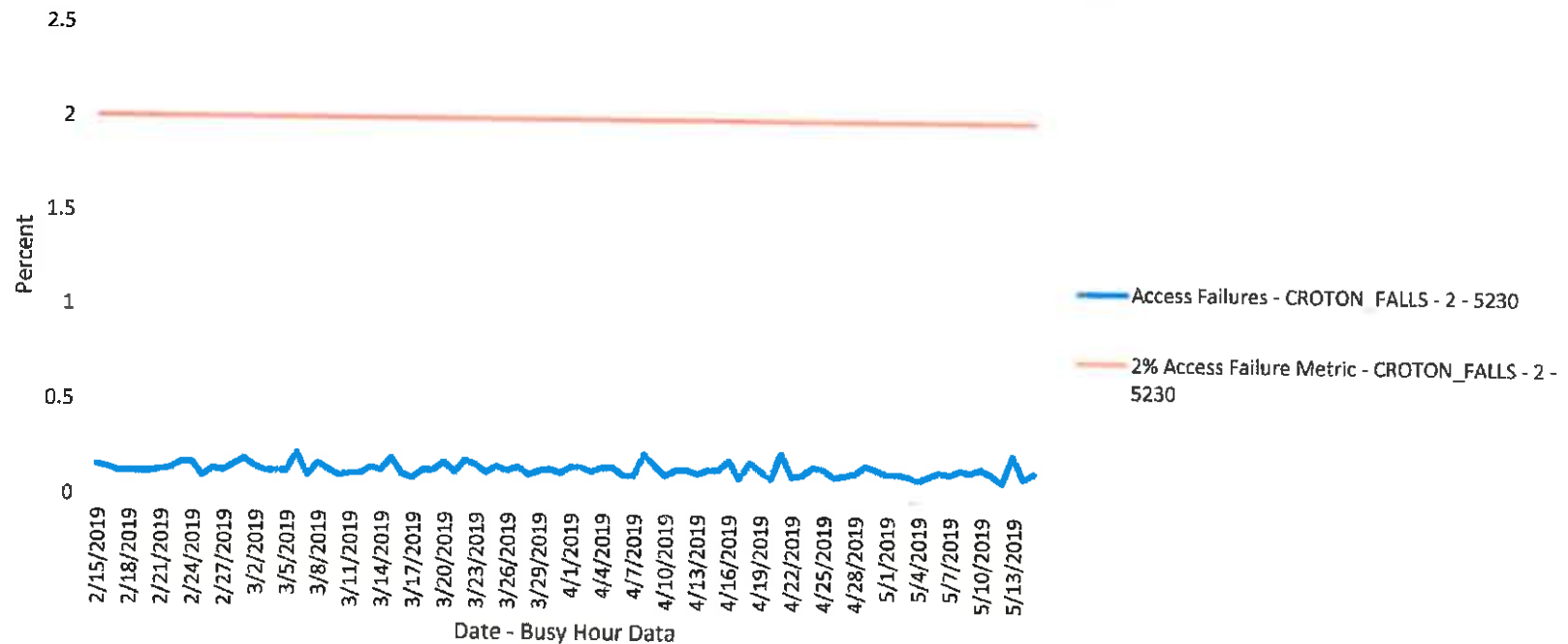


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2%.. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the chart to follow.

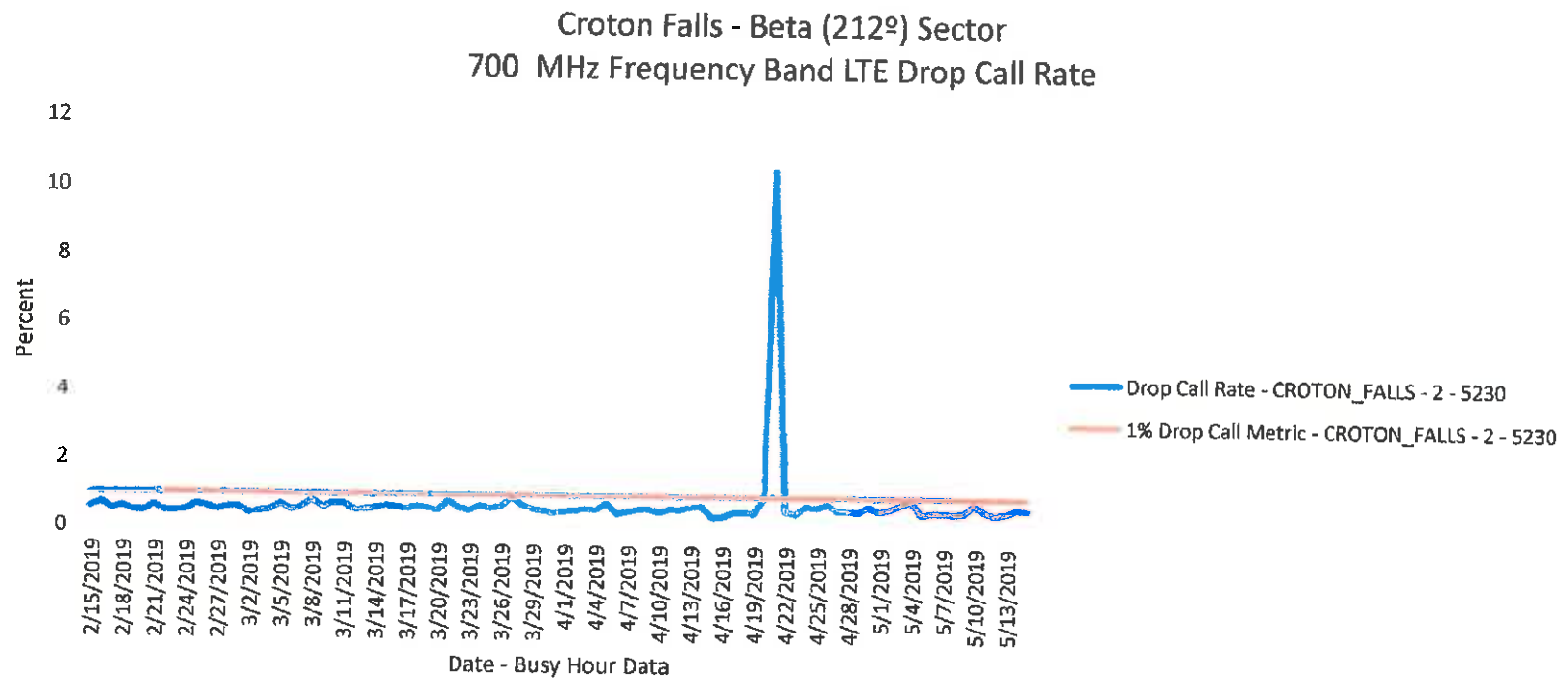


Chart demonstrates the LTE drop rate for the 700 MHz frequency band from the sector. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The chart demonstrates that as users travel south west from the Croton Falls facility, they experience a drop rate close to or at the industry standard and of Verizon's performance goal of 1%. The data in the chart over the three-month time period demonstrate drop rates at 1%. The drop call KPI data further substantiates the significant gap in service when used in conjunction with the drive test data and coverage maps.

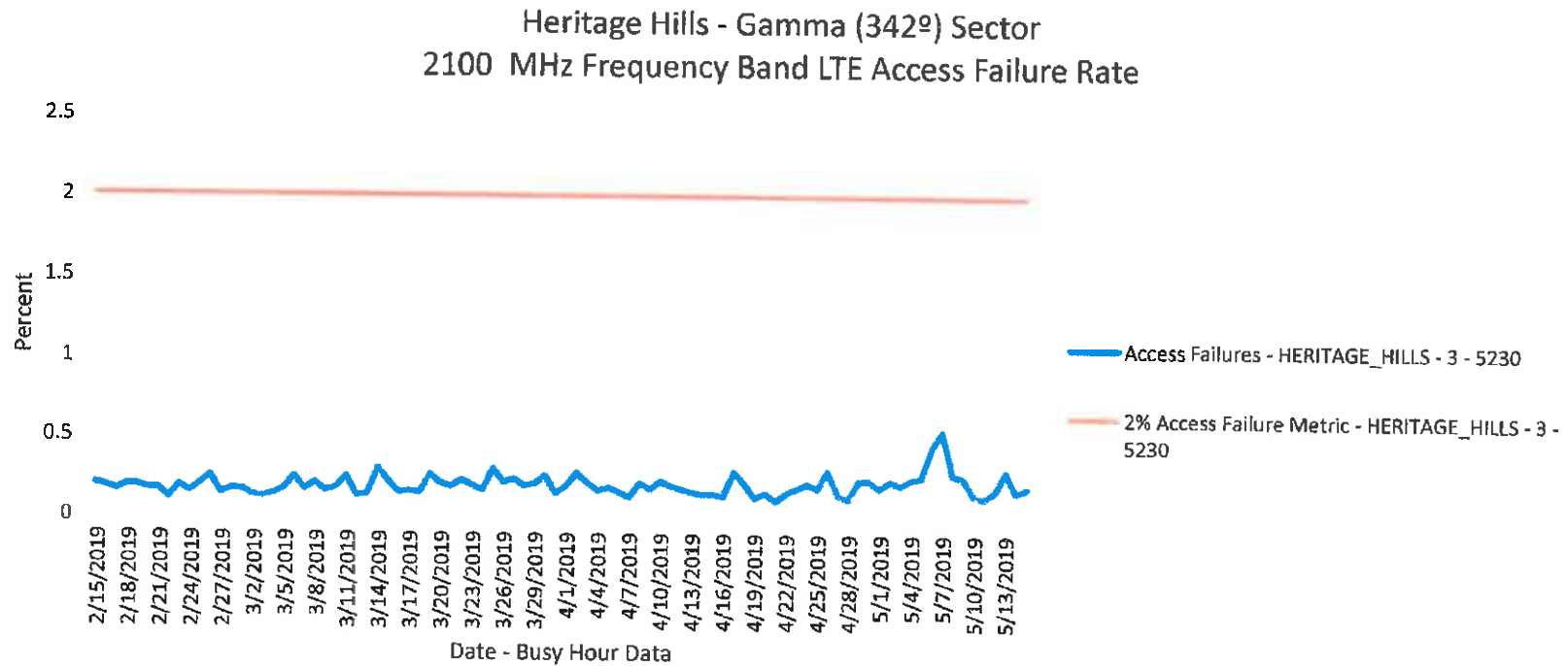


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2% metric which is acceptable. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz frequency band charts to follow. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage.

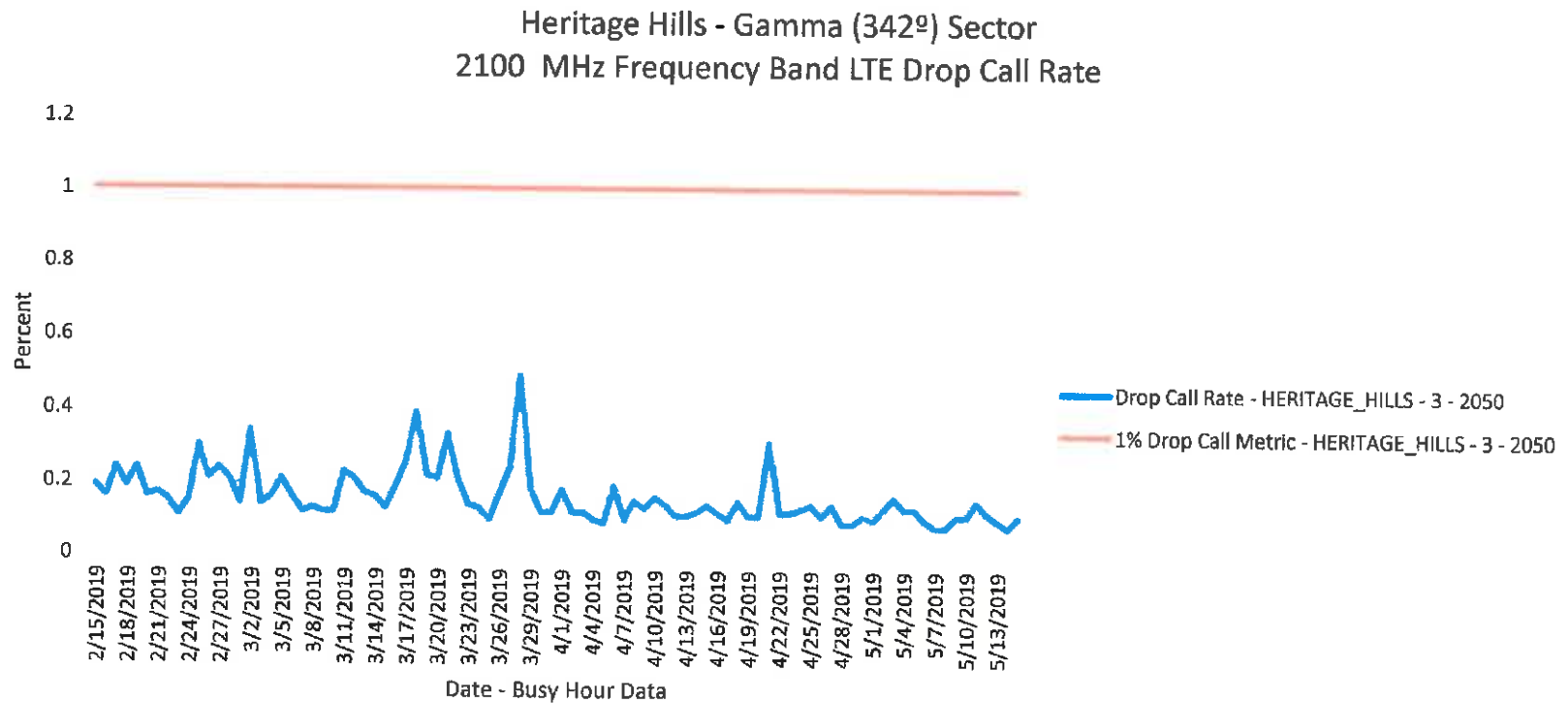


Chart demonstrates the LTE drop rate for the 2100 MHz frequency band from the sector. The drop rate in this chart is within Verizon's performance goal of 1%. However, a call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz charts to follow.

Heritage Hills - Gamma (342°) Sector 700 MHz Frequency Band LTE Access Failure Rate

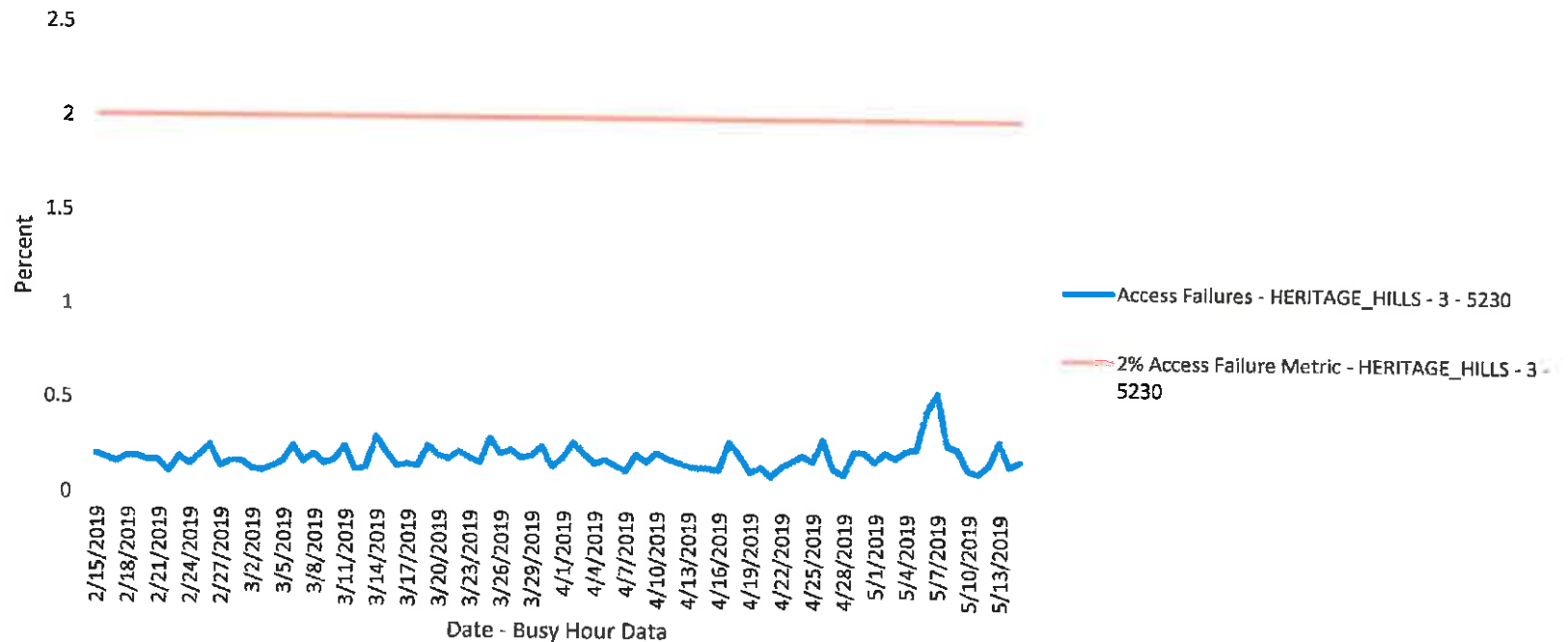


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2%. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the chart to follow.

Heritage Hills - Gamma (342°) Sector 700 MHz Frequency Band LTE Drop Call Rate

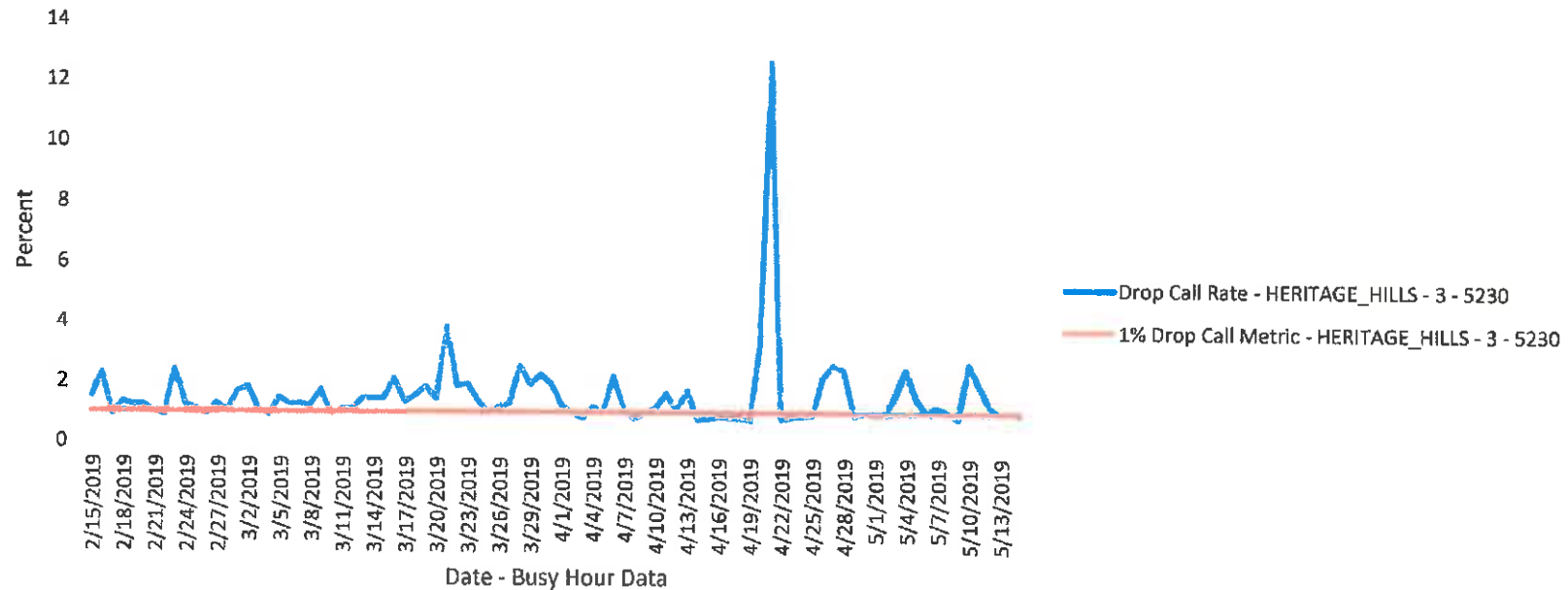


Chart demonstrates the LTE drop rate for the 700 MHz frequency band from the sector. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The chart demonstrates that as users travel north from the Heritage Hills facility, they experience a drop rate in excess of the industry standard, and in excess of Verizon's performance goal of 1%. The data in the chart over the three-month time period demonstrate drop rates over 2%. The drop call KPI data further substantiates the significant gap in service when used in conjunction with the drive test data and coverage maps.

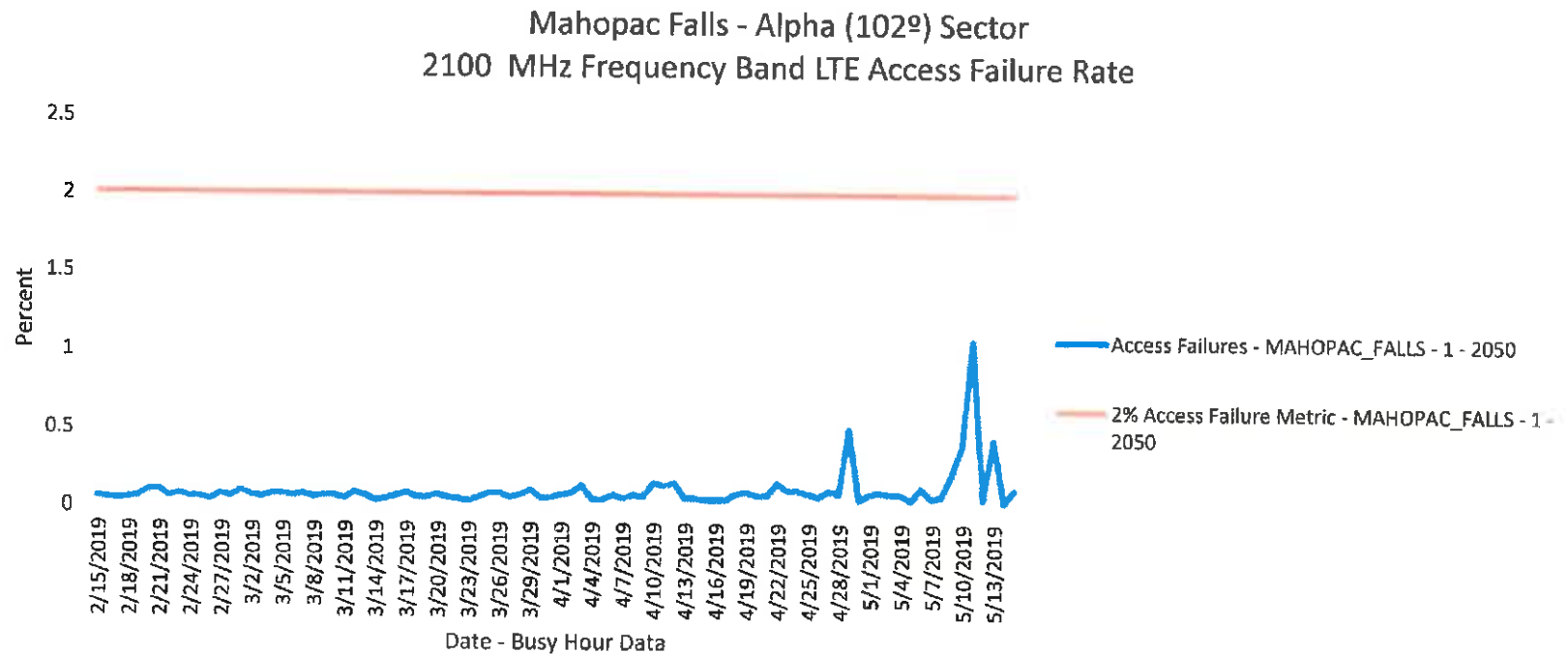


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2% metric which is acceptable. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz frequency band charts to follow. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage.

Mahopac Falls - Alpha (102nd) Sector 2100 MHz Frequency Band LTE Drop Call Rate

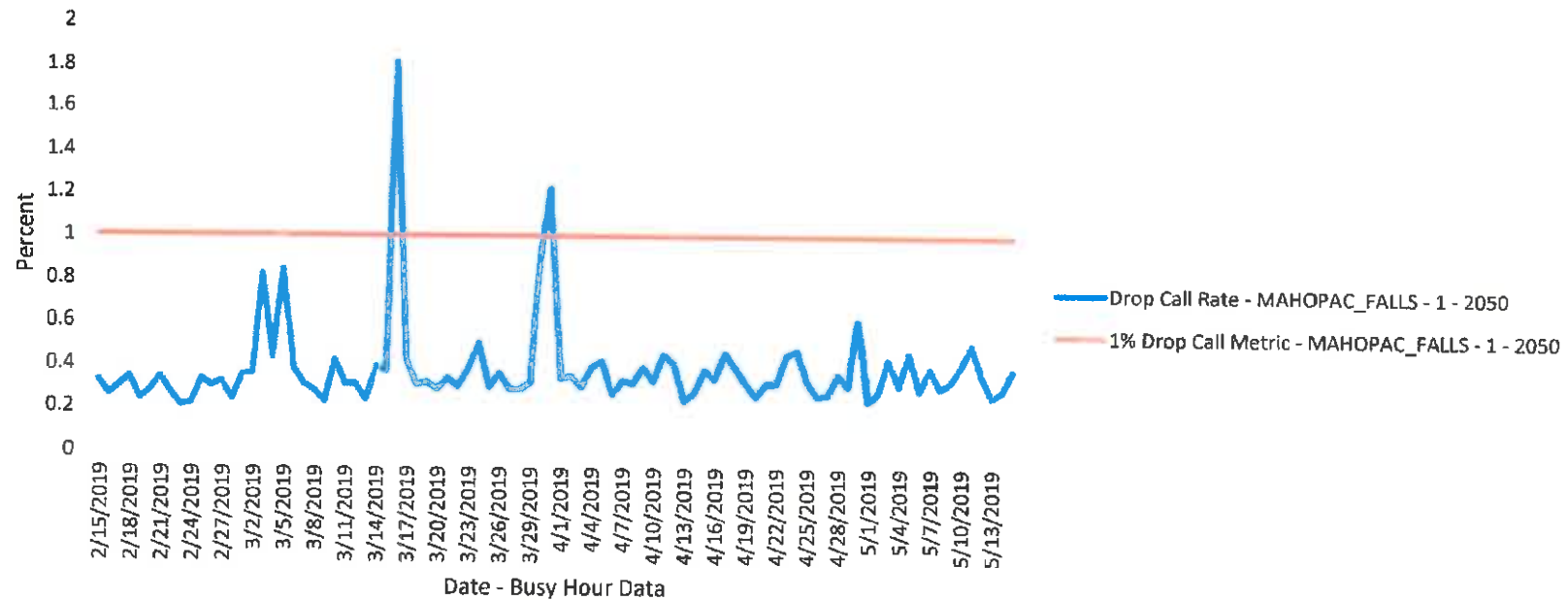


Chart demonstrates the LTE drop rate for the 2100 MHz frequency band from the sector. The drop rate in this chart is within Verizon's performance goal of 1% with the exception of a drop call rate of 1.8 and 1.2 on March 16 and March 31, 2019. However, a call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz charts to follow.

Mahopac Falls - Alpha (102nd) Sector 700 MHz Frequency Band LTE Access Failure Rate

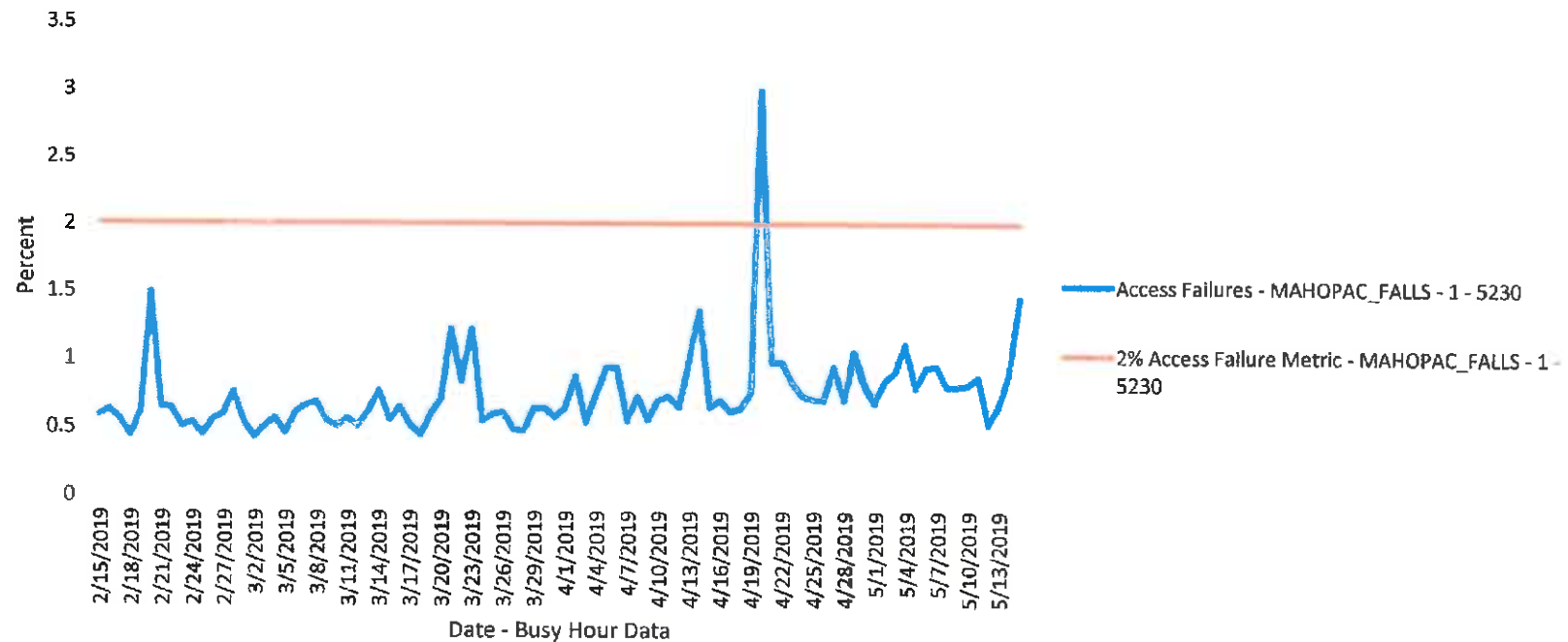


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2%, with exception to a 3% access failure that occurred on April 20, 2019. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the chart to follow.

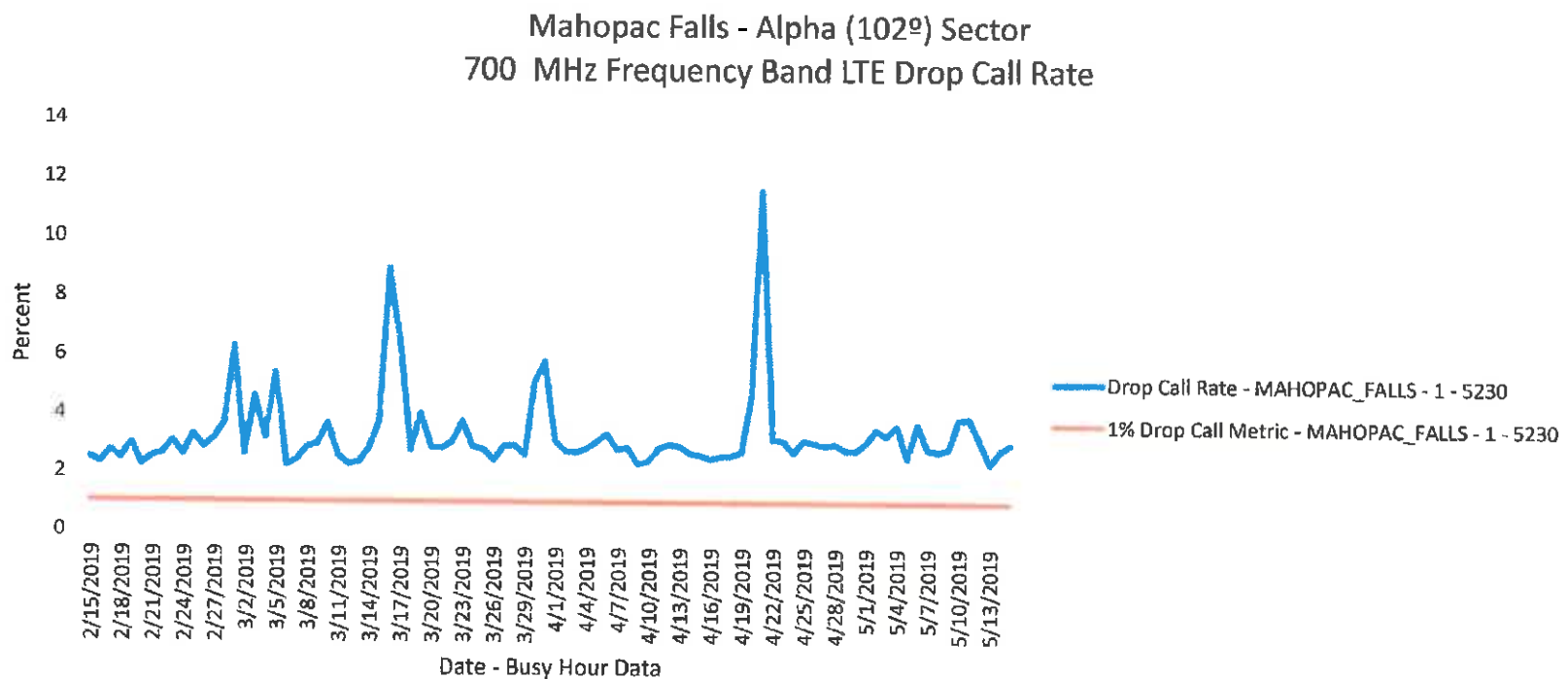


Chart demonstrates the LTE drop rate for the 700 MHz frequency band from the sector. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The chart demonstrates that as users travel east from the Mahopac Falls facility, they experience a drop rate in excess of the industry standard, and in excess of Verizon's performance goal of 1%. The data in the chart over the three-month time period demonstrate drop rates over 3%. The drop call KPI data further substantiates the significant gap in service when used in conjunction with the drive test data and coverage maps.

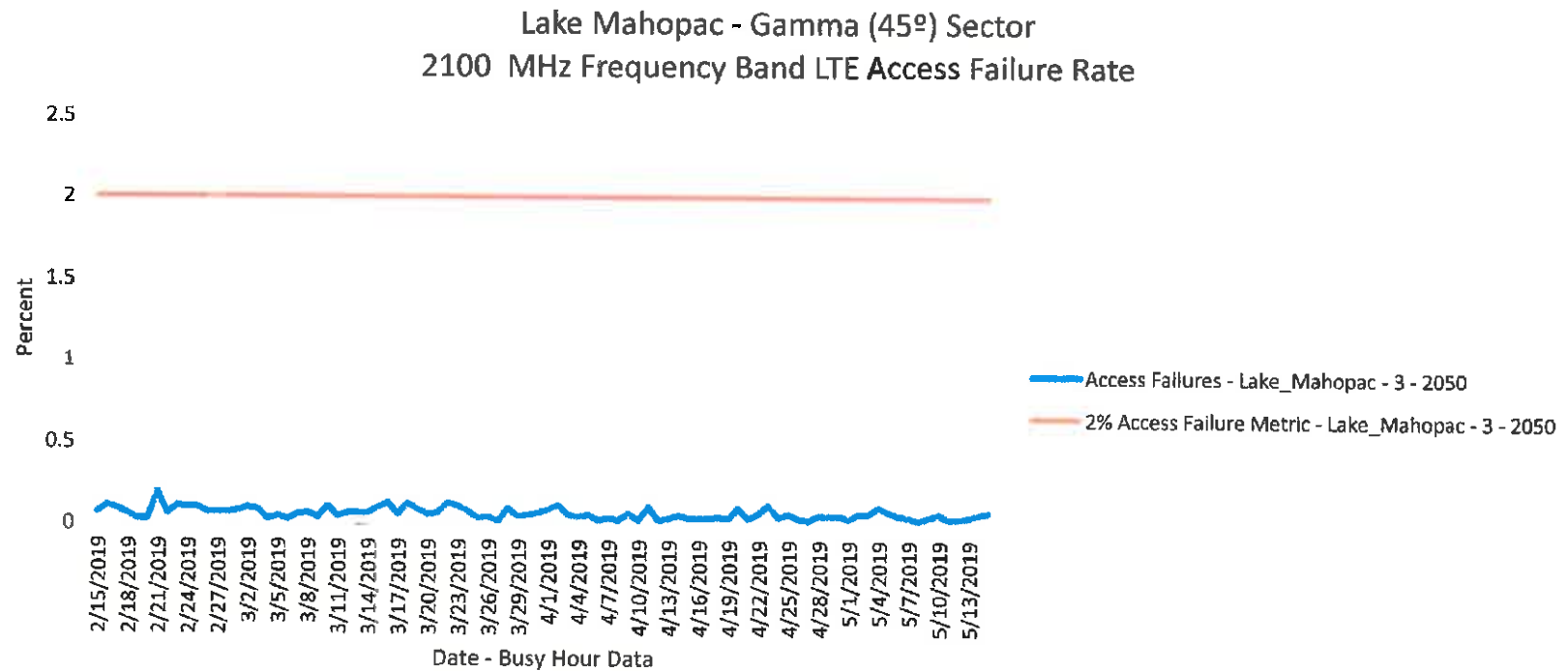


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2% metric which is acceptable. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz frequency band charts to follow. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage.

Lake Mahopac - Gamma (45°) Sector 2100 MHz Frequency Band LTE Drop Call Rate

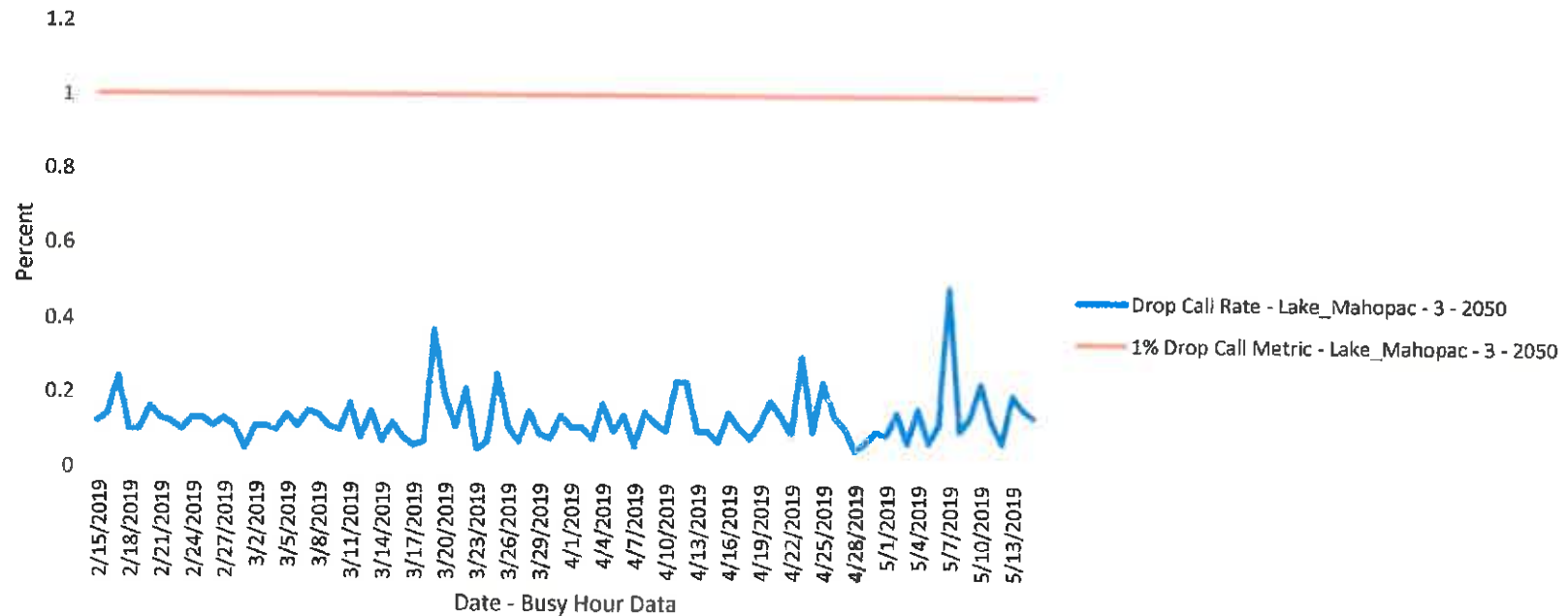


Chart demonstrates the LTE drop rate for the 2100 MHz frequency band from the sector. The drop rate in this chart is within Verizon's performance goal of 1%. However, a call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz charts to follow.

Lake Mahopac - Gamma (45°) Sector 700 MHz Frequency Band LTE Access Failure Rate

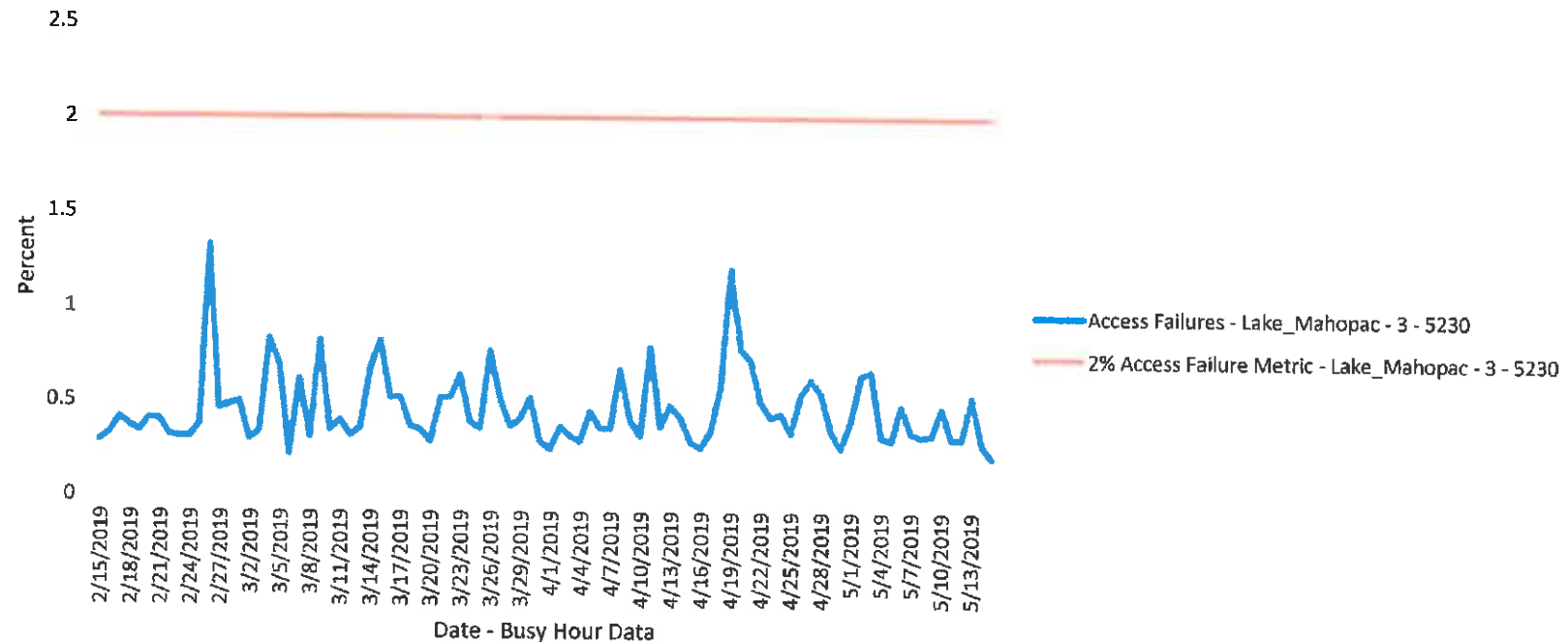


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2%. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the chart to follow.

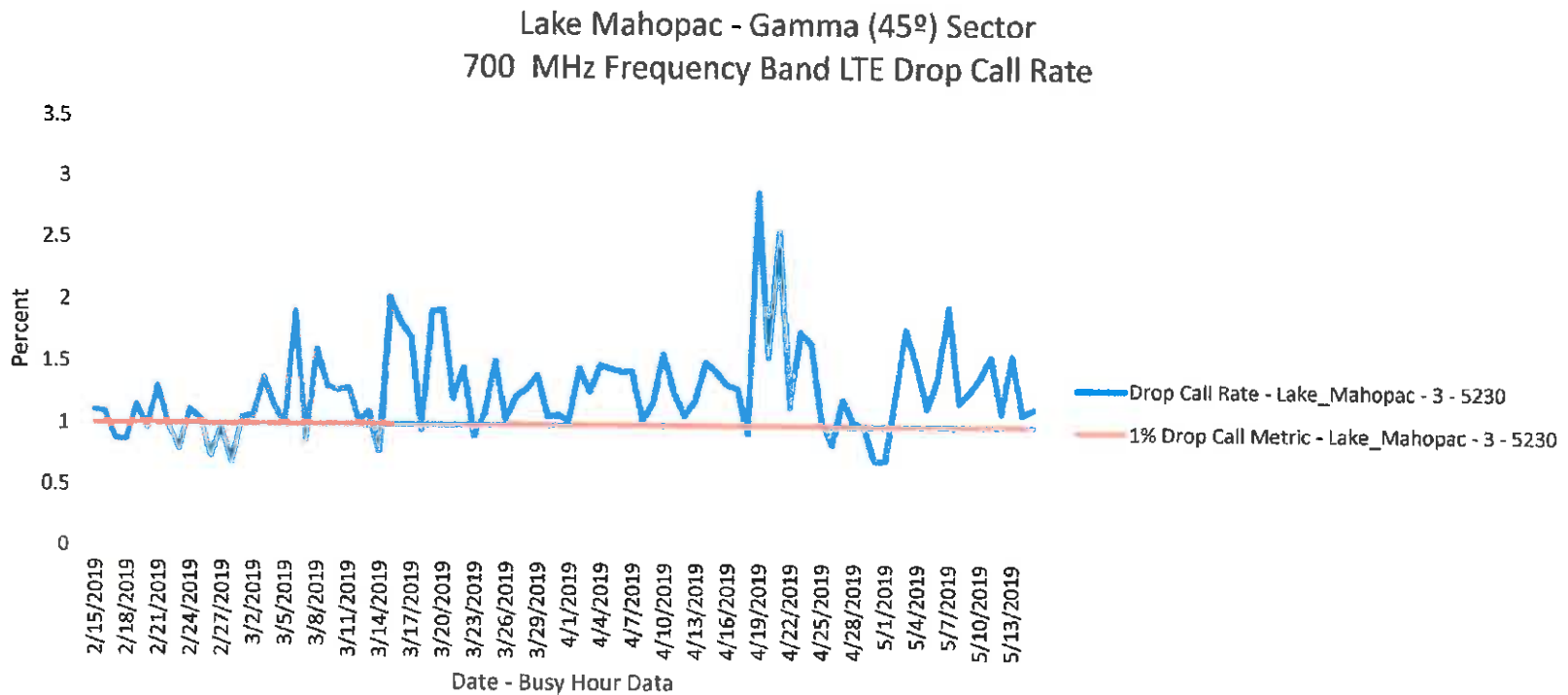


Chart demonstrates the LTE drop rate for the 700 MHz frequency band from the sector. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The chart demonstrates that as users travel north east from the Lake Mahopac facility, they experience a drop rate in excess of the industry standard, and in excess of Verizon's performance goal of 1%. The data in the chart over the three-month time period demonstrate drop rates over 1.5%. The drop call KPI data further substantiates the significant gap in service when used in conjunction with the drive test data and coverage maps.

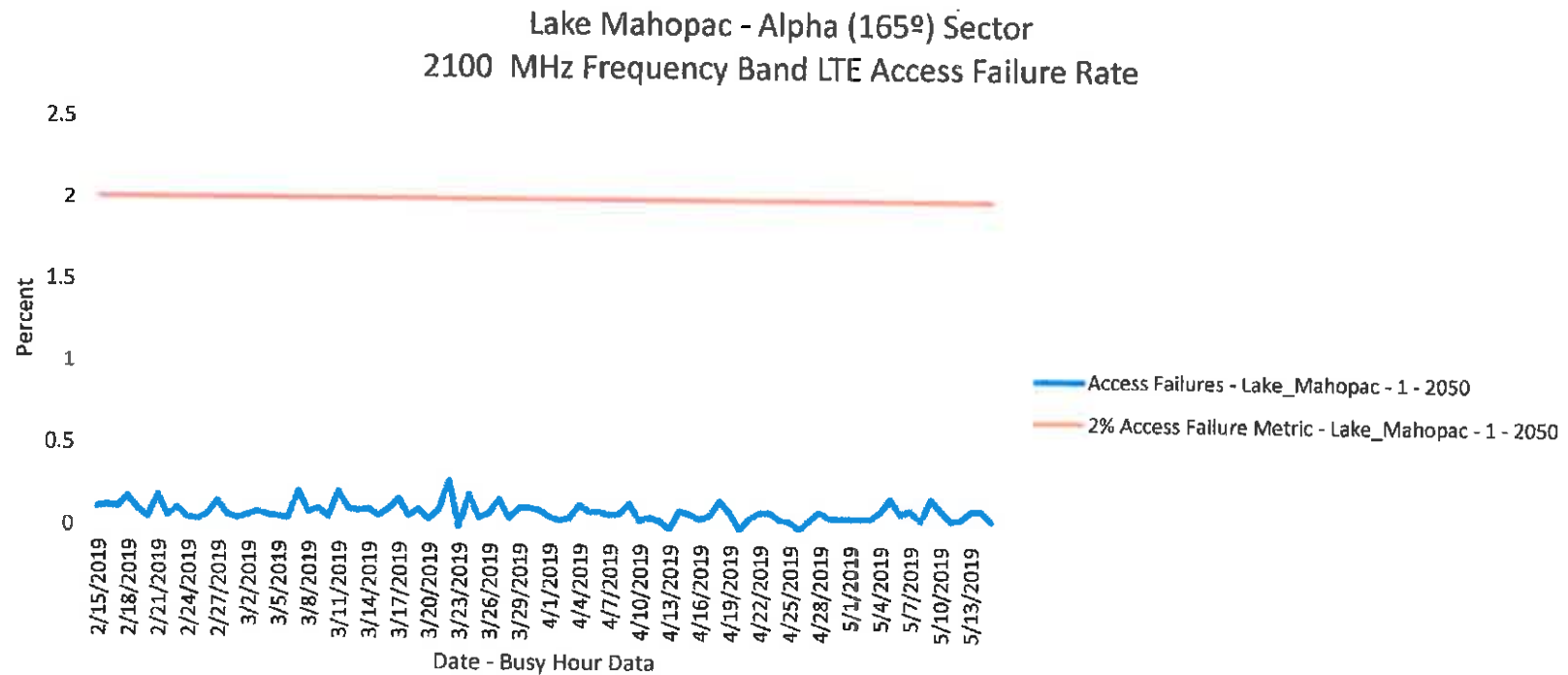


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2% metric which is acceptable. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz frequency band charts to follow. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage.

Lake Mahopac - Alpha (165^o) Sector 2100 MHz Frequency Band LTE Drop Call Rate

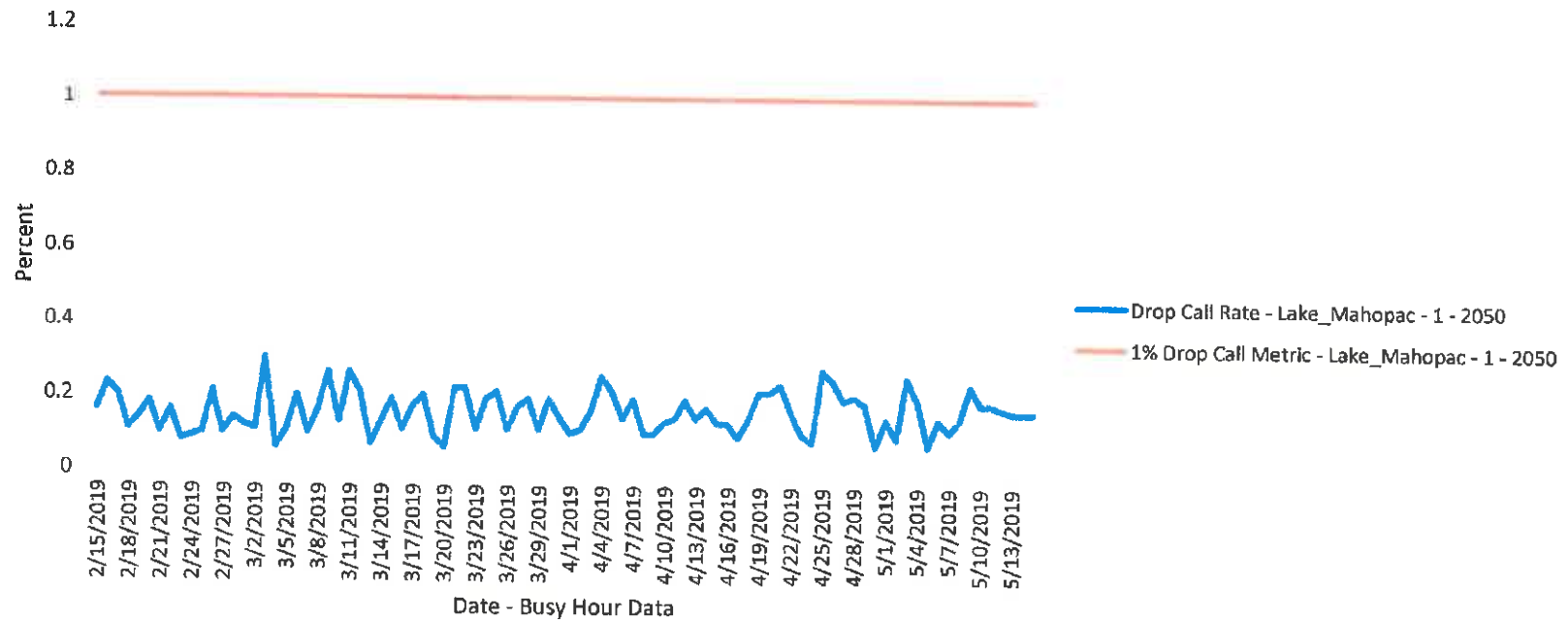


Chart demonstrates the LTE drop rate for the 2100 MHz frequency band from the sector. The drop rate in this chart is within Verizon's performance goal of 1%. However, a call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz charts to follow.

Lake Mahopac - Alpha (165°) Sector 700 MHz Frequency Band LTE Access Failure Rate

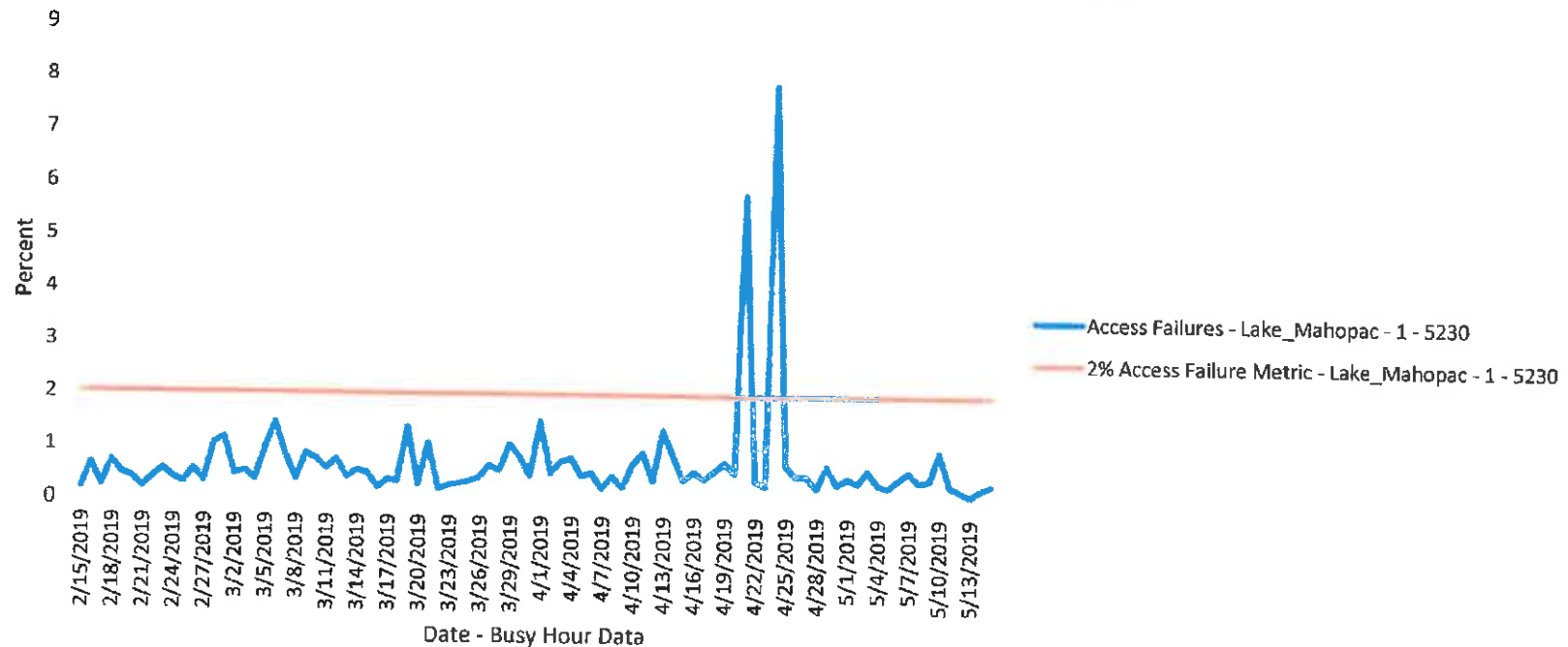


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2%, with exception to a 5% and 7% access failure that occurred on April 21 and April 24, 2019. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the chart to follow.

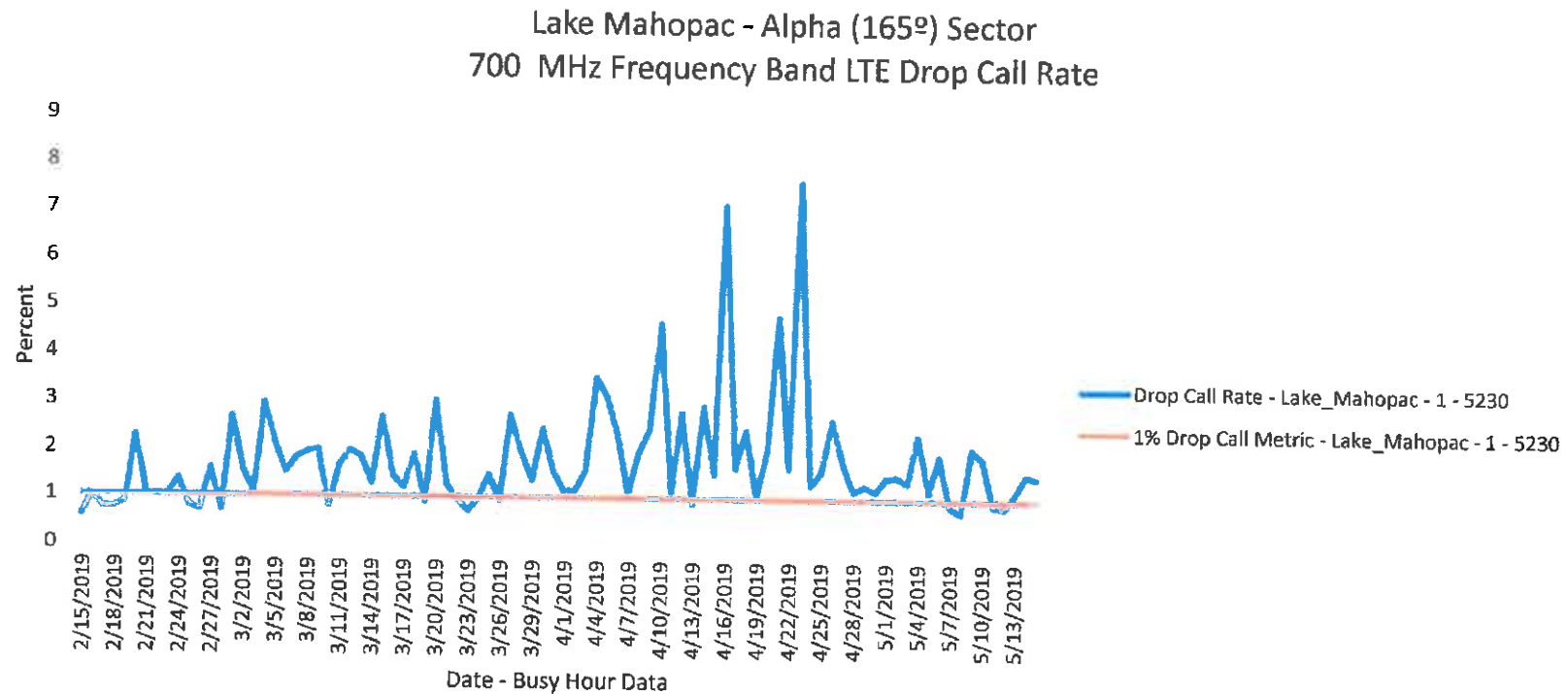


Chart demonstrates the LTE drop rate for the 700 MHz frequency band from the sector. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The chart demonstrates that as users travel south east from the Lake Mahopac facility, they experience a drop rate in excess of the industry standard, and in excess of Verizon's performance goal of 1%. The data in the chart over the three-month time period demonstrate drop rates over 3%. The drop call KPI data further substantiates the significant gap in service when used in conjunction with the drive test data and coverage maps.

Dispatch Information

**Date
Entered:** 05-20-2019

Approved By: 334(Maude
Filmer)

**Case
Disposition:** Closed

**Time
Entered:** 05-20-2019

**Approved
Date:** 06-28-2019

Date Disposed: 06-14-2019

Officer: 614(Craig
Tompkins)

Opened By: Grider(Billy
Grider)

	Narrative	Notes
:52	05/22/19, ECO Tompkins	<p>On 05/21 at approximately 1530 hours, ECO Wamsley and I patrolled to the above listed address. We were able to locate the cleared area in question. No piles of freshly dumped material were located at this time. Evidence of previous dumping was found, but appeared to mainly be dirt. I will return to the location in the near future to see if any new material is disposed of on site.</p>
:31	06/14/19, ECO Tompkins	<p>On 06/13 at approximately 1130 hours, I patrolled to the above listed address to see if any new material was disposed of on site and speak with the property owners. Upon arrival to the address, no new material was observed to be dumped in the area in question. I was then able to speak with the property owners, Richard and Rose Diehl, about the above allegations. They stated that approximately 4-5 years ago they were building their house on the property and needed a staging area for the necessary fill and equipment so they cleared the lower lot to create a staging area. Mr. Diehl stated that they brought in fill for the driveway and home site from Lawton Adams in Somers, I-684 construction in the Goldens Bridge area, and from the Town of Carmel Highway Department. Mr. Diehl stated that most of the fill was used in the construction process and the remaining material was leveled in their staging area. He also stated that once the construction projects were completed, approximately 3 years ago, no further fill was brought into the property and that the staging area is now being considered for the site of a cell tower. No signs of contaminated fill were observed on the property. No violations of the ECL were observed during these site visits. No complainant information given to contact for further information or results of investigation.</p> <p>CASE CLOSED by investigation.</p>



Honorable Chairman Craig Paepre
and Members of the Planning Board
Town of Carmel
60 McAlpin Avenue
Mahopac, NY 10541

July 12, 2019

RE: Homeland Towers Site Name: Lake Casse NY056
254 Croton Falls Road
Carmel, NY 10541
Response to Comments

Honorable Chairman and Members of the Board:

Please find as follows the responses to the comments from Richard J. Franzetti, PE comment memo dated May 17, 2019 (the response is in red after each of the referenced comments):

Franzetti memo:

General Comments:

Comment 3: The area of disturbance for the work has been provided, however it does not account for work that has been performed along the entire length of the driveway. The applicant should note the following:

- a. The threshold criteria of disturbances for the NYSDEC stormwater regulation are between 5,000 square feet and one (1) acre and over one (1) acre. The project will require coverage under the NYSEC SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-15-002) and the development of Stormwater Pollution Prevention Plan (SWPPP) depending on the area of disturbance.

This comment has been acknowledged by the applicant. The area of disturbance is ~15,270 sq ft. Therefore a NYSDEC SW permit and associated SWPPP is required.

However, the area of disturbance may change as the applicant may not be trenching the entire length of the driveway. Once this is decided by the applicant the appropriate permitting can be determined.

The subject parcel is located within the New York City Watershed East of the Hudson therefore a SWPPP will be prepared and the project will be submitted for a NYSDEC SW permit.

Comment 5: The location of the following, for both existing and proposed conditions, are needed:

- a. Drinking water well;
The approximate location of the existing well for the subject parcel has been added to the drawings and is shown on Drawing SP-1.
- b. Subsurface septic treatment systems (SSTS);
The approximate location of the existing SSTS for the subject parcel has been added to the drawings and is shown on Drawing SP-1.
- c. Stormwater management;
Specific comments addressed herein.
- d. Drainage features;

APT ENGINEERING

☐ 3 SADDLEBROOK DRIVE · KILLINGWORTH, CT 06419 · PHONE 860-663-1697 · FAX 860-663-0935

☐ P.O. BOX 504 · 116 GRANDVIEW ROAD · CONWAY, NH 03818 · PHONE 603-496-5853 · FAX 603-447-2124

Specific comments addressed herein.

e. Utilities:

None existing in the area of the proposed improvements. As previously shown on the drawings proposed utilities are identified.

f. Lighting and associated light spill plan.

This applicant has provided additional information for these items. However lighting spill plan has not been provided.

A Lighting Spill Plan has been added as a detail 3/C-4 on drawing C-4.

Comments:

Comment 7: Requirements of §156-62 P (7) must be met.

The applicant has indicated that it is providing three (3) trees as per the code. The applicant has acknowledged additional trees will be planted if the tower is designed as a faux tree. The drawings conflict in identifying a monopine versus a monopole. This discrepancy should be addressed.

There is no discrepancy on the drawings. The plans show that a monopole is being proposed as part of this application. There are areas shown and called out for (3) proposed trees on drawing SP-2 and CP-1 if a decision be made by the Planning Board that the new tower be a monopine.

Comment 8: All planting should be verified by the Town of Carmel Wetlands Inspector and all plantings shall be installed per §142 of the Town of Carmel Town Code

This comment has been acknowledged by the applicant. A note should be added to the drawing. See prior response to comment regarding monopine versus monopole.

A note regarding the potential plantings has been added to drawing SP-2.

Comment 9: The overall disturbance for the project as submitted is 15,270 sq-ft which is above the threshold criteria of disturbance for New York State Department of Environmental Conservation (NYSDEC) stormwater regulations. The development of Stormwater Pollution Prevention Plan (SWPPP) is required; however erosion and sediment controls are required for the site.

This comment has been acknowledged by the applicant. The area of disturbance includes the entire length of the access driveway. A SWPPP will need to be provided.

The subject parcel is located within the New York City Watershed East of the Hudson therefore a SWPPP will be prepared and the project will be submitted for a NYSDEC SW permit.

Comment 10: Drawing EC-2 identifies the following erosion and sediment control measures –construction entrance, hay bales, silt sacks, water bars, temporary diversion ditches, temporary sediment traps, and temporary soil protection. However these features are not located on the drawings or in the details.

This drawing has not been updated to address this comment

As previously responded Erosion Control Note #1 on drawing EC-2 has been revised to include only the sedimentation measures being proposed on the project. The reason that those features are not located on the drawings is because they are not being proposed as part of this application.

Comment 11: Provide additional detail regarding drainage from the proposed driveway. In particular the area proximate to the neighbor's house on the south west side of the property:

During the site walk, rutting and erosion was observed along the north side of the driveway along the proposed route of the utility trench. Runoff from this area and trenching will need to be addressed.

The driveway is existing and there is no requirement to improve or address existing conditions but nevertheless the applicant proposes a 3' wide grassed swale with (2) stone check dams that will terminate into a stone bermed level spreader. This has been added to the drawings (see SP-2 and SP-3) at the edge of the subject parcel. This swale will capture the water that leaves the subject parcel in that area and will lower the velocity of the runoff prior to it leaving the property and help to alleviate the runoff from that area which may contribute to the rutting and erosion offsite.

Comment 12: The driveway is approximately 1,000 feet long with an existing residence down grade. The applicant must provide for infiltration of the stormwater from the driveway. This could include a combination of infiltration trenches, infiltrators and rain gardens.

See prior response to comment

The driveway is existing and there is no requirement to improve or address existing conditions but nevertheless the applicant proposes a 3' wide grassed swale with (2) stone check dams that will terminate into a stone bermed level spreader. This has been added to the drawings (see SP-2 and SP-3) at the edge of the subject parcel. This swale will capture the water that leaves the subject parcel in that area and will lower the velocity of the runoff prior to it leaving the property and help to alleviate the runoff from that area which may contribute to the rutting and erosion offsite.

Comment 14: Parking on the site must be addressed.

This comment has been acknowledged by the applicant. The applicant indicated that Drawings SP-2 and CP-1 show parking. However only Drawing SP-2 has this information provided.

As previously shown the proposed designated parking area was shown on drawing SP-2 and detail I/CP-1 on drawing CP-1.

Comment 15: The use of hay bales is discouraged, straw bales should be used.

This comment has been acknowledged by the applicant. However only Drawing EC-2 contains this information.

As previously shown there are no hay bales or straw bales proposed as part of this application.

Comment 17: The applicant must consider having the monopole designed to resemble a tree.

This comment has not been acknowledged by the applicant. The Planning Board should note that Drawing SP2 and CP-1 identify a monopine tower, other drawings identify a monopole. The drawings need to be in conformance with each other.

There is no discrepancy on the drawings. The plans show that a monopole is being proposed as part of this application. There are areas shown and called out for (3) proposed trees on drawing SP-2 and CP-1 if a decision be made by the Planning Board that the new tower be a monopine.

Should you have any questions, please do not hesitate to call me at (860) 663-1697 x206.

Sincerely,

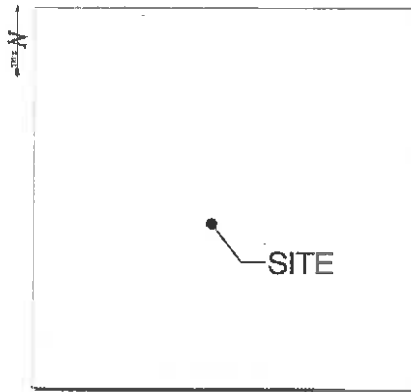
APT Engineering



Robert C. Burns, P.E.
Program Manager



HOMELAND TOWERS, LLC
WIRELESS TELECOMMUNICATIONS FACILITY
 LAKE CASSE
 254 CROTON FALLS ROAD
 CARMEL, NY 10541



VICINITY MAP
 SCALE: 1"=100'

DRAWING INDEX

- T-1 TITLE SHEET & INDEX
- 1-4 TOPOGRAPHIC SURVEY
- R-1 1,000' RADIUS MAP
- R-2 1,000' RADIUS PROPERTY OWNERS
- SP-1 SITE PLAN
- SP-2 PARTIAL SITE PLAN
- SP-3 PARTIAL SITE PLAN
- SP-4 EXISTING DRIVEWAY PROFILE
- CP-1 COMPOUND PLAN
- A-1 ELEVATIONS
- A-2 ELEVATIONS
- EC-1 EROSION CONTROL PLAN
- EC-2 EROSION CONTROL NOTES
- EC-3 EROSION CONTROL DETAILS
- C-1 VERIZON EQUIPMENT PLAN & DETAILS
- C-2 VERIZON ANTENNA PLAN & DETAILS
- C-3 SITE DETAILS
- C-4 VERIZON EQUIPMENT LIGHTING DETAILS

SITE INFORMATION

PROJECT LOCATION: 254 CROTON FALLS ROAD
 CARMEL, NY 10541

PROJECT DESCRIPTION: RAWLAND SITE W/FOUR-ROUND EQUIPMENT WITH IN-
 SITU W/ TELECOMMUNICATIONS COMPOUND W/
 NEW 40'x40' ASL MONOPOLE.

PROPERTY DEVELOPER: HOMELAND TOWERS, LLC
 0-ARMONY STREET
 2ND FLOOR
 DANBURY, CT 06817

DEVELOPER CONTACT: RAY VERGAT
 (203) 287-6348

ENGINEER CONTACT: ROBERT C. RUMS
 (800) 668-1067 X200

LATITUDE: 41° 25' 40" E409N
 LONGITUDE: 73° 43' 11" E72° 57W
 ELEVATION: 585 @± ANSL

SECTION: 40.10
 BLOCK: 1
 LOT: 43
 ZONE: RESIDENTIAL

OWNER:
 RICHARD J. & ROSEMARY CIBUL
 254 CROTON FALLS ROAD
 CARMEL, NY 10541

APPLICANT:
 HOMELAND TOWERS, LLC
 9 HARMONY STREET
 2ND FLOOR
 DANBURY, CT 06810
 RAY VERGAT
 (203) 287-6348

HOMELAND PROJECT ATTORNEY:
 SHYDER & SHYDER, LLP
 94 WHITE PLAINS ROAD
 FAIRY TOWN, NY 10531
 (914) 353-0700

POWER PROVIDER:
 NYSEG (585) 484-2225

TELECO PROVIDER:
 VERIZON (914) 892-9200

DIG SAFETY, NEW YORK:
 (800) 662-7969

GO/FIRMING CODES:
 2015 IRC W/ 2017 NYS UNIFORM CODE SUPPLEMENT
 NATIONAL ELECTRICAL CODE
 34-020-3
 TOWN OF CARMEL: ZONING CODE
 SECTION 186-62

verizon
 4 CENTEROCK ROAD
 WEST NYACK, NY 10994

AP7
 ENGINEERING
 2 BACCHUS DRIVE PHASE 2000
 WEST NYACK, NY 10994
 (845) 287-8940
 WWW.AP7ENGINEERING.COM

PERMITTING DOCUMENTS

FIG.	DATE	BY	REVISION
1	11/10/11	RAY VERGAT	1.0
2	11/10/11	RAY VERGAT	2.0
3	11/10/11	RAY VERGAT	3.0
4	11/10/11	RAY VERGAT	4.0
5	11/10/11	RAY VERGAT	5.0
6	11/10/11	RAY VERGAT	6.0
7	11/10/11	RAY VERGAT	7.0
8	11/10/11	RAY VERGAT	8.0
9	11/10/11	RAY VERGAT	9.0
10	11/10/11	RAY VERGAT	10.0
11	11/10/11	RAY VERGAT	11.0
12	11/10/11	RAY VERGAT	12.0
13	11/10/11	RAY VERGAT	13.0
14	11/10/11	RAY VERGAT	14.0
15	11/10/11	RAY VERGAT	15.0
16	11/10/11	RAY VERGAT	16.0
17	11/10/11	RAY VERGAT	17.0
18	11/10/11	RAY VERGAT	18.0
19	11/10/11	RAY VERGAT	19.0
20	11/10/11	RAY VERGAT	20.0
21	11/10/11	RAY VERGAT	21.0
22	11/10/11	RAY VERGAT	22.0
23	11/10/11	RAY VERGAT	23.0
24	11/10/11	RAY VERGAT	24.0
25	11/10/11	RAY VERGAT	25.0
26	11/10/11	RAY VERGAT	26.0
27	11/10/11	RAY VERGAT	27.0
28	11/10/11	RAY VERGAT	28.0
29	11/10/11	RAY VERGAT	29.0
30	11/10/11	RAY VERGAT	30.0
31	11/10/11	RAY VERGAT	31.0
32	11/10/11	RAY VERGAT	32.0
33	11/10/11	RAY VERGAT	33.0
34	11/10/11	RAY VERGAT	34.0
35	11/10/11	RAY VERGAT	35.0
36	11/10/11	RAY VERGAT	36.0
37	11/10/11	RAY VERGAT	37.0
38	11/10/11	RAY VERGAT	38.0
39	11/10/11	RAY VERGAT	39.0
40	11/10/11	RAY VERGAT	40.0
41	11/10/11	RAY VERGAT	41.0
42	11/10/11	RAY VERGAT	42.0
43	11/10/11	RAY VERGAT	43.0
44	11/10/11	RAY VERGAT	44.0
45	11/10/11	RAY VERGAT	45.0
46	11/10/11	RAY VERGAT	46.0
47	11/10/11	RAY VERGAT	47.0
48	11/10/11	RAY VERGAT	48.0
49	11/10/11	RAY VERGAT	49.0
50	11/10/11	RAY VERGAT	50.0
51	11/10/11	RAY VERGAT	51.0
52	11/10/11	RAY VERGAT	52.0
53	11/10/11	RAY VERGAT	53.0
54	11/10/11	RAY VERGAT	54.0
55	11/10/11	RAY VERGAT	55.0
56	11/10/11	RAY VERGAT	56.0
57	11/10/11	RAY VERGAT	57.0
58	11/10/11	RAY VERGAT	58.0
59	11/10/11	RAY VERGAT	59.0
60	11/10/11	RAY VERGAT	60.0
61	11/10/11	RAY VERGAT	61.0
62	11/10/11	RAY VERGAT	62.0
63	11/10/11	RAY VERGAT	63.0
64	11/10/11	RAY VERGAT	64.0
65	11/10/11	RAY VERGAT	65.0
66	11/10/11	RAY VERGAT	66.0
67	11/10/11	RAY VERGAT	67.0
68	11/10/11	RAY VERGAT	68.0
69	11/10/11	RAY VERGAT	69.0
70	11/10/11	RAY VERGAT	70.0
71	11/10/11	RAY VERGAT	71.0
72	11/10/11	RAY VERGAT	72.0
73	11/10/11	RAY VERGAT	73.0
74	11/10/11	RAY VERGAT	74.0
75	11/10/11	RAY VERGAT	75.0
76	11/10/11	RAY VERGAT	76.0
77	11/10/11	RAY VERGAT	77.0
78	11/10/11	RAY VERGAT	78.0
79	11/10/11	RAY VERGAT	79.0
80	11/10/11	RAY VERGAT	80.0
81	11/10/11	RAY VERGAT	81.0
82	11/10/11	RAY VERGAT	82.0
83	11/10/11	RAY VERGAT	83.0
84	11/10/11	RAY VERGAT	84.0
85	11/10/11	RAY VERGAT	85.0
86	11/10/11	RAY VERGAT	86.0
87	11/10/11	RAY VERGAT	87.0
88	11/10/11	RAY VERGAT	88.0
89	11/10/11	RAY VERGAT	89.0
90	11/10/11	RAY VERGAT	90.0
91	11/10/11	RAY VERGAT	91.0
92	11/10/11	RAY VERGAT	92.0
93	11/10/11	RAY VERGAT	93.0
94	11/10/11	RAY VERGAT	94.0
95	11/10/11	RAY VERGAT	95.0
96	11/10/11	RAY VERGAT	96.0
97	11/10/11	RAY VERGAT	97.0
98	11/10/11	RAY VERGAT	98.0
99	11/10/11	RAY VERGAT	99.0
100	11/10/11	RAY VERGAT	100.0

DESIGN PROFESSIONAL OF RECORD:
 RUMS, ROBERT C. RUMS P.E.
 0-ARMONY STREET
 2ND FLOOR
 DANBURY, CT 06817

DEVELOPER: HOMELAND TOWERS, LLC
 0-ARMONY STREET
 2ND FLOOR
 DANBURY, CT 06817

NOTE:
 IT IS A VIOLATION OF NEW YORK STATE
 REGULATION AND ARTICLE 16, SECTION
 1701 (3) OF THE ELECTIONS AND
 ELECTIONS LAW TO VOTE IN THE
 ELECTIONS OF A
 LICENSED PROFESSIONAL ENGINEER OR
 LAND SURVEYOR TO VOTE IN THE
 ELECTIONS OF A
 LICENSED PROFESSIONAL ENGINEER OR
 LAND SURVEYOR SHALL APPEAR TO THE
 ELECTIONS AND THE ELECTIONS
 OFFICIALS AND FOLLOWED BY THE
 BOARD AND THE DATE OF SUCH
 OCCURRENCE AND A BREACH
 OF THE ELECTIONS

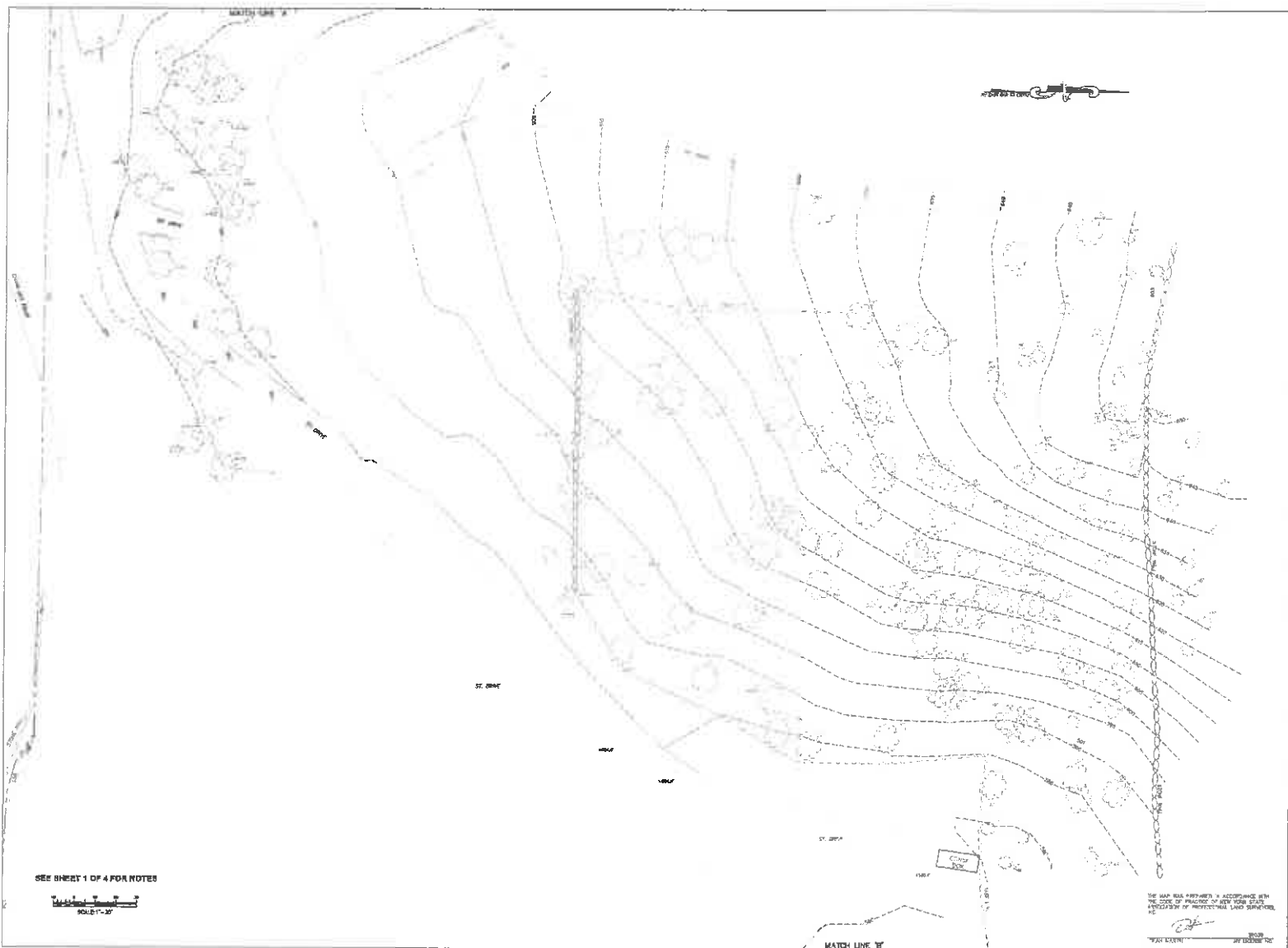
HOMELAND TOWERS
 LAKE CASSE
 254 CROTON FALLS ROAD
 CARMEL, NY 10541

AP7 ENGINEERING
 2 BACCHUS DRIVE PHASE 2000
 WEST NYACK, NY 10994
 (845) 287-8940
 WWW.AP7ENGINEERING.COM

SHEET #101:
 TITLE SHEET & INDEX

84771 LUBBER

T-1



<ul style="list-style-type: none"> IRON PIN (FOUND) ADJ. PROP./SITE DATA (To be Sd) MANHOLE DRAINAGE MANHOLE SANITARY MANHOLE DEP. MANHOLE TELE. MANHOLE 11" CATCH BASIN 24" CATCH BASIN SEWER PRESS OVERHEAD PRESS PHILADELPHIA FLAD POLE INTERMEDIATE CONTROL BOX 	<ul style="list-style-type: none"> SIGN POLE UTILITY POLE GLY ANCHOR UTILITY POLE WATER METER GAS VALVE GAS METER TRANSFORMER ELEC. METER WALL BOX WALL BOX OUTLINE BOX A.C. UNIT 400 WATTAGE LIGHT POLE
---	---


Martin
 Surveying Associates, LLC
 201 CHESTNUT LANE, BERLIN, CT 06037
 860-422-9228 FAX: 860-422-9229

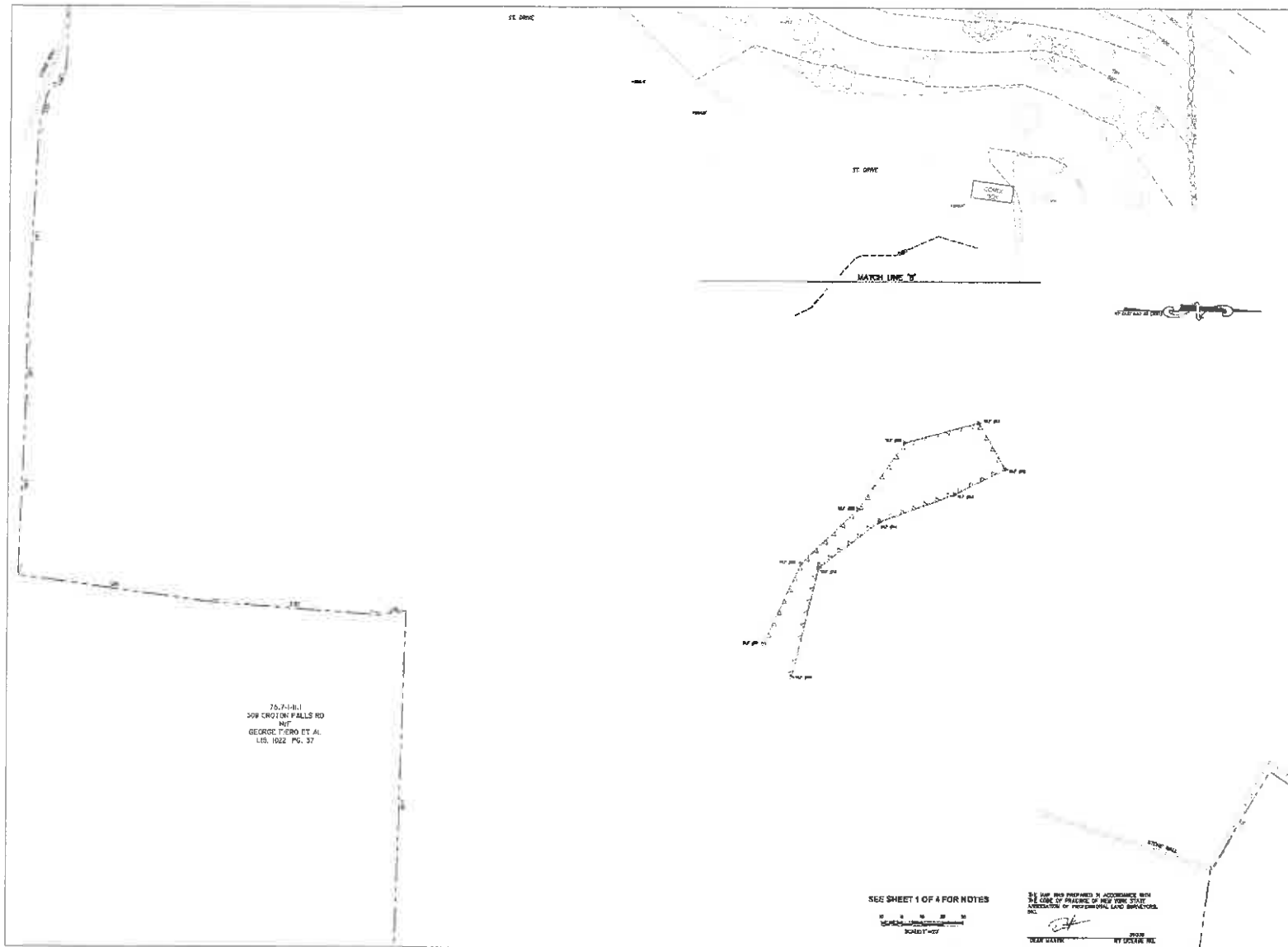
#105546

TOPOGRAPHIC SURVEY
LAND OF
RICHARD J. & ROSEMARIE DIEHL
TAX ID: 83-19-1-43
254 CROTON FALLS ROAD
MAHOPAC
PUTNAM COUNTY
NEW YORK

0.5 INCHES TO 100 FEET
 SCALE: 1" = 20'
 DATE: 05/01/11
 PROJECT: 11111
 SHEET: 3 OF 4


SEE SHEET 1 OF 4 FOR NOTES
 SCALE 1" = 20'

THE MAP HAS BEEN PREPARED IN ACCORDANCE WITH THE CODE OF PRACTICE FOR SURVEYING AND MAPPING OF PROFESSIONAL LAND SURVEYORS.
 RICHARD J. DIEHL
 JUNE 1, 2011



- LEGEND:
- BURN PILE (GROUND)
 - RAMP/20' WIDE (To the SW)
 - MANHOLE (GROUND)
 - DRAINAGE MANHOLE
 - SANITARY MANHOLE
 - GAS MANHOLE
 - TELL. MANHOLE
 - "C" CATCH BASIN
 - "T" CATCH BASIN
 - DECIDUOUS TREES
 - EVERGREEN TREES
 - SHRUB/BUSH
 - FLAG POLE
 - BENCHMARK (CONCRETE BOX)
 - SIGN
 - POST
 - LIGHT POLE
 - UTILITY POLE
 - WATER GATE
 - WATER METER
 - GAS VALVE
 - GAS METER
 - TRANSFORMER
 - FUEL METER
 - MAIL BOX
 - HAND-HOLE
 - EJECTION BOX
 - A.C. DIRT
 - NO TRAFFIC LIGHT POLE

- BOUNDARY LINE
- GUARD RAIL
- UNDEVELOPED POND (SP. 100)
- U/G GAS LINE
- U/G ELEC. LINE
- WATER LINE
- OVERHEAD UTILITIES
- U/G TELL. LINE
- CHAIN LINK FENCE
- STREET LINE

martin
Surveying Associates, LLC
 26 CHRISTIAN LAKE AVENUE, CT 06217
 860-432-2222 860-432-2223

TOPOGRAPHIC SURVEY
LAND OF
RICHARD J. & ROSEMARIE DIEHL
TAX ID: 65-19-1-43
264 CROTON FALLS ROAD
MAHOPAC
PUTNAM COUNTY
NEW YORK

APPROVED BY: [Signature]

DATE: 1/15/19

CHECKED BY: [Signature]

DATE: 1/15/19

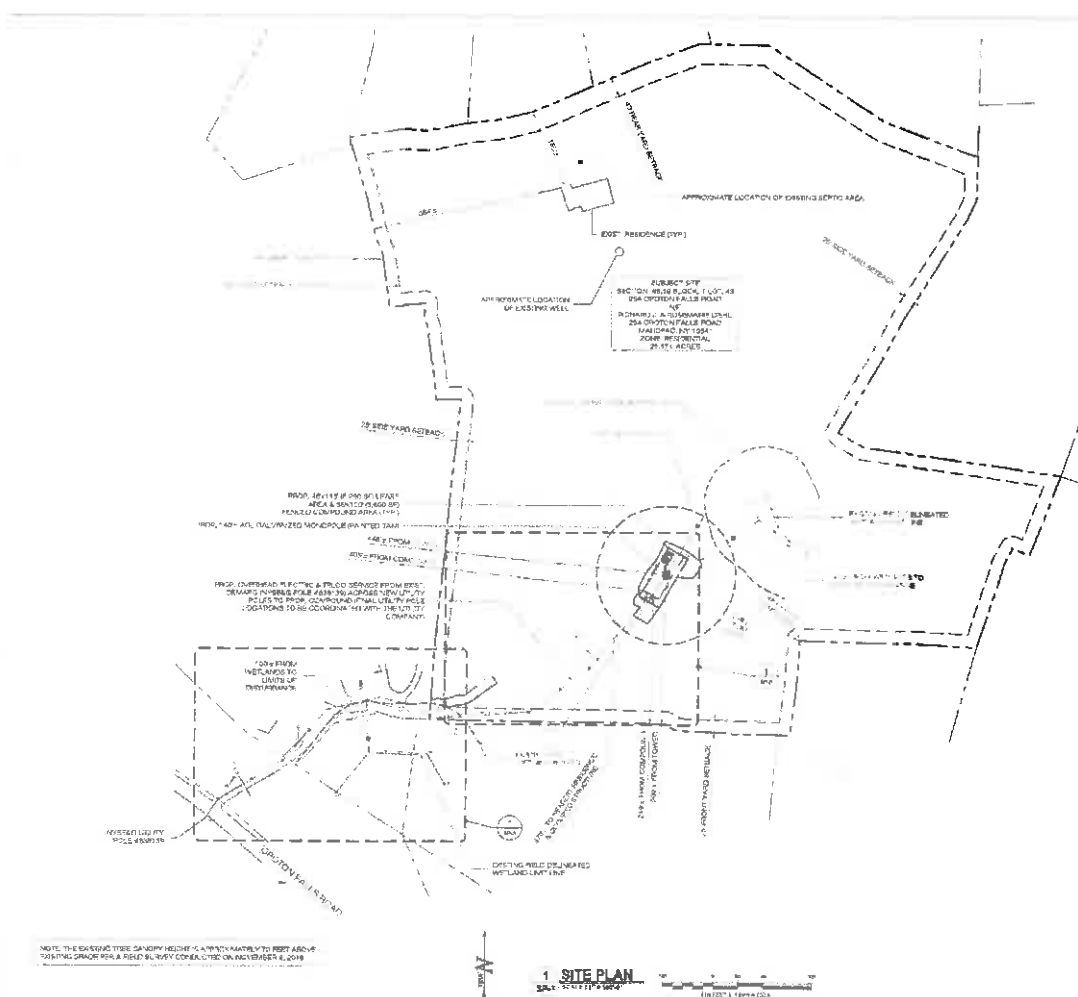
4 OF 4



R-1

R-1 4-24-62

[illegible][illegible]



ZONING TABLE: CARMEL ZONING DISTRICT RESIDENTIAL

ITEM	REQUIREMENT	PROPOSED
MAXIMUM LOT AREA (SQ. FT.)	10,000	10,000
MINIMUM LOT WIDTH (FT.)	25	25
MINIMUM LOT DEPTH (FT.)	25	25
MINIMUM FRONT YARD SETBACK (FT.)	10	10
MINIMUM SIDE YARD SETBACK (FT.)	5	5
MINIMUM REAR YARD SETBACK (FT.)	10	10
MINIMUM BUILDING COVERAGE (%)	10	10
MINIMUM LOT AREA (SQ. FT.)	10,000	10,000
MINIMUM LOT WIDTH (FT.)	25	25
MINIMUM LOT DEPTH (FT.)	25	25
MINIMUM FRONT YARD SETBACK (FT.)	10	10
MINIMUM SIDE YARD SETBACK (FT.)	5	5
MINIMUM REAR YARD SETBACK (FT.)	10	10
MINIMUM BUILDING COVERAGE (%)	10	10

NR = NOT APPLICABLE
 * WALKWAY LOCATED UNDER DECK (25' x 10')
 * WALKWAY LOCATED UNDER DECK (25' x 10')
 * WALKWAY LOCATED UNDER DECK (25' x 10')

verizon
 4 CENTERSHORE ROAD
 WEST YACK NY 10594

APT ENGINEERING
 100 CROTON FALLS ROAD
 CROTON FALLS, NY 10511
 WWW.APT-ENG.COM

PERMITTING DOCUMENTS

NO.	DATE	REVISION
1	01/15/18	FOR REVIEW, RCE
2	01/15/18	FOR REVIEW, RCE
3	01/15/18	FOR REVIEW, RCE
4	01/15/18	FOR REVIEW, RCE
5	01/15/18	FOR REVIEW, RCE
6	01/15/18	FOR REVIEW, RCE
7	01/15/18	FOR REVIEW, RCE
8	01/15/18	FOR REVIEW, RCE
9	01/15/18	FOR REVIEW, RCE
10	01/15/18	FOR REVIEW, RCE

DESIGN PROFESSIONAL'S DECLARATION
 I, the undersigned, being a duly licensed Professional Engineer in the State of New York, do hereby certify that I am the author of the design and that I am a duly licensed Professional Engineer in the State of New York.

DESIGNER: APT ENGINEERING
ADDRESS: 100 CROTON FALLS ROAD
CROTON FALLS, NY 10511
PHONE: (914) 261-1111
FAX: (914) 261-1112
EMAIL: info@apt-eng.com
WWW: www.apt-eng.com

DATE: 01/15/18
BY: [Signature]
CHECKED BY: RCE

HOMELAND TOWERS
 LAKE CAUSE
 254 CROTON FALLS ROAD
 CROTON FALLS, NY 10511
 (914) 261-1111
 info@apt-eng.com
 www.apt-eng.com

DATE: 01/15/18
BY: [Signature]
CHECKED BY: RCE

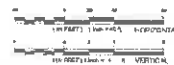
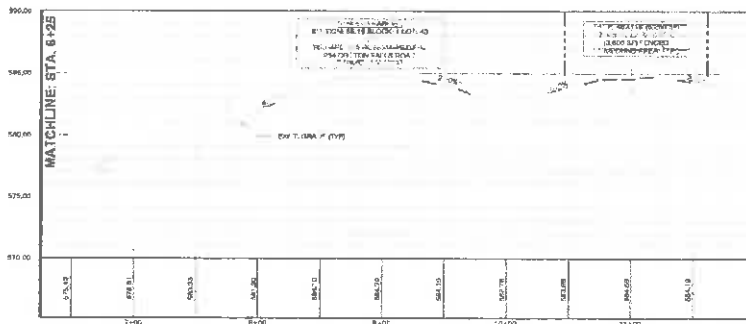
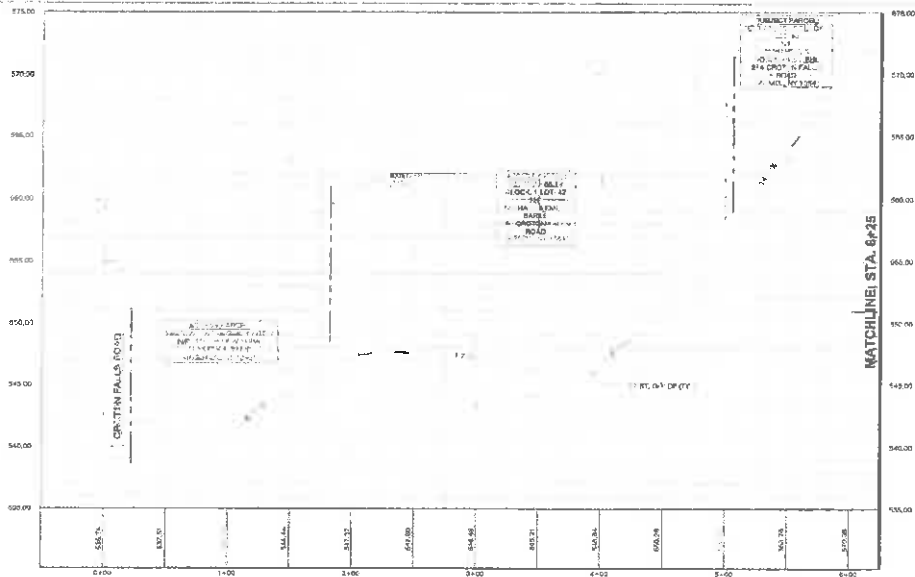
LEGEND

- SUBJECT PARCEL PROPERTY LINE
- ADJACENT PROPERTY (HARBORVIEW LANE)
- LOT LINE
- LOT LINE DISTURBANCE LINE

NOTES:
 1. THE EXISTING 254 CROTON FALLS ROAD IS A 25' WIDE ROAD.
 2. THE EXISTING 254 CROTON FALLS ROAD IS A 25' WIDE ROAD.
 3. THE EXISTING 254 CROTON FALLS ROAD IS A 25' WIDE ROAD.

SITE PLAN

SP-1



EXISTING DRIVEWAY PROFILE
SCALE: HORIZONTAL 1"=40'
VERTICAL 1"=4'



4 CENTERCROOK ROAD
WEST NYACK, NY 10994



APT
ENGINEERING

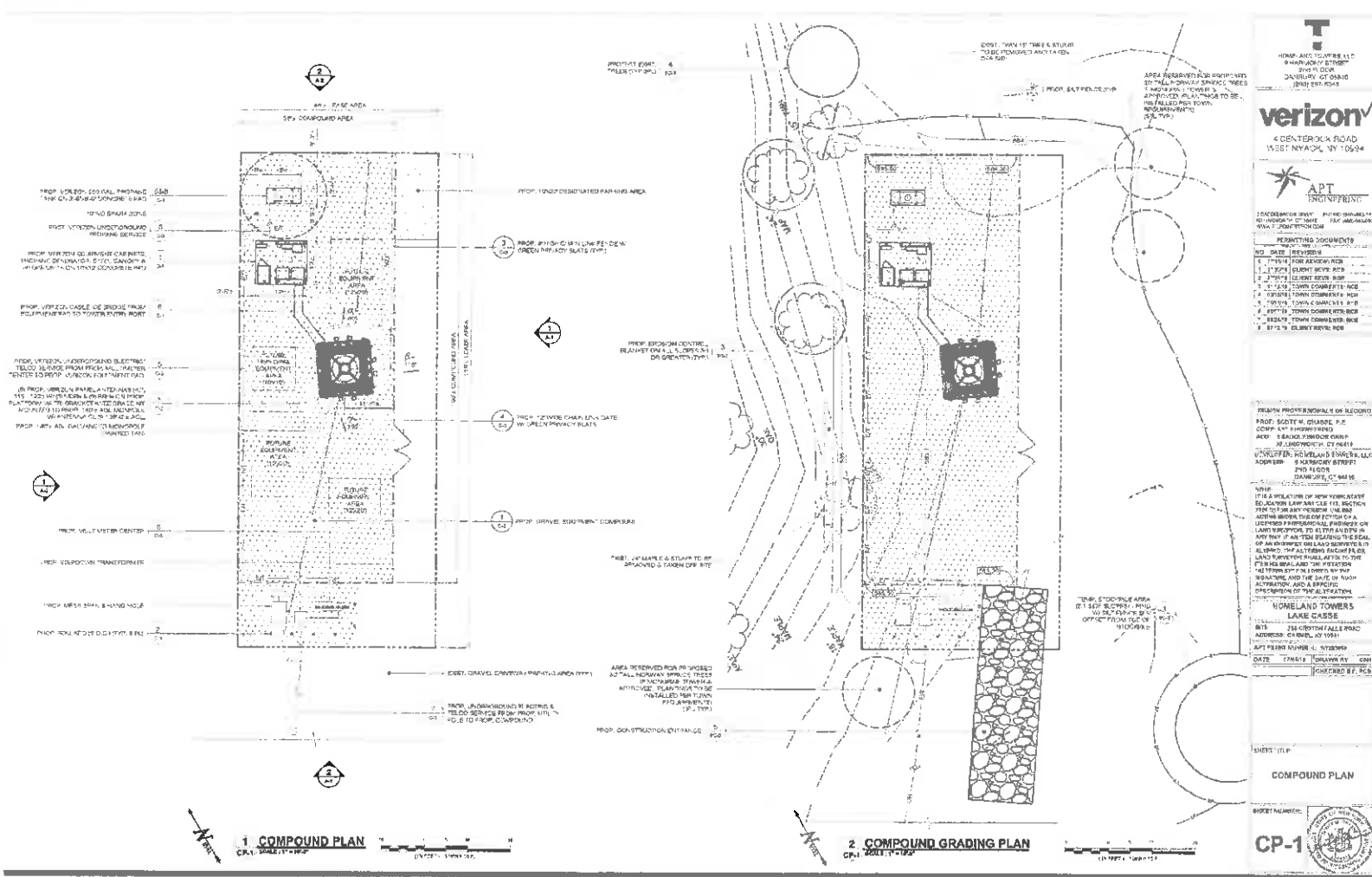
NO.	DATE	REVISION
1	04/15/10	ISSUE FOR RECORD
2	04/15/10	ISSUE FOR RECORD
3	04/15/10	ISSUE FOR RECORD
4	04/15/10	ISSUE FOR RECORD
5	04/15/10	ISSUE FOR RECORD
6	04/15/10	ISSUE FOR RECORD
7	04/15/10	ISSUE FOR RECORD
8	04/15/10	ISSUE FOR RECORD
9	04/15/10	ISSUE FOR RECORD
10	04/15/10	ISSUE FOR RECORD

DESIGN PROFESSIONALS OF RECORD
 SCOTT M. CHASE, P.E.
 CIVIL ENGINEER
 1000 WILSON AVENUE
 SUITE 200
 WEST NYACK, NY 10994

DATE: 04/15/10
 DRAWN BY: J. J. JONES
 CHECKED BY: J. J. JONES

SHEET TITLE
 EXISTING DRIVEWAY
 PROFILE

SHEET NUMBER
 SP-4



verizon
4 CENTER ROCK ROAD
WEST NYACK, NY 10994

APT ENGINEERING

10/20/2019 10:00 AM
10/20/2019 10:00 AM
10/20/2019 10:00 AM

PERMITTING DOCUMENTS

NO.	DATE	REVISION
1	10/20/2019	10/20/2019 10:00 AM
2	10/20/2019	10/20/2019 10:00 AM
3	10/20/2019	10/20/2019 10:00 AM
4	10/20/2019	10/20/2019 10:00 AM
5	10/20/2019	10/20/2019 10:00 AM
6	10/20/2019	10/20/2019 10:00 AM
7	10/20/2019	10/20/2019 10:00 AM
8	10/20/2019	10/20/2019 10:00 AM
9	10/20/2019	10/20/2019 10:00 AM
10	10/20/2019	10/20/2019 10:00 AM

DESIGN PROFESSIONALS OF RECORD

PROF. SCOTT W. CHASE, P.E.
COMP. BY: SCOTT W. CHASE, P.E.
ARCH. BY: SCOTT W. CHASE, P.E.
ELECT. BY: SCOTT W. CHASE, P.E.
MECHAN. BY: SCOTT W. CHASE, P.E.
CIVIL BY: SCOTT W. CHASE, P.E.
LANDSCAPE BY: SCOTT W. CHASE, P.E.
PLUMBING BY: SCOTT W. CHASE, P.E.
ROOFING BY: SCOTT W. CHASE, P.E.
HVAC BY: SCOTT W. CHASE, P.E.
PAINT BY: SCOTT W. CHASE, P.E.
GENERAL BY: SCOTT W. CHASE, P.E.

HOME LAND TOWERS
LAME CASE
254 CROTON FALLS ROAD
WEST NYACK, NY 10994
APT ENGINEERING, INC.
10/20/2019 10:00 AM
DATE: 10/20/2019
DRAWN BY: GCM
CHECKED BY: RCB

SHEET 1 OF 1

COMPOUND PLAN

CP-1

0022-0466/96/0000-0000\$05.00/0

0022-0466/96/0000-0000\$05.00/0

- 550/277 & 550/278: 2014/04/24 14:00

- [illegible]

CONSTRUCTION SCHEDULE AND MAINTENANCE PLAN - BY CONTRACTOR

NAME	NAME
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	COMETS
NEBULAE	NEBULAE
GALAXIES	GALAXIES
CLUSTERS	CLUSTERS
OTHER	OTHER
REMARKS	REMARKS
CONCLUSION	CONCLUSION
SIGNATURE	SIGNATURE
DATE	DATE
TIME	TIME
LOCATION	LOCATION
WEATHER	WEATHER
MOON	MOON
STARS	STARS
PLANETS	PLANETS
COMETS	

verizon
4 CENTER ROAD
WEST NYACK, NY 10994



APT
ENGINEERING

NO	DATE	KEYWORDS
1	1/27/68	FOR NEW YORK OFF
2	1/27/68	CURRENT REPLY FOR
3	1/27/68	URGENT REPLY FOR
4	1/27/68	COMM COMMENTS, B, RD
5	1/27/68	COMM COMMENTS, B, RD
6	1/27/68	COMM COMMENTS, RD
7	1/27/68	COMM COMMENTS, RD
8	1/27/68	COMM COMMENTS, RD
9	1/27/68	COMM COMMENTS, RD
10	1/27/68	COMM COMMENTS, RD
11	1/27/68	COMM COMMENTS, RD
12	1/27/68	COMM COMMENTS, RD
13	1/27/68	COMM COMMENTS, RD
14	1/27/68	COMM COMMENTS, RD
15	1/27/68	COMM COMMENTS, RD
16	1/27/68	COMM COMMENTS, RD
17	1/27/68	COMM COMMENTS, RD
18	1/27/68	COMM COMMENTS, RD
19	1/27/68	COMM COMMENTS, RD
20	1/27/68	COMM COMMENTS, RD
21	1/27/68	COMM COMMENTS, RD
22	1/27/68	COMM COMMENTS, RD
23	1/27/68	COMM COMMENTS, RD
24	1/27/68	COMM COMMENTS, RD
25	1/27/68	COMM COMMENTS, RD
26	1/27/68	COMM COMMENTS, RD
27	1/27/68	COMM COMMENTS, RD
28	1/27/68	COMM COMMENTS, RD
29	1/27/68	COMM COMMENTS, RD
30	1/27/68	COMM COMMENTS, RD
31	1/27/68	COMM COMMENTS, RD
32	1/27/68	COMM COMMENTS, RD
33	1/27/68	COMM COMMENTS, RD
34	1/27/68	COMM COMMENTS, RD
35	1/27/68	COMM COMMENTS, RD
36	1/27/68	COMM COMMENTS, RD
37	1/27/68	COMM COMMENTS, RD
38	1/27/68	COMM COMMENTS, RD
39	1/27/68	COMM COMMENTS, RD
40	1/27/68	COMM COMMENTS, RD
41	1/27/68	COMM COMMENTS, RD
42	1/27/68	COMM COMMENTS, RD
43	1/27/68	COMM COMMENTS, RD
44	1/27/68	COMM COMMENTS, RD
45	1/27/68	COMM COMMENTS, RD
46	1/27/68	COMM COMMENTS, RD
47	1/27/68	COMM COMMENTS, RD
48	1/27/68	COMM COMMENTS, RD
49	1/27/68	COMM COMMENTS, RD
50	1/27/68	COMM COMMENTS, RD
51	1/27/68	COMM COMMENTS, RD
52	1/27/68	COMM COMMENTS, RD
53	1/27/68	COMM COMMENTS, RD
54	1/27/68	COMM COMMENTS, RD
55	1/27/68	COMM COMMENTS, RD
56	1/27/68	COMM COMMENTS, RD
57	1/27/68	COMM COMMENTS, RD
58	1/27/68	COMM COMMENTS, RD
59	1/27/68	COMM COMMENTS, RD
60	1/27/68	COMM COMMENTS, RD
61	1/27/68	COMM COMMENTS, RD
62	1/27/68	COMM COMMENTS, RD
63	1/27/68	COMM COMMENTS, RD
64	1/27/68	COMM COMMENTS, RD
65	1/27/68	COMM COMMENTS, RD
66	1/27/68	COMM COMMENTS, RD
67	1/27/68	COMM COMMENTS, RD
68	1/27/68	COMM COMMENTS, RD
69	1/27/68	COMM COMMENTS, RD
70	1/27/68	COMM COMMENTS, RD
71	1/27/68	COMM COMMENTS, RD
72	1/27/68	COMM COMMENTS, RD
73	1/27/68	COMM COMMENTS, RD
74	1/27/68	COMM COMMENTS, RD
75	1/27/68	COMM COMMENTS, RD
76	1/27/68	COMM COMMENTS, RD
77	1/27/68	COMM COMMENTS, RD
78	1/27/68	COMM COMMENTS, RD
79	1/27/68	COMM COMMENTS, RD
80	1/27/68	COMM COMMENTS, RD
81	1/27/68	COMM COMMENTS, RD
82	1/27/68	COMM COMMENTS, RD
83	1/27/68	COMM COMMENTS, RD
84	1/27/68	COMM COMMENTS, RD
85	1/27/68	COMM COMMENTS, RD
86	1/27/68	COMM COMMENTS, RD
87	1/27/68	COMM COMMENTS, RD
88	1/27/68	COMM COMMENTS, RD
89	1/27/68	COMM COMMENTS, RD
90	1/27/68	COMM COMMENTS, RD
91	1/27/68	COMM COMMENTS, RD
92	1/27/68	COMM COMMENTS, RD
93	1/27/68	COMM COMMENTS, RD
94	1/27/68	COMM COMMENTS, RD
95	1/27/68	COMM COMMENTS, RD
96	1/27/68	COMM COMMENTS, RD
97	1/27/68	COMM COMMENTS, RD
98	1/27/68	COMM COMMENTS, RD
99	1/27/68	COMM COMMENTS, RD
100	1/27/68	COMM COMMENTS, RD

PROF. SCOTT M. GINSBERG, P.E.
CORP. & JEFF. MANAGEMENT
4001 13400 LEWIS DRIVE
DALLAS, TEXAS 75244-1141
214-343-1141

KILLING OF MARTIN LUTHER KING
 WASHINGTON, D. C. (AP) —
 A MAN WHO WAS SHOT BY
 A POLICE OFFICER IN
 THE DISTRICT OF COLUMBIA
 WAS IDENTIFIED AS MARTIN
 LUTHER KING, JR.

[illegible]

EROSION CONTROL

EC-2

[illegible]

[illegible]

#6

LAW OFFICES OF
SNYDER & SNYDER, LLP

94 WHITE PLAINS ROAD
TARRYTOWN, NEW YORK 10591

(914) 333-0700

FAX (914) 333-0743

WRITER'S E-MAIL ADDRESS

rgaudio@snnyderlaw.net

NEW JERSEY OFFICE
ONE GATEWAY CENTER, SUITE 2600
NEWARK, NEW JERSEY 07102
(973) 824-9772
FAX (973) 824-9774

REPLY TO:

TARRYTOWN OFFICE

NEW YORK OFFICE
445 PARK AVENUE, 9TH FLOOR
NEW YORK, NEW YORK 10022
(212) 749-1448
FAX (212) 932-2693

LESLIE J. SNYDER
ROBERT D. GAUDIOSO

DAVID L. SNYDER
(1956-2012)

July 14, 2019

Honorable Chairman Craig Paepre
and Members of the Planning Board
Town of Carmel Town Hall
60 McAlpin Avenue
Mahopac, New York 10541

Re: Application for site plan and special permit approval for
Dixon Lake: 36 Dixon Road, Carmel, New York

Honorable Chairman Craig Paepre and Members of the Planning Board:

We are the attorneys for Homeland Towers LLC and New York SMSA Limited Partnership d/b/a Verizon Wireless (collectively, the "Applicants") in connection with their request for site plan and special permit approval to locate a public utility wireless telecommunications facility ("Facility") at the above captioned property ("Property"). The proposed Facility consists of a 110-foot tower designed to resemble a tree, and a fenced 52' x 65' compound for related equipment. Please note that the application has been amended to reduce the height of the tower to 110 feet.

In support of the foregoing and in response to the Town comments, we are pleased to enclose five (5) copies of the following materials and one CD with all documents:

1. Visual Resource Evaluation, prepared by Saratoga Associates;
2. Pinnacle Report based on 110 foot tower height;
3. Supplemental Report from PierCon Solutions;
4. Response letter prepared by APT Engineering;
5. Revised Site Plan.

We thank you for your consideration, and look forward to discussing this matter at next Planning Board meeting on July 31, 2019. If you have any questions or require any additional documentation, please do not hesitate to contact me at 914-333-0700.

Snyder & Snyder, LLP

By: 

Robert D. Gaudio

RDG:cae

Enclosures

cc: Homeland Towers

Verizon Wireless

z:\ssdata\wpdata\ss3\rdg\homelandtowers\carmel\058 (dixon)\pb letter 7-14-19.rtf

Proposed Wireless Telecommunications Facility

Site Name: Dixon Lake, NY- 058
36 Dixon Road
Carmel, NY 10512

VISUAL RESOURCE ASSESSMENT



Prepared for:
Homeland Towers
9 Harmony Street, 2nd Floor
Danbury, CT 06810

June 27, 2019

VISUAL RESOURCE ASSESSMENT

Homeland Towers, LLC ("Project Sponsor") seeks approval from the Town of Carmel, NY to construct a wireless telecommunications facility (the "Facility") to be located on property at 36 Dixon Road, Carmel, NY 10512 ("host property"). To address issues of potential visual impact, Saratoga Associates, Landscape Architects, Architects, Engineers, and Planners, P.C. was retained to conduct a Visual Resource Assessment ("VRA") of the proposed Project.

The study area for this VRA extends to a two-mile radius from the Facility (hereafter referred to as the "2-mile study area"). Because much of the project area is heavily wooded substantial limiting extending distance views of the Facility, detailed analysis is largely focused on viewpoints within a ½-mile radius ("½-mile study area").

PROJECT DESCRIPTION

The Facility will be located at 41° 25' 09.4813" N, 73° 43' 28.0142" W ("Facility site"). The 10.19± acre host property is identified in Putnam County tax records as tax parcel 54.01-6. The existing ground elevation at the tower site is approximately 800 feet above mean sea level (amsl).

The Facility involves the construction of a 110-foot-tall stealth monopine style telecommunications tower designed to support up to four antenna levels.

Note: Six (6) balloon visibility tests were conducted between March 29 and April 29, 2019 to allow the general public and local decision-makers an opportunity to observe the location and potential visibility of the Facility. During each test, one four-foot diameter red balloon was raised to an elevation of 150 feet above existing grade (measured to the bottom of the balloon). At the time of the balloon tests 150 feet was the proposed height of the Facility. The proposed height has since been reduced to 110 feet. All analysis contained in this VRA is based on the currently proposed tower height of 110 feet.

Associated ground equipment will be located within a 57± foot by 65± foot (3,705± square feet) fenced enclosure at the base of the tower. Access to the Facility site will be directly from a new 480± foot-long 12-foot wide gravel driveway connecting with the existing paved driveway currently serving the property. The stealth monopine tower design will include a dense non-uniform branching pattern that will help to blend the structure with the visual characteristics of the surrounding landscape.

The host property is partially wooded and the Facility site is proposed within a grassy area with a thinned tree canopy overhead. The existing tree canopy height surrounding the Facility is approximately 50-60 feet.

LANDSCAPE SETTING

The Facility is located within the Town of Carmel, NY (2018 estimated population 34,360¹). The host property is zoned Residential as defined by the Carmel Town Code.

The ½-mile study area is largely suburban in character comprised of low to moderate density (i.e., 3/4 to 8+ acre) single-family residential lots, undeveloped woodland open space and municipal recreation uses. Structures are typically single-family homes within organized subdivisions or individual homes setback from main roads. Residential neighborhoods are typically wooded with well landscaped understory areas. Mature trees commonly extend to road edges limiting long distance vistas.

28 residential structures (including the main house on the host property) are within 1,000 feet of the Facility. The nearest occupied residential structure is approximately 310 feet to the north (30 Brittany Lane).

The Britany Lane residential subdivision is immediately adjacent to the host property. Approximately 19 single family residences are within the Britany Lane neighborhood. Approximately 33 single-family residences are located along Dixon Road between Long Pond Road and Carolyn Road.

The topography within the 2-mile study area is characterized by a rolling and often steeply sloped landscape. The topographic highpoint within the two-mile radius study area is Hitchcock Hill (elevation 1,111± feet amsl). The topographic low point is along the outfall below the West Branch Reservoir Dam elevation 421± feet amsl) in the southeastern portion of the study area.

Waterbodies within the study area include West Branch Reservoir, Lake Gleneida, Long Pond, Barrett Pond, Dixon Lake, Lockwood Pond, Lockwood Pond, Lake Ossi and China Pond. The study area is heavily wooded with broad tracts of mature second growth deciduous forest interspersed with stands of mature evergreen species. The tree canopy occupies approximately 5,860 acres of the 8,040-acre two-mile study area (73%).² Mature tree cover generally ranges from 50 to 70 feet in height. An additional 2,270 acres (28%) of the two-mile study area is water surface.

Visual Resources

Scenic Resources of Statewide Significance - To avoid subjectivity in assessing potential visual impact, the New York State Department of Environmental Conservation's ("NYSDEC") Program Policy on Assessing and Mitigating Visual Impact (DEP-00-02) ("DEC Visual Policy") provides guidance in the determination of visual significance under the State Environmental Quality Review Act (SEQRA). Visual impact is defined by the DEC Visual Policy as follows:

"Aesthetic impact occurs when there is a detrimental effect on the perceived beauty of a place or structure. Significant aesthetic impacts are those that may

¹ <https://www.census.gov/quickfacts/carmeltownputnamcountynynewyork>

² Tree cover calculations are based on areas with 50% or greater tree canopy coverage within 30-meter x 30-meter grid cells as presented in the National Land Cover Database (NLCD) 2011 Percent Tree Canopy dataset. <https://viewer.nationalmap.gov/basic/#productSearch>

cause a diminishment of the public enjoyment and appreciation of an inventoried resource, or one that impairs the character or quality of such a place.”³

The DEC Visual Policy defines an “inventoried resource” as a place recognized for its beauty and designated through federal or state democratic political processes in recognition of its aesthetic value.⁴ Inventoried places are a matter of public record and are not arbitrarily or subjectively determined. The DEC Visual Policy contains specific criteria defining places considered to be aesthetic resources of statewide significance. These places are high value sites including state parks, scenic roads, wild, scenic and recreational rivers, state forests, wildlife management areas, scenic areas of statewide significance, Heritage Areas, National Natural Landmarks, state or federally designated trails, properties or districts listed on the National Register of Historic Places, among others. Only one (1) place meeting this definition is located within the 2-mile study area. This is:

- Nimham Mountain Multiple Use Area (1.8 miles east of tower site at its nearest point) - The 1,054-acre Nimham Mountain Multiple Use Area is managed for timber harvesting. The area is open to the public with trails for hiking, biking and horseback riding. The multiple use area is within a heavily forested area. Viewshed analysis indicates the facility will not be visible from this resource.

Aesthetic Resources of Local Importance - Aesthetic resources of local importance are publicly accessible places generally recognized and enjoyed by community residents and visitors for their unique aesthetic value. Aesthetic resources of local importance are established through local democratic processes and are not arbitrarily or subjectively determined. Such places are most commonly municipal parks, trails, bikeways, and may also include not-for-profit conservation lands and open space preserves.

Aesthetic resources of local importance within the 2-mile study area include:

- Putnam County Trailway (1.8 miles east of tower site at its nearest point) – The Putnam County Trailway is a paved bicycle/pedestrian path located primarily on right-of-way lands of the former Putnam Division of the New York Central Railroad. The Putnam Trailway spans 12.0 linear miles through Putnam County, from the Westchester border at Baldwin Place to Brewster Village. In the study area the Putnam County Trailway is within a heavily forested area more than 1.8 miles from the Facility. Viewshed analysis indicates the facility will not be visible from this recreational resource.
- Jimmy McDonough Memorial Park (400 feet south of tower site at its nearest point) – Jimmy McDonough Memorial Park includes three football/soccer fields, one ninety-foot baseball diamond, one sixty-foot diamond and an extreme skate park. This facility also has rest rooms and a food concession. It is open from late March to November. The host property is immediately adjacent to this park. The facility will be directly visible from most open field areas within the park. Figure A6 illustrates the view from McDonough Park.

³ DEC Visual Policy, p.5. (https://www.dec.ny.gov/docs/permits_ej_operations_pdf/visual2000.pdf)

⁴ DEC Visual Policy, p.1.

- Sycamore Park (1,800 feet southwest of tower site) – Sycamore Park contains tennis courts, a baseball/football field, beach, picnic and playground areas, paddle ball/hand ball court and a concession/refreshment stand. The upper portion of the Facility will be seasonally visible at the tree from the vicinity of the baseball/football field. Figure A2 illustrates the view from Sycamore Park.
- Putnam County Veterans Memorial Park (1.4 miles north of tower site at its nearest point) – The Putnam County Veterans Memorial Park includes hiking trails swimming pool, volleyball and basketball courts and children's playground. The developed area of the park falls outside of the project viewshed. The facility will not be visible from this recreational resource.

Resources of local importance are identified on Figures 1 and 2.

Other Areas of Aesthetic Interest

While not rising to the threshold of statewide significance or local importance, other places of local interest have been included in this visual assessment to represent potential Facility views from roadways, residential neighborhoods and adjacent or nearby residential properties. Such locations are not representative of any aesthetically significant place as defined under the DEC Visual Policy and are not directly addressed under SEQRA.

Residential Areas - Within the ½-mile radius study area residential development is largely clustered in planned single-family residential subdivisions and homes fronting local roads. Nearby residential neighborhoods generally include Britany Lane/Bianca Court, Dixon Lake Road/Lakeview Road/Valley Court/Pine Lane/Wood Road, Carolyn Road (East and West), Angela Drive, Enrico Court, and Orchard Hill Road. Roadside single-family residential development is found along portions of Dixon Road, Long Pond Road and Crane Road. Parcel sizes in these areas generally range from 1/3 acre to 8 acres or more.

Dense woodland commonly limits views from residential properties to the immediate foreground. From most residential properties views of the Facility will be substantially screened by intervening dense mature woodland vegetation – even during winter leaf-off-season.

The facility will be visible above intervening trees from a portion of Britany Lane. Views from Dixon Road will largely be screened by roadside vegetation, however, brief glimpses through deciduous vegetation will occur during winter leaf-off-season. Such views will be substantially or completely screened during summer leaf-on season.

Figures A3, A4, A5, A7 & A8 illustrate views from these residential areas.

Roadways - Approximately 72 miles of public roadways are within the 2-mile study area. Crane road is the most heavily travelled roadway within one (1) mile of the Facility. Crane Road at the intersection with Dixon Road has an average daily traffic volume (AADT) of approximately 4,031 Long Pond Road at the intersection with Dixon Road has an AADT of approximately 1,942 vehicles.

From most public roads the project will be substantially or fully screened by dense roadside vegetation. A brief intermittent glimpse of the Facility may occur through foreground trees to

eastbound motorists on Dixon Road as it passes in the vicinity of the facility. Such visibility during summer leaf-on season will be substantially or completely screened by roadside deciduous vegetation. No direct (unobstructed) visibility of the proposed tower was found from any portion of Dixon Road.

VIEWSHED ANALYSIS

Viewshed mapping identifies the geographic area within which there is a relatively high probability that some portion of the Facility could be visible.

One viewshed overlay was prepared defining the area within which there would be no visibility of the Facility due to the screening effect of intervening topography. This "bare earth" condition identifies the maximum potential geographic area within which further investigation is appropriate. A second viewshed overlay was prepared illustrating the screening effect of existing mature vegetation and buildings. The more realistic "land cover" condition identifies the geographic area where one would expect to be substantially screened by intervening forest vegetation.

Global Mapper 19.0 GIS software was used to generate viewshed areas based on publicly available topographic and land cover datasets. Topographic data was derived 2-meter resolution digital elevation models (DEM) acquired from the New York State GIS Clearinghouse.⁵ Using Global Mapper's viewshed analysis tool, the proposed Facility location and height were input and a conservative offset of six feet was applied to account for the observer's eye level. The resulting viewshed identifies grid cells with a direct line-of-sight to the Facility high point (110 feet above ground level).

Within one (1) mile of the Facility site existing forest vegetation was manually digitized from ½-foot resolution digital ortho-photographs (2016) acquired from NYS Orthos On-line.⁶ For the remainder of the 2-mile study area existing forest vegetation is based on areas with 75% or greater tree canopy coverage as presented in the National Land Cover Database (NLCD) 2011 Percent Tree Canopy dataset.⁷ Building footprints were manually digitized from ½-foot resolution digital ortho-photographs.

The screening effect of vegetation and built structures was incorporated by adding 50 feet in vertical height to forest areas and 25 feet to building footprints. Forested areas and building footprints were removed from the viewshed result to account for affected areas located within structures or densely wooded cover.

Based on field observation, most trees in forested portions of the study area are taller than 50 feet. This height therefore represents a conservative estimate of the efficacy of vegetative screening. It is important to note that digitized vegetation is based on interpretation of forest areas that are clearly distinguishable in the source aerial photography. As such, the potential screening value of site-specific vegetative cover such as small hedgerows, street trees and

⁵ <https://orthos.dhSES.ny.gov/>

⁶ <https://orthos.dhSES.ny.gov/>

⁷ <https://viewer.nationalmap.gov/basic/#productSearch>

individual trees and other areas of non-forest tree cover may not be represented in the viewshed analysis.

It is noteworthy that untrained reviewers often misinterpret “bare earth” condition viewshed maps to represent wintertime, or leafless condition visibility. In fact, deciduous woodlands provide a substantial visual barrier in all seasons. Since the digitized forest cover overlay generally identifies only larger stands of woodland vegetation that are clearly distinguishable from aerial photography, the land cover viewshed map is substantially representative of both leaf-on and leaf-off seasons. The bare earth condition map is provided only to assist experienced visual analysts identify the maximum potential geographic area within which further investigation is appropriate. Such bare earth viewshed maps are generally not appropriate for public interpretation.

By themselves, the viewshed maps do not determine how much of the proposed wireless telecommunications tower would be visible above intervening landform or vegetation (e.g., 100%, 50%, 10% etc. of total tower height), but rather the geographic area within which some portion of the Facility would theoretically be visible. Their primary purpose is to provide a general understanding of a Facility’s potential visibility and identify areas where further investigation is appropriate.

Figure 1 illustrates areas of potential Facility visibility at a macro scale within the 2-mile study area. Figure 2 provides a more localized assessment of potential Facility visibility within the ½-mile study area.

The land cover viewshed overlay illustrates that of the 8,040 acres within the 2-mile study area, a direct view (e.g., not screened or filtered by intervening vegetation) of the Facility is theoretically possible from approximately 51 acres (0.6%). Of this, approximately 16 acres falls on the surface of a waterbody. Of the 502 acres within the 1/2-mile study area, a direct view of the Facility is possible from approximately 25 acres (5.0%), of which approximately 1.0 acre falls on a waterbody and approximately 4.0 acres is within the host property.

Of the 72 miles of public roads within the 2-mile study area, potential Facility views are found along approximately 2.8 linear miles (3.8%). Of the 6.7 miles of public roads within the 1/2-mile study area, potential Facility views are found along approximately 0.95 miles (14.2%). In all cases affected road segments are short and facility views will be brief and intermittent through roadside vegetation or between structures. Given the complex visual stimuli encountered by motorists travelling in a moving vehicle, even if the Facility is visible it is probable viewer recognition of the Facility would be limited to a fraction of the total available viewing time. As the tendency of motorists is to focus down the road peripheral views of the Facility may go largely unnoticed by most travelers.

The only notable locations within the public right-of-way within the ½ mile study area where an unobstructed view of the Facility was found was from the ball fields and parking lot within Jimmy McDonough Memorial Park adjacent to the host property (refer to Figure A6) and along Britany Lane approximately 470 feet north of the Facility site (refer to Figures A7 & A8). Other Facility views are in isolated locations where narrow view corridors exist through small openings in

roadside vegetation and between residential structures, however such conditions are not common.

Study Area Reconnaissance

Balloon Visibility Tests – The Town of Carmel required balloon visibility tests be conducted on six (6) days to allow the general public and local decision-makers an opportunity to observe the location and potential visibility of the Facility. Tests were originally scheduled for Friday, Saturday and Monday dates between March 22, 2019 and April 1, 2019. In the event inclement weather on any of these dates the test would be postponed for seven days (7) until balloon tests were successfully completed on two (2) Fridays, two (2) Saturdays and two (2) Mondays.

Tests were conducted when the weather forecast published on several prominent websites (i.e., weather.com, accuweather.com and wunderground.com) at 12pm the day before the scheduled test predicted winds to be 5mph or less for the duration of the test. The Town of Carmel was notified by the Project Sponsor on the afternoon of the day prior to the scheduled test as to whether or not the test would take place.

Successful balloon tests were conducted on March 29, March 30, April 5, April 6, April 22, and April 29. On each test day the balloon was launched at approximately 8am and remained aloft until at least 12pm. Wind conditions between 8am and 12pm on these dates were as follows:

Friday March 29, 2019: 4-5 mph

Saturday 30, 2019: 7-9 mph

Friday April 5, 2019: 5-6 mph

Saturday April 6, 2019: 3-6 mph

Monday April 22, 2019: 5-8 mph

Monday April 29, 2019: 3-5mph

Note: Based on a favorable weather forecast a balloon was raised on Monday April 8. However, un-forecast fog was present at the Facility site at the time of launch. At the request of the Town of Carmel the test was terminated at 9am and rescheduled for the next calendar Monday with suitable weather conditions.

On the dates where winds remained near or below 5mph balloons were generally stable and at or near the intended altitude. On the dates where winds increased above the forecast 5 mph for some portion of the test the balloon occasionally dropped below the intended altitude. In all cases balloons were most stable during the early hours of the test when winds were most calm.

The balloon test was conducted during winter leaf-off season to represent the worst-case (i.e., most exposed) visual condition. Project visibility will be substantially less during summer leaf-on season.

During each balloon visibility test, one four-foot diameter red balloon was raised to an elevation of 150 feet above existing grade (measured to the bottom of the balloon). At the time of the balloon tests 150 feet was the proposed height of the Facility. The proposed height has since been reduced to 110 feet. Due to the dense tree canopy at the proposed tower center the

balloon was launched beneath an opening in the tree canopy approximately 40 feet southwest of the proposed tower center.

In addition to the six (6) balloon visibility tests, a construction crane was positioned at the Facility site on Saturday April 27, 2019 for the purpose of conducting a signal test. The crane was in place between 8am and 4pm. Signal tests were conducted at 3 different heights (150 feet, 130 feet and 110 feet). A four-foot diameter balloon was tied to the crane boom to represent the tower high point.

During the April 5, 2019 balloon test an experienced visual analyst drove public roads to inventory those areas where viewshed mapping identified potential Facility visibility. Photographs were taken from multiple vantage points to document the views in the direction of the Facility from places where a theoretical view was identified by viewshed analysis. Photos were also taken from locations where balloon visibility was less than worst-case or where the balloons were not visible to balance the photo record and document visual conditions representative of less affected areas on the subject property. Emphasis was placed on locations considered to be of scenic, cultural, and/or social importance to the community. Such places include recreation and conservation areas, historic resources, open spaces, local roadways, and residential neighborhoods.

Photographs were taken using identical Canon EOS D6 Mark II digital single lens reflex ("DSLR") 26-mega pixel cameras with a fixed 50mm lens (full frame sensor). The precise coordinate of each photo location was recorded in the field using a handheld global positioning system (GPS) unit. The Canon EOS D6 Mark II also has a built in GPS sensor which imbeds photo coordinates in the photo file meta data.

Photographs taken during the field reconnaissance are provided as Figures 3-16. Photographs were taken from the following places:

Map ID	Location Description	Direction to Tower	Distance to Tower (feet)	Theoretical View Indicated by Land Cover Viewshed - (See Figure 2)	Balloon (150 ft) Visible*	Photo/ Simulation Provided as
1	US-6 at West Branch Reservoir Dam	NE	8,450	NO	NO	
2	Colonel Glen Drive near # 32	NE	9,500	YES	YES	
3	Rock Hill Girl Scout Camp- Beach on Long Pond	NNE	4,570	YES	YES	
4	Fini Drive near #12	N	3,190	YES	YES	Figure A1
5	Sycamore Town Park	NNE	2,670	YES	Filtered**	Figure A2
6	Wood Road near #501	NE	2,470	NO	NO	
7	Wood Road near #535	ENE	2,080	NO	Filtered**	
8	Valley Court and Wood Road	E	2,000	YES	YES	Figure A3
9	Wood Road at Chestnut Ridge Road	E	2,990	NO	NO	
10	West Carolyn Road at Cul-de- sac	SSE	2,120	NO	NO	
11	Lakeview Street near #334	ESE	1,510	YES	Filtered**	Figure A4
12	Dixon Lake Drive near #26	ENE	1,390	YES	Filtered**	Figure A5
13	Long Pond Road at Dixon Road	NNE	1,410	NO	NO	
14	Dixon Road near #21	NE	920	NO	NO	
15	Angela Drive at Cul- de- sac	N	1,550	YES	YES	
16	Jimmy McDonough Memorial Park	N	1,080	YES	YES	Figure A6
17	Enrico Court at Cul- de- sac	NE	1,930	NO	NO	
18	Brittany Lane near #42	SSW	960	YES	YES	Figure A7
19	Orchard Hill Road near #85	W	1,630	NO	NO	
20	Brittany Lane near #72	SW	1,060	YES	Filtered**	
21	Bianca Court at Cul-de- sac	SW	1,300	NO	NO	
22	Brittany Lane near #30	S	490	YES	YES	Figure A8

23	Brittany Lane near #20	SSE	570	YES	Filtered**	
24	Dixon Road near #67	E	490	YES	Filtered**	
25	Dixon Road near #77	SE	780	NO	NO	
26	Dixon Road near #111	SE	1,610	NO	NO	
27	West Carolyn Road near #11	SSE	2,030	NO	Filtered**	

* "Balloon Visible" differs from "Theoretical View Indicated by Land Cover Viewshed" due to the use of a highly conservative estimate of tree height in viewshed calculation (50 feet). In most cases mature woodland vegetation is significantly taller resulting in reduced project visibility.

** "Filtered" visibility indicates photo locations where the balloon was visible through intervening deciduous vegetation during winter leaf-off season. Such views will likely be fully screened during summer leaf-on season.

Photo Simulations

To illustrate how the monopine design wireless telecommunications tower will appear photo simulations were prepared from eight (8) affected photo locations. Photo simulations were developed by superimposing a rendering of a three-dimensional computer model of the proposed Facility into the base photograph taken from each corresponding visual receptor. The three-dimensional computer model was developed using *3D Studio Max Design®* software (3D Studio Max).

Simulated perspectives (camera views) were matched to the corresponding base photograph for each simulated view by replicating the precise coordinates of the field camera position (as recorded by handheld GPS) and the focal length of the camera lens used (e.g. 50mm). Precisely matching these parameters assures scale accuracy between the base photograph and the subsequent simulated view. The camera's elevation (Z) value is derived from digital elevation model (DEM) data plus the camera's height above ground level. The camera's target position was set to match the bearing of the corresponding existing condition photograph as recorded in the field. With the existing conditions photograph displayed as a "viewport background," and the viewport properties set to match the photograph's pixel dimensions, minor camera adjustments were made (horizontal and vertical positioning, and camera roll) to align the horizon in the background photograph with the corresponding features of the 3D model.

To verify the camera alignment, elements visible within the photograph (e.g., balloon, existing buildings, utility poles, topography, etc.) were identified and digitized from digital orthophotos as needed. Each element was assigned a Z value based on DEM data and then imported to 3D Studio Max. A 3D terrain model was also created (using DEM data) to replicate the existing local topography. The digitized elements were then aligned with corresponding elements in the photograph by adjusting the camera target. If necessary, slight camera adjustments were made for accurate alignment.

A daylight system was created matching the exact date and time of each baseline photograph to assure proper shading and shadowing of modeled elements.

Once the camera alignment was verified, a to-scale 3D model of the proposed 110-foot-tall stealth monopine telecommunications tower was merged into the model space. The 3D model of both the stealth tree was constructed in sufficient detail to accurately convey visual character and reveal impacts. The scale, alignment, elevations and location of the visible elements of the

proposed tower are true to the conceptual design. Post production editing (i.e., airbrush out portion of tower that falls below or behind foreground topography and vegetation) was completed using Adobe Photoshop software. The methodology accurately represents the location, height and visual character of the proposed tower.

Photo simulations are provided in Appendix A.

Summary and Conclusions

The study area is characterized by a rolling and steeply sloped landscape and heavily wooded with broad tracts of mature second growth deciduous forest that effectively block or screen views of the Facility from most locations. Of the 8,042 acres within the 2-mile study area, a view of the proposed telecommunications tower is theoretically possible from approximately 51 acres (0.6%). Of this, approximately 16 acres falls on the surface of a waterbody. Of the 502 acres within the 1/2-mile study area, a direct view of the Facility is possible from approximately 25 acres (5.0%), of which approximately 1.0 acres falls on a waterbody and approximately 4.0 acres is within the host property.

Of the 72 miles of public roads within the 2-mile study area, potential Facility views are found along approximately 2.8 linear miles (3.8%). Of the 6.7 miles of public roads within the 1/2-mile study area, potential Facility views are found along approximately 0.95 miles (14.2%). In all cases affected road segments are short and facility views will be brief and intermittent through roadside vegetation or between structures. Given the complex visual stimuli encountered by motorists travelling in a moving vehicle, even if the Facility is visible it is probable viewer recognition of the Facility would be limited to a fraction of the total available viewing time. As the tendency of motorists is to focus down the road peripheral views of the Facility may go largely unnoticed by most travelers.

The only notable locations within the public right-of-way within the ½ mile study area where an unobstructed view of the Facility was found was from the ball fields and parking lot within Jimmy McDonough Memorial Park adjacent to the host property (refer to Figure A6) and along Britany Lane approximately 470 feet north of the Facility site (refer to Figures A7 & A8).

28 residential structures (including the main house on the host property) are within 1,000 feet of the Facility. The nearest occupied residential structure is approximately 310 feet to the north (#30 Brittany Lane). Adjacent residences may experience visibility through intervening deciduous tree trunks and branches. Such visibility will be reduced during summer leaf-on season. From more distant residential properties along Britany Lane and Dixon Road, where Facility views occur, seasonal visibility will largely be filtered through foreground vegetation which will substantially screen or completely block views during summer leaf-on season.

Six (6) balloon visibility tests were conducted between March 29 and April 29, 2019. On each of these dates one four-foot diameter red balloon was raised to an elevation of 150 feet above existing grade (measured to the bottom of the balloon). At the time of the balloon tests 150 feet was the proposed height of the Facility. The proposed height has since been lowered to 110 feet thereby reducing Facility visibility from the balloon visibility presented in Figures 3-16 – Photo Log.

No aesthetic resources of statewide significance will be affected by views of the Facility. Visual impact is defined by the NYS Department of Environmental Conservation as follows:

"Aesthetic impact occurs when there is a detrimental effect on the perceived beauty of a place or structure. Mere visibility, even startling visibility of a project proposal, should not be a threshold for decision making."⁸ Significant aesthetic impacts are those that may cause a diminishment of the public enjoyment and appreciation of an inventoried resource, or one that impairs the character or quality of such a place. Proposed large facilities by themselves should not be a trigger for a declaration of significance."⁹

In other words, the DEC Visual Policy recognizes that not everything that is visible rises to the level of an Aesthetic Impact, and not all Aesthetic Impacts rise to the level of a Significant Aesthetic Impact that may diminish public enjoyment of the resource.

Based on the degree of Facility visibility and proposed mitigation measures presented in the application, it is clear that any remaining project visibility is not of a size or extent that it would constitute an unacceptable magnitude. Nor does the Facility affect a sufficient number of public viewers or geographic area where the Facility can reasonably be deemed to be visually important as defined by SEQRA.

Furthermore, when considered within the framework of the DEC Visual Policy's definition of "significant adverse visual impact", it is clear the Facility will not cause a diminishment of the public enjoyment and appreciation of any scenic or historic resource, or one that impairs the character or quality of such a place. As such the proposed Project will not result in an adverse visual impact.

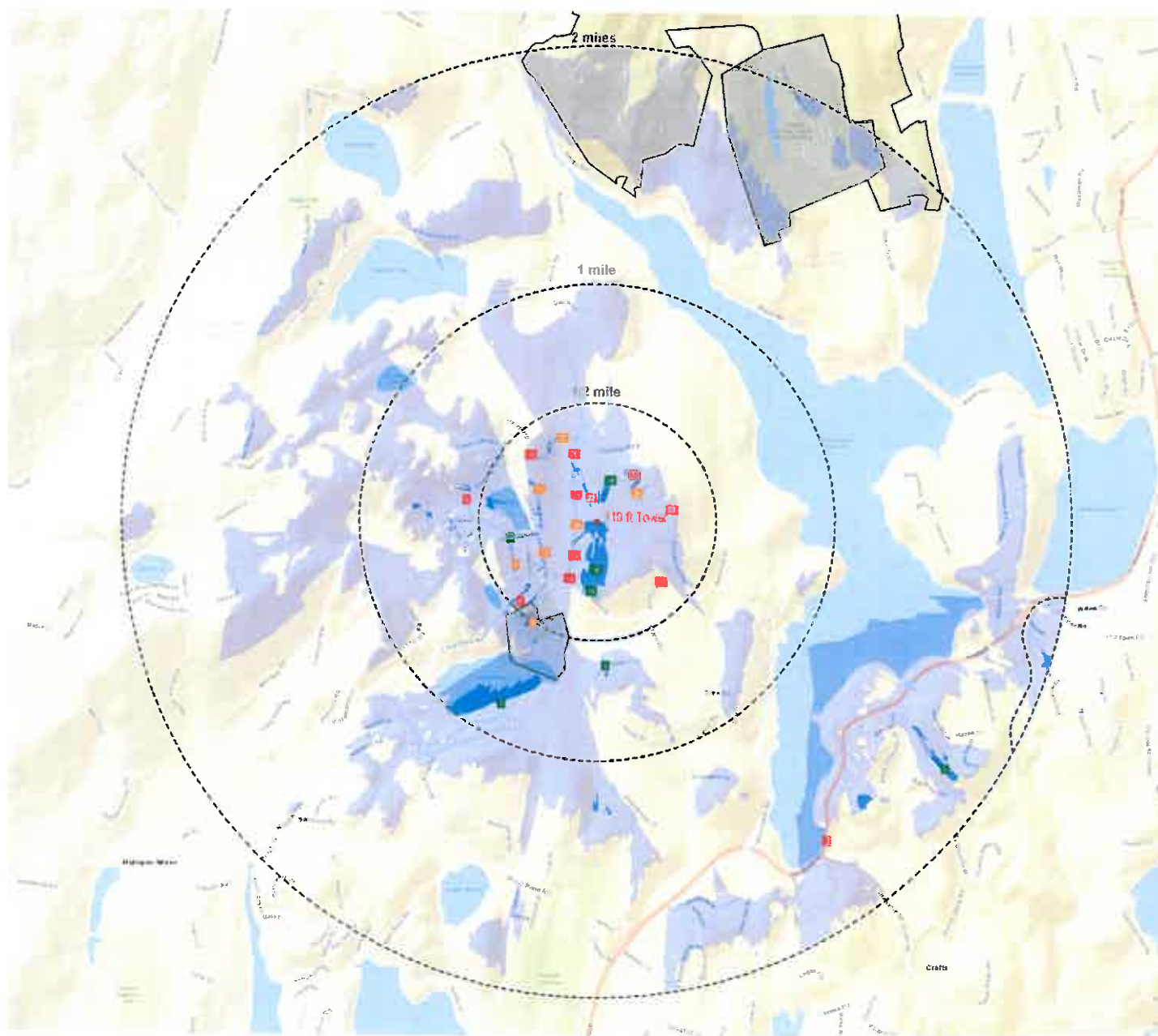
Submitted by:



Matthew W. Allen, RLA

⁸ NYSDEC Visual Policy (DEP-00-2), p.9.

⁹ *Id.* p.5.



LEGEND

- Bare Earth Viewshed Area
(Excludes existing vegetation and structures)
- Land Cover Viewshed Area
(Includes existing vegetation and structures)

Photo Locations

- Balloon Visible
- Balloon Visible Through Trees
- Balloon not Visible

Scenic Resources

- Municipal Recreation Area
- State Multiple Use Areas
- Putnam County Trailway

Note: Viewshed areas are not definitive. Viewshed mapping provides a general understanding of where the proposed project is theoretically visible based on regional topographic, forest and building cover data sources.

The "Bare Earth" condition overlay identifies areas where the proposed telecommunication tower high point may be visible without consideration of the screening effect of existing vegetation or built structures. Bare earth analysis is provided to assist experienced visual analysts identify the maximum potential geographic area within which further investigation is appropriate. This topography-only viewshed map is not representative of project visibility during winter season leaf-off conditions.

The "Land Cover" condition viewshed area includes the screening effect of intervening vegetation and buildings. Vegetated areas and buildings were manually digitized from 2015 one-foot resolution digital orthomage. All digitized tree cover is assumed to be 50 feet tall and all digitized buildings are assumed to be 25 feet tall.

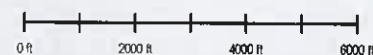
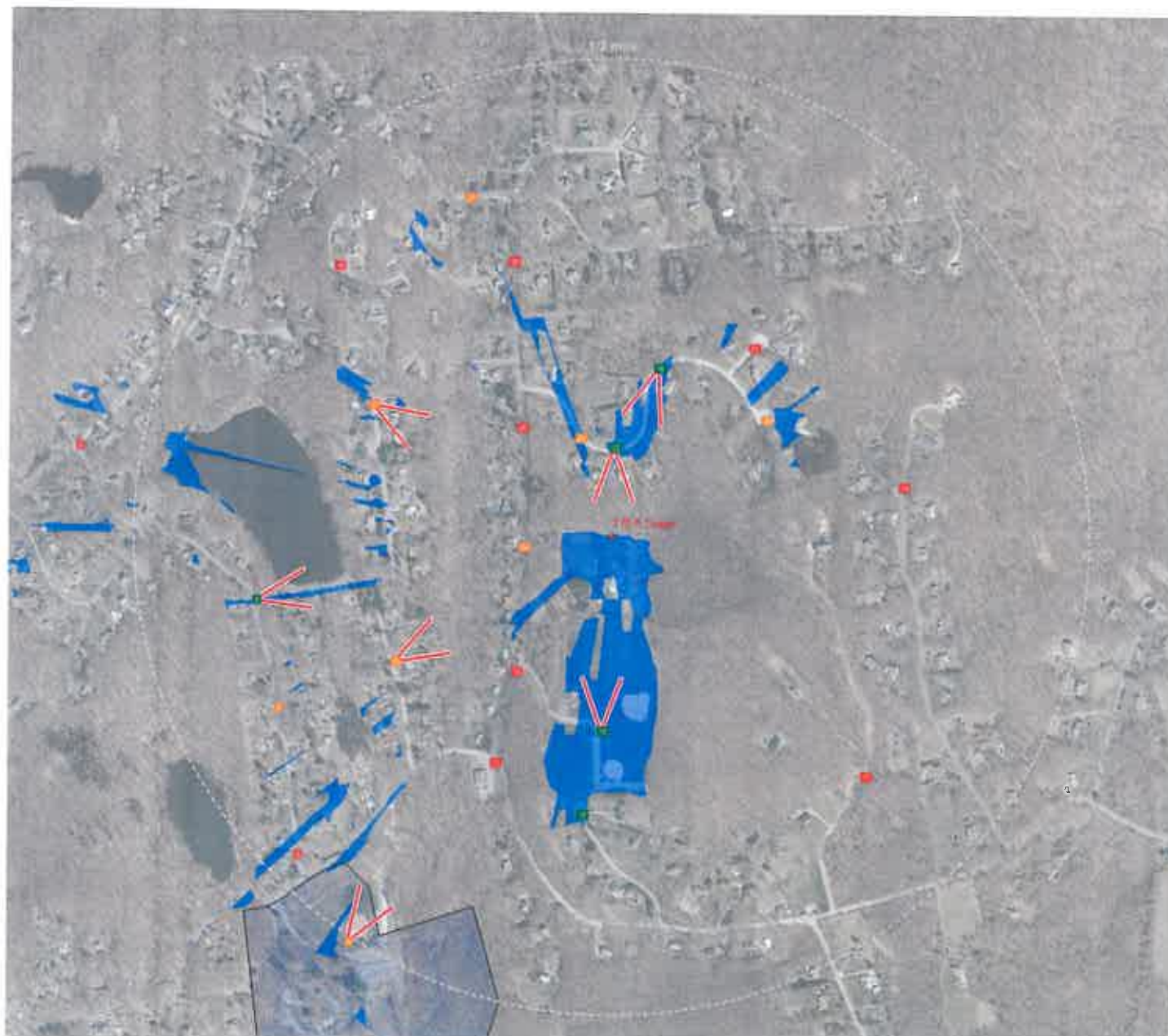


FIGURE 1
PHOTO LOCATION/VIEWSHED MAP 2 MILE RADIUS
Visual Resource Assessment
Proposed Telecommunications Tower



Dutch Lake Site (PTT001)
36200th Street
Carmel, NY 12032



LEGEND

■ Land Cover Viewshed Area
(Includes existing vegetation and structures)

Photo Locations

■ Balloon Visible

■ Balloon Visible Through Trees

■ Balloon not Visible

V Photo Simulation (refer to Appendix A)

Scenic Resources

Municipal Recreation Area

Note: Viewshed areas are not definitive. Viewshed mapping provides a general understanding of where the proposed project is theoretically visible based on regional topographic, forest and building cover data sources.

The "Land Cover" condition viewshed area includes the screening effect of intervening vegetation and buildings. Vegetated areas and buildings were manually digitized from 2016 one-foot resolution digital orthomosaic. All digitized tree cover is assumed to be 50 feet tall and all digitized buildings are assumed to be 25 feet tall.

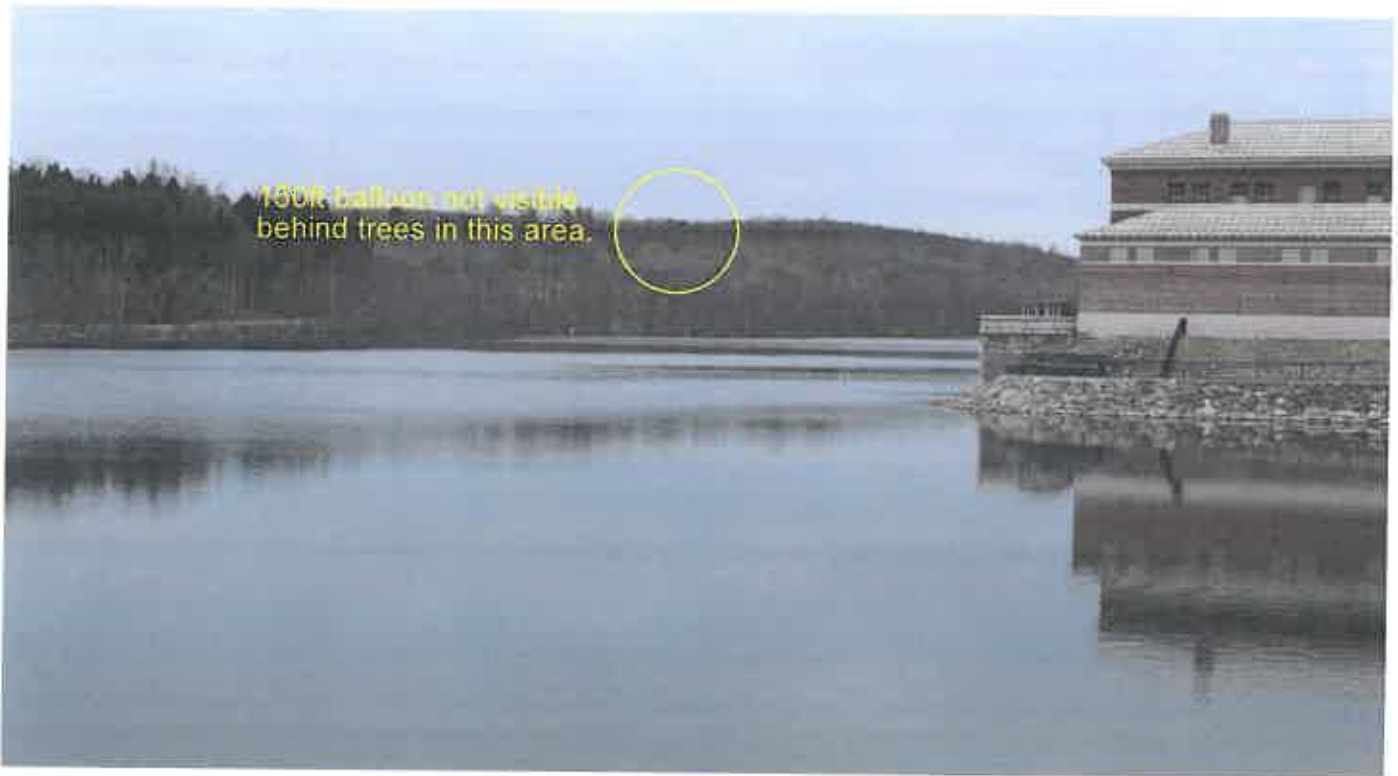
0 ft 500 ft 1000 ft 1500 ft



FIGURE 3
PHOTO LOCATION VIEWSHED MAP - 1 MILE RADIUS
Visual Resource Assessment
Proposed Telecommunications Tower



Green Lake, Inc. (NY092)
30 Dexter Road
Carmel, NY 10512



VP1 - US-6 at West Branch Reservoir Dam

Distance: 8,450 Feet



VP2- Colonel Glen Drive near # 32

Distance: 9,500 Feet

PHOTO LOG

Note: At the time of the balloon tests 150 feet was the proposed height of the Facility. The proposed height has since been reduced to 110 feet.

SARATOGA
ASSOCIATES

HOMELAND TOWERS

Figure 16

Visual Resource Assessment
Proposed Telecommunications Tower

Dixon Lake
36 Dixon Road
Carmel, NY 10512



VP3 - Rock Hill Girl Scout Camp- Beach on Long Pond

Distance: 4,570 Feet



VP4 - Fini Drive near #12

Distance: 3,190 Feet

PHOTO LOG

Note: At the time of the balloon tests, 150 feet was the proposed height of the Facility. The proposed height has since been reduced to 110 feet.

SARATOGA
ASSOCIATES

HOMELAND TOWERS
A Division of

Figure 15

Visual Resource Assessment
Proposed Telecommunications Tower

Dixon Lake
36 Dixon Road
Carmel, NY 10512



VP5 - Sycamore Town Park

Distance: 2,670 Feet



VP6 - Wood Road near #501

Distance: 2,470 Feet

PHOTO LOG

Note: At the time of the balloon tests 150 feet was the proposed height of the Facility. The proposed height has since been reduced to 110 feet.

Figure 10

Visual Resource Assessment Proposed Telecommunications Tower

SARATOGA
ASSOCIATES


HOMELAND TOWERS

Oliver Lake
38 Dixon Road
Carmel, NY 10512



VP7 - Wood Road near #535

Distance: 2,080 Feet



VP8 - Valley Court and Wood Road

Distance: 2,000 Feet

PHOTO LOG

Note: At the time of the balloon tests, 150 feet was the proposed height of the Facility. The proposed height has since been reduced to 110 feet.

SARATOGA
ASSOCIATES



Figure 9

Visual Resource Assessment
Proposed Telecommunications Tower

Dixon Lake
38 Dixon Road
Campbell, NY 10512



VP9 - Wood Road at Chestnut Ridge Road

Distance: 2,990 Feet



VP10 - West Carolyn Road at Cul-de- sac

Distance: 2,120 Feet

PHOTO LOG

Note: At the time of the balloon tests, 150 feet was the proposed height of the Facility. The proposed height has since been reduced to 110 feet.

SARATOGA
ASSOCIATES

HOMELAND TOWERS

Figure 8

Visual Resource Assessment
Proposed Telecommunications Tower

Dixon Lake
36 Dixon Road
Carmel, NY 10512



VP11 - Lakeview Street near #334

Distance: 1,510 Feet



VP12 - Dixon Lake Drive near #26

Distance: 1,390 Feet

PHOTO LOG

Note: At the time of the balloon tests 150 feet was the proposed height of the Facility. The proposed height has since been reduced to 110 feet.

SARATOGA
ASSOCIATES

HOMELAND TOWERS

Figure 14

Visual Resource Assessment
Proposed Telecommunications Tower

Dixon Lake
36 Dixon Road
Carmel, NY 10512



VP13 - Long Pond Road at Dixon Road

Distance: 1,410 Feet



VP14 - Dixon Road near #21

Distance: 920 Feet

PHOTO LOG

Note: At the time of the balloon tests 150 feet was the proposed height of the Facility. The proposed height has since been reduced to 110 feet.

SARATOGA
ASSOCIATES

HOMELAND TOWERS
A Division of Saratoga Associates, Inc.

Figure 7

Visual Resource Assessment
Proposed Telecommunications Tower

Dixon Lake
36 Dixon Road
Garnet, NY 10512



VP15 - Angela Drive at Cul- de- sac

Distance: 1,550 Feet



VP16 - Jimmy McDonought Memorial Park

Distance: 1,080 Feet

PHOTO LOG

Note: At the time of the balloon tests 150 feet was the proposed height of the Facility. The proposed height has since been reduced to 110 feet.

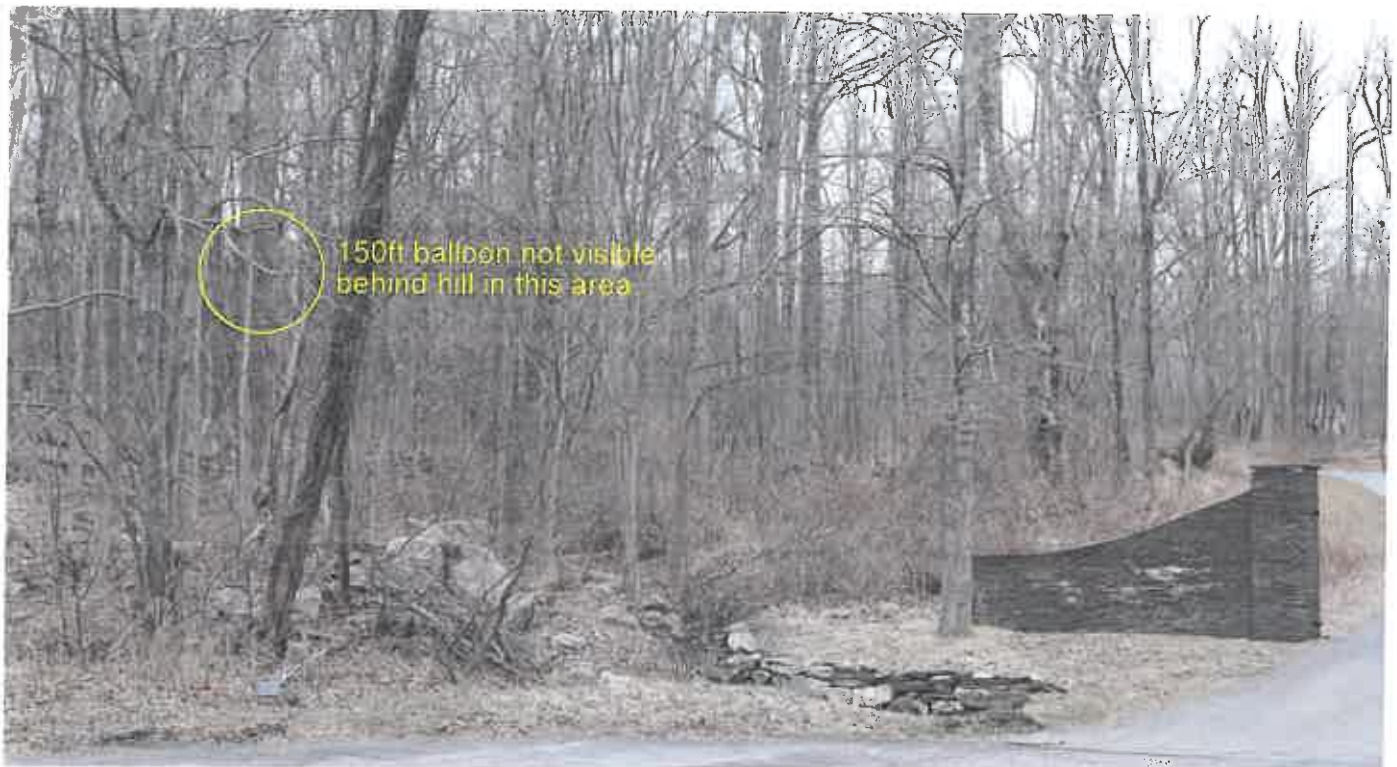
SARATOGA
ASSOCIATES



Figure 3

Visual Resource Assessment
Proposed Telecommunications Tower

Dixon Lake
38 Dixon Road
Carmel, NY 10512



VP17 - Enrico Court at Cul- de- sac

Distance: 1,930 Feet



VP18 - Brittany Lane near #42

Distance: 960 Feet

PHOTO LOG

Note: At the time of the balloon tests, 150 feet was the proposed height of the Facility. The proposed height has since been reduced to 110 feet.

SARATOGA
ASSOCIATES

HOMELAND TOWERS

Figure 11

Visual Resource Assessment
Proposed Telecommunications Tower

Dixon Lake
38 Dixon Road
Carmel, NY 10512



VP19 - Orchard Hill Road near #85

Distance: 1,630 Feet



VP20 - Brittany Lane near #72

Distance: 1,060 Feet

PHOTO LOG

Note: At the time of the balloon tests, 150 feet was the proposed height of the Facility. The proposed height has since been reduced to 110 feet.

SARATOGA
ASSOCIATES

HOMELAND TOWERS
A Division of

Figure 5

Visual Resource Assessment
Proposed Telecommunications Tower

Dixon Lake
38 Dixon Road
Carmel, NY 10512



VP21 - Bianca Court at Cul-de- sac

Distance: 1,300 Feet



VP22 - Brittany Lane near #30

Distance: 490 Feet

PHOTO LOG

Note: At the time of the balloon tests 150 feet was the proposed height of the facility. The proposed height has since been reduced to 110 feet.

SARATOGA
ASSOCIATES

HOMELAND TOWERS

Figure 4

Visual Resource Assessment
Proposed Telecommunications Tower

Dixon Lake
36 Dixon Road
Carmel, NY 10512



VP23 - Brittany Lane near #20

Distance: 570 Feet



VP24 - Dixon Road near #67

Distance: 490 Feet

PHOTO LOG

Note: At the time of the balloon tests 150 feet was the proposed height of the Facility. The proposed height has since been reduced to 110 feet.

SARATOGA
ASSOCIATES

HOMELAND TOWERS

Figure 6:

Visual Resource Assessment
Proposed Telecommunications Tower

Dixon Lake
36 Dixon Road
Carmel, NY 10512



VP25 - Dixon Road near #77

Distance: 780 Feet



VP26 - Dixon Road near #111

Distance: 1,610 Feet

PHOTO LOG

Note: At the time of the balloon tests 150 feet was the proposed height of the Facility. The proposed height has since been reduced to 110 feet.

SARATOGA
ASSOCIATES



Figure 12

Visual Resource Assessment
Proposed Telecommunications Tower

Dixon Lake
36 Dixon Road
Camden, NY 10512



VP27 - West Carolyn Road near #11

Distance: 2,030Feet

PHOTO LOG

Note: At the time of the balloon tests 150 feet was the proposed height of the Facility. The proposed height has since been reduced to 110 feet.

SARATOGA
ASSOCIATES



Figure 13

Visual Resource Assessment Proposed Telecommunications Tower

Dixon Lake
38 Dixon Road
Carmel, NY 10512

APPENDIX A

Photo Simulations

Photograph Information

Date: April 5, 2019
Time: 10:58 am
Focal Length: 50mm
Camera: Canon EOS 6D Mark II
Photo: 41° 24' 37.8692" N
Location: 73° 43' 26.3208" W
Distance: 3,100 Feet



Existing Condition

VP4 - First Drive near #12

SARATOGA
ASSOCIATES

Figure A9.4

To appear at the correct scale this
photograph is intended to be viewed
18 inches from the reader's eye when
printed on 11x17" paper

Pro Project Telecommunications Transit Tower



Michael L. Liker
36 Orion Road
Canton, NY 13515



Photograph Information

Date: April 5, 2019
Time: 10:58 am
Focal Length: 50mm
Camera: Canon EOS 6D MarkII
Photo: 41° 24' 37.6692" N
Location: 73° 43' 26.3208" W
Distance: 3,190 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Simulated Condition - 110 ft Monopine
VP4 - Fini Drive near #12

SARATOGA
ASSOCIATES



Figure A1-1
Visual Resource Assessment

Pro-posed Telecommunicat-ions Tower

Dixon Lake
36 Dixon Road
Carmel, NY 12512



Photograph Information

Date: April 5, 2019
 Time: 10:15 am
 Focal Length: 50mm
 Camera: Canon EOS 6D Mark II
 Photo Location: 41° 24' 47.4228" N
 73° 43' 47.3124" W
 Distance: 2,670 Feet

To appear at the correct scale this
 photograph is intended to be viewed
 18 inches from the reader's eye when
 printed on 11"x17" paper.

Existing Condition
 VP5 - Sycamore Town Park

SARATOGA
 ASSOCIATES



Figure A2-4
 Visual Resource Assessment
 Proposed Telecommunications Tower
 Dixon Lake
 36 Dixon Road
 Carmel, NY 10512



Photograph Information

Date: April 5, 2019
 Time: 10:15 am
 Focal Length: 50mm
 Camera: Canon EOS 6D MarkII
 Photo: 41° 24' 47.4228" N
 Location: 73° 43' 47.3124" W
 Distance: 2,670 Feet

To appear at the correct scale this
 photograph is intended to be viewed
 16 inches from the reader's eye when
 printed on 11"x17" paper.

Simulated Condition - 110 ft Monoplane
 VP5 - Sycamore Town Park

SARATOGA
 ASSOCIATES



Visual Resource Associates

Pro Posed Telecommunica Tions

Dixon Lake
 36 Dixon Road
 Canaan, NY 10612



Photograph Information

Date: April 5, 2019
 Time: 10:03 am
 Focal Length: 50mm
 Camera: Canon EOS 6D Mark II
 Photo: 41° 25' 06.1176" N
 Location: 73° 43' 53.8752" W
 Distance: 2,000 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Existing Condition
 VP8 - Valley Court and Wood Road

SARATOGA
 ASSOCIATES



Pro Forest Telecommunications

Dixon Lake
 36 Dixon Road
 Camel, NY 10512

Figure A3-a

Visual Resource Assessment



Photograph Information

Date: April 5, 2019
Time: 10:03 am
Focal Length: 50mm
Camera: Canon EOS 6D MarkII
Photo
Location: 41° 25' 06.1176" N
73° 43' 53.8752" W
Distance: 2,000 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Simulated Condition – 110 ft Monopine
VP8 - Valley Court and Wood Road

SARATOGA
ASSOCIATES



Proposed Telecommunication Towers

Dixon Lake
38 Dixon Road
Camel, NY 10512

Figure A3-b
Visual Resource Assessment



Photograph Information

Date: April 5 2019
Time: 9:55 am
Focal Length: 50mm
Camera: Canon EOS 6D MarkII
Photo: 41° 25' 16.7268" N
Location: 73° 43' 45.3216" W
Distance: 1,510 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Existing Condition
VP11 - Lakeview Street near #334

SARATOGA
ASSOCIATES



Figure A4-4
Visual Resource Assessment
Proposed Telecommunications Tower

Dixton Lake
36 Dixen Road
Carmel, NY 10512



Photograph Information

Date: April 5 2019
 Time: 9:55 am
 Focal Length: 50mm
 Camera: Canon EOS 6D MarkII
 Photo Location: 41° 25' 16.7268" N
 73° 43' 45.3216" W
 Distance: 1,510 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Simulated Condition - 110 ft Monopine
 VP11 - Lakeview Street near #334

SARATOGA
 ASSOCIATES



Figure A4-b
 Visual Resource Assessment

Proposed Telecommunications Tower

Dixon Lake
 36 Dixon Road
 Carmel, NY 10512



Photograph Information

Date: April 5 2019
 Time: 9:05 am
 Focal Length: 50mm
 Camera: Canon EOS 6D MarkII
 Photo Location: 41° 25' 02.7084" N
 73° 43' 43.8564" W
 Distance: 1,390 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Existing Condition
 VP12 - Dixon Lake Drive near #26

SARATOGA
 ASSOCIATES



Pro-Postel Telecommunications - T-Mobile

Dixon Lake
 36 Dixon Road
 Carmel, NY 12012

Figure A5-A

Visual Resource Assessment



Photograph Information

Date: April 5 2019
Time: 9:05 am
Focal Length: 50mm
Camera: Canon EOS 6D MarkII
Photo: 41° 25' 02.7084" N
Location: 73° 43' 43.8564" W
Distance: 1,390 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Simulated Condition - 110 ft Monopine
VP12- Dixon Lake Drive near #26

SARATOGA
ASSOCIATES



Proposed Telecommunications Tower

Edison Lake
36 Dixon Road
Carmel NY 10512



Photograph Information

Date: April 5 2019
Time: 9:00 am
Focal Length: 50mm
Camera: Canon EOS 6D MarkII
Photo: 41° 24' 58.8744" N
Location: 73° 43' 28.8444" W
Distance: 1,080 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Existing Condition
VP16 - Jimmy McDonough Memorial Park

SARATOGA
ASSOCIATES



Figure AB-8
Visual Resource Assessment
Proposed Telecommunications Tower
Dixton Lake
36 Dixon Road
Carmel, NY 10512



Photograph Information

Date: April 5 2019
Time: 9:00 am
Focal Length: 50mm
Camera: Canon EOS 6D MarkII
Photo: 41° 24' 58.8744" N
Location: 73° 43' 28.8444" W
Distance: 1,080 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Simulated Condition - 110 ft. Monopine

VP16 - Jimmy McDonough Memorial Park

SARATOGA
ASSOCIATES



Visual Resource Associates
P.O. Box 1000
Carmel, NY 12024

Proposed Telecommunications Tower

Dixon Lake
30 Union Road
Carmel, NY 12024



Photograph Information

Date: April 5, 2019
Time: 10:24 am
Focal Length: 50mm
Camera: Canon EOS 6D MarkII
Photo: 41° 25' 18.6564" N
Location: 73° 43' 24.6144" W
Distance: 960 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Existing Condition
VP18 - Brittany Lane near #42

SARATOGA
ASSOCIATES



Figure A7-1
Visual Resource Assessment
Proposed Telecommunications Tower

Dixon Lake
15 Dixon Road
Carmel, NY 12512



Photograph Information

Date: April 5, 2019
 Time: 10:24 am
 Focal Length: 50mm
 Camera: Canon EOS 6D Mark II
 Photo: 41° 25' 18.6564" N
 Location: 73° 43' 24.6144" W
 Distance: 960 Feet

To appear at the correct scale this
 photograph is intended to be viewed
 18 inches from the reader's eye when
 printed on 11"x17" paper.

Simulated Condition - 110 ft Monopile
 VP18 - Brittany Lane near #42

SARATOGA
 ASSOCIATES



Proposed Telecommunications Tower

Duxen Lake
 36 Duxen Road
 Carmel, NY 10512

Figure A7-b

Visual Resource Assessment



Photograph Information

Date: April 5 2019
Time: 9:05 am
Focal Length: 50mm
Camera: Canon EOS 6D MarkII
Photo: 41° 25' 14.3184" N
Location: 73° 43' 27.8256" W
Distance: 490 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Existing Condition
VP22 - Brittany Lane near #30

SANATOGA
ASSOCIATES



Priced Paved Telecommunication Towers

Exxon Lake
36 Dixon Road
Carmel, NY 12512

Figure A6-1

Visual Resource Assessment



Photograph Information

Date: April 5 2019
 Time: 9:05 am
 Focal Length: 50mm
 Camera: Canon EOS 6D MarkII
 Photo: 41° 25' 14.3184" N
 Location: 73° 43' 27.8256" W
 Distance: 490 Feet

To appear at the correct scale this photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Simulated Condition - 110 ft Monopine
 VP22 - Brittany Lane near #30

EMATON
 ASSOCIATES



Figure A3-1
 Visual Resource Assessment

Prepared: Telecommunications Tiers TIER 1

Dixon Lane
 36 Dixon Road
 Carmel, NY 10512



PINNACLE TELECOM GROUP

Professional and Technical Services

**ANTENNA SITE FCC RF COMPLIANCE
ASSESSMENT AND REPORT**

HOMELAND TOWERS, LLC

**SITE "NY058 – DIXON LAKE"
36 DIXON ROAD
CARMEL, NY**

JUNE 12, 2019

14 RIDGEDALE AVENUE, SUITE 260 • CEDAR KNOLLS, NJ 07927 • 973-451-1630

CONTENTS

INTRODUCTION AND SUMMARY	3
ANTENNA AND TRANSMISSION DATA	5
COMPLIANCE ANALYSIS	7
COMPLIANCE CONCLUSION	12

CERTIFICATION

APPENDIX A. BACKGROUND ON THE FCC MPE LIMIT

APPENDIX B. SUMMARY OF EXPERT QUALIFICATIONS

INTRODUCTION AND SUMMARY

At the request of Homeland Towers, LLC, Pinnacle Telecom Group has performed an independent expert assessment of radiofrequency (RF) levels and related FCC compliance for proposed wireless antenna operations on a proposed 110-foot monopole to be located at 38 Dixon Road in Carmel, NY.

Homeland Towers refers to the prospective site as "NY058 – Dixon Lake", and the proposed pole will accommodate the directional panel antennas of up to four wireless carriers. At this time, Verizon Wireless plans to occupy the highest antenna mounting position on the pole.

The FCC requires wireless antenna operators to perform an assessment of the RF levels from all the transmitting antennas at a site whenever antenna operations are added or modified, and ensure compliance with the FCC Maximum Permissible Exposure (MPE) limit in areas of unrestricted public access, i.e., at street level around the site.

In this case, the compliance assessment will include the RF effects of a worst-case hypothetical collocation of three wireless carriers' antennas. By worst case, we mean that the carriers whose maximum capacity relates to higher emitted power levels will be hypothetically assumed to occupy the lower mounting positions on the monopole, thus matching higher power and smaller distances to ground-level around the site.

The analysis will conservatively assume all the wireless carriers are operating at maximum capacity and maximum power in each of their FCC-licensed frequency bands. With that extreme degree of conservatism incorporated in the analysis, we can have great confidence that the actual RF effects from any combination of wireless operators, however they might actually be positioned on the pole, would be in compliance with the FCC's MPE limit.

This assessment of antenna site compliance is based on the FCC limit for general population "maximum permissible exposure" (MPE), a limit established

as safe for continuous exposure to RF fields by humans of either sex, all ages and sizes, and under all conditions.

The result of an FCC compliance assessment can be described in layman's terms by expressing the calculated RF levels as simple percentages of the FCC MPE limit. In that way, the figure 100 percent serves as the reference for compliance, and calculated RF levels below 100 percent indicate compliance with the MPE limit. An equivalent way to describe the calculated results is to relate them to a "times-below-the-limit" factor. Here, we will apply both descriptions.

The result of the FCC compliance assessment in this case is as follows:

- ❑ At street level around the site, the conservatively calculated maximum RF level caused by the combination of the wireless carriers' panel antenna operations is 3.3434 percent of the FCC general population MPE limit, well below the 100-percent reference for compliance. In other words, even with calculations designed to significantly overstate the RF levels versus those that could actually occur at the site, the worst-case calculated RF level in this case is still more than 25 times below the limit defined by the federal government as safe for continuous exposure of the general public.
- ❑ The results of the calculations provide a clear demonstration that the RF levels from as many as four wireless carriers, even under worst-case collocation circumstances, would satisfy the FCC requirement for controlling potential human exposure to RF fields. Moreover, because of the conservative methodology and assumptions applied in this analysis, RF levels actually caused by any combination of wireless operators' antenna operations at this site will be even less significant than the calculation results here indicate.

The remainder of this report provides the following:

- ❑ relevant technical data on the parameters for the four wireless carriers;

- ❑ a description of the applicable FCC mathematical model for assessing compliance with the MPE limit, and application of the relevant technical data to that model; and
- ❑ analysis of the results of the calculations, and the compliance conclusion for the proposed site.

In addition, two Appendices are included. Appendix A provides background on the FCC MPE limit, along with a list of key references. Appendix B provides a summary of the qualifications of the author of this report.

ANTENNA AND TRANSMISSION DATA

As described, the proposed 110-foot pole will be able to accommodate as many as four wireless carriers' antennas. This analysis will include an assumption of "worst-case" collocation by four wireless carriers – AT&T, Sprint, T-Mobile, and Verizon Wireless.

The worst-case collocation methodology basically involves taking the carriers with the most available spectrum and the opportunity for higher power levels and hypothetically positioning them at the lower points on the monopole – thus matching the most power with the shorter distances to the ground. Typically, the vertical spacing between different wireless carriers' antennas on a pole is 10 feet.

The transmission parameters for each of the wireless carriers are described below.

AT&T is licensed to operate in the 700, 850, 1900, and 2300 MHz frequency bands. In the 700 MHz band, AT&T uses four 40-watt RF channels per sector. In the 850 MHz band, AT&T uses two 30-watt channels and one 40-watt channel per sector. In the 1900 MHz band, AT&T uses four 30-watt channels per sector. In the 2300 MHz band, AT&T uses four 25-watt channels per sector.

Sprint is licensed to operate in the 800 MHz, 1900 MHz, and 2500 MHz frequency bands. In the 800 MHz band, Sprint uses two 50-watt channels per

antenna sector. In the 1900 MHz band, Sprint uses four 40-watt channels per sector. In the 2500 MHz band, Sprint uses three 40-watt channels per sector.

T-Mobile is licensed to operate in the 600 MHz, 700 MHz, 1900 MHz, and 2100 MHz frequency bands. In the 600 MHz band, T-Mobile uses four 40-watt channels per sector. In the 700 MHz band, T-Mobile uses one 40-watt channel per sector. In the 1900 MHz band, T-Mobile uses five 30-watt channels per sector. In the 2100 MHz band, T-Mobile uses one 40-watt channel and two 80-watt channels per sector.

Verizon Wireless is licensed to operate in the 746, 869, 1900 and 2100 MHz frequency bands. In the 746 MHz band, Verizon uses four 40-watt channels per antenna sector. In the 869 MHz band, Verizon uses seven 20-watt channels per antenna sector and four 40-watt channels per sector. In the 1900 MHz band, Verizon uses three 16-watt channels and four 40-watt channels per antenna sector. In the 2100 MHz band, Verizon uses four 40-watt channels per sector.

Based on the proposed mounting heights and then followed by overall available power levels, we will hypothetically assign the mounting heights (to the centerline of the antennas) as follows:

- Verizon Wireless: 106 feet
- Sprint: 96 feet
- AT&T: 86 feet
- T-Mobile: 76 feet

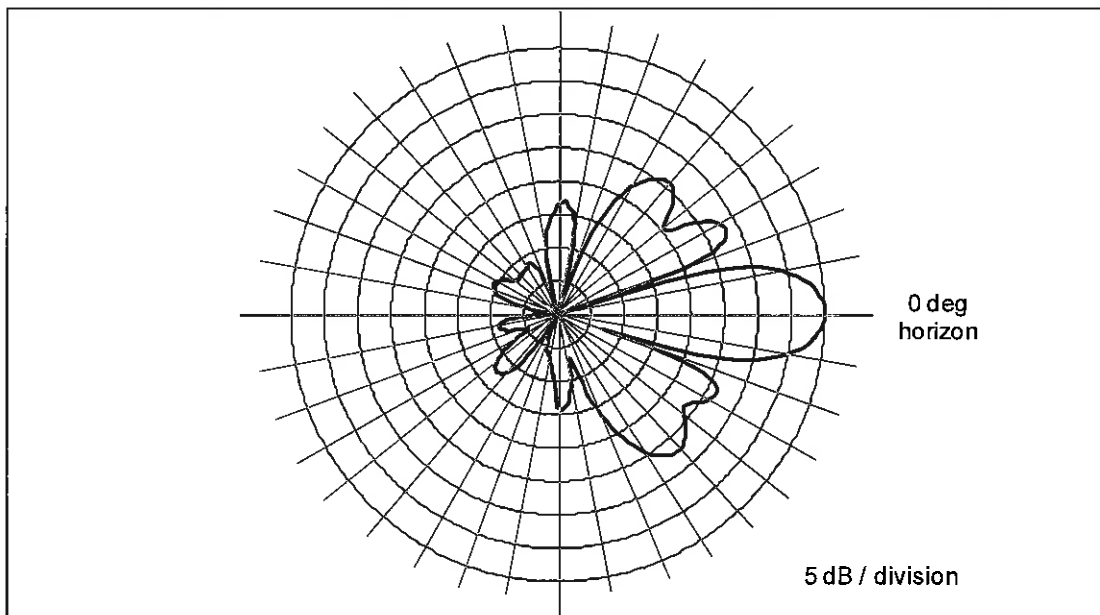
The area below the antennas, at street level, is of interest in terms of potential “uncontrolled” exposure of the general public, so the antenna’s vertical-plane emission characteristic is used in the calculations, as it is a key determinant in the relative level of RF emissions in the “downward” direction.

By way of illustration, Figure 1, below, shows the vertical-plane pattern of a typical 1900 MHz panel antenna. The antenna is effectively pointed at the three o’clock position (the horizon) and the pattern at different angles is described

using decibel units. The use of a decibel scale in incidentally visually understates the relative directionality characteristic of the antenna in the vertical plane. Where the antenna pattern reads 20 dB, the relative RF energy emitted at the corresponding downward angle is 1/100th of the maximum that occurs in the main beam (at 0 degrees); at 30 dB, the energy is 1/1000th of the maximum.

Note that the automatic pattern-scaling feature of our internal software may skew side-by-side visual comparisons of different antenna models, or even different parties' depictions of the same antenna model.

Figure 1. 1900 MHz Directional Panel Antenna – Vertical-plane Pattern



Compliance Analysis

FCC Office of Engineering and Technology Bulletin 65 ("OET Bulletin 65") provides guidelines for mathematical models to calculate potential RF exposure levels at various points around transmitting antennas.

Around an antenna site at ground level (in what is called the "far field" of the antennas), the RF levels are directly proportional to the total antenna input power and the relative antenna gain (focusing effect) in the downward direction of

interest – and the levels are otherwise inversely proportional to the square of the straight-line distance to the antenna. Conservative calculations also assume the potential RF exposure is enhanced by reflection of the RF energy from the intervening ground. Our calculations will assume a 100% “perfect”, mirror-like reflection, which is the absolute worst-case approach.

The formula for ground-level MPE compliance assessment of any given wireless antenna operation is as follows:

$$\text{MPE\%} = (100 * \text{TxPower} * 10^{(\text{Gmax-Vdisc})/10} * 4) / (\text{MPE} * 4\pi * R^2)$$

where

MPE%	=	RF level, expressed as a percentage of the FCC MPE limit applicable to continuous exposure of the general public
100	=	factor to convert the raw result to a percentage
TxPower	=	maximum net power into antenna sector, in milliwatts, a function of the number of channels per sector, the transmitter power per channel, and line loss
$10^{(\text{Gmax-Vdisc})/10}$	=	numeric equivalent of the relative antenna gain in the direction of interest downward toward ground level
4	=	factor to account for a 100-percent-efficient energy reflection from the ground, and the squared relationship between RF field strength and power density ($2^2 = 4$)
MPE	=	FCC general population MPE limit
R	=	straight-line distance from the RF source to the point of interest, centimeters

The MPE% calculations are normally performed out to a distance of 500 feet from the facility to points 6.5 feet (approximately two meters, the FCC-recommended standing height) off the ground, as illustrated in Figure 2 on the next page.

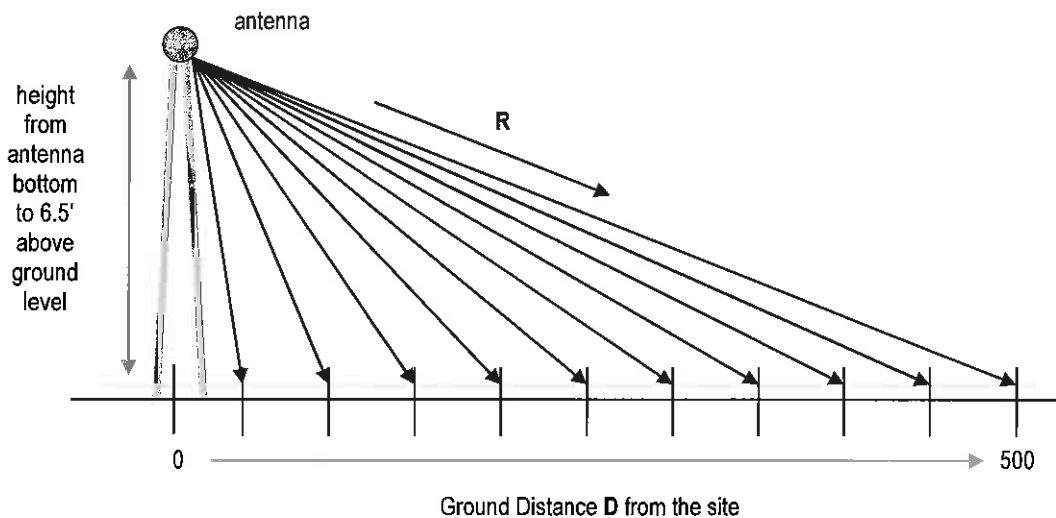


Figure 2. Street-level MPE% Calculation Geometry

It is popularly thought that the farther away one is from an antenna, the lower the RF level – which is generally but not universally correct. The results of MPE% calculations fairly close to the site will reflect the variations in the vertical-plane antenna pattern as well as the variation in straight-line distance to the antennas. Therefore, RF levels may actually increase slightly with increasing distance within the range of zero to 500 feet from the site. As the distance approaches 500 feet and beyond, though, the antenna pattern factor becomes less significant, the RF levels become primarily distance-controlled and, as a result, the RF levels generally decrease with increasing distance. In any case, the RF levels more than 500 feet from a wireless antenna site are well understood to be sufficiently low and always in compliance.

FCC compliance for a collocated antenna site is assessed in the following manner. At each distance point away from the site, an MPE% calculation is made for each antenna operation, including the individual components of dual-band operations. Then, at each point, the sum of the individual MPE% contributions is compared to 100 percent, where the latter figure serves as a normalized reference for compliance with the MPE limit.

We refer to the sum of the individual MPE% contributions as “total MPE%”, and any calculated total MPE% result exceeding 100 percent is, by definition, higher than the limit and represent non-compliance and a need to take action to mitigate the RF levels. If all results are below 100 percent, that indicates compliance with the federal regulations on controlling exposure.

Note that the following conservative methodology and assumptions are incorporated into the MPE% calculations on a general basis:

1. The antennas are assumed to be operating continuously at maximum RF power – i.e., with the maximum number of channels and the maximum transmitter power per channel.
2. The power-attenuation effects of any shadowing or visual obstruction to a line-of-sight path from the antennas to the points of interest at ground level are ignored.
3. The calculations intentionally minimize the distance factor (R) by assuming a 6’6” human and performing the calculations from the bottom (rather than the centerline) of the antenna.
4. The potential RF exposure at ground level is assumed to be 100-percent enhanced (increased) via a “perfect” field reflection from the intervening ground.

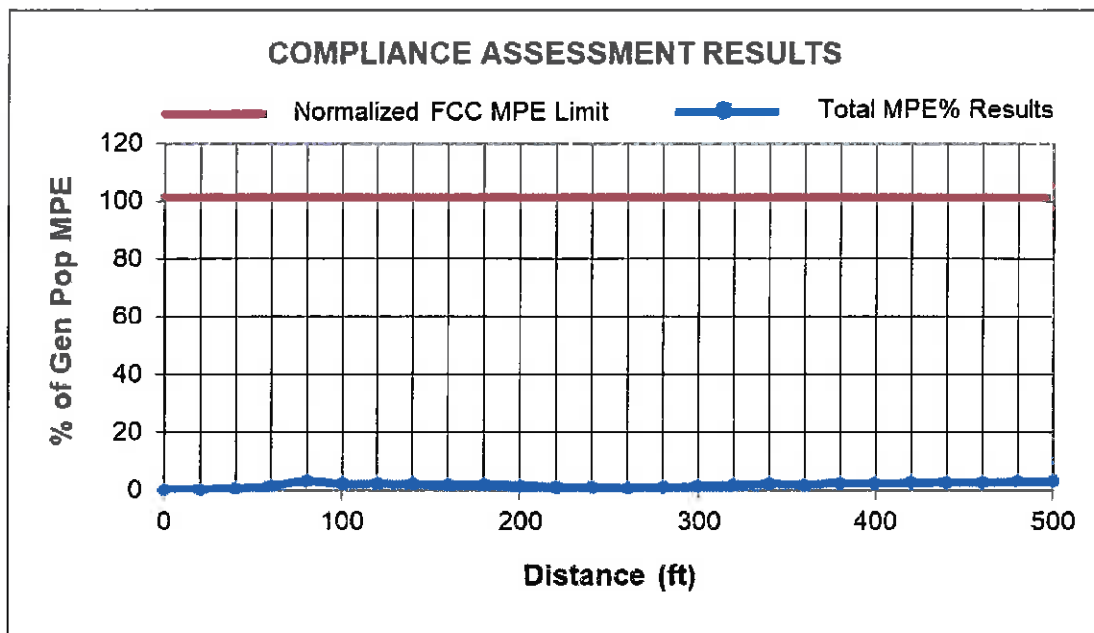
The net result of these assumptions is to intentionally and significantly overstate the calculated RF levels relative to the RF levels that will actually occur – and the purpose of this conservatism is to allow “safe-side” conclusions about compliance with the MPE limit.

The table on the following page provides the results of the MPE% calculations for each operator, with the worst-case overall result highlighted in bold in the last column.

Ground Distance (ft)	Verizon MPE%	AT&T MPE%	Sprint MPE%	T-Mobile MPE%	Total MPE%
0	0.0455	0.1233	0.0525	0.0138	0.2351
20	0.0586	0.2102	0.0214	0.1137	0.4039
40	0.1136	0.3769	0.0444	0.2008	0.7357
60	0.1827	0.6102	0.0719	0.7543	1.6191
80	0.2191	1.3086	0.1188	1.6969	3.3434
100	0.1940	1.5628	0.1356	0.3594	2.2518
120	0.4779	1.2794	0.3548	0.2734	2.3855
140	0.6259	1.2338	0.1612	0.1852	2.2061
160	0.7941	0.8321	0.0664	0.2410	1.9336
180	0.8828	0.4612	0.1117	0.5794	2.0351
200	0.6719	0.3751	0.1370	0.5796	1.7636
220	0.4462	0.4002	0.1635	0.2754	1.2853
240	0.3268	0.3615	0.1481	0.1910	1.0274
260	0.1859	0.3858	0.0931	0.2491	0.9139
280	0.1367	0.5235	0.0426	0.3948	1.0976
300	0.1321	0.7628	0.0280	0.5363	1.4592
320	0.1905	1.0407	0.0527	0.6143	1.8982
340	0.3024	1.2666	0.0943	0.7495	2.4128
360	0.2720	1.1358	0.1251	0.5763	2.1092
380	0.4206	1.2478	0.1422	0.7618	2.5724
400	0.5959	1.2746	0.1290	0.6035	2.6030
420	0.5434	1.1599	0.1562	0.8154	2.6749
440	0.7087	1.1918	0.1428	0.7883	2.8316
460	0.8819	1.0932	0.2052	0.7226	2.9029
480	0.8127	1.0063	0.1890	1.1628	3.1708
500	0.7514	1.1346	0.2718	1.0732	3.2310

As indicated, the overall worst-case calculated result is 3.3434 percent of the FCC general population MPE limit – well below the 100-percent reference for compliance, particularly given the significant conservatism incorporated in the analysis.

A graph of the overall calculation results, shown on the next page, provides perhaps a clearer *visual* illustration of the relative compliance of the calculated RF levels. The line representing the overall calculation shows an obviously clear, consistent margin to the FCC MPE limit.



Compliance Conclusion

The FCC MPE limit has been constructed in such a manner that continuous human exposure to RF fields up to and including 100 percent of the MPE limit is acceptable and completely safe.

The conservatively calculated maximum RF effect at street level from the assumed worst-case collocation of as many as four wireless carriers is 3.3434 percent of the FCC general population MPE limit. In other words, even with an extremely conservative analysis intended to dramatically overstate the RF effects of any wireless collocation scenario at the site, the calculated worst-case RF level is still more than 25 times below the FCC MPE limit.

The results of the calculations indicate clear compliance with the FCC regulations and the related MPE limit, even for a worst-case collocation scenario. Because of the conservative calculation methodology and operational assumptions applied in this analysis, the RF levels actually caused by any more realistic collocation of antennas at this site would be even less significant than the calculation results here indicate, and compliance would be achieved by an even larger margin.

CERTIFICATION

It is the policy of Pinnacle Telecom Group that all FCC RF compliance assessments are reviewed, approved, and signed by the firm's Chief Technical Officer who certifies as follows:

1. I have read and fully understand the FCC regulations concerning RF safety and the control of human exposure to RF fields (47 CFR 1.1301 *et seq*).
2. To the best of my knowledge, the statements and information disclosed in this report are true, complete and accurate.
3. The analysis of site RF compliance provided herein is consistent with the applicable FCC regulations, additional guidelines issued by the FCC, and industry practice.
4. The results of the analysis indicate that the subject antenna operations will be in compliance with the FCC regulations concerning the control of potential human exposure to the RF emissions from antennas.



Daniel J. Collins
Chief Technical Officer
Pinnacle Telecom Group, LLC

6/12/19

Date

Appendix A. Background on the FCC MPE Limit

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

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

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

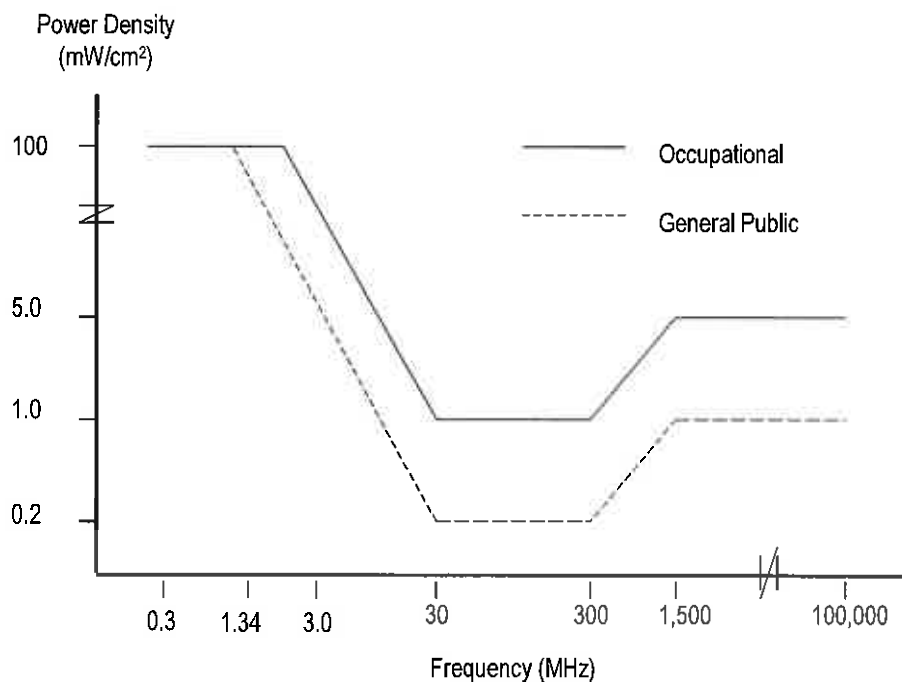
The specified continuous exposure MPE limits are based on known variation of human body susceptibility in different frequency ranges, and a Specific Absorption Rate (SAR) of 4 watts per kilogram, which is universally considered to accurately represent human capacity to dissipate incident RF energy (in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

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

The FCC's RF exposure limits are expressed in two equivalent forms, using alternative units of field strength (expressed in volts per meter, or V/m), and power density (expressed in milliwatts per square centimeter, or mW/cm²). The table on the next page lists the FCC limits for both occupational and general population exposures, using the mW/cm² reference, for the different radio frequency ranges.

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

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



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

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

For potential exposure from multiple systems, the respective percentages of the MPE limits are added, and the total percentage compared to 100 (percent of the limit). If the result is less than 100, the total exposure is in compliance; if it is more than 100, exposure mitigation measures are necessary to achieve compliance.

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

FCC References on RF Compliance

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

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

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

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

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

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

Appendix B. SUMMARY of EXPERT QUALIFICATIONS

Daniel J. Collins, Chief Technical Officer, Pinnacle Telecom Group, LLC

Synopsis:	<ul style="list-style-type: none"> • 40+ years of experience in all aspects of wireless system engineering, related regulation, and RF exposure • Has performed or led RF exposure compliance assessments on more than 20,000 antenna sites since the latest FCC regulations went into effect in 1997 • Has provided testimony as an RF compliance expert more than 1,500 times since 1997 • Have been accepted as an FCC compliance expert in New York, New Jersey, Connecticut, Pennsylvania and more than 40 other states, as well as by the FCC
Education:	<ul style="list-style-type: none"> • B.E.E., City College of New York (Sch. Of Eng.), 1971 • M.B.A., 1982, Fairleigh Dickinson University, 1982 • Bronx High School of Science, 1966
Current Responsibilities:	<ul style="list-style-type: none"> • Leads all PTG staff work involving RF safety and FCC compliance, microwave and satellite system engineering, and consulting on wireless technology and regulation
Prior Experience:	<ul style="list-style-type: none"> • Edwards & Kelcey, VP – RF Engineering and Chief Information Technology Officer, 1996-99 • Bellcore (a Bell Labs offshoot after AT&T's 1984 divestiture), Executive Director – Regulation and Public Policy, 1983-96 • AT&T (Corp. HQ), Division Manager – RF Engineering, and Director – Radio Spectrum Management, 1977-83 • AT&T Long Lines, Group Supervisor – Microwave Radio System Design, 1972-77
Specific RF Safety / Compliance Experience:	<ul style="list-style-type: none"> • Involved in RF exposure matters since 1972 • Have had lead corporate responsibility for RF safety and compliance at AT&T, Bellcore, Edwards & Kelcey, and PTG • While at AT&T, helped develop the mathematical models for calculating RF exposure levels • Have been relied on for compliance by all major wireless carriers, as well as by the federal government, several state and local governments, equipment manufacturers, system integrators, and other consulting / engineering firms
Other Background:	<ul style="list-style-type: none"> • Author, <i>Microwave System Engineering</i> (AT&T, 1974) • Co-author and executive editor, <i>A Guide to New Technologies and Services</i> (Bellcore, 1993) • National Spectrum Management Association (NSMA) – former three-term President and Chairman of the Board of Directors; was founding member, twice-elected Vice President, long-time member of the Board, and was named an NSMA Fellow in 1991 • Have published more than 35 articles in industry magazines



Supplemental Report Drive Test Analysis & KPI

Site ID: "Dixon Lake NY058"

36 Dixon Road
Carmel, NY
Putnam County

Prepared for
New York SMSA Limited Partnership d/b/a Verizon Wireless

By

PierCon Solutions, LLC
June 24, 2019

TABLE OF CONTENTS

1	PURPOSE AND SCOPE.....	3
2	DRIVE TEST METHODOLOGY	3
3	RESULTS OF DRIVE TEST DATA	4
4	KPI DATA- VERIZON WIRELESS'S KEY SYSTEM PERFORMANCE INDICATOR DATA	4
5	CONCLUSION	5
6	APPENDIX – EXHIBITS	6

1 PURPOSE AND SCOPE

PierCon Solutions LLC, an engineering firm specializing in wireless communications, performed an independent drive test for the proposed Dixon Lake Site located at 36 Dixon Road. The drive test occurred on April 27th, 2019 and involved measuring signals at three different antenna heights and recording measurements from the Verizon Wireless network. The purpose of the test was to confirm the predictions made by propagation software and to verify that the proposed height is the minimum height required to provide adequate service to the service gap described in the PierCon report dated July 31st, 2018 (RF Report 1). In addition, KPI data is attached which further demonstrates the gap in service.

2 DRIVE TEST METHODOLOGY

In order to confirm the accuracy of the submitted propagation maps, an independent drive test and CW (continuous wave) test was performed on April 27th, 2019 by Chris Conroy and Associate RF Engineer Benjamin Blankstein. Drive tests are a means to evaluate existing coverage and CW tests are a means to determine the minimum height for a proposed facility.

Drive tests also referred to as Scan Test, are used to produce maps ("Drive Test Maps"), which demonstrate actual signal levels along roadways that are traveled by specially equipped scan test vehicles. In a drive test, the signals from the surrounding on-air sites (LTE and CDMA) are collected by a receive antenna mounted to the roof of the drive test vehicle. The data collected by the receive antenna is then processed by computer equipment within the drive test vehicle. The coordinates and signal strength of each collection point is recorded by the computer equipment and ultimately depicted on a Drive Test Map. Literally thousands of data points are collected during a drive test over the roadways driven by the drive test vehicle to ensure that a complete and statistically relevant number of data points can be evaluated.

The scan test consisted of collecting thousands of data points in the vicinity of the Dixon Lake proposed site and surrounding roadways. A PCTEL IBLEX C multiband receiver, capable of measuring signals from the 700, 850, 1900, and 1700/2100 MHz frequency bands, was used to collect data points through the use of a magnetic mounted antenna and GPS device on the outside of the vehicle. The recording software is also capable of measuring CDMA and LTE Technologies. PCTEL drive test software was used to collect the data on a laptop computer while the vehicle was moving. The receiver has a calibration certification from TRS RenTelco and this certificate is attached as Exhibit A.

The CW test also consisted of collecting thousands of data points in the vicinity of the Lake Casse proposed site and surrounding roadways. The same PCTEL IBFLEX C multiband receiver was utilized to measure the CW signal from a magnetic mounted antenna located on the roof of the vehicle. The scan test and CW test were performed at the same time with the same receiver.

Since the testing was performed during the time of year where foliage was just beginning to return, the test results will still be overstated, and require a factor to account for losses due to dense foliage that will be in full during the spring through fall season. The foliage loss correction can vary by the type of environment and range between 5-20 dB. PierCon utilized a conservative 5 dB foliage correction in the analysis to follow. Although calculated values were found to be between 5db and 10 dB, 5 dB was chosen due to the fact that some trees had foliage. Additional factor was also needed for the CW test only. The CW test factor involved providing an equivalent RSRP signal level from the measured RSSI level in the CW test. RSRP signals are the standard reference signals for LTE networks. By performing these calculations, the drive test data can be compared with the propagation data for the proposed site.

3 RESULTS OF DRIVE TEST DATA

Verizon's current 4th technology generation deployed is LTE and is the relevant standard in which to design to. Verizon is in the process of migrating the 850 MHz frequency band license to 4G (LTE) and in order to do so will be retiring the 3G (CDMA) technology at the end of 2019. Since most sites do not have 3G CDMA, the drive test data will not be a clear representation of a gap in service nevertheless attached here to is the 3G CDMA drive test data. Please find attached Exhibits B- J respectively for the 700MHz, 2100 MHz LTE and 3G CDMA 850 MHz.

In exhibits B – J, for LTE the color of the dots represents a range of signal strengths at the point. The green dots represent RSRP signals stronger than -95 dBm or suburban in-building coverage levels. The yellow dots represent RSRP signals stronger than -105 dBm and weaker than -95 dBm or in-vehicle coverage levels (no suburban in-building coverage). The red dots represent RSRP signals weaker than -105 dBm, (no suburban in-building or in vehicle in-building coverage). For

Analysis of the 700 MHz LTE scan test data reveal that the propagation from RF Report 1 for existing 700 LTE coverage is accurate and further demonstrates the significant coverage gap detailed in RF Report 1. However, analysis of the 2100 MHz LTE scan test data reveal that the propagation from RF Report 1 for existing 2100 LTE coverage is accurate for in building coverage but over predicted for in-vehicle coverage in Report 1 Exhibit A-4. Thus, there is actually a greater gap in service for in-vehicle. This could be due to the density of trees in the path of the radio signal, the prediction tool did not take into account the attenuation experienced at the higher frequency band. Therefore, the propagation map for in-vehicle for the 2100 MHz is inaccurate. Please see Exhibit B, C and D for the 700 MHz, 2100 MHz and 3G CDMA 850 MHz scan test.

Analysis of the CW data at differing antenna heights revealed little differences are present between the CW antenna heights of 150',130'and 110' for 2100 MHz and 700 MHz frequency bands. The areas that did show a reduction in coverage due to the lower heights, such as the intersection near Dixon Road, State Highway 301 and Albin Road to the south of the proposed, are covered by an existing Verizon site based on the Scan data.

Exhibits E, F, and G represent the CW tests from 4/27/19 for the 700 MHz signal. Exhibits E, F and G represent the measured signals from a single 700 MHz transmitter located at the Dixon Lake proposed site location at three different antenna heights (110' 130', 150'). Please also find attached in Exhibits H, I, and J representing the CW tests from 4/27/19 for the 2100 MHz signal. Exhibits H, I, and J represent the measured signals from a single 2100 MHz transmitter located at the Dixon Lake proposed site location at three different antenna heights (110' 130', 150').

Therefore, based upon a review of these results, the application has been revised to a tower height of 110' with the tallest antennas located at 106' centerline. This revision is based upon the CW test results which concluded that the minimum structure height for Verizon Wireless is 110'. At this height, space for at least one other collocation carrier will be potentially feasible.

4 KPI DATA- VERIZON WIRELESS'S KEY SYSTEM PERFORMANCE INDICATOR DATA

In addition to confirming that Verizon Wireless has a significant gap in 4G LTE coverage with Drive Test Maps and Coverage Maps, an evaluation of Verizon Wireless's Key System Performance Indicator Data ("KPI Data") has been provided. The KPIs utilized consist of call drop call failure rates and access failure rates from Verizon's existing antennas providing signal facing the gap area identified in and surrounding the proposed site NY058 Dixon Lake.

The drop call rate and call access failure rate are two performance indicators of a wireless network having a gap in reliable service. Dropped calls, meaning calls that are prematurely ended by the network rather than the customer, are an indicator that the signal strength and/or signal quality is unreliable such that voice calls or data connections are disconnected. Call access failures, or setup failures, meaning the inability for a customer to place a call, are indicators

that the signal strength and/or quality are unreliable such that calls or data sessions are unable to be established at the will of the customer.

From a review of the terrain features, antenna height and distance away from the subject gap area, the sites providing signal toward the gap include Carmel 3, Carmel 2, Carmel, Bullet Hole and Mt. Ninham. All other facilities are located too far away or have substantial terrain features blocking the signal to the area. Therefore, the following analysis includes KPI data from the Carmel 3, Carmel 2, Carmel, Bullet Hole and Mt. Ninham only. The data consists of current last 3 months of data from February 19th to May 19th 2019. Please note on April 19, there was a fiber outage confirmed by Verizon Wireless and was not taken into account in review of the KPI data.

The KPI charts include 4G dropped call performance data and access failure data for the Verizon's facilities surrounding the proposed site. As previously indicated for 3G, most of the surrounding sites do not have 3G active due to re-farming, therefore, KPI data was not provided. The drop call percentages and the access failure percentages indicate that Verizon has a significant gap in reliable wireless service in the areas surrounding the proposed Site. Any dropped call or access failure can be deemed unacceptable to a wireless customer, particularly in an emergency situation. Verizon has established a dropped call rate of greater than 1% or an access failure rate of greater than 2% is a measure of unreliable wireless coverage. Please refer to the following exhibits attached hereto for the 4G KPI data:

Exhibit K "4G Access Failure Rate and 4G Drop Failure Rate"

The KPI exhibits demonstrate that Verizon's 4G network on the 700 MHz licensed frequency bands is not able to provide reliable service due to a significant gap in the area. It is important to note that due to the unreliable coverage from the 2100 MHz frequency band, most of the users will transfer to the 700 MHz frequency band as the user travels toward the proposed site. As the user enters the gap in coverage, calls will drop. The KPI for drop call rate and access failure rates greatly exceed 1% and 2% which are the industry standard metrics for reliable performance. The data presented is a clear indicator of the lack of reliable service. This presented along with the drive test maps and coverage maps further substantiates the specific location of the gap area.

5 CONCLUSION

PierCon conducted an independent drive test in order to determine the minimum height needed to address the gap in service detailed in RF Report 1 for Verizon Wireless. PierCon continues to demonstrate that a significant gap persists in the areas described in the previous RF report by PierCon and that the proposed location is necessary to remedy a significant gap in service and provide reliable coverage to the Town of Carmel. The drive test revealed that the minimum height required is 110' for an antenna centerline height of 106'. Without the proposed facility, Verizon Wireless will be materially inhibited from providing its services at a height below 110ft.

Report Prepared by:



Frances Boschulte
RF Engineer Manager
06/24/2019
PierCon Solutions, LLC

6 APPENDIX – EXHIBITS

- *A – Calibration Certificate*
- *B – 700 MHz Drive Test*
- *C – 2100 MHz Drive Test*
- *D – 3G CDMA Drive Test*
- *E – 700 MHz CW Test @ 150'*
- *F – 700 MHz CW Test @ 130'*
- *G – 700 MHz CW Test @ 110'*
- *H – 700 MHz CW Test @ 150'*
- *I – 700 MHz CW Test @ 130'*
- *J – 700 MHz CW Test @ 110'*
- *K – KPI Data for LTE 700 MHz and 2100 MHz*



TRS-RenTelco

1830 West Airfield Drive
DFW Airport, Texas 75261

Calibration Certificate Traceability Statement

Asset Number: 1205626
MFG/Model Number: PCTEL/IBFLEX;C
Serial Number: 81707011
Description: IBflex Super Config
Customer: PIERCON SOLUTIONS, LLC
Address: 63 BEAVER BROOK RD. BLDG 1 STE 201
LINCOLN PARK NJ 07035

Customer P.O. No: 190312CC-1
Rental Agreement Number: 1755940-0
Certificate Number: 17559400120562617727

This certificate applies to the instrument identified above and shall not be reproduced, except in full, without written approval of TRS-RenTelco.

This certifies that the above instrument was calibrated to manufacturer's specifications using approved procedures and traceable measurement standards.

This calibration was performed by an approved vendor.

The Quality System of TRS-RenTelco is registered by UL DQS Certificate Number 10000112 to the Quality Management System Standard ISO 9001:2008. TRS-RenTelco's Laboratory is in compliance with MIL-STD-45662A, ANSI/NCSL Z540-1-1994, ISO/IEC 17025:2005 and ISO 10012:2003.

Measurement standards are calibrated at planned intervals. Traceability is to the International System of Units (SI) through the National Institute of Standards and Technology (NIST) or other recognized National Metrology Institute (NMI), natural physical constants, consensus standards, or by ratio type measurements using self calibrating techniques. Supporting documentation relative to traceability is available for review by appointment.

This instrument is initially being sent to the above customer calibrated and fully functional.

Although the calibration laboratory is in compliance with ANSI/NCSL Z540-1-1994 and MIL-STD-45662A this calibration certificate is issued only as a Traceability Statement and does not carry the requirement of recalibration at the end of rental and customer notification of Out of Tolerance conditions.

TRS-RenTelco's calibration interval for this instrument is 24 months.

Processed By: JAY MERCADO

Calibration Date: Jul 27, 2017

Calibration Due Date: Jul 27, 2019

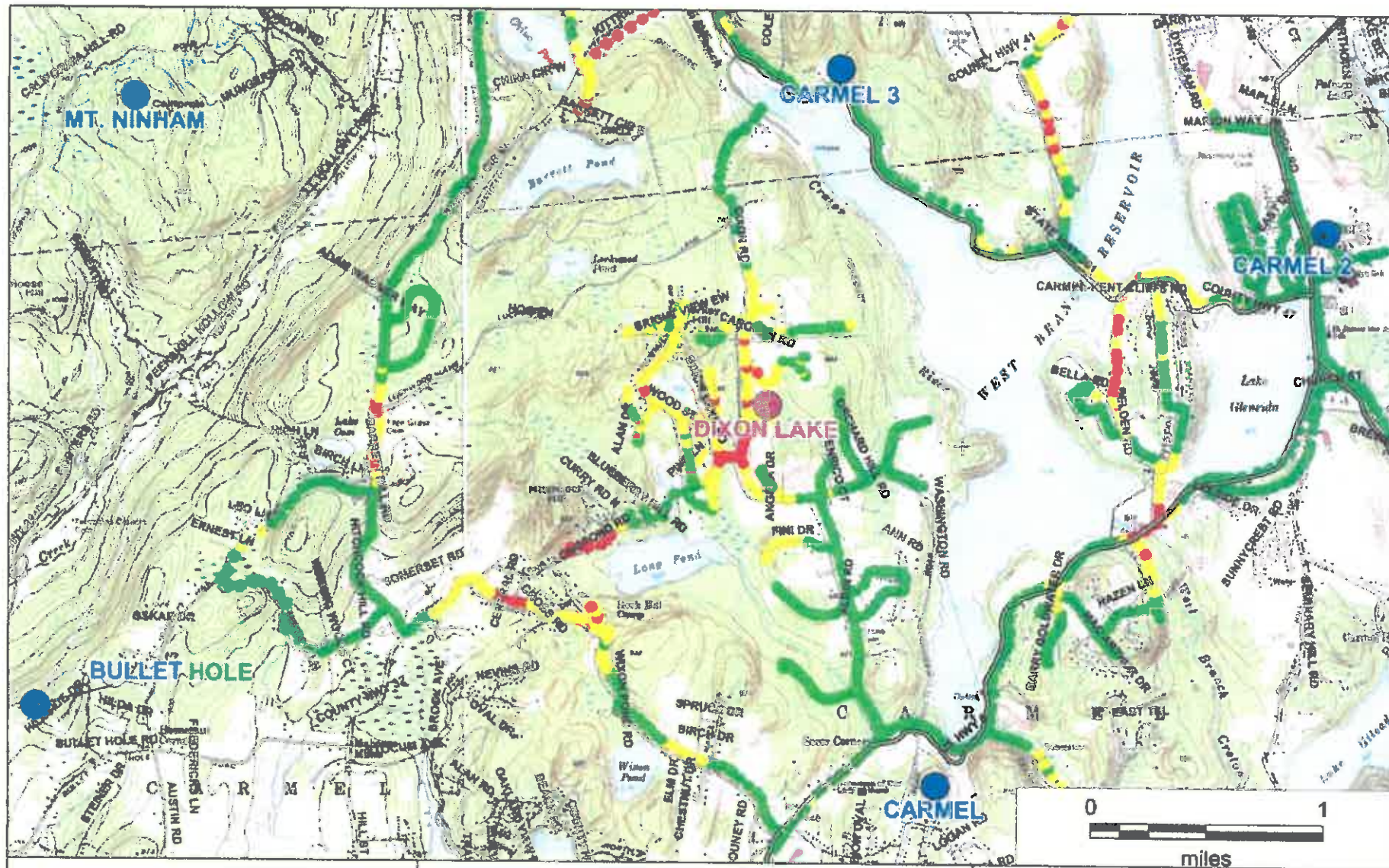
Quality Assurance:

Peel Off Sticker Here --->

TRS-RenTelco 800-621-6354
ID: 1205626 Date: 07/27/17
AV Due: 07/27/19

Certificate Print Date: April 23, 2019

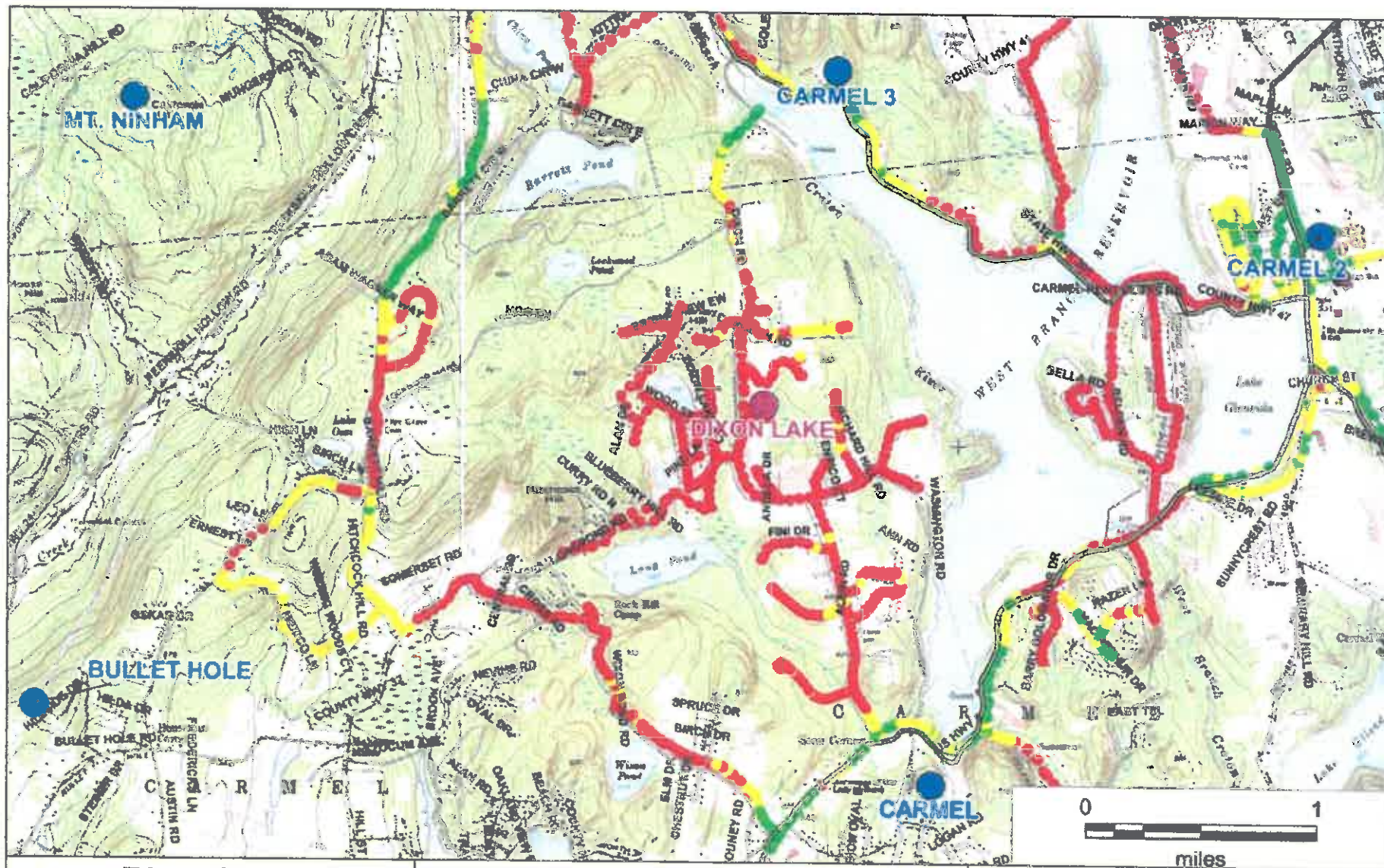
Page 1 of 1



Dixon Lake
 700 MHz LTE
 Scan Drive
 36 Dixon Road
 Carmel, NY 10512

- Verizon Wireless Existing Site
- Verizon Wireless Proposed Site
- Reliable In-Building Suburban Coverage (≥ -95 dBm RSRP)
- Reliable In-Vehicle Suburban Coverage (≥ -105 dBm RSRP)
- Unreliable In-Vehicle Coverage (< -105 dBm RSRP)

verizon 
PierCon Solutions LLC
Specialists in Wireless Systems
 Prepared by PierCon Solutions LLC
 05/20/2019



Dixon Lake

2100 MHz LTE
Scan Drive

36 Dixon Road
Carmel, NY 10512

● Verizon Wireless Existing Site

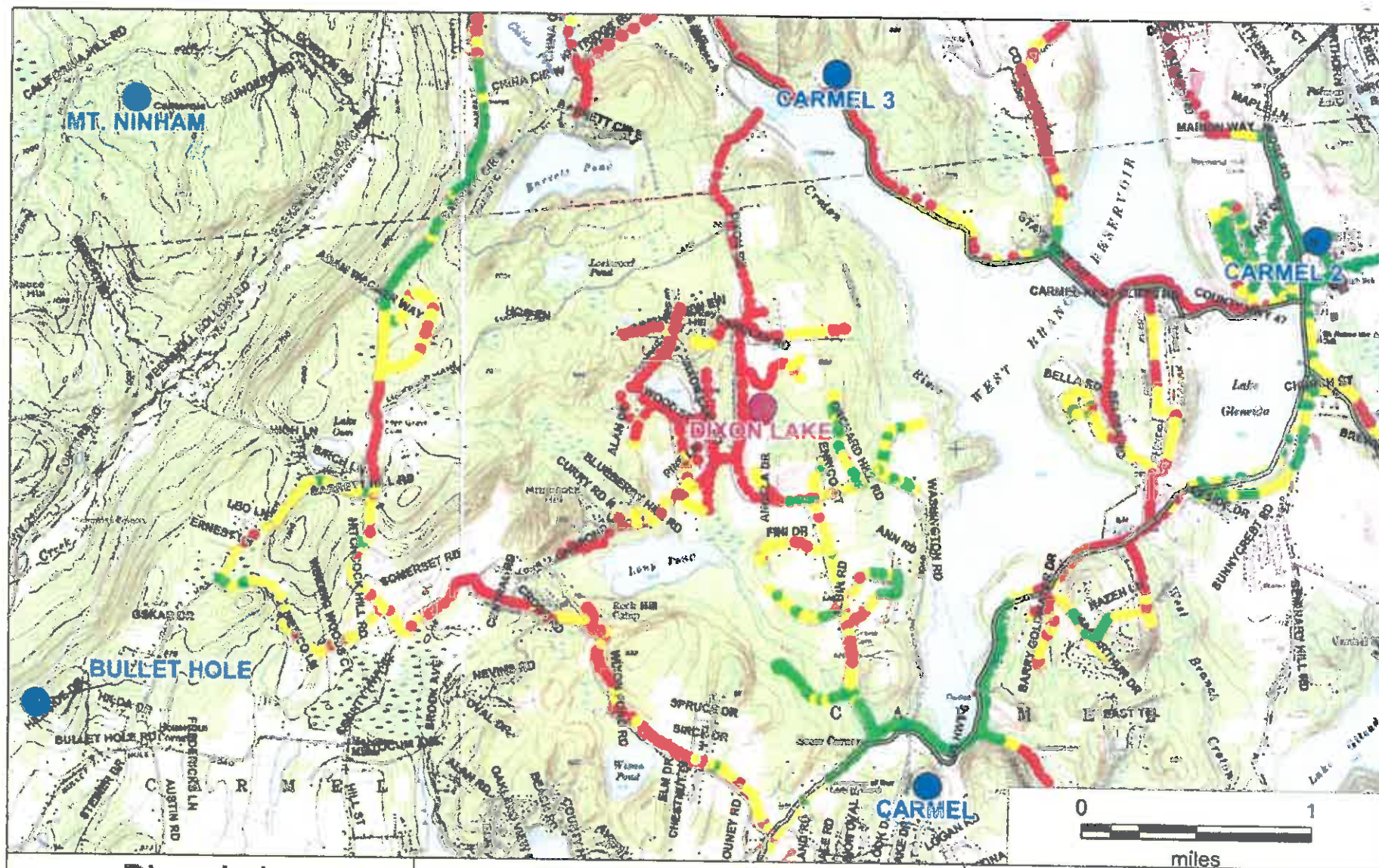
● Verizon Wireless Proposed Site

- Reliable In-Building Suburban Coverage (≥ -95 dBm RSRP)
- Reliable In-Vehicle Suburban Coverage (≥ -105 dBm RSRP)
- Unreliable In-Vehicle Coverage (< -105 dBm RSRP)

verizon

PierCon Solutions
Specialists in Wireless Systems

Prepared by PierCon Solutions LLC
05/20/2019



Dixon Lake
 3G CDMA 850MHz
 Scan Drive

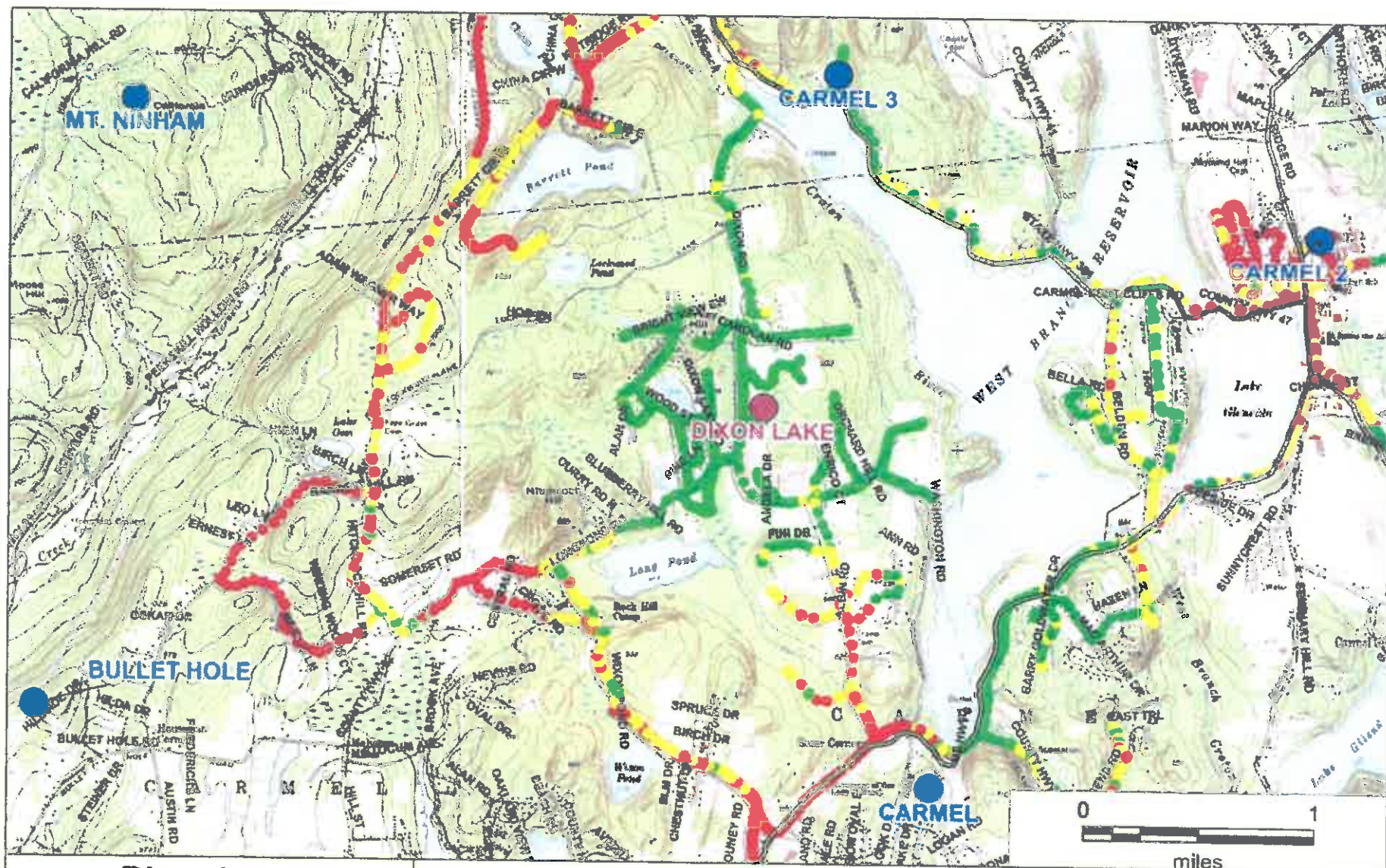
36 Dixon Road
 Carmel, NY 10512

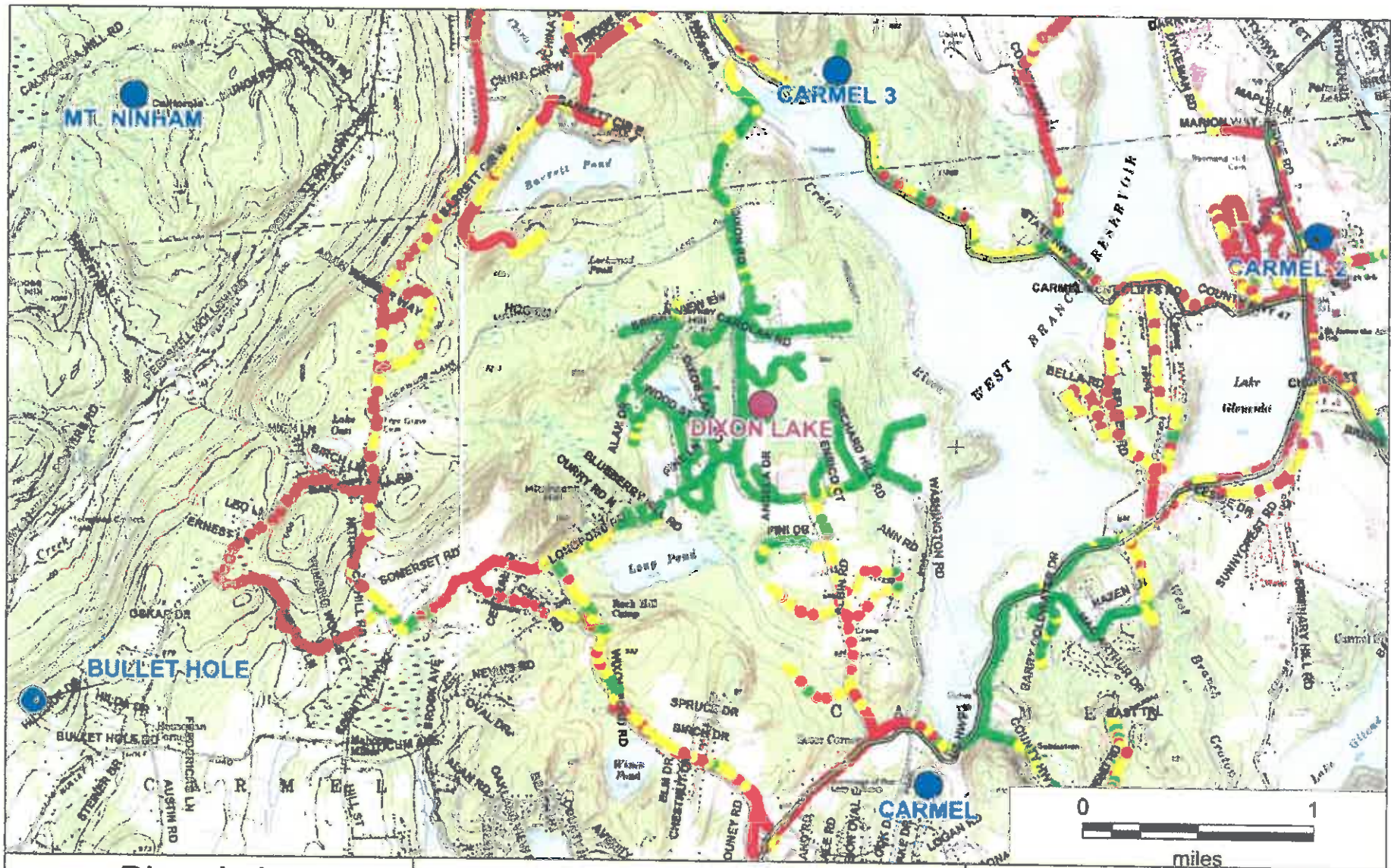
- Verizon Wireless Existing Site
- Verizon Wireless Proposed Site

Receive Channel Pilot Power (dBm)
 ● 110 dB OPL (-75) dBm Reliable In Building Coverage
 ● 120 dB OPL (-75) dBm Reliable In Vehicle Coverage
 ● >120 OPL

verizon
PierCon Solutions
 Specialists in Wireless Systems

Prepared by PierCon Solutions LLC
 05/20/2019





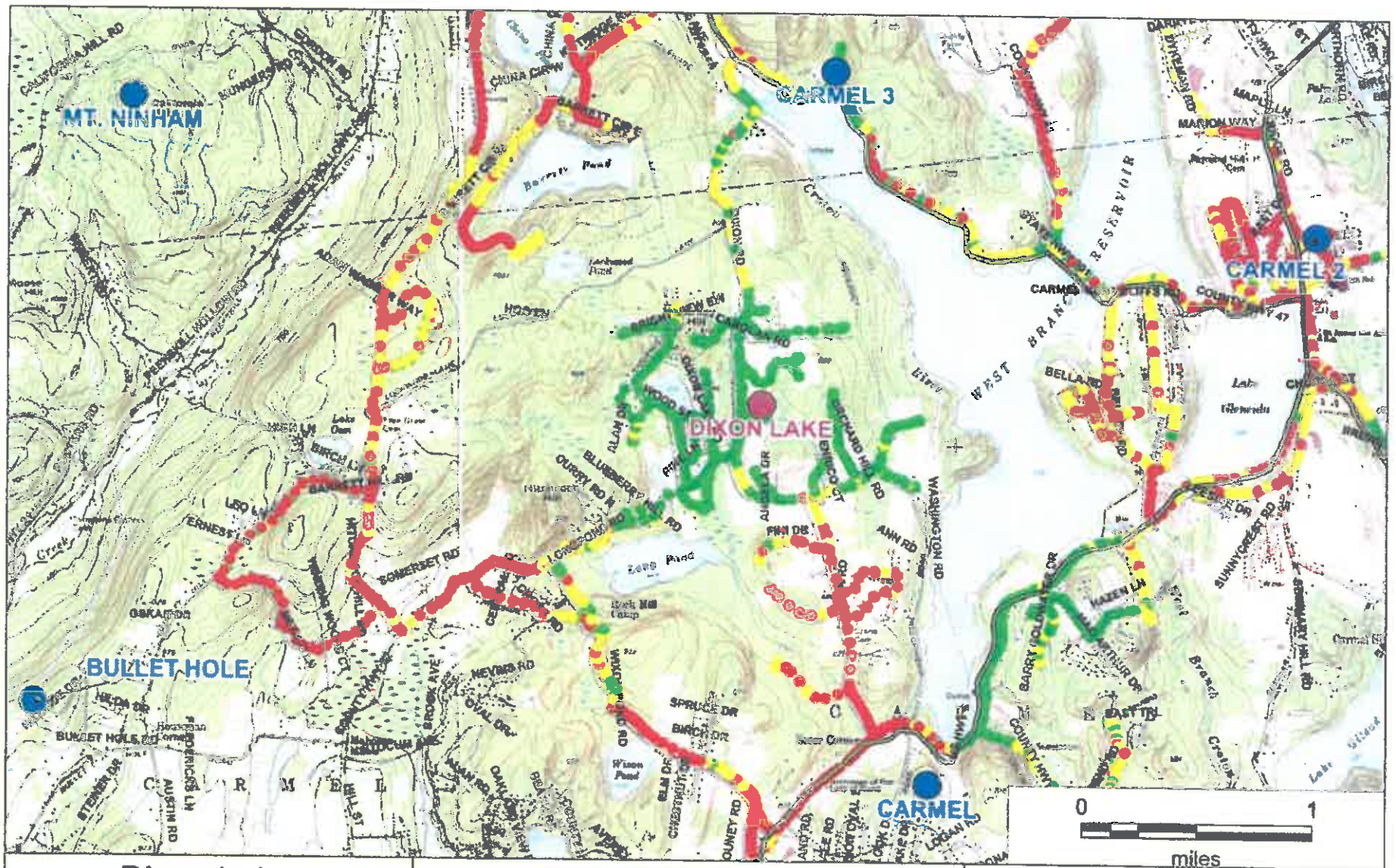
Dixon Lake
 700 MHz CW Test
 @ 130'

36 Dixon Road
 Carmel, NY 10512

- Verizon Wireless Existing Site
- Verizon Wireless Proposed Site

- Reliable In-Building Suburban Coverage (≥ -95 dBm RSRP)
- Reliable In-Vehicle Suburban Coverage (≥ -105 dBm RSRP)
- Unreliable In-Vehicle Coverage (< -105 dBm RSRP)

verizon 
PierCon Solutions LLC
Specialists in Wireless Systems
 Prepared by PierCon Solutions LLC
 05/20/2019



Dixon Lake

700 MHz CW Test
@ 110'

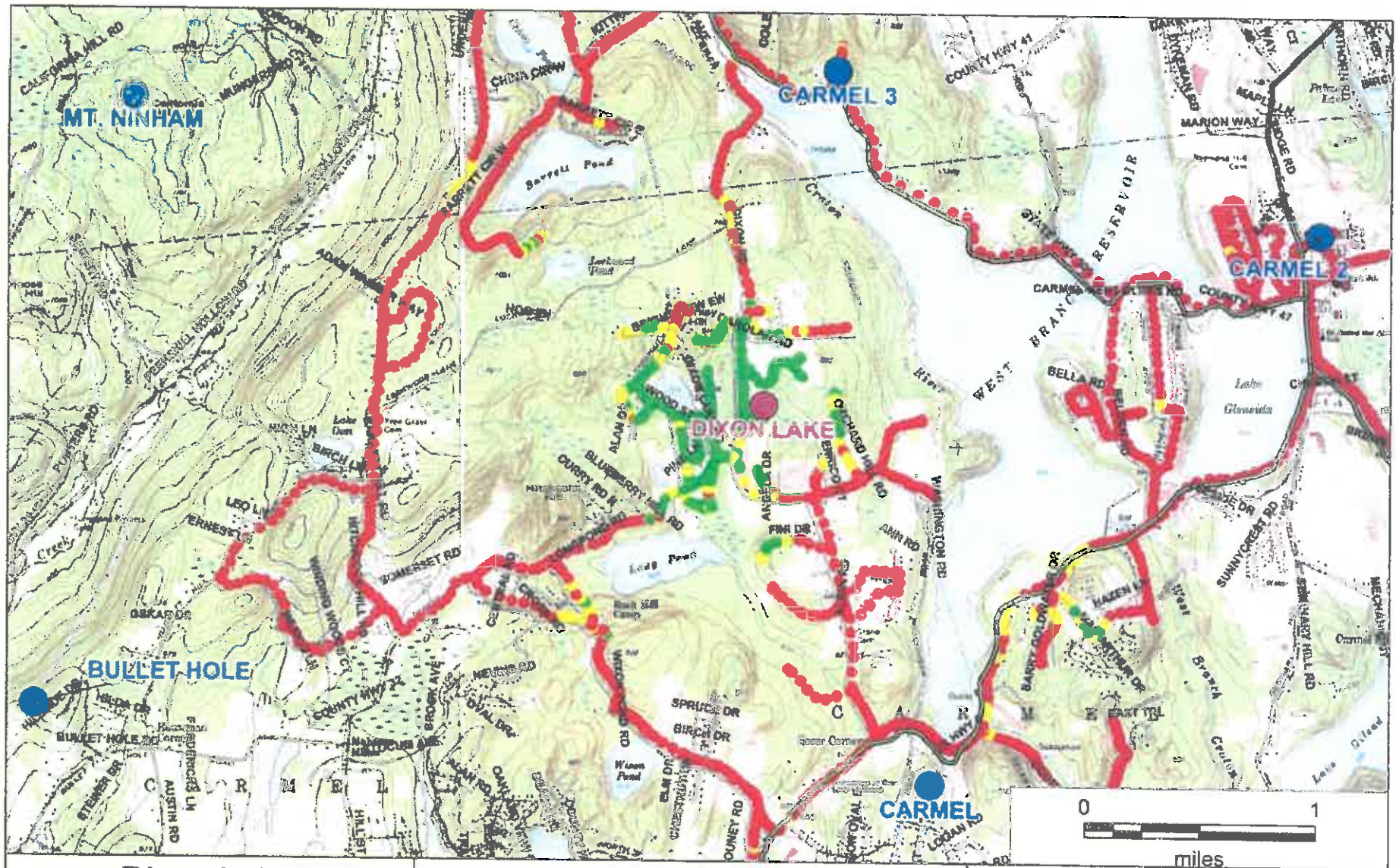
36 Dixon Road
Carmel, NY 10512

- Verizon Wireless Existing Site
- Verizon Wireless Proposed Site
- Reliable In-Building Suburban Coverage (≥ -95 dBm RSRP)
- Reliable In-Vehicle Suburban Coverage (≥ -105 dBm RSRP)
- Unreliable In-Vehicle Coverage (< -105 dBm RSRP)

verizon

PierCon Solutions LLC
Specialists in Wireless Systems

Prepared by PierCon Solutions LLC
05/20/2019



Dixon Lake
 2100 MHz CW Test
 @ 150'

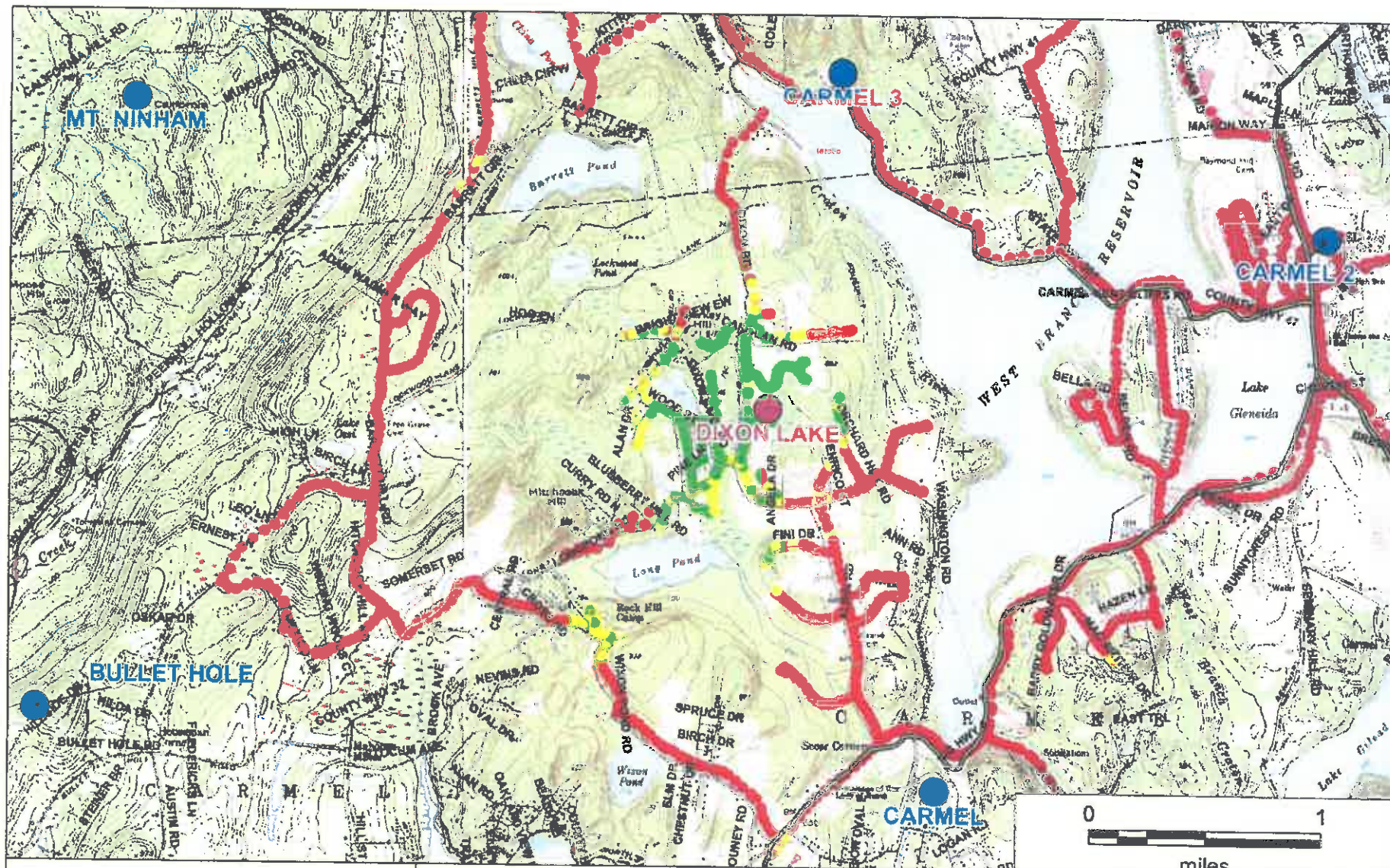
36 Dixon Road
 Carmel, NY 10512

- Verizon Wireless Existing Site
- Verizon Wireless Proposed Site

- Reliable In-Building Suburban Coverage (≥ -95 dBm RSRP)
- Reliable In-Vehicle Suburban Coverage (≥ -105 dBm RSRP)
- Unreliable In-Vehicle Coverage (< -105 dBm RSRP)

verizon 
PierCon Solutions ^{LLC}
 Specialists in Wireless Systems

Prepared by PierCon Solutions LLC
 05/20/2019



Dixon Lake

2100 MHz CW Test
@ 130'

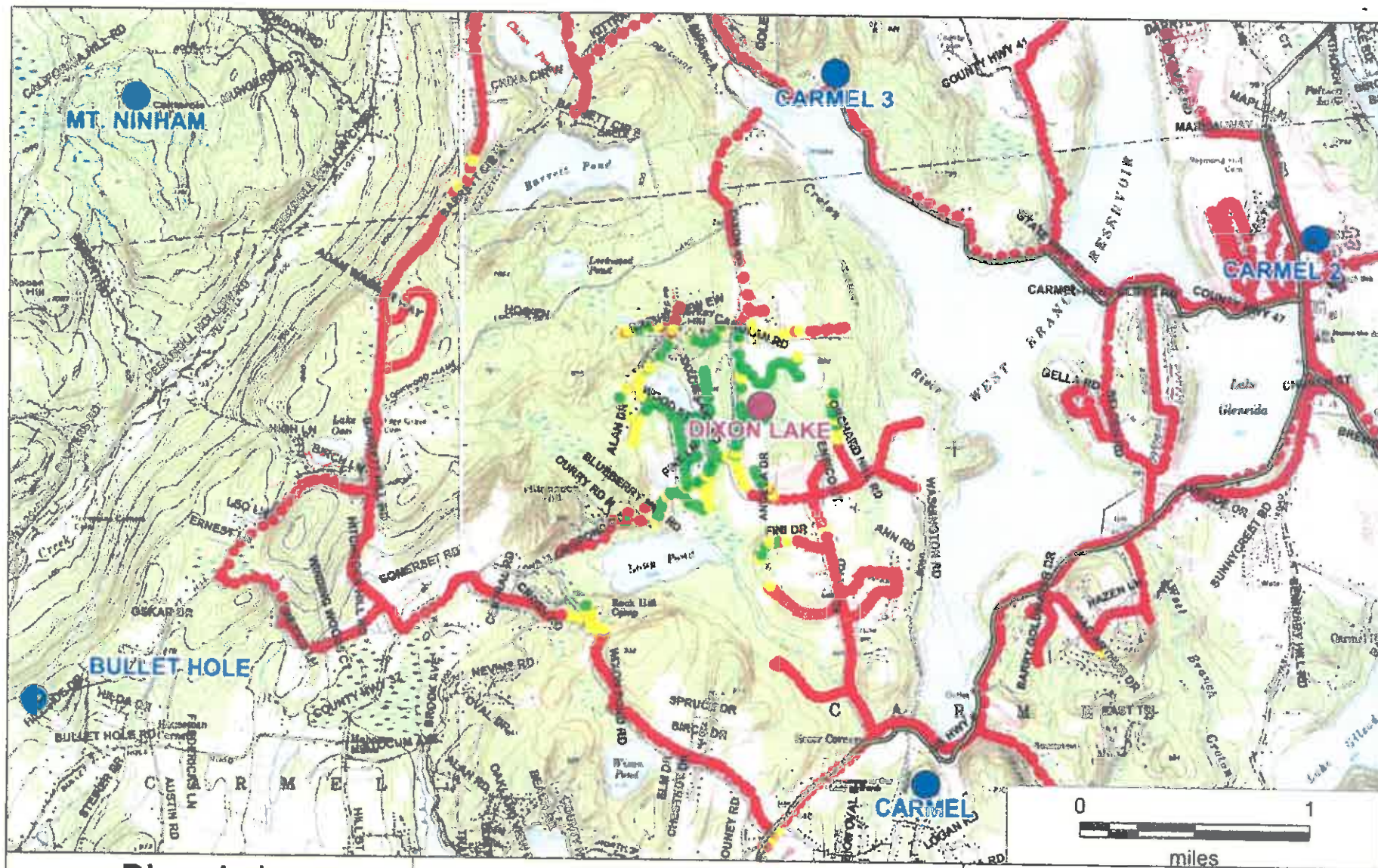
36 Dixon Road
Carmel, NY 10512

- Verizon Wireless Existing Site
- Verizon Wireless Proposed Site
- Reliable In-Building Suburban Coverage (≥ -95 dBm RSRP)
- Reliable In-Vehicle Suburban Coverage (≥ -105 dBm RSRP)
- Unreliable In-Vehicle Coverage (< -105 dBm RSRP)

verizon 

 **PierCon Solutions** LLC
Specialists in Wireless Systems

Prepared by PierCon Solutions LLC
05/20/2019



Dixon Lake

2100 MHz CW Test
@ 110'

36 Dixon Road
Carmel, NY 10512

- Verizon Wireless Existing Site
- Verizon Wireless Proposed Site
- Reliable In-Building Suburban Coverage (≥ -95 dBm RSRP)
- Reliable In-Vehicle Suburban Coverage (≥ -105 dBm RSRP)
- Unreliable In-Vehicle Coverage (< -105 dBm RSRP)

verizon 

PierCon Solutions
Specialists in Wireless Systems

Prepared by PierCon Solutions LLC
05/20/2019

Exhibit J

4G LTE KPI Charts

Carmel 3 - Beta (200th) Sector LTE 2100 MHz Access Failure Rate

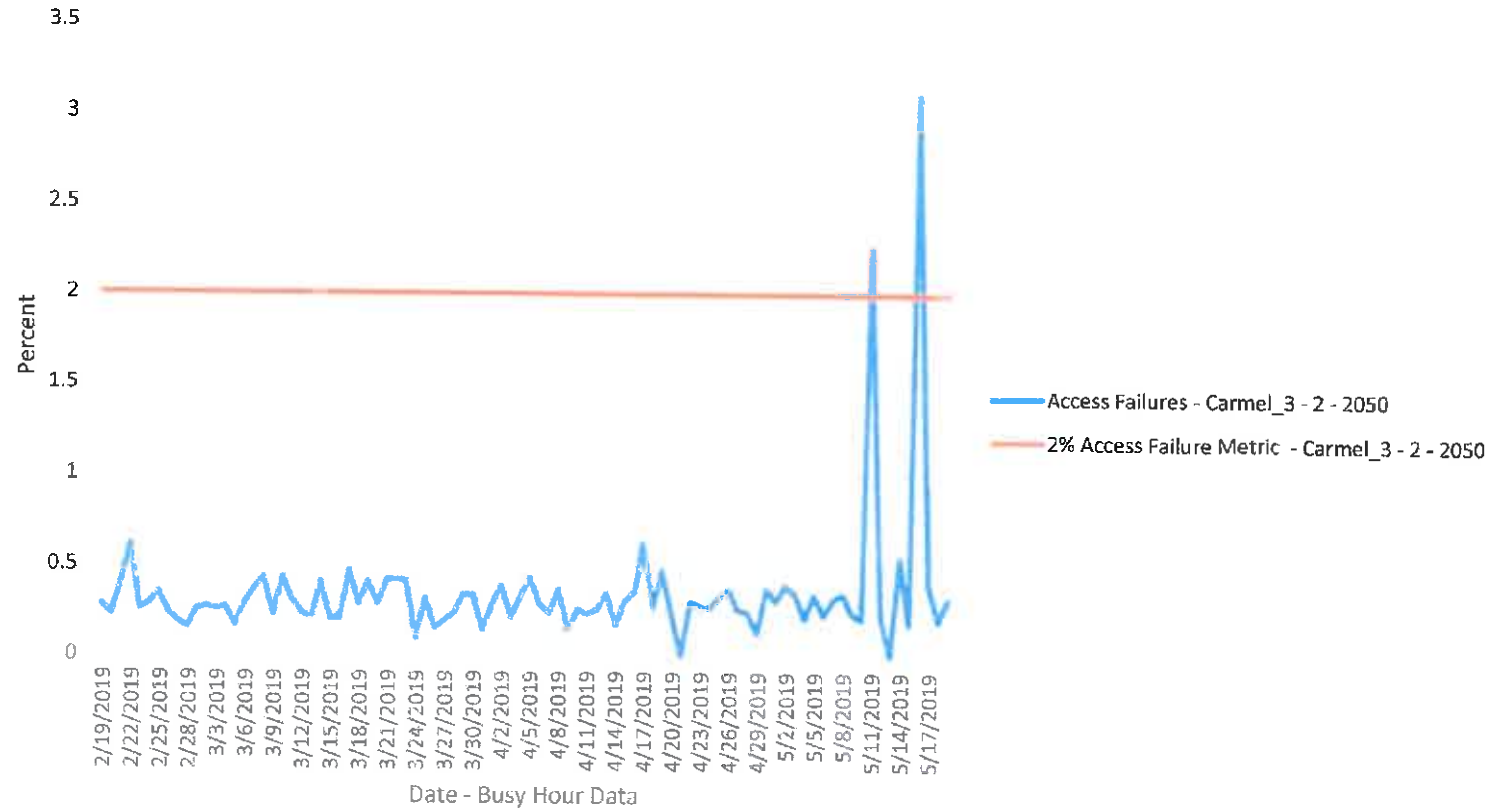


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2% metric with the exception of 2.3 and 3 that occurred on May 11th and May 16th, 2019 which is acceptable. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz frequency band charts to follow. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage.

Carmel 3 - Beta (200^g) Sector LTE 2100 MHz Drop Call Rate

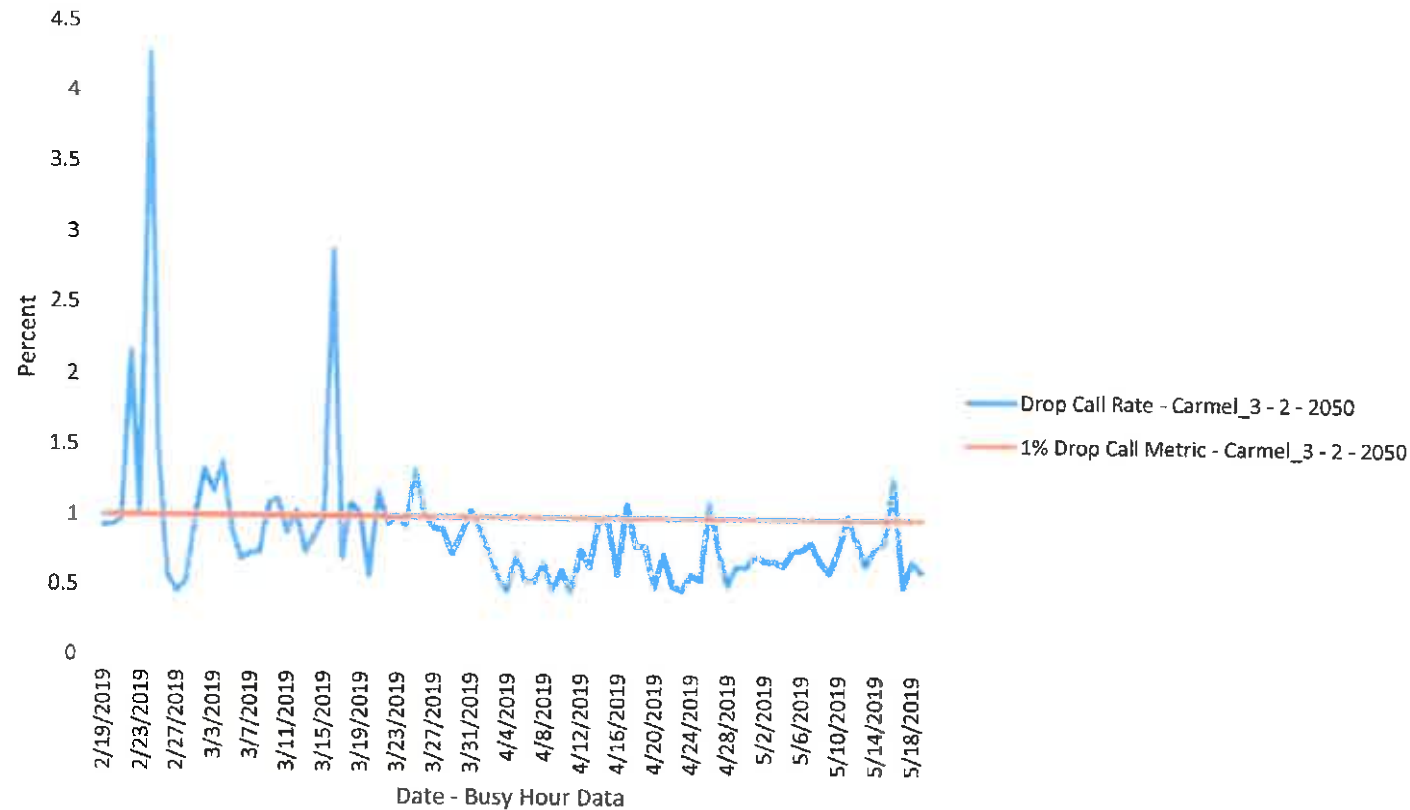


Chart demonstrates the LTE drop rate for the 2100 MHz frequency band from the sector. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The chart demonstrates that as users travel south from the Carmel 3 facility, they experience a drop rate in excess of the industry standard, and in excess of Verizon's performance goal of 1%. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz charts to follow.

Carmel 3 - Beta (200%) Sector LTE 700 MHz Access Failure Rate

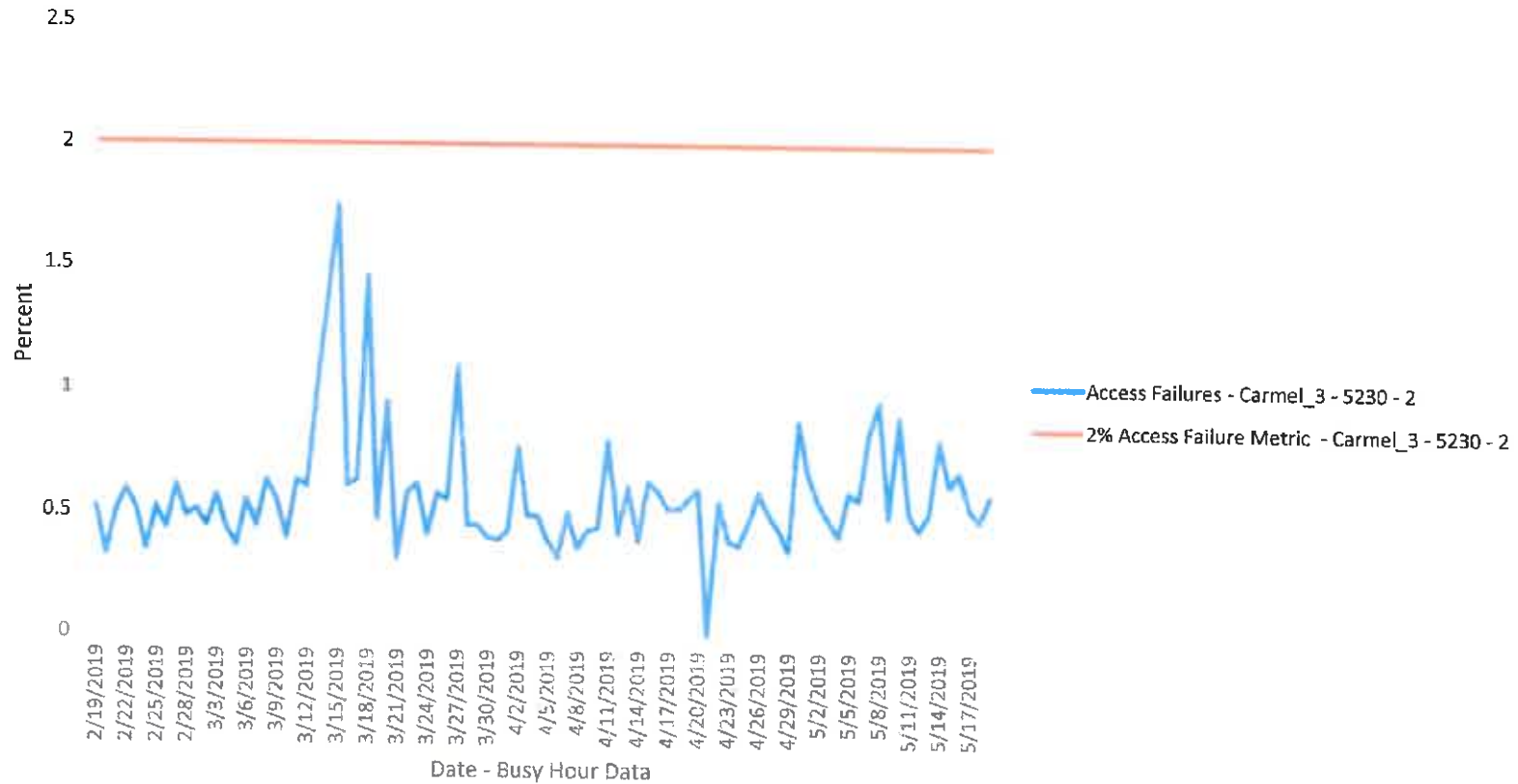


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2%. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the chart to follow.

Carmel 3 - Beta (200^g) Sector LTE 700 MHz Drop Call Rate

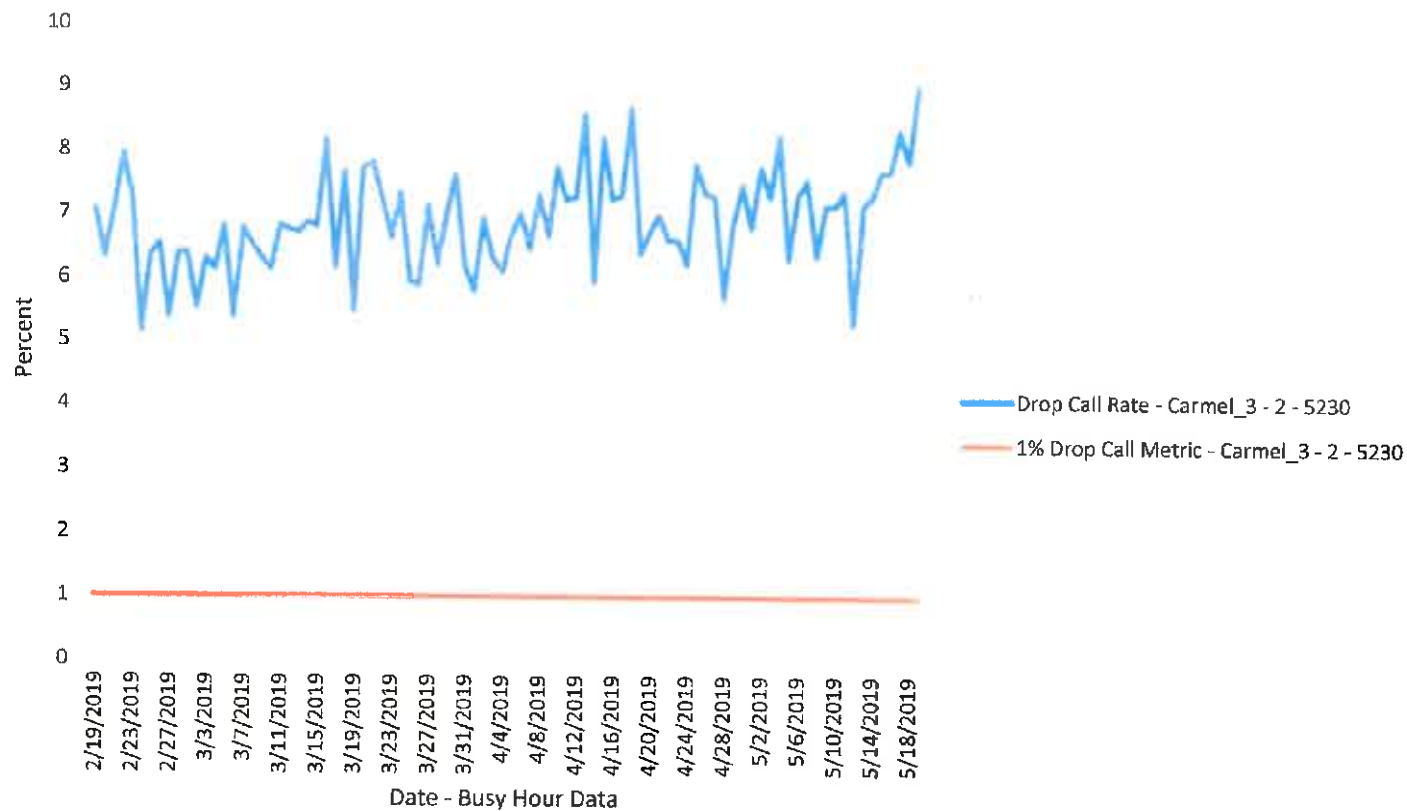


Chart demonstrates the LTE drop rate for the 700 MHz frequency band from the sector. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The chart demonstrates that as users travel south from the Carmel 3 facility, they experience a drop rate in excess of the industry standard, and in excess of Verizon's performance goal of 1%. The data in the chart over the three-month time period demonstrate drop rates over 1%. The drop call KPI data further substantiates the significant gap in service when used in conjunction with the drive test data and coverage maps.

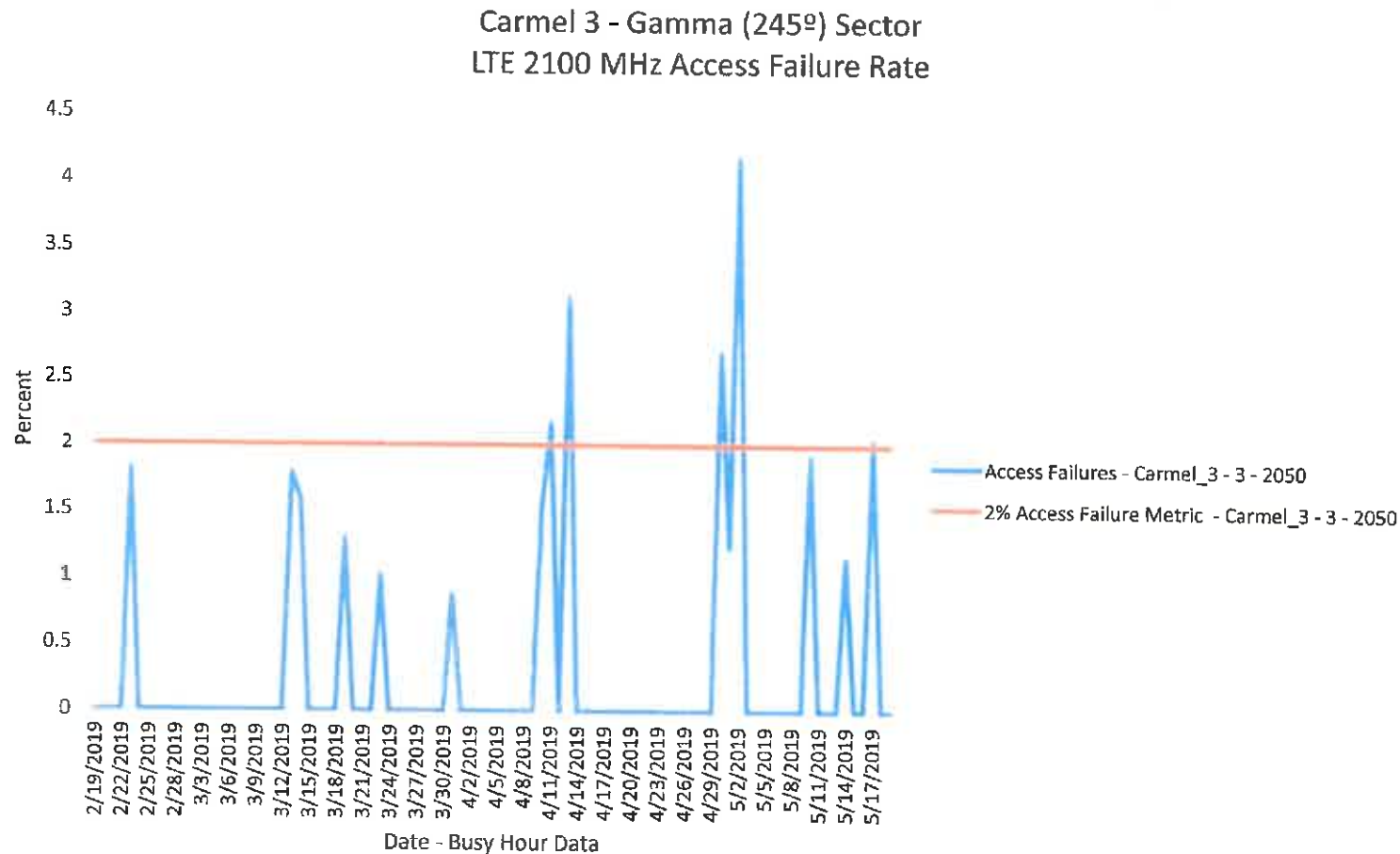


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2% metric with the exception of 2.1%, 3.1%, 2.7% and 4.2% access failure that occurred on April 10th, April 12th, April 30th, and May 2nd, which is acceptable. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz frequency band charts to follow. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage.

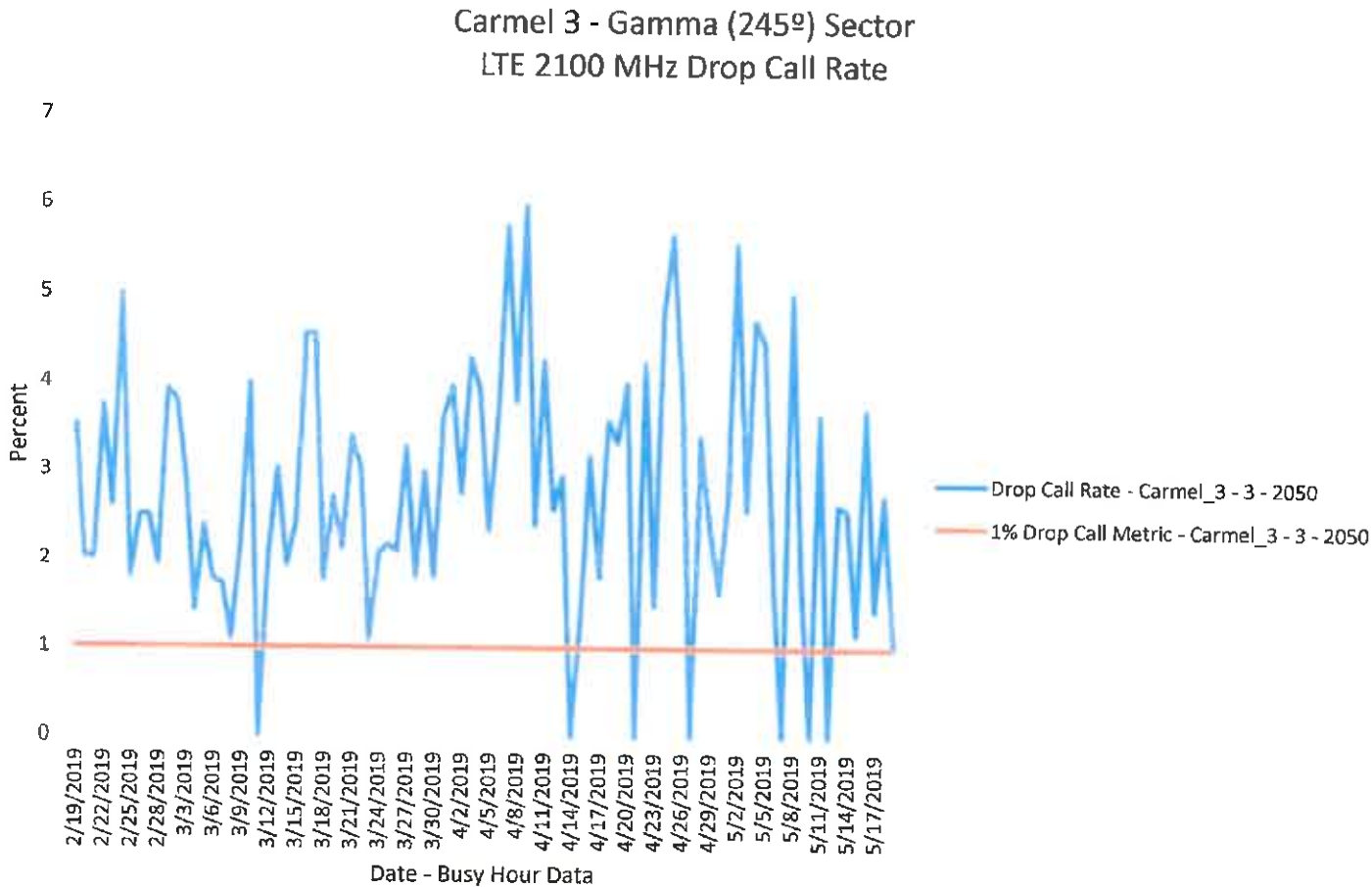


Chart demonstrates the LTE drop rate for the 2100 MHz frequency band from the sector. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The chart demonstrates that as users travel south west from the Carmel 3 facility, they experience a drop rate in excess of the industry standard, and in excess of Verizon's performance goal of 1%. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz charts to follow.

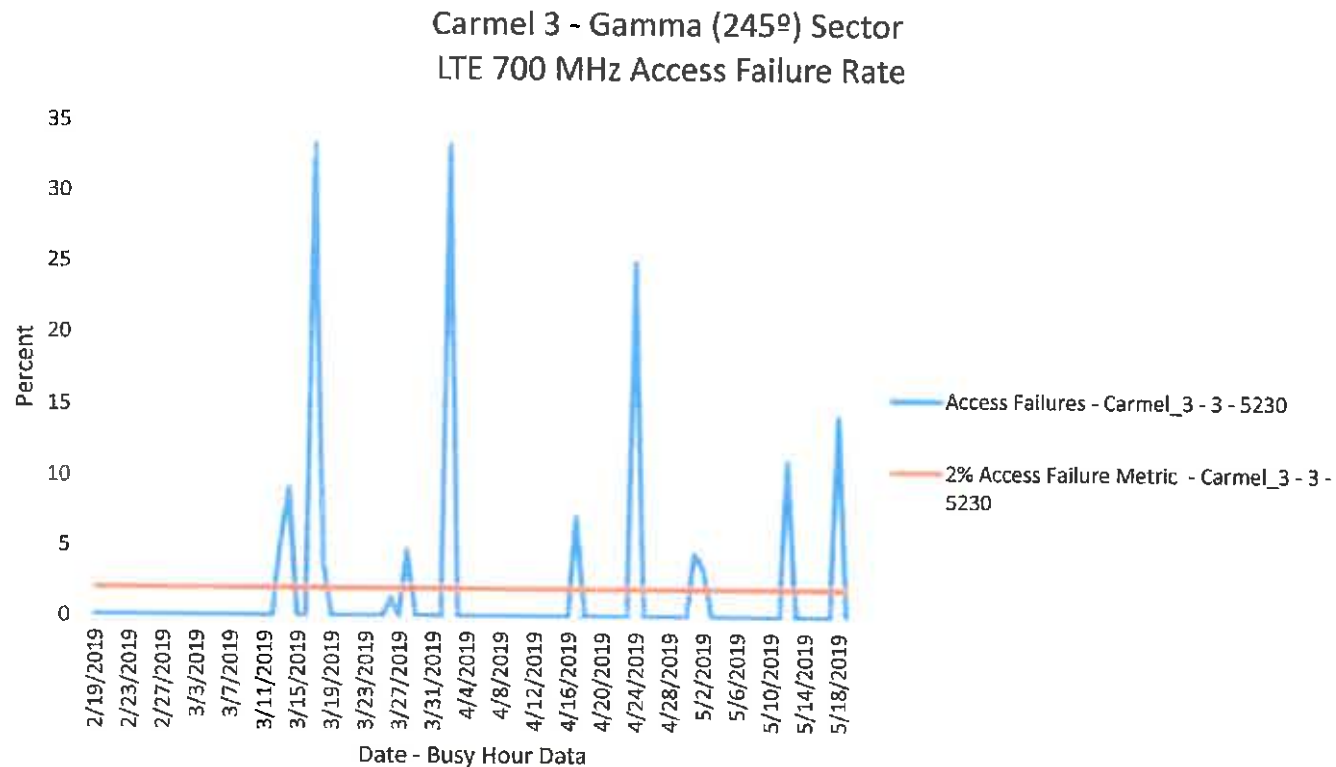


Chart demonstrates that users are not able to access the LTE network within reasonable success. Access failures recorded were over the 2% metric which is unacceptable. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The access failures represented in the chart indicate failures ranging from 3% to over 33%.

Carmel 3 - Gamma (245°) Sector LTE 700 MHz Drop Call Rate

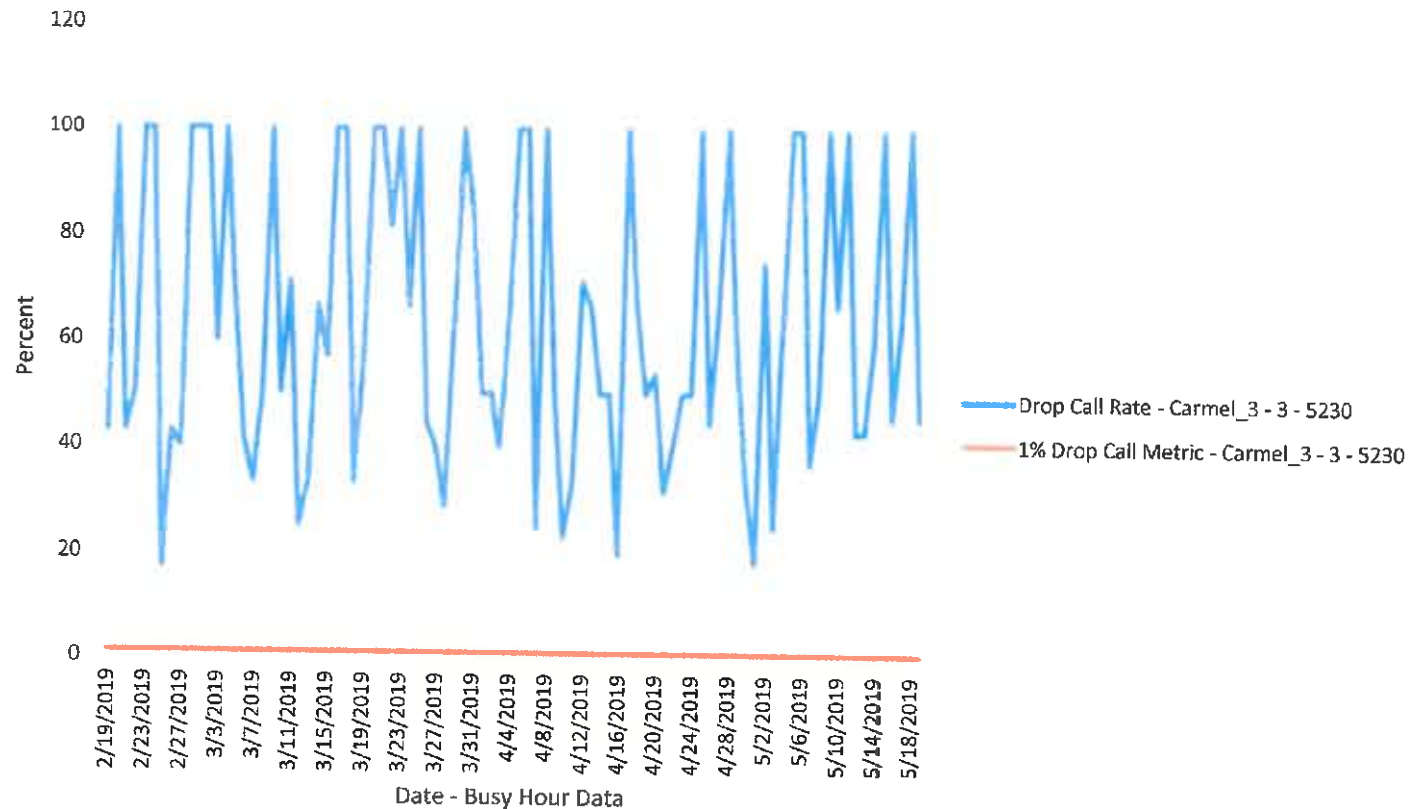


Chart demonstrates the LTE drop rate for the 700 MHz frequency band from the sector. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The chart demonstrates that as users travel south west from the Carmel 3 facility, they experience a drop rate in excess of the industry standard, and in excess of Verizon's performance goal of 1%. The data in the chart over the three-month time period demonstrate drop rates over 1%. The drop call KPI data further substantiates the significant gap in service when used in conjunction with the drive test data and coverage maps.

Carmel - Gamma (342nd) Sector LTE 2100 MHz Access Failure Rate

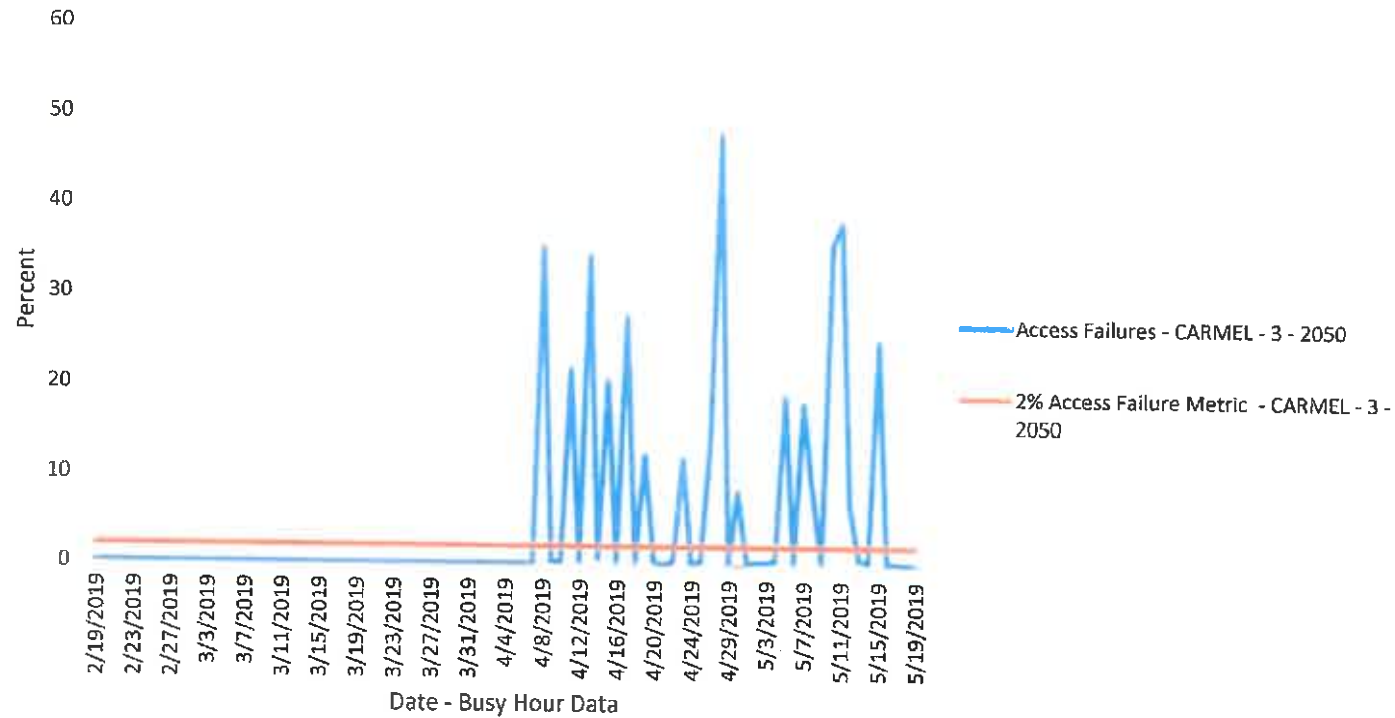


Chart demonstrates that users are not able to access the LTE network within reasonable success. Access failures recorded were over the 2% metric which is unacceptable. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The access failures represented in the chart indicate failures ranging from 8% to over 40%.

Carmel - Gamma (342nd) Sector LTE 2100 MHz Drop Call Rate

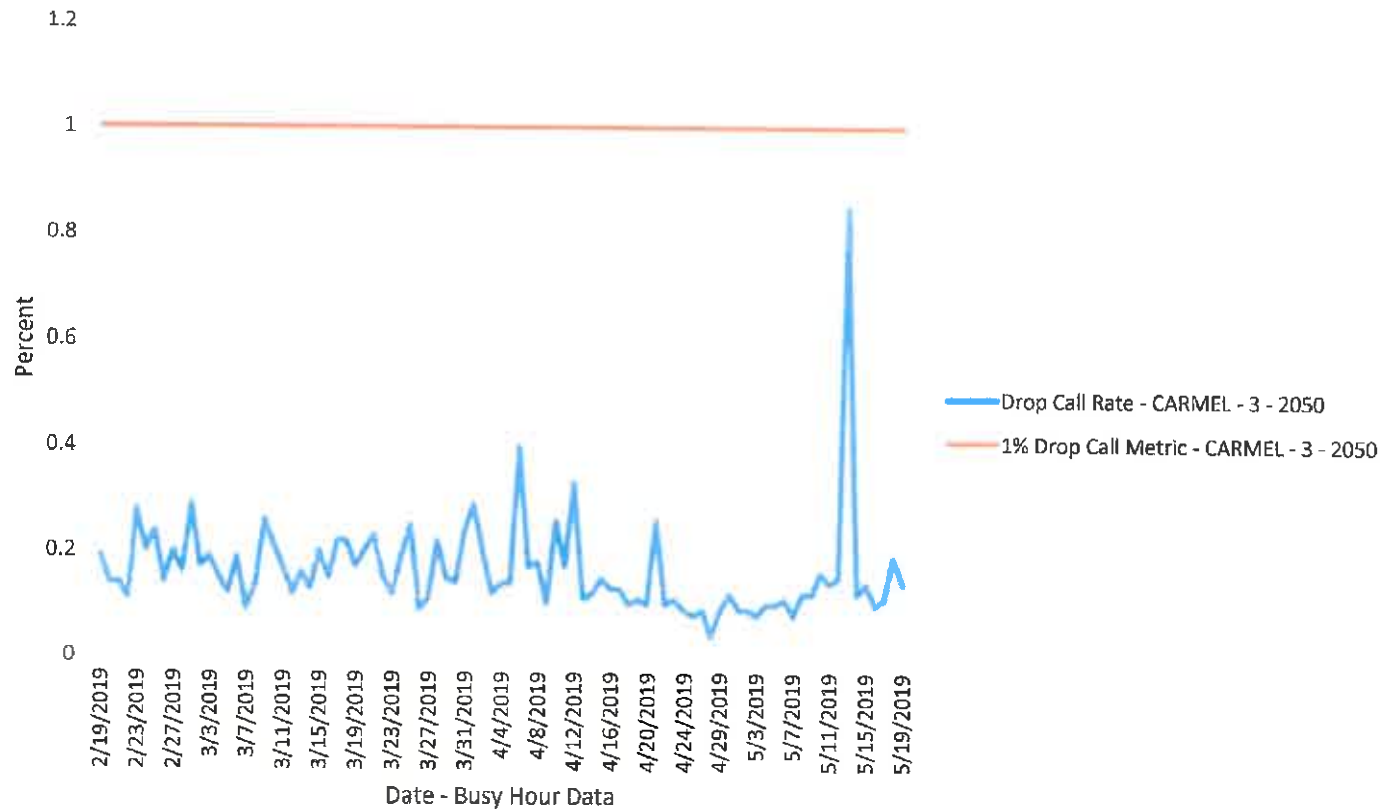


Chart demonstrates the LTE drop rate for the 2100 MHz frequency band from the sector. The drop rate in this chart is within Verizon's performance goal of 1%. However, a call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz charts to follow.

Carmel - Gamma (342°) Sector LTE 700 MHz Access Failure Rate

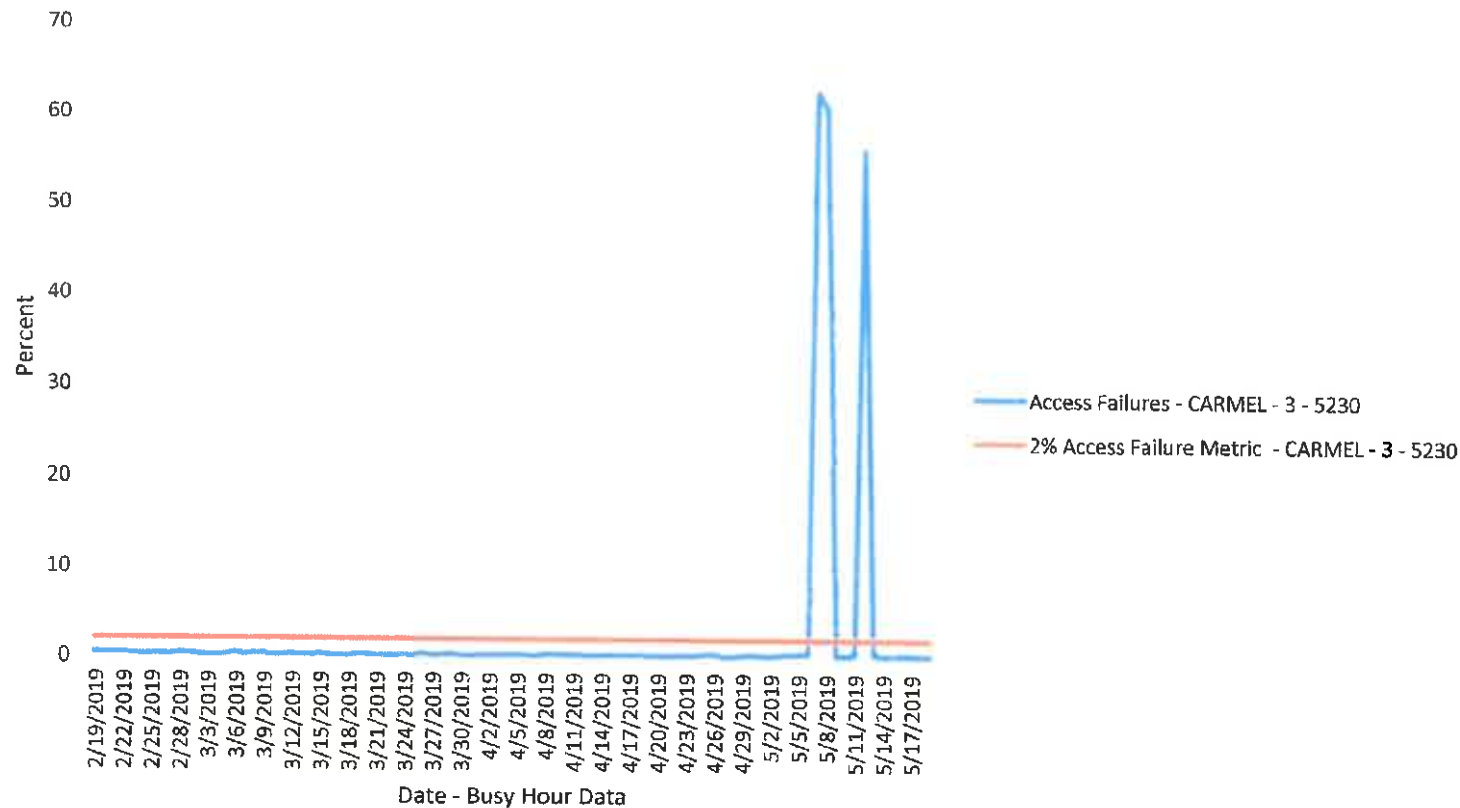


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2%, with exception to a 61 and 57% access failure that occurred on May 7 and May 12, 2019. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the chart to follow.

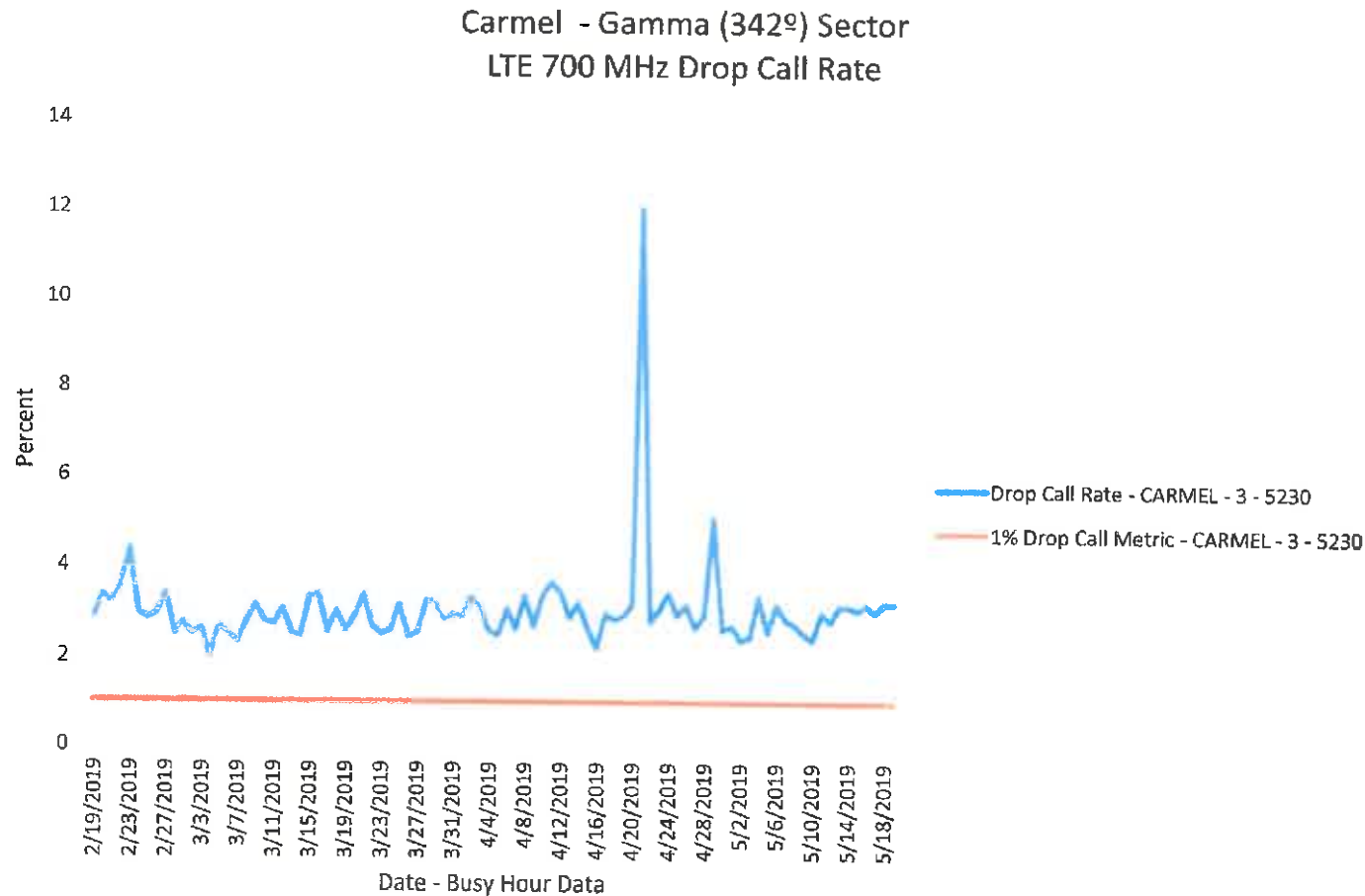


Chart demonstrates the LTE drop rate for the 700 MHz frequency band from the sector. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The chart demonstrates that as users travel north west from the Carmel facility, they experience a drop rate in excess of the industry standard, and in excess of Verizon's performance goal of 1%. The data in the chart over the three-month time period demonstrate drop rates over 1%. The drop call KPI data further substantiates the significant gap in service when used in conjunction with the drive test data and coverage maps.

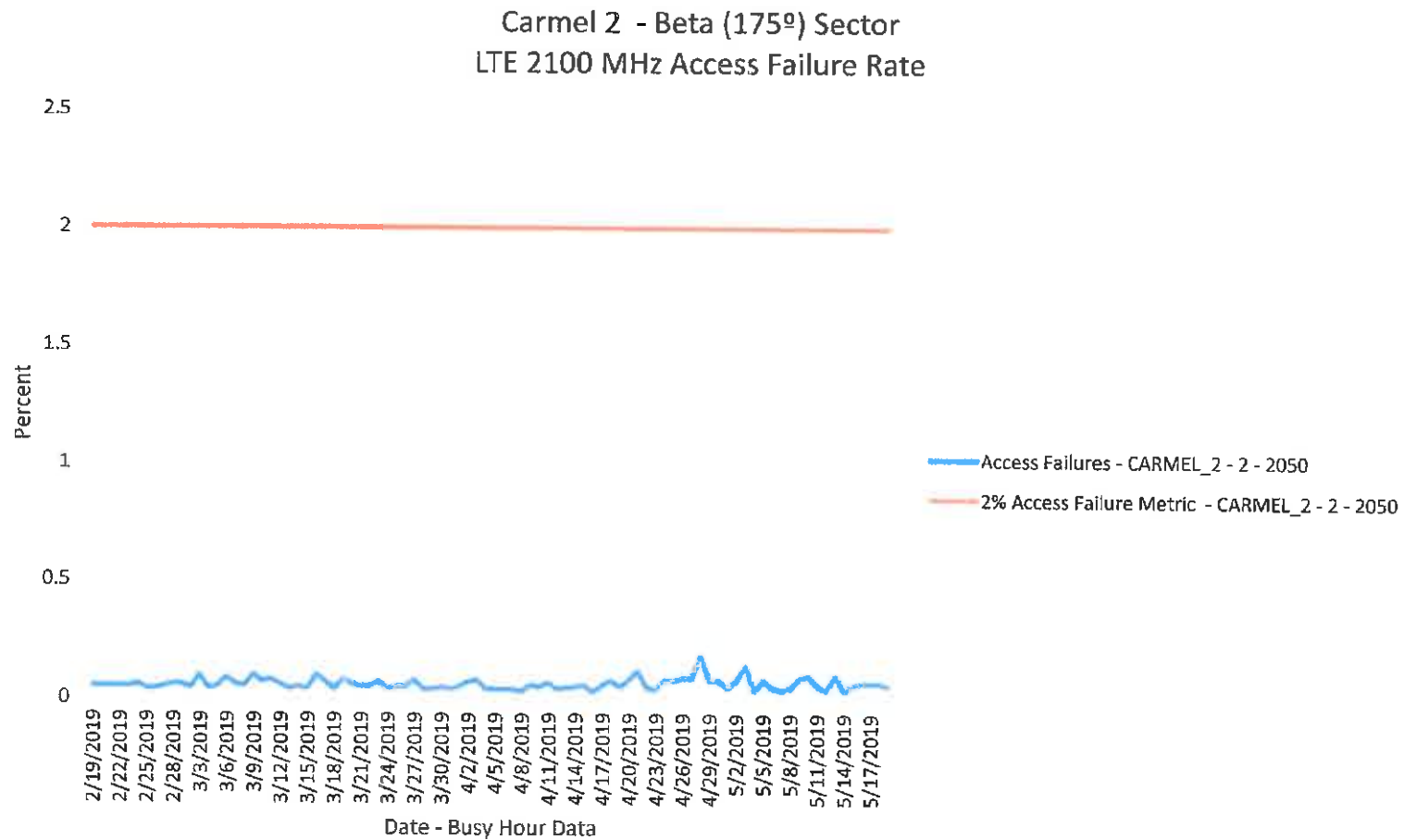


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2% metric which is acceptable. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections.

Carmel 2 - Beta (175⁹) Sector LTE 2100 MHz Drop Call Rate

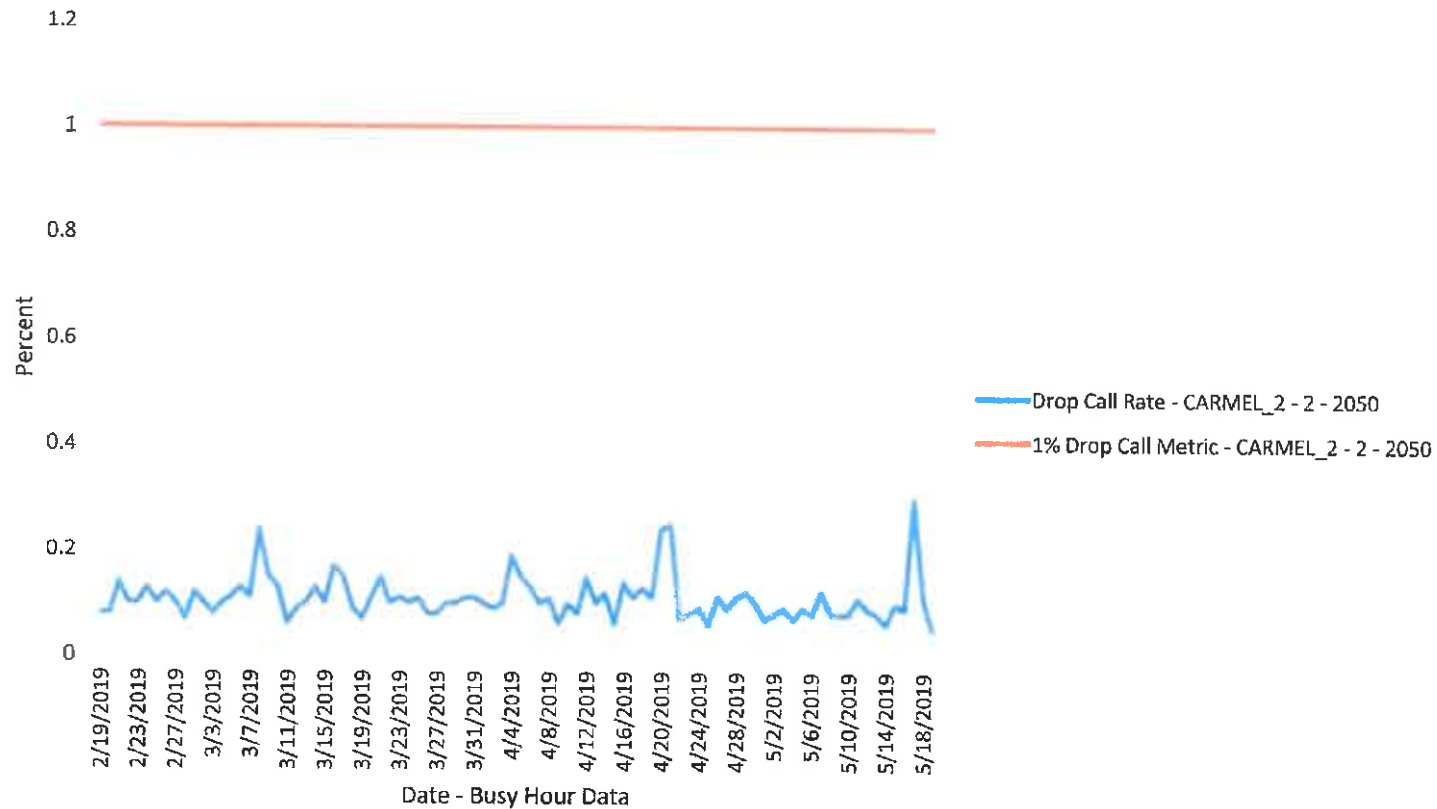


Chart demonstrates the LTE drop rate for the 2100 MHz frequency band from the sector. The drop rate in this chart is within Verizon's performance goal of 1%. However, a call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage.

Carmel 2 - Gamma (315°) Sector LTE 2100 MHz Access Failure Rate

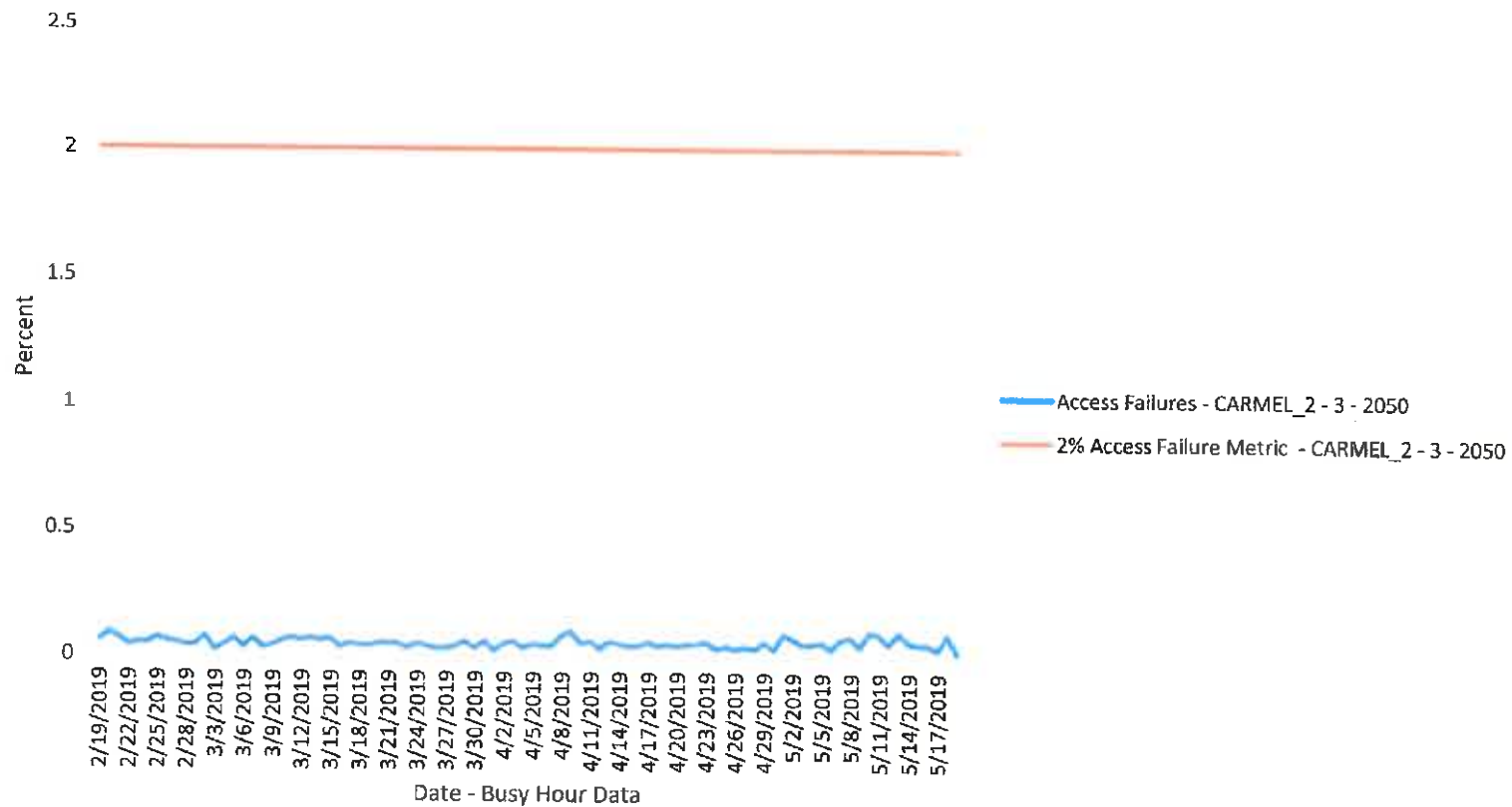


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2% metric which is acceptable. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz frequency band. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage.

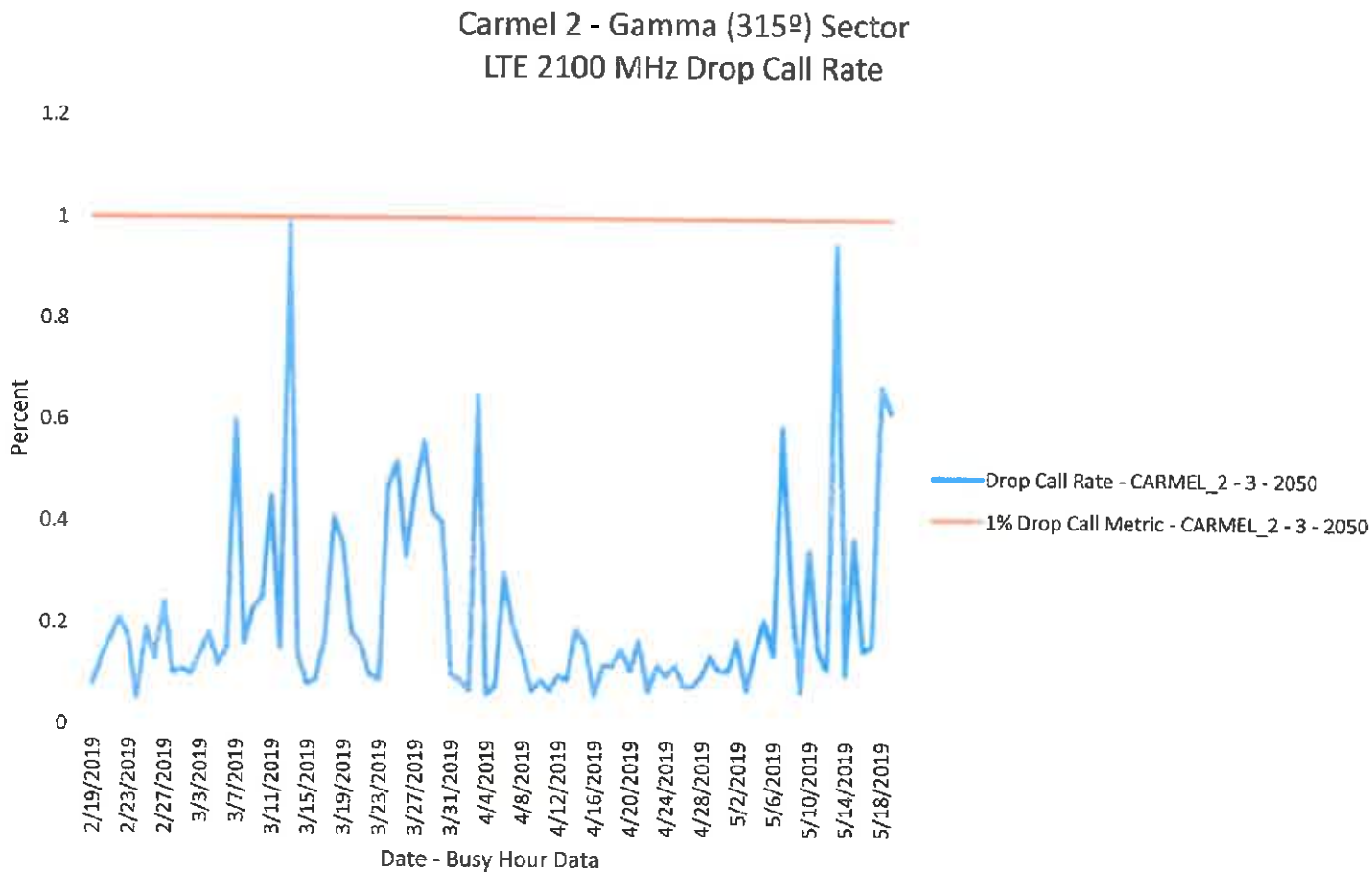


Chart demonstrates the LTE drop rate for the 2100 MHz frequency band from the sector. The drop rate in this chart is within Verizon's performance goal of 1%. However, a call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage.

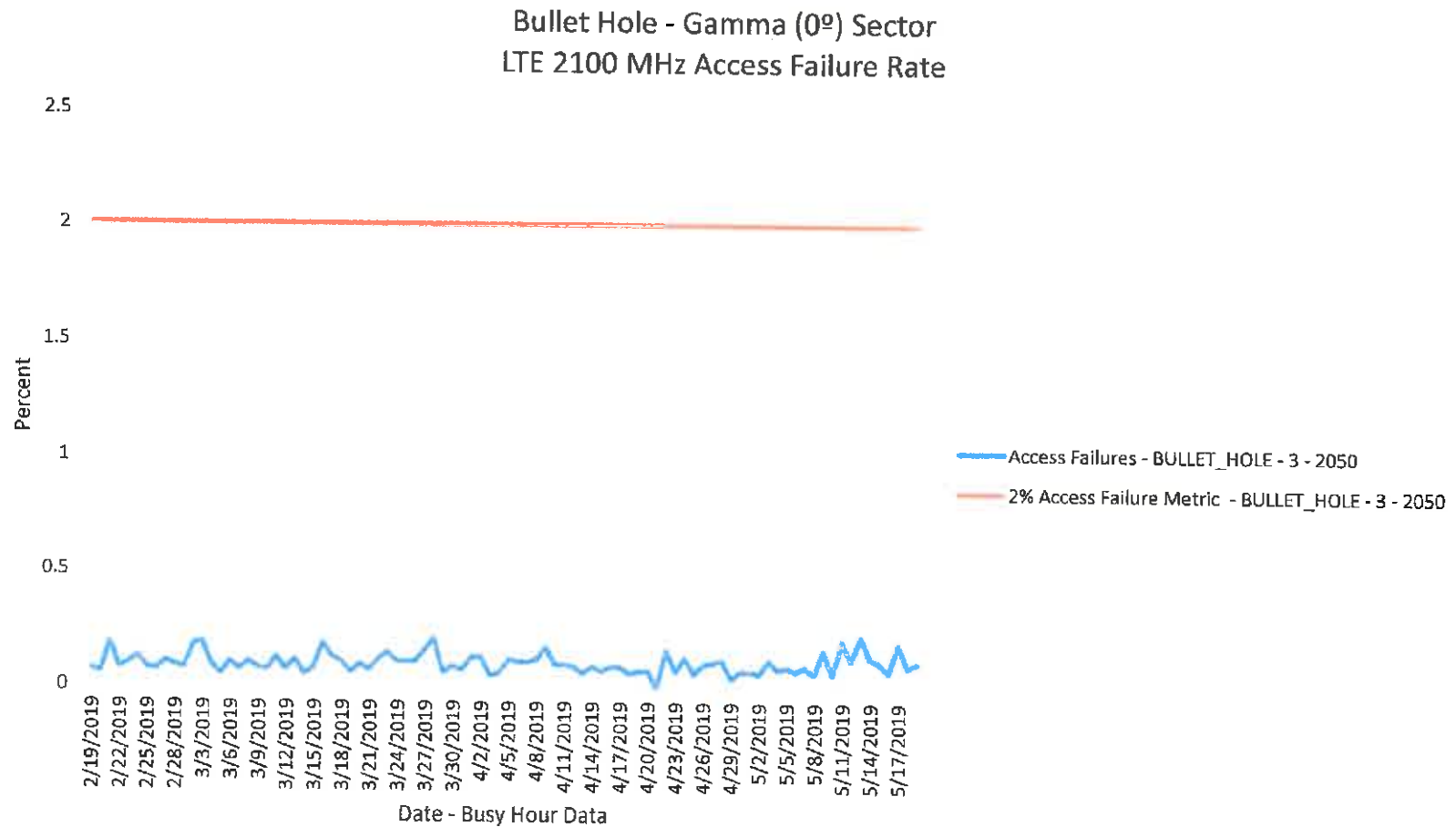


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2% metric which is acceptable. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz frequency band charts to follow. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage.

Bullet Hole - Gamma (0°) Sector LTE 2100 MHz Drop Call Rate

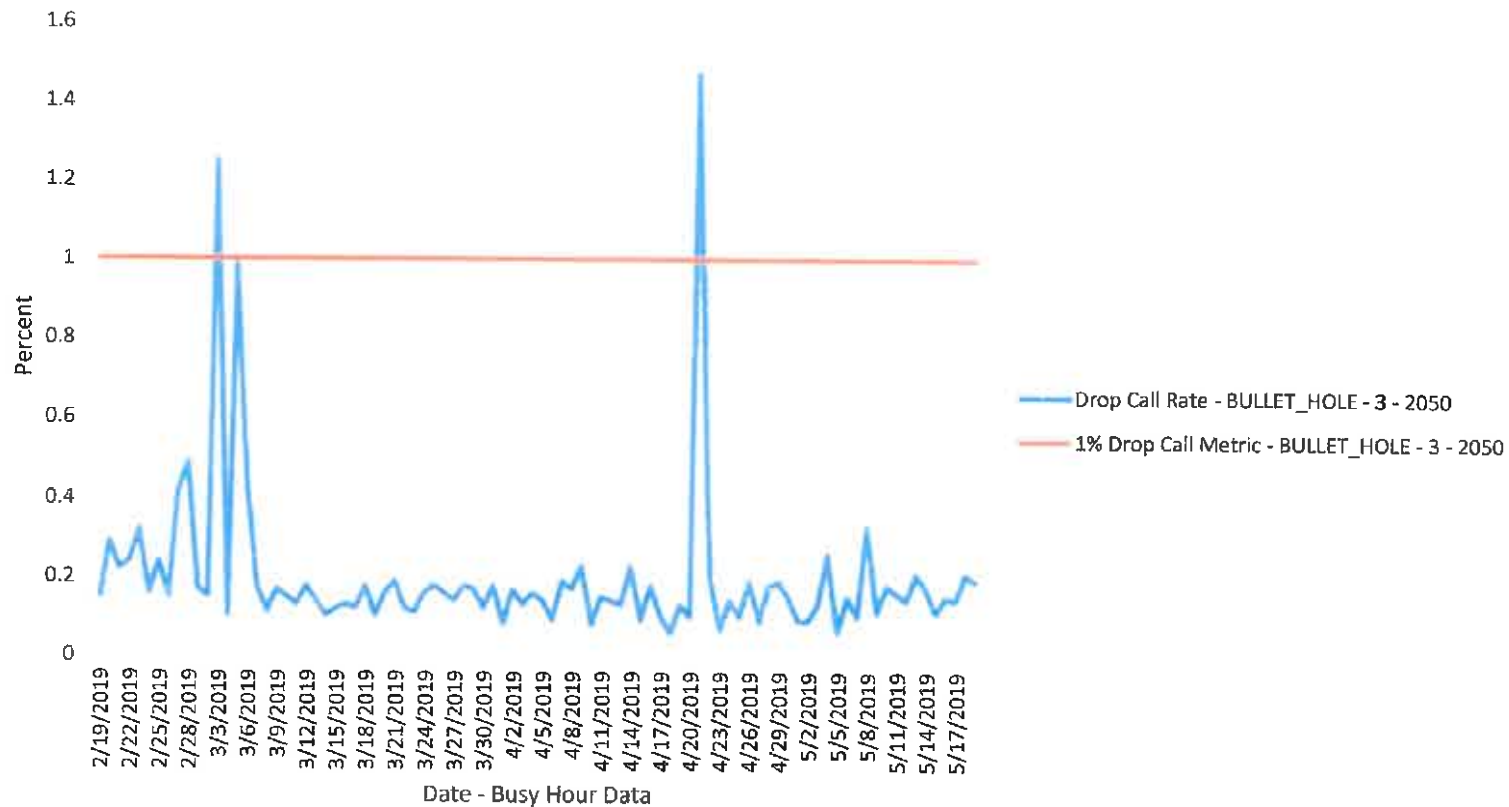


Chart demonstrates the LTE drop rate for the 2100 MHz frequency band from the sector. The drop rate in this chart is within Verizon's performance goal of 1% with the exception of a drop call rate of 1.3 and 1.5 on March 2 and April 20, 2019. However, a call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz charts to follow.

Bullet Hole - Gamma (0°) Sector LTE 700 MHz Access Failure Rate

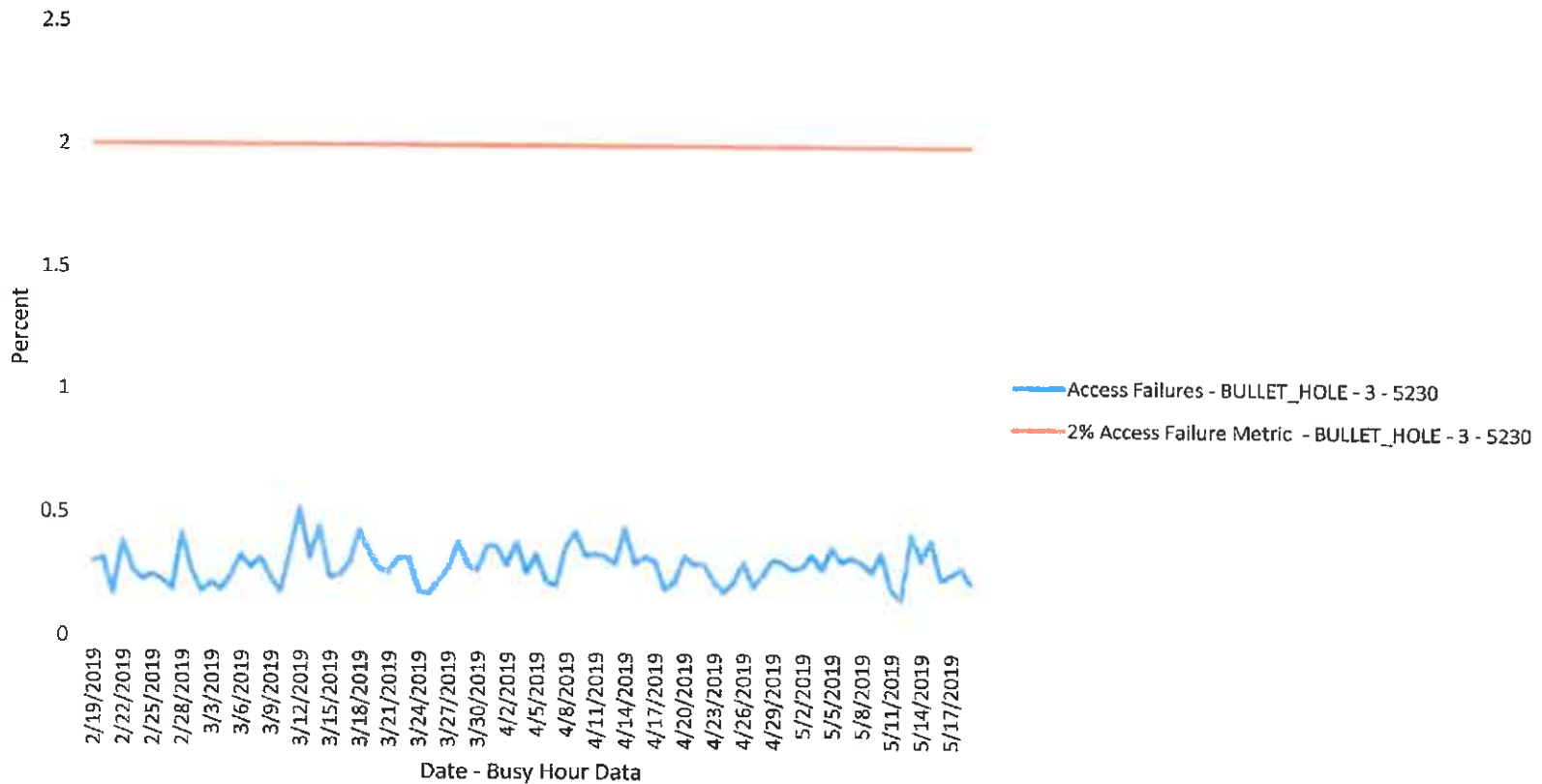


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2%. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the chart to follow.

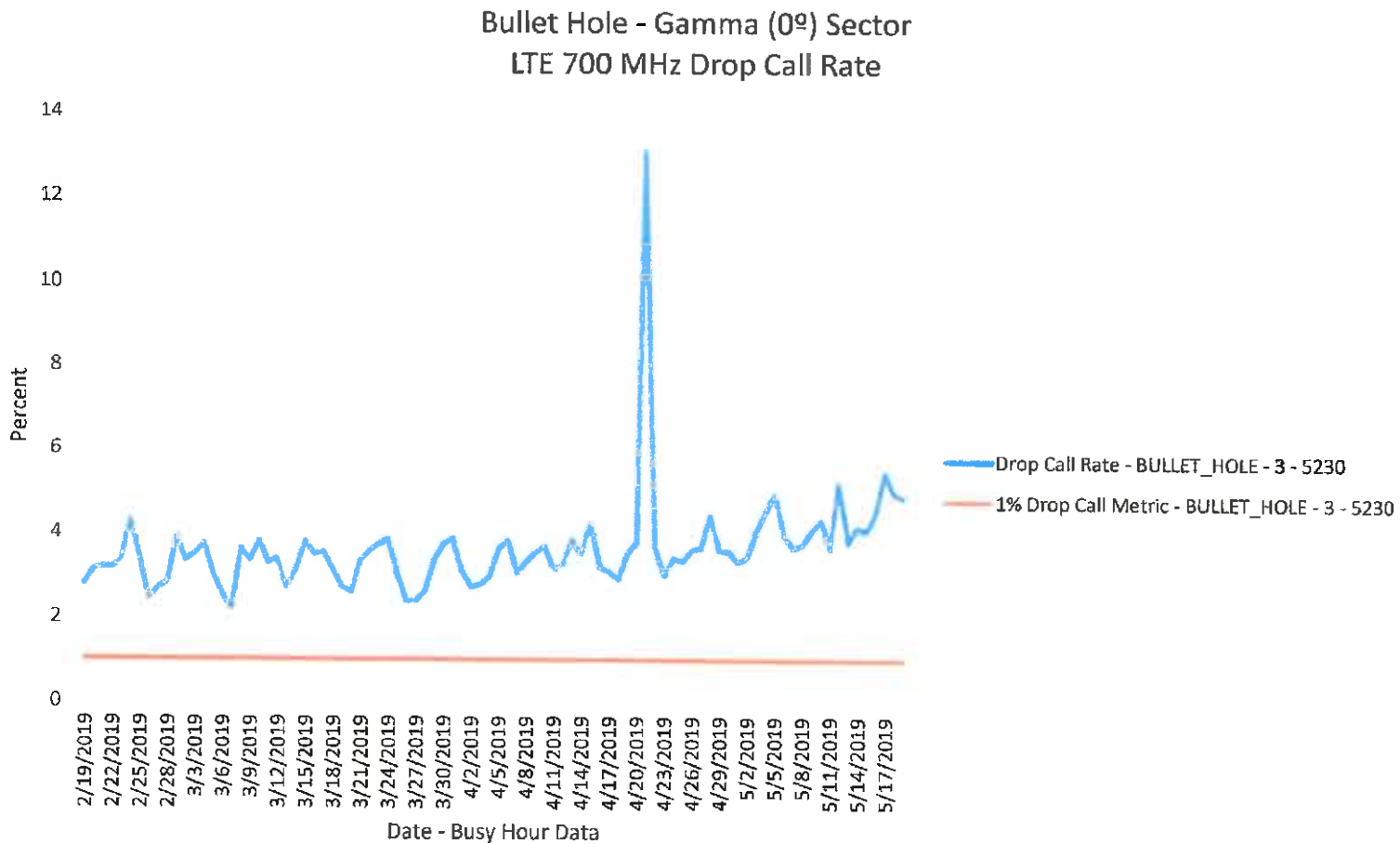


Chart demonstrates the LTE drop rate for the 700 MHz frequency band from the sector. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The chart demonstrates that as users travel north east from the Bullet Hole facility, they experience a drop rate in excess of the industry standard, and in excess of Verizon's performance goal of 1%. The data in the chart over the three-month time period demonstrate drop rates over 3%. The drop call KPI data further substantiates the significant gap in service when used in conjunction with the drive test data and coverage maps.

Bullet Hole - Alpha (122nd) Sector LTE 2100 MHz Access Failure Rate

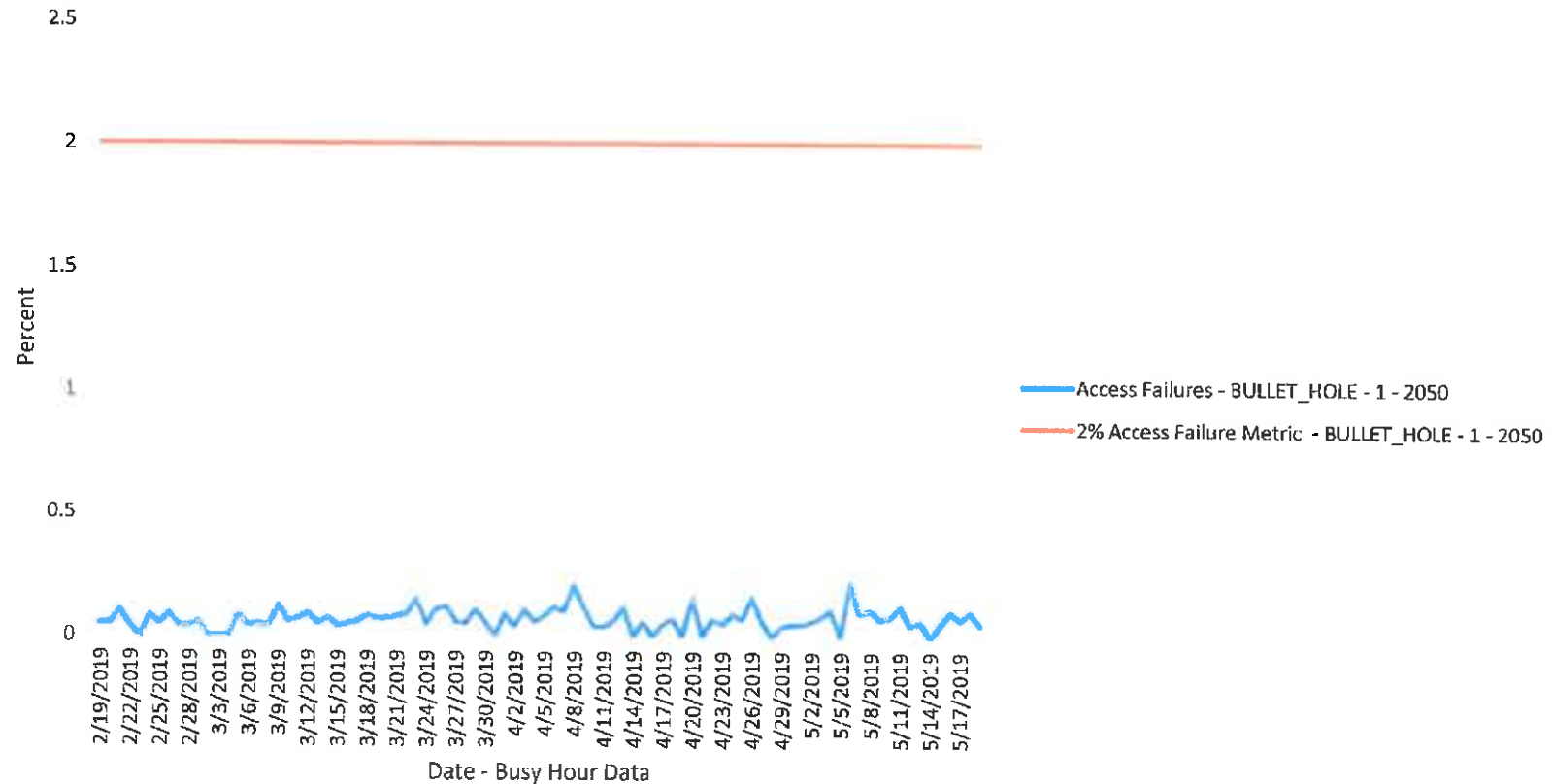


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2% metric which is acceptable. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz frequency band charts to follow. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage

Bullet Hole - Alpha (122°) Sector LTE 2100 MHz Drop Call Rate

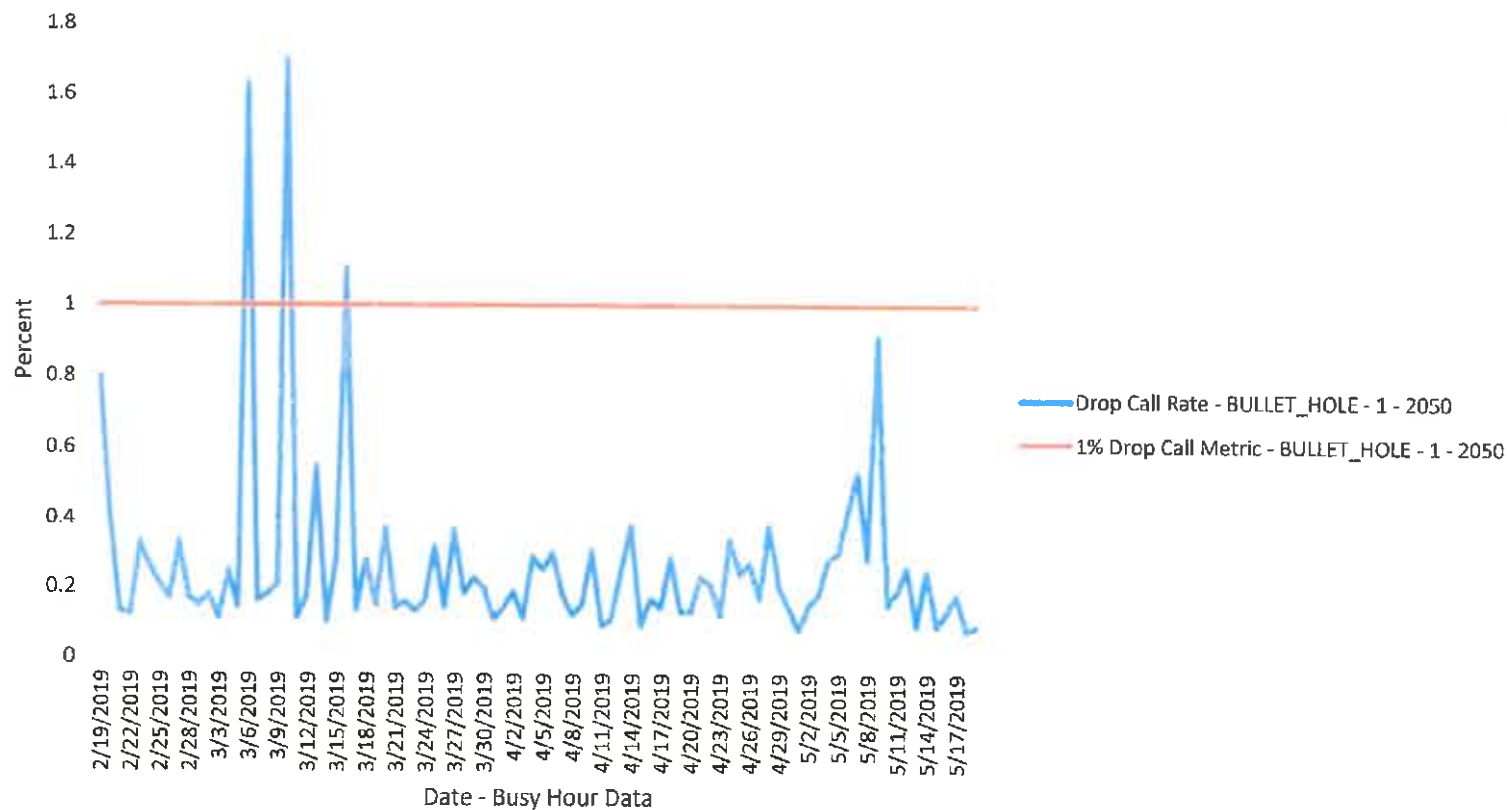


Chart demonstrates the LTE drop rate for the 2100 MHz frequency band from the sector. The drop rate in this chart is within Verizon's performance goal of 1% with the exception of a drop call rate of 1.6, 1.7 and 1.1 on March 10, and March 16, 2019. However, a call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz charts to follow.

Bullet Hole - Alpha (122°) Sector LTE 700 MHz Access Failure Rate

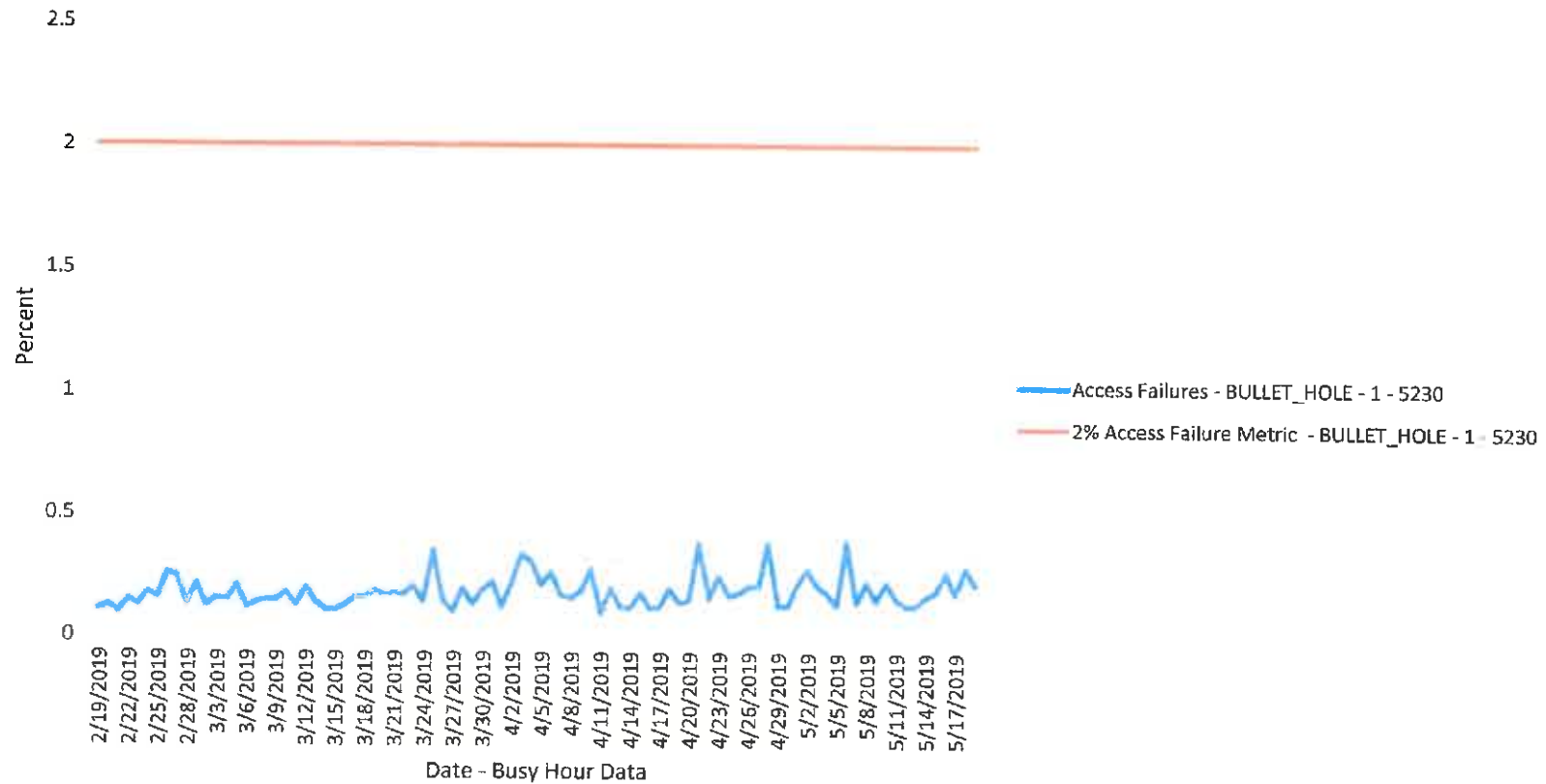


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2%. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the chart to follow.

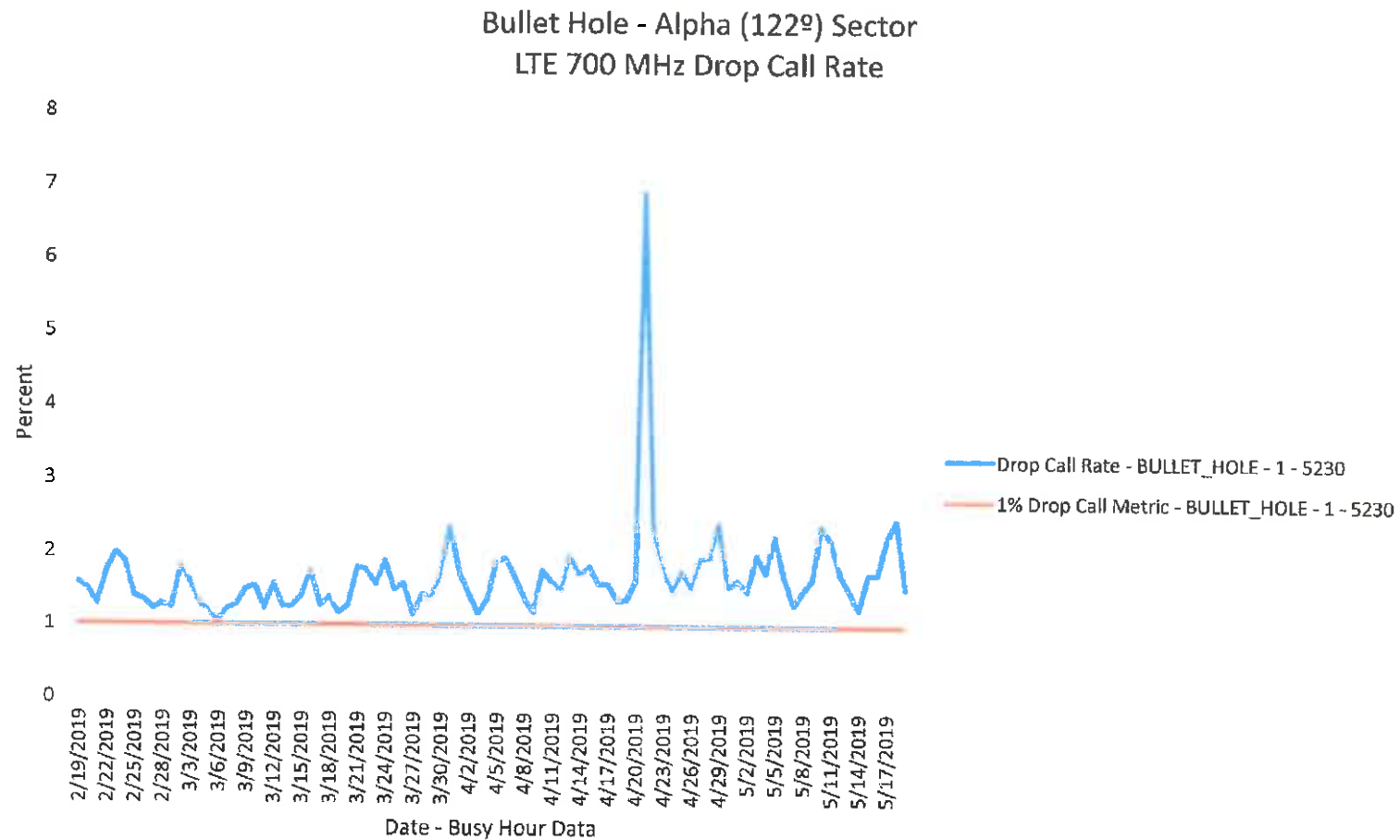


Chart demonstrates the LTE drop rate for the 700 MHz frequency band from the sector. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The chart demonstrates that as users travel north east from the Bullet Hole facility, they experience a drop rate in excess of the industry standard, and in excess of Verizon's performance goal of 1%. The data in the chart over the three-month time period demonstrate drop rates over 1%. The drop call KPI data further substantiates the significant gap in service when used in conjunction with the drive test data and coverage maps.

Mt Ninham - Alpha (95°) Sector LTE 2100 MHz Access Failure Rate

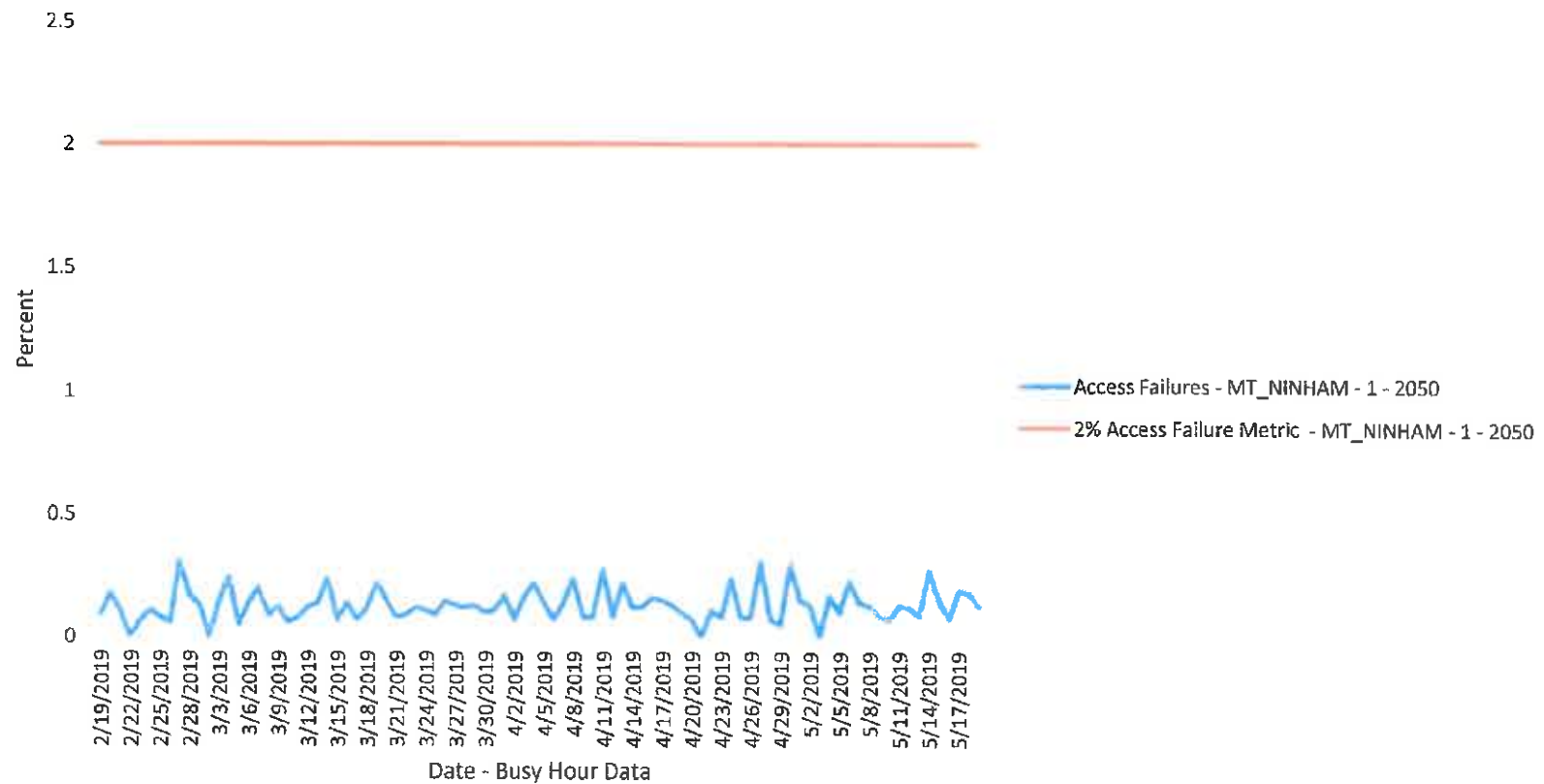


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2% metric which is acceptable. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz frequency band charts to follow. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage

Mt Ninham - Alpha (95°) Sector LTE 2100 MHz Drop Call Rate

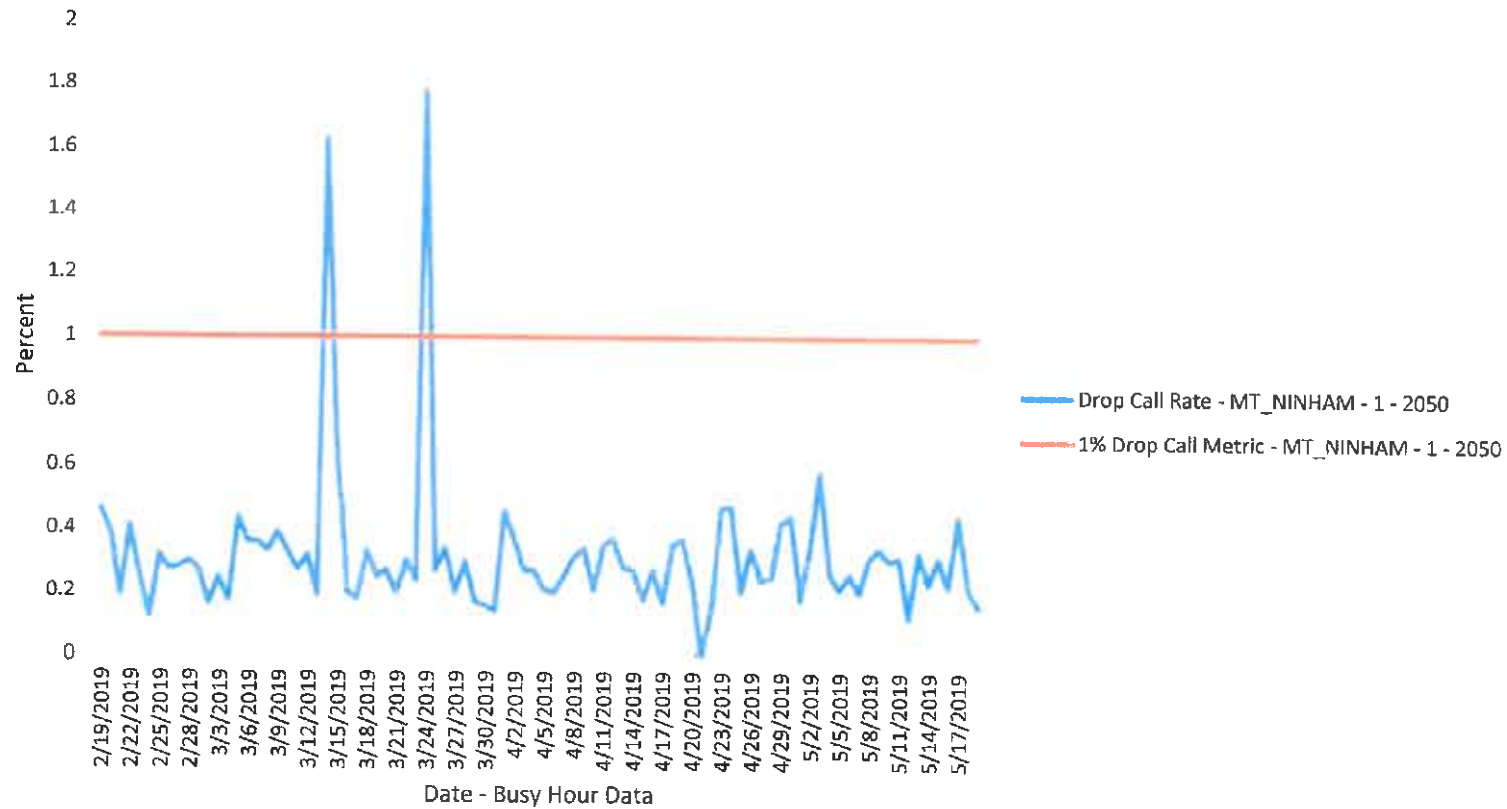


Chart demonstrates the LTE drop rate for the 2100 MHz frequency band from the sector. The drop rate in this chart is within Verizon's performance goal of 1% with the exception of a drop call rate of 1.6 and 1.8 on March 14, and March 25, 2019. However, a call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz charts to follow.

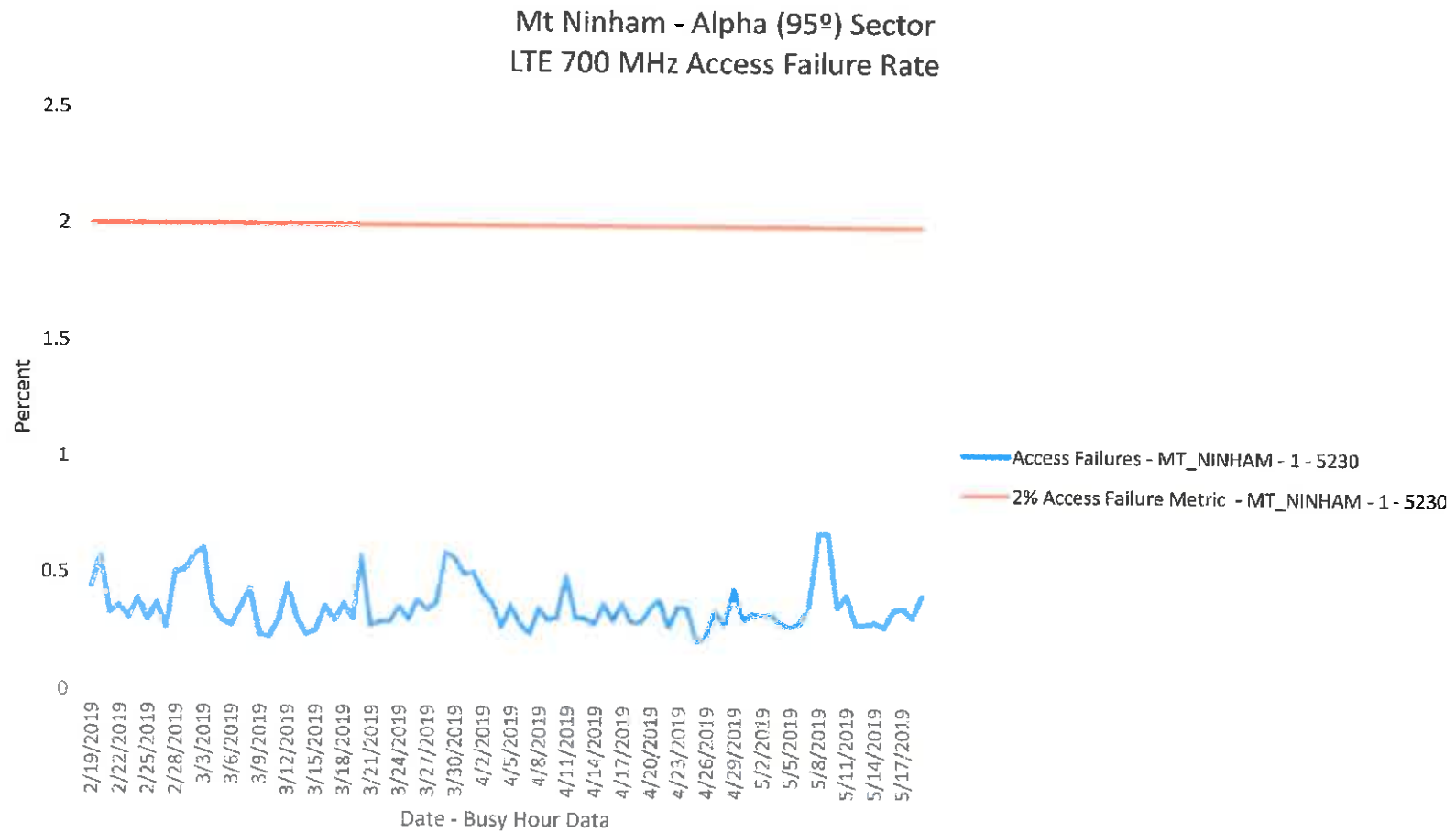


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2%. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the chart to follow.

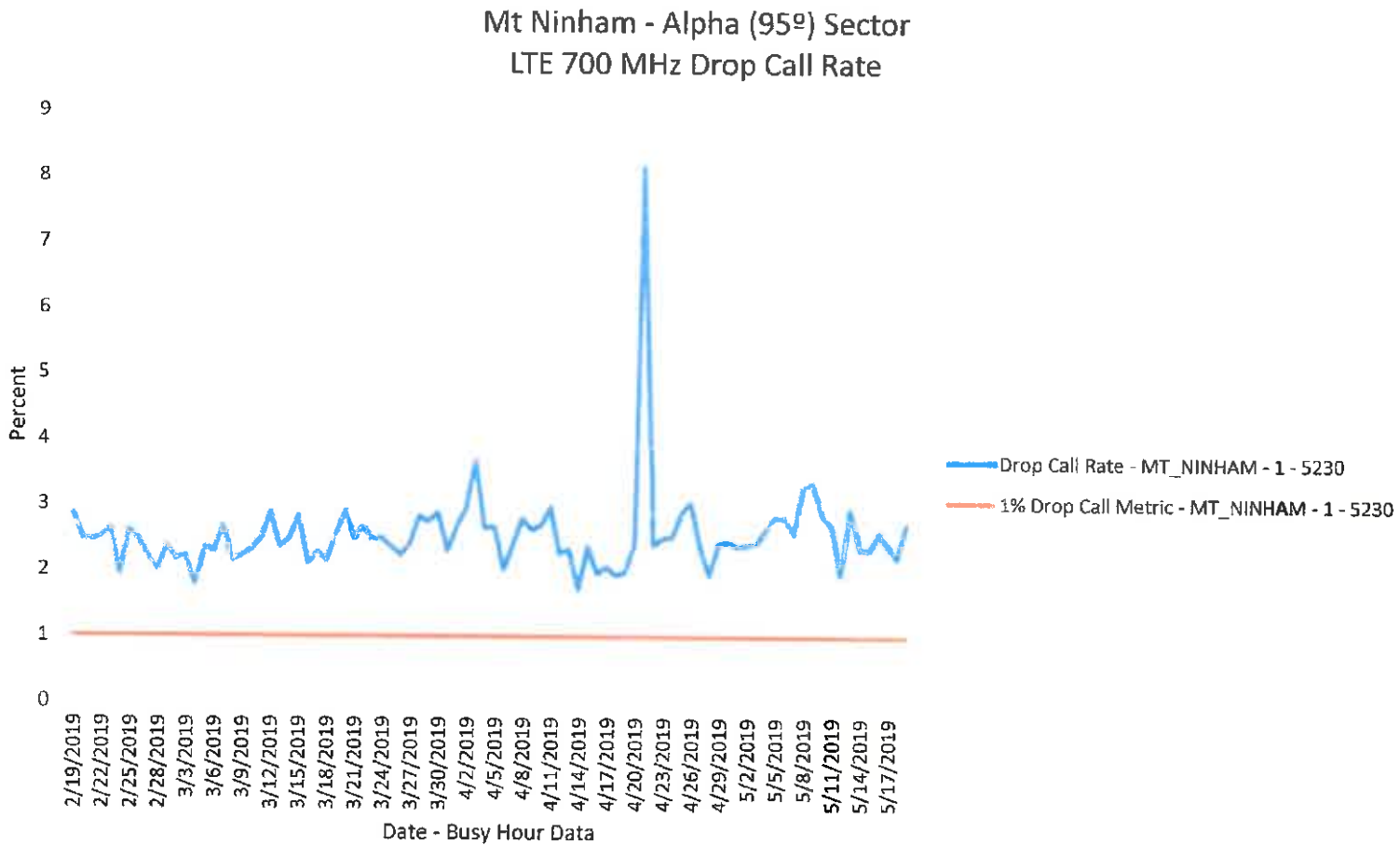


Chart demonstrates the LTE drop rate for the 700 MHz frequency band from the sector. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The chart demonstrates that as users travel south east from the Mt Ninham facility, they experience a drop rate in excess of the industry standard, and in excess of Verizon's performance goal of 1%. The data in the chart over the three-month time period demonstrate drop rates over 2%. The drop call KPI data further substantiates the significant gap in service when used in conjunction with the drive test data and coverage maps.

Mt Ninham - Beta (190°) Sector LTE 2100 MHz Access Failure Rate

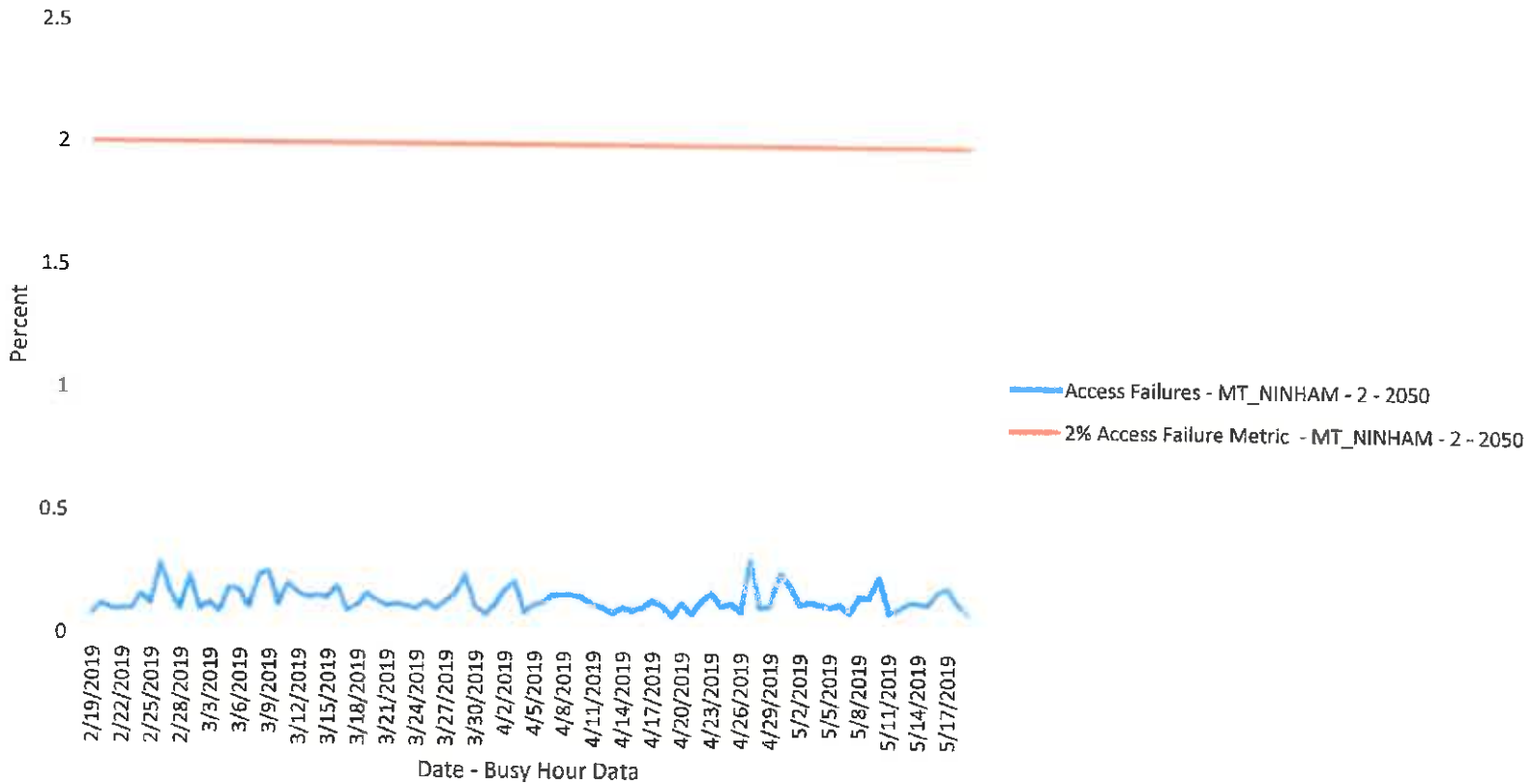


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2% metric which is acceptable. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz frequency band charts to follow. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage

Mt Ninham- Beta (190^o) Sector LTE 2100 MHz Drop Call Rate

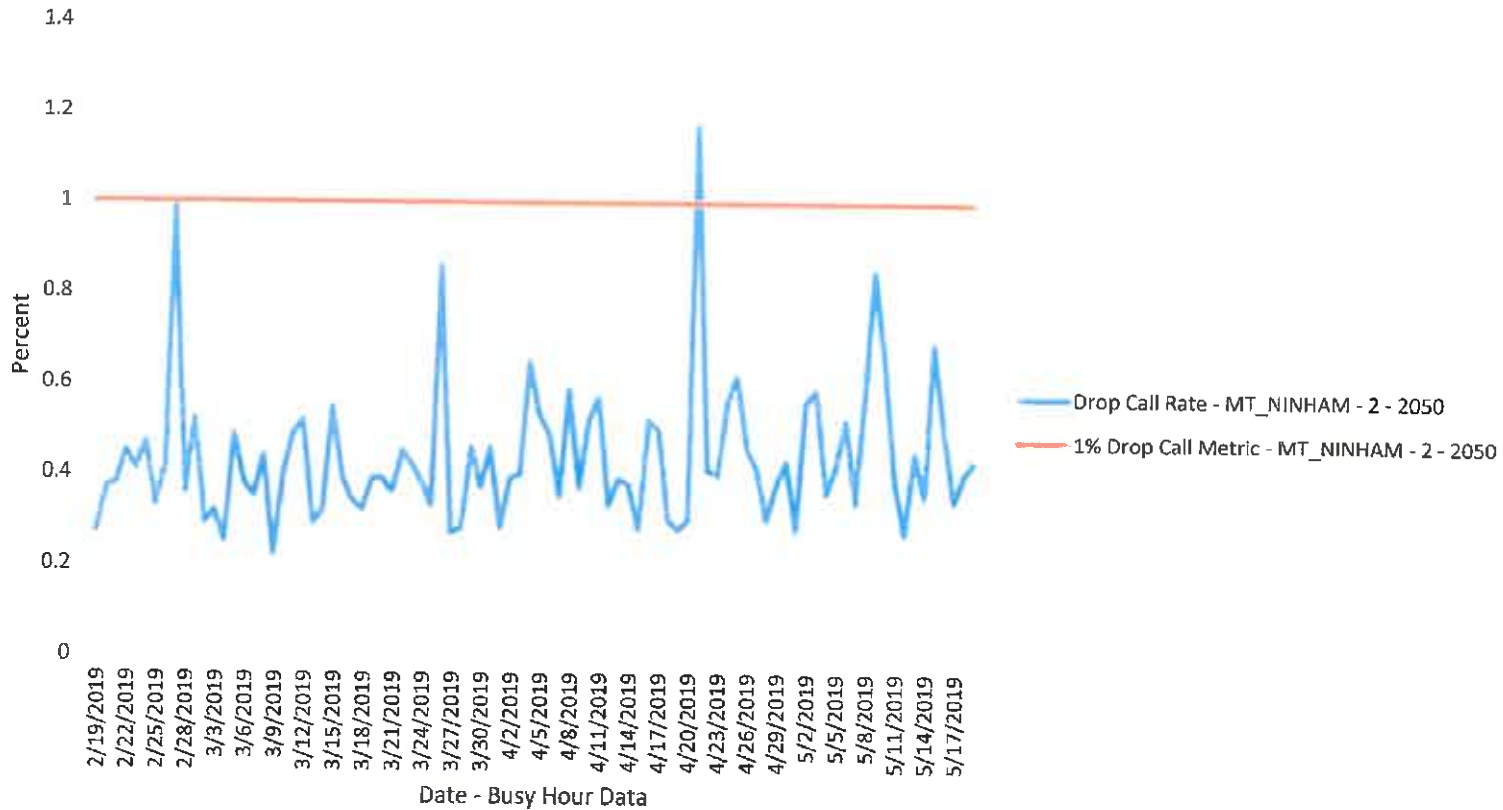


Chart demonstrates the LTE drop rate for the 2100 MHz frequency band from the sector. The drop rate in this chart is within Verizon's performance goal of 1% with the exception of a drop call rate of 1.2 on April 20, 2019. However, a call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the 700 MHz charts to follow.

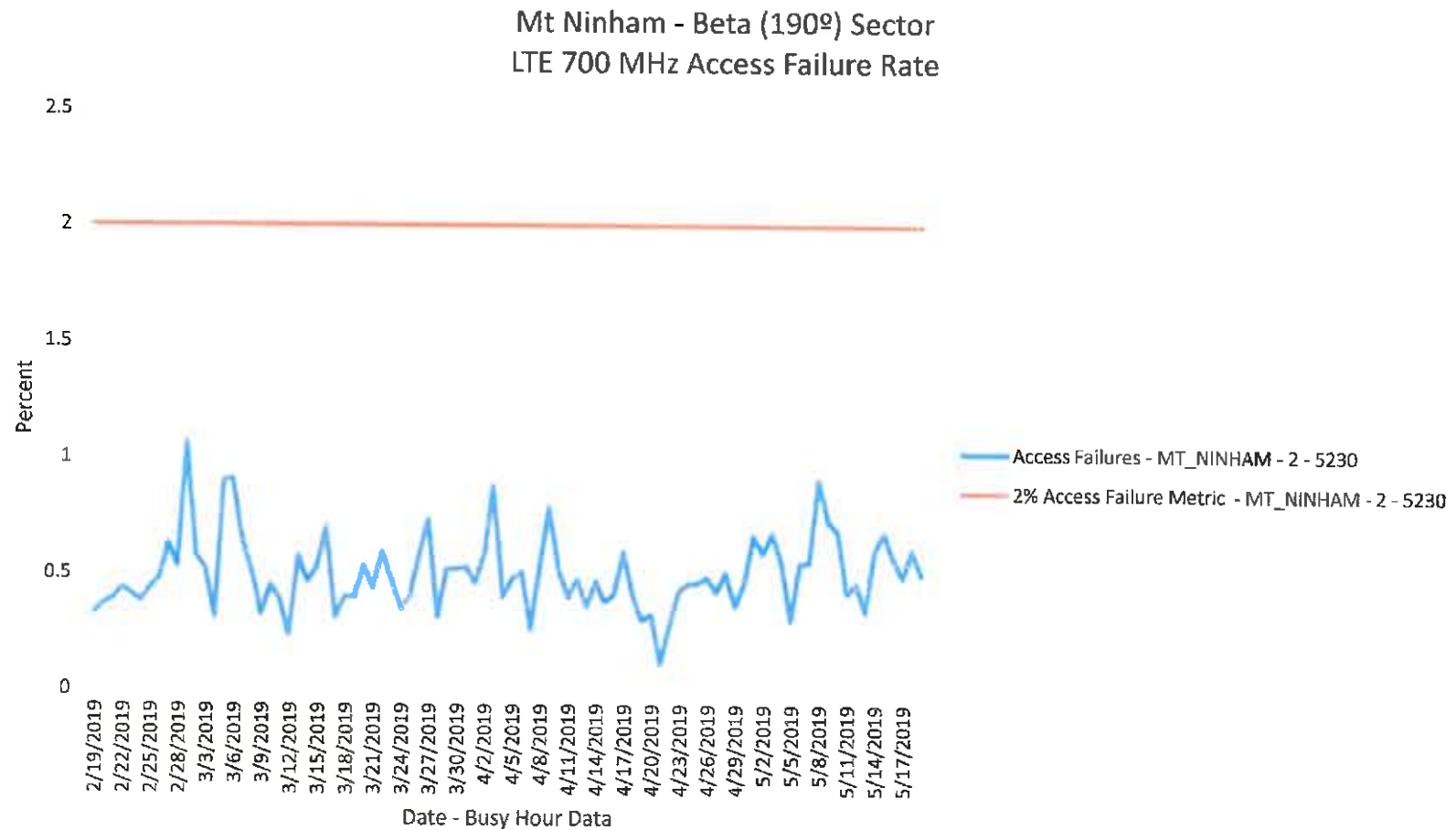


Chart demonstrates that users are able to access the LTE network within reasonable success. All access failures recorded were under the 2%. LTE is a very robust technology that allows users to connect (access) even with poor signal through adaptive modulation. While a user may connect with a poor-quality signal the experience will be very poor, with extremely slow data connections. The indicator to determine if the LTE network has issues related to coverage would be to examine the drop call rate in the chart to follow.

Mt Ninham- Beta (190°) Sector LTE 700 MHz Drop Call Rate

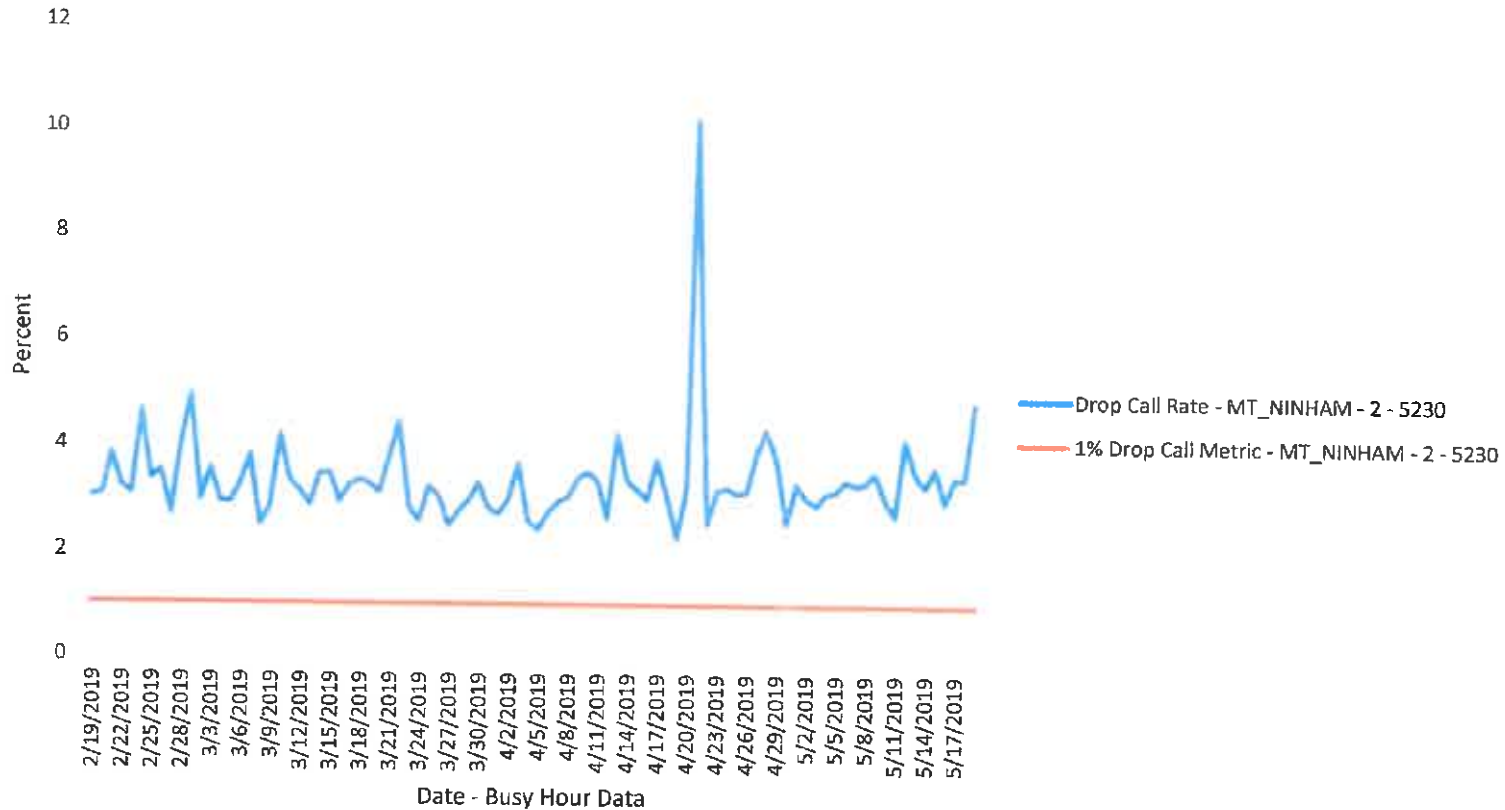
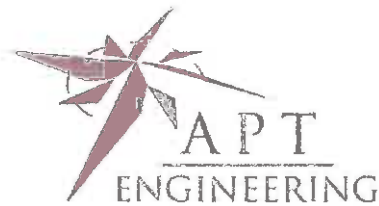


Chart demonstrates the LTE drop rate for the 700 MHz frequency band from the sector. A call will initially operate on 2100 MHz frequency band, as a user travels outside the range of the 2100 MHz signal, the connection will transfer to the 700 MHz frequency band, since the 700 MHz frequency band has a larger area of coverage. The chart demonstrates that as users travel south east from the Mt Ninham facility, they experience a drop rate in excess of the industry standard, and in excess of Verizon's performance goal of 1%. The data in the chart over the three-month time period demonstrate drop rates over 2%. The drop call KPI data further substantiates the significant gap in service when used in conjunction with the drive test data and coverage maps.



Honorable Chairman Craig Paepre
and Members of the Planning Board
Town of Carmel
60 McAlpin Avenue
Mahopac, NY 10541

July 11, 2019

RE: Homeland Towers Site Name: Dixon Lake NY058
36 Dixon Road
Carmel, NY 10512
Response to Comments

Honorable Chairman and Members of the Board:

Please find as follows the responses to the comments from Michael Carnazza comment memo dated September 12, 2018, Richard J. Franzetti, PE comment memo dated September 12, 2018, and Patrick Cleary comment memo dated September 12, 2018 (the response is in red after each of the referenced comments):

Carnazza memo:

General Comments:

- Second Bullet: Provide a zoning information note on the plat. Include all of section 156-62 of the Zoning Code and provide ALL information and show compliance and/or need for variances.
Town of Carmel Zoning Code Section 156-62 has been added under Governing Codes on drawing I-1.
- Third Bullet: What is the width of the driveway? Will a car be able to pass a car driving the opposite direction if needed?
The width of the proposed driveway is 12'. A minimum of 12' width is typical for access/drive ways and should therefore provide adequate vehicular access/egress.

Franzetti memo:

- Comment 6: The gravel access drive proposed, exceeds 7%, therefore, in accordance with 128-37(E) the access drive must be paved.
The design of the proposed access driveway has been revised to call for paving on the section of the driveway that exceeds 7% (station 2+75 to station 4+25) (see drawings SP-2 and SP-3).
- Comment 6: All erosion and sediment control measures should be provided on the drawings.
All erosion and sediment control measures are currently shown on the permitting drawings. A drawing (EC-1) has been added to the drawing set for clarity.
- Comment 8: Requirements of §156-62 P (7) must be met.
Article 156-62P(7) states that a minimum of three live trees with a minimum height of 20 feet shall be planted in close proximity to a wireless telecommunications facility designed as a faux tree. As shown previously on the drawings, (3) proposed trees are shown on drawing SP-2 and SP-4

APT ENGINEERING

□ 3 SADDLEBROOK DRIVE · KILLINGWORTH, CT 06419 · PHONE 860-663-1697 · FAX 860-663-0935

□ P.O. BOX 504 · 116 GRANDVIEW ROAD · CONWAY, NH 03818 · PHONE 603-496-5853 · FAX 603-447-2124

Comment 10: The area of disturbance has not been provided, it is unclear if a Stormwater Pollution Prevention Plan (SWPPP), as detailed by the New York State Department of Environmental Conservation (NYSDEC) is required.

As shown previously on the drawings, the limit of disturbance is called out on drawing SP-2. The proposed limits of disturbance is 26,850± sf (0.62 Ac). All erosion control measures are shown on drawings SP-2, EC-1 and EC-2.

Clear memo:

Comment 3d: The site or building on which the facility is proposed to be installed does not become nonconforming or increase nonconformity by reason of the installation of wireless telecommunication facilities. This includes, but is not limited to yard, buffer, height, floor area ratio for equipment buildings, parking, open space and other requirements. The height requirements of this chapter shall apply to buildings and equipment shelters

"Details of the supporting equipment shelters are required to document compliance with this provision."

As previously shown on the drawings, there are no equipment shelters proposed as part of this application. Details for the equipment cabinets was provided on drawings C-1.

Comment 8(3): For all buildings or equipment shelters to be located in a residential zoning district, the equipment shelter shall be treated in an architectural manner compatible with the residences in the vicinity.

There are no buildings and/or equipment shelters being proposed. Details for the equipment cabinets was provided on drawings C-1.

Comment 8(7): A minimum of three live trees with a minimum height of 20 feet shall be planted in close proximity to a wireless telecommunications facility designed as a faux tree. The Planning Board may require additional live mature plantings to assist in mitigating visual impacts of wireless telecommunication facilities designed as faux trees.

"The site plan notes that three 20' trees are proposed surrounding the antenna enclosure. Tree species should be identified. Given that this facility is proposed on a residential property in a residential zone, adding additional screening is recommended."

The species of the proposed trees has been added to drawing SP-4. In addition additional trees have been added to drawing SP-4 as well.

Comment 8(9): Associated equipment shall be enclosed by a fence, landscaped screening decorative wall, or other screening and buffering measures found to be acceptable by the Planning Board.

As previously shown on the drawings, fencing details are provided on drawing C-3.

Comment 9: Are any lights proposed on the monopole tower? Are any lights proposed within the equipment compound? If so, details are required.

No lights are proposed on the monopole. A Lighting Detail drawing (C-4) has been added to the drawing set.

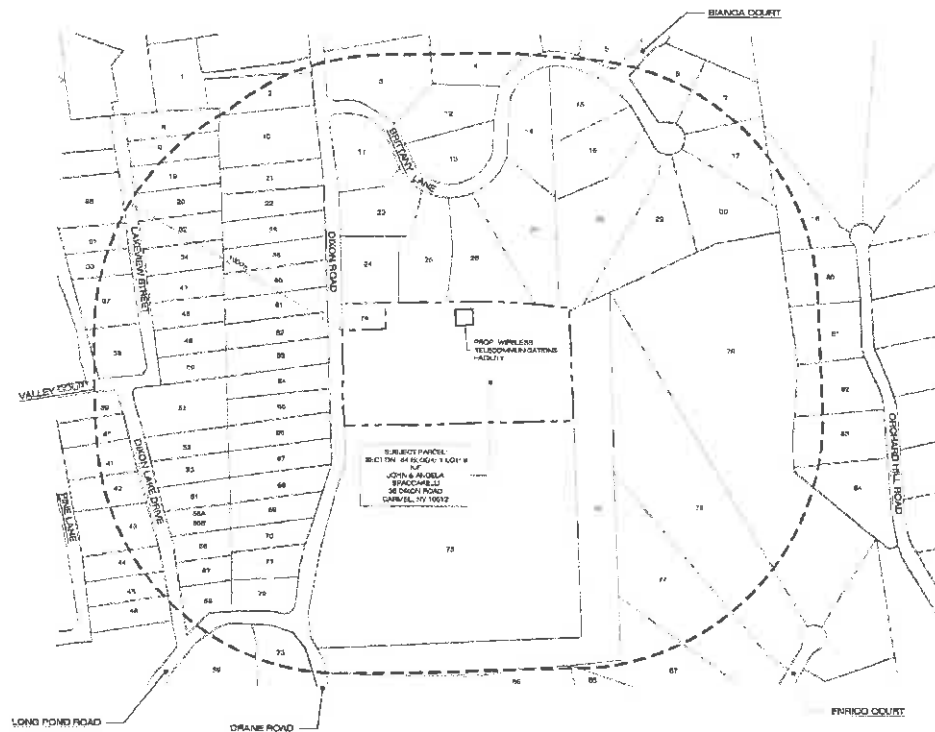
Should you have any questions, please do not hesitate to call me at (860) 663-1697 x206.

Sincerely,

APT Engineering



Robert C. Burns, P.E.
Program Manager



1 1000' RADIUS MAP
SCALE: 1" = 500'

0 500 1000
[IN FEET] 1 Mile = 5280

T
HARRIS AND "TOWERS, LLC
3 HARTFORD STREET
3RD FLOOR
ROCKVILLE, MD 20850
(301) 251-2140

verizon
4 CENTERHOCK ROAD
WEST NYACK, NY 10984

APT
INTEGRATED

3500 CROOK HALL RD. 2ND FLOOR 101
PT. RICHMOND, CT 06457
(860) 442-1111

PROJECT: 101 DOCUMENTS

DATE: 05/04/2010
1. SITE PLAN FOR APPROVAL
2. SITE PLAN FOR APPROVAL
3. SITE PLAN FOR APPROVAL
4. SITE PLAN FOR APPROVAL
5. SITE PLAN FOR APPROVAL
6. SITE PLAN FOR APPROVAL
7. SITE PLAN FOR APPROVAL
8. SITE PLAN FOR APPROVAL
9. SITE PLAN FOR APPROVAL
10. SITE PLAN FOR APPROVAL

DESIGN PROFESSIONALS OF RECORD

PROJ: 101-101-001
PROP: 101-101-001
ADD: 101-101-001
101-101-001
101-101-001
101-101-001
101-101-001
101-101-001
101-101-001
101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

101-101-001

1,000' RADIUS PROPERTY OWNERS
SEE DRAWING E.1 FOR PROPERTY LOCATIONS

[illegible][illegible][illegible]

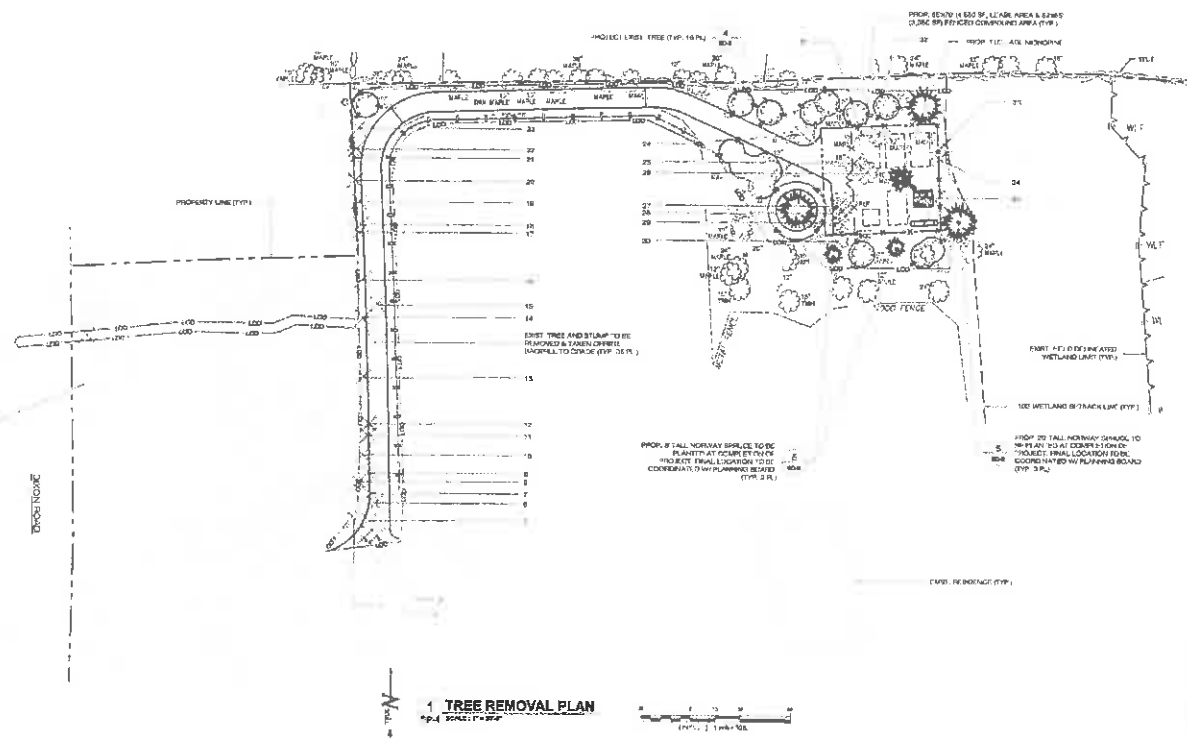
[illegible]



[illegible]


NOTE: COUNTRY OF ORIGIN IS A GPH SUPPLY PERFORMANCE AND MANUFACTURING CAPABILITY & STRUCTURE MAP OF COUNTRY

[illegible]

PLANS	TIME TYPE	TIME CHARACTER
1	PMH	30"
2	AMPLE	25"
3	NOT ON PLAN	30"
4	DMR	30"
5	MAPLE	25"
6	PMH	30"
7	PMH	30"
8	P-ME	25"
9	MAPLE	15"
10	MAPLE	25"
11	PMH	25"
12	PMH	25"
13	MAPLE	30"
14	MAPLE	30"
15	MAPLE	25"
16	MAPLE	25"
17	MAPLE	25"
18	MAPLE	25"
19	MAPLE	25"
20	MAPLE	25"
21	MAPLE	25"
22	MAPLE	25"
23	MAPLE	25"
24	MAPLE	25"
25	MAPLE	25"
26	MAPLE	25"
27	MAPLE	25"
28	MAPLE	25"
29	MAPLE	25"
30	MAPLE	25"
31	MAPLE	25"
32	MAPLE	25"
33	MAPLE	25"
34	MAPLE	25"
35	MAPLE	25"



QUANTITY	ITEM NAME	COMBINATION NAME	SIZE	FOOT	SYMBOL	REMARKS
1	POST, 4x6	POSTWAY SPRUCE	80-UP TALL	840		FILE TO BASE
2	POST, 4x6	POSTWAY SPRUCE	80-UP TALL	840		FILE TO BASE

 4 CENTERCROSS ROAD WEST NY, NY 10994	
APT 207B-1000	
1. NAME, PHONE, FAX	2. PHONE, FAX, E-MAIL
NAME: SCOTT H. CHANARE P.E.	PHONE: 845-833-7100 FAX: 845-833-7100
3. PRINTED DOCUMENTS NAME: APT# 207B-1000 4. ADDRESS: 4 CENTERCROSS RD 5. ADDRESS: WEST NY, NY 10994 6. ADDRESS: 4 CENTERCROSS RD 7. ADDRESS: WEST NY, NY 10994	
8. NAME: SCOTT H. CHANARE P.E. 9. ADDRESS: 4 CENTERCROSS RD 10. ADDRESS: WEST NY, NY 10994 11. ADDRESS: 4 CENTERCROSS RD 12. ADDRESS: WEST NY, NY 10994	
13. ADDRESS: 4 CENTERCROSS RD 14. ADDRESS: WEST NY, NY 10994 15. ADDRESS: 4 CENTERCROSS RD 16. ADDRESS: WEST NY, NY 10994	
17. ADDRESS: 4 CENTERCROSS RD 18. ADDRESS: WEST NY, NY 10994 19. ADDRESS: 4 CENTERCROSS RD 20. ADDRESS: WEST NY, NY 10994	
21. ADDRESS: 4 CENTERCROSS RD 22. ADDRESS: WEST NY, NY 10994 23. ADDRESS: 4 CENTERCROSS RD 24. ADDRESS: WEST NY, NY 10994	
25. ADDRESS: 4 CENTERCROSS RD 26. ADDRESS: WEST NY, NY 10994 27. ADDRESS: 4 CENTERCROSS RD 28. ADDRESS: WEST NY, NY 10994	
29. ADDRESS: 4 CENTERCROSS RD 30. ADDRESS: WEST NY, NY 10994 31. ADDRESS: 4 CENTERCROSS RD 32. ADDRESS: WEST NY, NY 10994	
33. ADDRESS: 4 CENTERCROSS RD 34. ADDRESS: WEST NY, NY 10994 35. ADDRESS: 4 CENTERCROSS RD 36. ADDRESS: WEST NY, NY 10994	
37. ADDRESS: 4 CENTERCROSS RD 38. ADDRESS: WEST NY, NY 10994 39. ADDRESS: 4 CENTERCROSS RD 40. ADDRESS: WEST NY, NY 10994	
41. ADDRESS: 4 CENTERCROSS RD 42. ADDRESS: WEST NY, NY 10994 43. ADDRESS: 4 CENTERCROSS RD 44. ADDRESS: WEST NY, NY 10994	
45. ADDRESS: 4 CENTERCROSS RD 46. ADDRESS: WEST NY, NY 10994 47. ADDRESS: 4 CENTERCROSS RD 48. ADDRESS: WEST NY, NY 10994	
49. ADDRESS: 4 CENTERCROSS RD 50. ADDRESS: WEST NY, NY 10994 51. ADDRESS: 4 CENTERCROSS RD 52. ADDRESS: WEST NY, NY 10994	
53. ADDRESS: 4 CENTERCROSS RD 54. ADDRESS: WEST NY, NY 10994 55. ADDRESS: 4 CENTERCROSS RD 56. ADDRESS: WEST NY, NY 10994	
57. ADDRESS: 4 CENTERCROSS RD 58. ADDRESS: WEST NY, NY 10994 59. ADDRESS: 4 CENTERCROSS RD 60. ADDRESS: WEST NY, NY 10994	
61. ADDRESS: 4 CENTERCROSS RD 62. ADDRESS: WEST NY, NY 10994 63. ADDRESS: 4 CENTERCROSS RD 64. ADDRESS: WEST NY, NY 10994	
65. ADDRESS: 4 CENTERCROSS RD 66. ADDRESS: WEST NY, NY 10994 67. ADDRESS: 4 CENTERCROSS RD 68. ADDRESS: WEST NY, NY 10994	
69. ADDRESS: 4 CENTERCROSS RD 70. ADDRESS: WEST NY, NY 10994 71. ADDRESS: 4 CENTERCROSS RD 72. ADDRESS: WEST NY, NY 10994	
73. ADDRESS: 4 CENTERCROSS RD 74. ADDRESS: WEST NY, NY 10994 75. ADDRESS: 4 CENTERCROSS RD 76. ADDRESS: WEST NY, NY 10994	
77. ADDRESS: 4 CENTERCROSS RD 78. ADDRESS: WEST NY, NY 10994 79. ADDRESS: 4 CENTERCROSS RD 80. ADDRESS: WEST NY, NY 10994	
81. ADDRESS: 4 CENTERCROSS RD 82. ADDRESS: WEST NY, NY 10994 83. ADDRESS: 4 CENTERCROSS RD 84. ADDRESS: WEST NY, NY 10994	
85. ADDRESS: 4 CENTERCROSS RD 86. ADDRESS: WEST NY, NY 10994 87. ADDRESS: 4 CENTERCROSS RD 88. ADDRESS: WEST NY, NY 10994	
89. ADDRESS: 4 CENTERCROSS RD 90. ADDRESS: WEST NY, NY 10994 91. ADDRESS: 4 CENTERCROSS RD 92. ADDRESS: WEST NY, NY 10994	
93. ADDRESS: 4 CENTERCROSS RD 94. ADDRESS: WEST NY, NY 10994 95. ADDRESS: 4 CENTERCROSS RD 96. ADDRESS: WEST NY, NY 10994	
97. ADDRESS: 4 CENTERCROSS RD 98. ADDRESS: WEST NY, NY 10994 99. ADDRESS: 4 CENTERCROSS RD 100. ADDRESS: WEST NY, NY 10994	

[illegible]

18 PROP. VERTICAN PANEL ANTENNAS (OP. 110)
EAST WIND BOW & 18 PROP. ON MOBILE
COLLOCATED ON SECTOR FRAME WITH BACK STAY
ARM AND STAY TO PROP. 110. JAIL VENTILATION
W/ ANTENNA CL. 18 PROP. JAIL ANTENNA TO
BE FITTED W/ MOBILE EDCS

FUTURE CARRIER ANTENNAS (TYP)

FUTURE CARRIER ANTENNAS (TYP)

PROP. 110 JAIL MOBILE

FUTURE CARRIER ANTENNAS (TYP)

18 PROP. VERTICAN ANTENNAS (TYP)

FUTURE EQUIPMENT AREA (TYP)

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. UNDERGROUND ELECTRICAL

TELEPHONE FROM CARRIER DEWANE

ANTENNA FOLD FROM TOWER PROP.

CONDUIT TO PROP. 110

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

1 EAST ELEVATION
A-2 SCALE: 1"=20'

1"=20' SCALE
1"=20' SCALE

18 PROP. VERTICAN PANEL ANTENNAS (OP. 110)
EAST WIND BOW & 18 PROP. ON MOBILE
COLLOCATED ON SECTOR FRAME WITH BACK STAY
ARM AND STAY TO PROP. 110. JAIL VENTILATION
W/ ANTENNA CL. 18 PROP. JAIL ANTENNA TO
BE FITTED W/ MOBILE EDCS

FUTURE CARRIER ANTENNAS (TYP)

FUTURE CARRIER ANTENNAS (TYP)

PROP. 110 JAIL MOBILE

FUTURE CARRIER ANTENNAS (TYP)

18 PROP. VERTICAN ANTENNAS (TYP)

FUTURE EQUIPMENT AREA (TYP)

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. UNDERGROUND ELECTRICAL

TELEPHONE FROM CARRIER DEWANE

ANTENNA FOLD FROM TOWER PROP.

CONDUIT TO PROP. 110

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

PROP. VERTICAN CARRIER FROM

EQUIPMENT FACTORY TO TOWER ENTRY

2 SOUTH ELEVATION
A-2 SCALE: 1"=20'

1"=20' SCALE
1"=20' SCALE

verizon

DEVELOPMENTAL ROUTE
ANTENNAE & EDCS

API
CONSTRUCTION

REVISIONS

NO. DATE REVISION

1 10/10/10 FOR REVIEW

2 10/10/10 FOR REVIEW

3 10/10/10 FOR REVIEW

4 10/10/10 FOR REVIEW

5 10/10/10 FOR REVIEW

6 10/10/10 FOR REVIEW

7 10/10/10 FOR REVIEW

8 10/10/10 FOR REVIEW

9 10/10/10 FOR REVIEW

10 10/10/10 FOR REVIEW

11 10/10/10 FOR REVIEW

12 10/10/10 FOR REVIEW

13 10/10/10 FOR REVIEW

14 10/10/10 FOR REVIEW

15 10/10/10 FOR REVIEW

16 10/10/10 FOR REVIEW

17 10/10/10 FOR REVIEW

18 10/10/10 FOR REVIEW

19 10/10/10 FOR REVIEW

20 10/10/10 FOR REVIEW

21 10/10/10 FOR REVIEW

22 10/10/10 FOR REVIEW

23 10/10/10 FOR REVIEW

24 10/10/10 FOR REVIEW

25 10/10/10 FOR REVIEW

26 10/10/10 FOR REVIEW

27 10/10/10 FOR REVIEW

28 10/10/10 FOR REVIEW

29 10/10/10 FOR REVIEW

30 10/10/10 FOR REVIEW

31 10/10/10 FOR REVIEW

32 10/10/10 FOR REVIEW

33 10/10/10 FOR REVIEW

34 10/10/10 FOR REVIEW

35 10/10/10 FOR REVIEW

36 10/10/10 FOR REVIEW

37 10/10/10 FOR REVIEW

38 10/10/10 FOR REVIEW

39 10/10/10 FOR REVIEW

40 10/10/10 FOR REVIEW

41 10/10/10 FOR REVIEW

42 10/10/10 FOR REVIEW

43 10/10/10 FOR REVIEW

44 10/10/10 FOR REVIEW

45 10/10/10 FOR REVIEW

46 10/10/10 FOR REVIEW

47 10/10/10 FOR REVIEW

48 10/10/10 FOR REVIEW

49 10/10/10 FOR REVIEW

50 10/10/10 FOR REVIEW

51 10/10/10 FOR REVIEW

52 10/10/10 FOR REVIEW

53 10/10/10 FOR REVIEW

54 10/10/10 FOR REVIEW

55 10/10/10 FOR REVIEW

56 10/10/10 FOR REVIEW

57 10/10/10 FOR REVIEW

58 10/10/10 FOR REVIEW

59 10/10/10 FOR REVIEW

60 10/10/10 FOR REVIEW

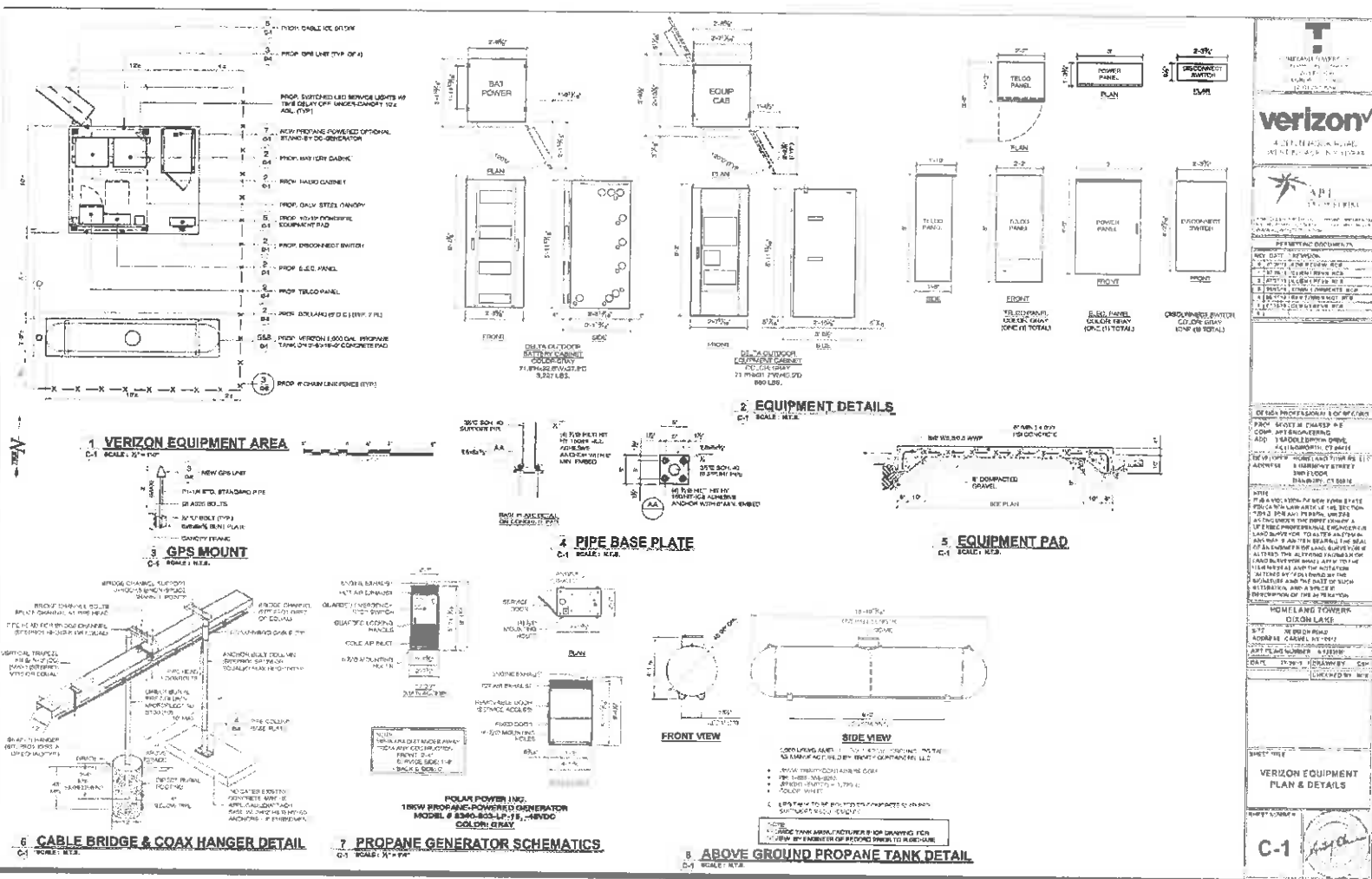
61 10/10/10 FOR REVIEW

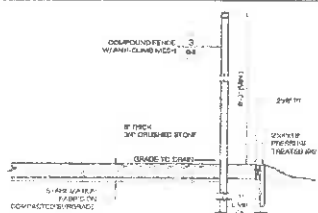
62 10/10/10 FOR REVIEW

SHEET TITLE:
ELEVATIONS

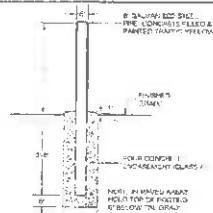
SHEET NUMBER:

A-2

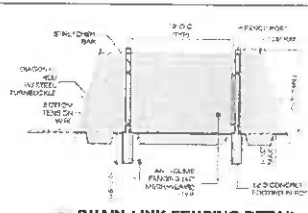




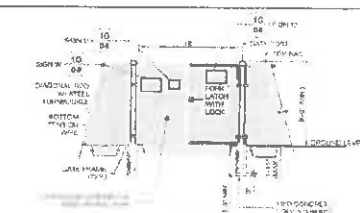
1. COMPOUND DETAIL
C-3 SCALE 1/4"



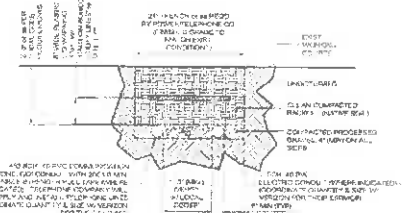
2. BOLLARD DETAIL
C-3 SCALE 1/4"



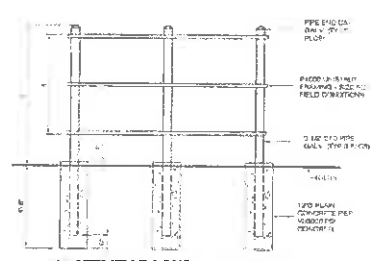
3. CHAIN-LINK FENCING DETAIL
C-3 SCALE 1/4"



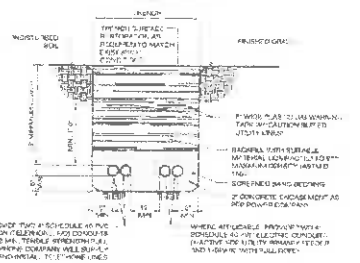
4. FENCE & GATE DETAIL
C-3 SCALE 1/4"



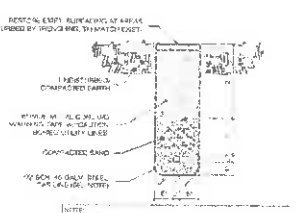
5. SECONDARY TRENCH DETAIL
C-3 SCALE 1/4"



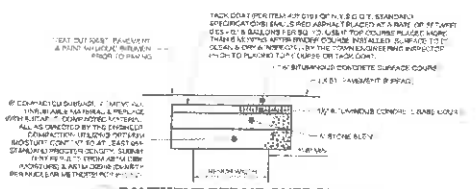
6. UTILITY BACKBOARD FRAME DETAIL
C-3 SCALE 1/4"



7. PRIMARY UTILITY TRENCH
C-3 SCALE 1/4"



8. PROPANE GAS TRENCH
C-3 SCALE 1/4"



9. PAVEMENT REPAIR OVER TRENCH
C-3 SCALE 1/4"



10. TYPICAL SIGNAGE
C-3 SCALE 1/4"

HOWLAND TOWERS, LLC
5 HOLLOWAY STREET
2ND FLOOR
DOWNEY, CT 06830
954-254-6666

verizon
4 CENTERCROSS ROAD
WEST NYACK, NY 10994

APT
KROHN BRAND

1. PROJECT NO.	2. PROJECT NAME
3. PROJECT LOCATION	4. PROJECT DATE
5. PROJECT DESCRIPTION	6. PROJECT STATUS
7. PROJECT OWNER	8. PROJECT CONTACT
9. PROJECT ADDRESS	10. PROJECT PHONE
11. PROJECT FAX	12. PROJECT EMAIL

REVISIONS

NO.	DATE	DESCRIPTION
1	01/01/2010	ISSUED FOR PERMIT
2	01/01/2010	ISSUED FOR PERMIT
3	01/01/2010	ISSUED FOR PERMIT
4	01/01/2010	ISSUED FOR PERMIT
5	01/01/2010	ISSUED FOR PERMIT
6	01/01/2010	ISSUED FOR PERMIT

NOTES

1. ALL UTILITIES SHALL BE DEPTH MARKED BY THE CONTRACTOR PRIOR TO ANY EXCAVATION.
2. ALL EXCAVATIONS SHALL BE PROTECTED BY THE CONTRACTOR.
3. ALL EXCAVATIONS SHALL BE BACKFILLED WITH COMPACTED MATERIAL.
4. ALL EXCAVATIONS SHALL BE SURFaced WITH ASPHALT OR CONCRETE.
5. ALL EXCAVATIONS SHALL BE MARKED WITH ORANGE FLUORESCENT PILES.
6. ALL EXCAVATIONS SHALL BE MARKED WITH ORANGE FLUORESCENT PILES.
7. ALL EXCAVATIONS SHALL BE MARKED WITH ORANGE FLUORESCENT PILES.
8. ALL EXCAVATIONS SHALL BE MARKED WITH ORANGE FLUORESCENT PILES.
9. ALL EXCAVATIONS SHALL BE MARKED WITH ORANGE FLUORESCENT PILES.
10. ALL EXCAVATIONS SHALL BE MARKED WITH ORANGE FLUORESCENT PILES.

HOWLAND TOWERS, LLC
5 HOLLOWAY STREET
2ND FLOOR
DOWNEY, CT 06830
954-254-6666

PROJECT NUMBER
C-3

CANOPY FRAMING
(FP)

2
CANOPY LIGHTING
FRONT VIEW



- SWT:
1. IMA 1000-1000 SERIES 4' x 4' POLYPROPYLENE TOWER LIGHTING MANUFACTURING CO. INC. MODEL: ALTR-1-2
 2. OUTLET BOX: TALL CONTACT INC. MODEL: PWB
 3. WIRETRAP: CONTACT INC. MODEL: PWB
 4. WIRETRAP: CONTACT INC. MODEL: PWB

FEATURES: 1. TOTAL 1000-1000 SERIES 4' x 4' POLYPROPYLENE TOWER LIGHTING MANUFACTURING CO. INC. MODEL: ALTR-1-2

NOTE: LIGHTS TO BE MOUNTED BELOW CANOPY BOTTOM OF LEAF
FACILITY AT APPROXIMATELY 10' AGL.

1 CANOPY LIGHTING

SCALE: 1/4" = 1'-0"

WPLEDFC52NW



Technical Specifications

Lighting

LED Lighting

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

WPLEDFC52NW



Technical Specifications

Lighting

LED Lighting

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

LED Module

2 LIGHTING CUTSHEETS

SCALE: 1/4" = 1'-0"

LIGHT FIXTURE INCLUDING HEIGHT FROM = 9
HEIGHT TO PROPERTY LINE (H) = 10'4"
MAXIMUM ALLOWED HEIGHT FROM = 10'4" + 8
MIN = 10'4" - 8
20' MIN - 10'4" - 8' MIN - 10'4" MIN

3 LIGHTING CALCULATIONS

SCALE: 1/4" = 1'-0"

4 CENTERPOCK ROAD
WEST WALK, NY 10894
CHERRY HILL, CT 06018
PH: 203.434.4345

verizon

4 CENTERPOCK ROAD
WEST WALK, NY 10894

CHERRY HILL, CT 06018
PH: 203.434.4345

APT
ENGINEERING

1. SITE PLAN
2. SITE PLAN
3. SITE PLAN
4. SITE PLAN
5. SITE PLAN
6. SITE PLAN
7. SITE PLAN
8. SITE PLAN
9. SITE PLAN
10. SITE PLAN
11. SITE PLAN
12. SITE PLAN
13. SITE PLAN
14. SITE PLAN
15. SITE PLAN
16. SITE PLAN
17. SITE PLAN
18. SITE PLAN
19. SITE PLAN
20. SITE PLAN
21. SITE PLAN
22. SITE PLAN
23. SITE PLAN
24. SITE PLAN
25. SITE PLAN
26. SITE PLAN
27. SITE PLAN
28. SITE PLAN
29. SITE PLAN
30. SITE PLAN
31. SITE PLAN
32. SITE PLAN
33. SITE PLAN
34. SITE PLAN
35. SITE PLAN
36. SITE PLAN
37. SITE PLAN
38. SITE PLAN
39. SITE PLAN
40. SITE PLAN
41. SITE PLAN
42. SITE PLAN
43. SITE PLAN
44. SITE PLAN
45. SITE PLAN
46. SITE PLAN
47. SITE PLAN
48. SITE PLAN
49. SITE PLAN
50. SITE PLAN
51. SITE PLAN
52. SITE PLAN
53. SITE PLAN
54. SITE PLAN
55. SITE PLAN
56. SITE PLAN
57. SITE PLAN
58. SITE PLAN
59. SITE PLAN
60. SITE PLAN
61. SITE PLAN
62. SITE PLAN
63. SITE PLAN
64. SITE PLAN
65. SITE PLAN
66. SITE PLAN
67. SITE PLAN
68. SITE PLAN
69. SITE PLAN
70. SITE PLAN
71. SITE PLAN
72. SITE PLAN
73. SITE PLAN
74. SITE PLAN
75. SITE PLAN
76. SITE PLAN
77. SITE PLAN
78. SITE PLAN
79. SITE PLAN
80. SITE PLAN
81. SITE PLAN
82. SITE PLAN
83. SITE PLAN
84. SITE PLAN
85. SITE PLAN
86. SITE PLAN
87. SITE PLAN
88. SITE PLAN
89. SITE PLAN
90. SITE PLAN
91. SITE PLAN
92. SITE PLAN
93. SITE PLAN
94. SITE PLAN
95. SITE PLAN
96. SITE PLAN
97. SITE PLAN
98. SITE PLAN
99. SITE PLAN
100. SITE PLAN

PROF: SCOTT B. CHASSIE, P.E.
COMP: APT ENGINEERING
ADD: 3 BROADVIEW PARK DRIVE
ALLANDOR, CT 06018

ADD: 3 BROADVIEW PARK DRIVE
ALLANDOR, CT 06018

ADD: 3 BROADVIEW PARK DRIVE
ALLANDOR, CT 06018

ADD: 3 BROADVIEW PARK DRIVE
ALLANDOR, CT 06018

ADD: 3 BROADVIEW PARK DRIVE
ALLANDOR, CT 06018

ADD: 3 BROADVIEW PARK DRIVE
ALLANDOR, CT 06018

ADD: 3 BROADVIEW PARK DRIVE
ALLANDOR, CT 06018

ADD: 3 BROADVIEW PARK DRIVE
ALLANDOR, CT 06018

ADD: 3 BROADVIEW PARK DRIVE
ALLANDOR, CT 06018

ADD: 3 BROADVIEW PARK DRIVE
ALLANDOR, CT 06018

ADD: 3 BROADVIEW PARK DRIVE
ALLANDOR, CT 06018

ADD: 3 BROADVIEW PARK DRIVE
ALLANDOR, CT 06018

ADD: 3 BROADVIEW PARK DRIVE
ALLANDOR, CT 06018

ADD: 3 BROADVIEW PARK DRIVE
ALLANDOR, CT 06018

ADD: 3 BROADVIEW PARK DRIVE
ALLANDOR, CT 06018

ADD: 3 BROADVIEW PARK DRIVE
ALLANDOR, CT 06018

ADD: 3 BROADVIEW PARK DRIVE
ALLANDOR, CT 06018

ADD: 3 BROADVIEW PARK DRIVE
ALLANDOR, CT 06018

ADD: 3 BROADVIEW PARK DRIVE
ALLANDOR, CT 06018

ADD: 3 BROADVIEW PARK DRIVE
ALLANDOR, CT 06018

ADD: 3 BROADVIEW PARK DRIVE
ALLANDOR, CT 06018

ADD: 3 BROADVIEW PARK DRIVE
ALLANDOR, CT 06018

ADD: 3 BROADVIEW PARK DRIVE
ALLANDOR, CT 06018

ADD: 3 BROADVIEW PARK DRIVE
ALLANDOR, CT 06018

ADD: 3 BROADVIEW PARK DRIVE
ALLANDOR, CT 06018

ADD: 3 BROADVIEW PARK DRIVE
ALLANDOR, CT 06018

#7

**RESOLUTION PURSUANT TO
TOWN OF CARMEL TOWN CODE §156-76**

RESOLVED that the Town Board of the Town of Carmel, pursuant to Carmel Town Code §156-76, hereby refers the Petition for Change of Zoning filed by Centennial Golf Club of New York, LLC dated April 30, 2019 and received in the Office of the Town Supervisor June 19, 2019 to the Town of Carmel Planning Board for its review, comment and/or recommendation.

Resolution

Offered by: Councilwoman McDonough

Seconded by: Councilman Lupinacci

<u>Roll Call Vote</u>	<u>YES</u>	<u>NO</u>	
Michael Barile	<u>X</u>	<u> </u>	
Jonathan Schneider	<u> </u>	<u> </u>	Absent
John Lupinacci	<u>X</u>	<u> </u>	
Suzanne McDonough	<u>X</u>	<u> </u>	
Kenneth Schmitt	<u>X</u>	<u> </u>	

S
E
A
L

I, Ann Spofford, Town Clerk of the Town of Carmel, Putnam County, New York, do hereby certify that the foregoing resolution is a true and exact copy of the original on file in my office which was adopted by the Town Board of said Town at a duly called and held meeting on the 2nd day of **July, 2019**; and of the whole thereof.

July 3, 2019
Dated

Ann Spofford
Ann Spofford, Town Clerk

TOWN BOARD
TOWN OF CARMEL: COUNTY OF PUTNAM

-----X
In the Matter of the Petition of

CENTENNIAL GOLF CLUB
OF NEW YORK, LLC

**VERIFIED PETITION FOR
CHANGE OF ZONING**

Petitioners,

For a Change of Zoning for Parcels of Real
Property

-----X

Petitioners, Centennial Golf Club of New York, LLC, by David Leibowits, member,
(hereinafter "Petitioners") respectfully submit as follows:

1. Petitioners are the owner of certain property located at Town of Carmel, County of Putnam and State of New York.
2. The Tax Map numbers are 44.-2-4, 44.-2-2 and 44.-2-3.
3. The subject premises are located within both the Carmel Central School District and Brewster School District.
4. The Petitioners request that the Zoning Code of the Town of Carmel, be amended, and the Zoning Map of the Town of Carmel be reclassified and change the zone of the subject premises from a Residential District (3 acres) to a its former classification which was Residential (1 acre).
5. The Petitioners hereby declare, for the purpose of reliance thereon by the Town of Carmel, that the full particulars of the Petitioners' proposed use of the subject premises for the next five (5) years, if this change of zone is granted, are as follows:
 - a. Cluster development containing 96 residential units (attached).



6. The site plan is being processed and will be presented to the Town of Carmel Planning Board for referral.

7. Economics of the declining golf course requires this action and is the only means to keep the remaining portion of the golf course (18 holes) open to the public at large, and forever green in the Town of Carmel and Town of Southeast.

8. The proposed change of zone will be beneficial to the public of the Town of Carmel because it is seeking to develop the property in the spirit of the Greenway Connection as adopted by §156-90 of the Town of Carmel Code:

a. Petitioner is open to conditions offered by the Town to keep the remaining 18-hole golf course and to preserve the remainder of the undeveloped parcel, in keeping with the Town of Carmel's adopted Greenway Compact Program;

b. The proposed change will further benefit the Town of Carmel to create needed single family development to a school district with a documented declining population (see attached); and

c. Increased tax revenues to be received by Town.

9. The proposed change of zone will not be detrimental to the other residential properties in the adjoining neighborhood because the cluster development will result in the residential development being in the general proximity of Fair Street, leaving the area adjoining Kelly Ridge green and undisturbed, due to the cluster.

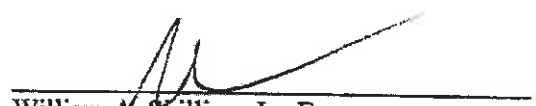
10. The parcels were previously zoned 1 acre at the time of Petitioner's purchase. Further, the property has been assessed from inception by paying charges to the Town of Carmel for the municipal sewer system on the basis of 162 units (see attached) and over \$3 million in sewer capital charges alone.

11. Currently, only commercial golf course and related purposes use the parcel. There are no non-conforming uses or structures on the subject premises.
 12. The subject premises are located within 500 feet of the town line of the Town of Carmel. The remaining golf course use after the zoning is changed are located within the Town of Carmel and Town of Southeast.
 13. The subject premises are not within 500 feet of any existing or proposed County or State Park or other recreation area except the existing golf course.
 14. The subject premises are not located within 500 feet of any right-of-way of any existing or proposed County or State parkway, thruway, expressway, road or highway.
 15. Upon information and belief, the subject premises are not located within 500 feet of any existing or proposed right-of-way of any stream or drainage channel owned by the County or for which the County has established channel rights.
 16. The subject premises are not located within 500 feet from the existing or proposed boundary of any County or State-owned land on which a public building or institution is situated.
 17. The proposed zone change does not affect property within the protectively zoned area of a housing project authorized under the Public Housing Law.
 18. The Petitioners hereby consent to Board action reverting the subject premises to a zoning classification similar to its present zoning classification if the Town Board subsequently determines that any statement contained in this Petition or any statement made by the Petitioners at the public hearing is found to be materially false and was not made in good faith. The petitioner further consents to Board action reverting the subject premises to a zoning classification similar to its present zoning classification in the event that the Petitioners fail to abide by any conditions or restrictions contained herein or imposed hereafter by the Town Board.
-

19. Petitioners waive any or all rights otherwise afforded to them under provisions of the Zoning Code of the Town of Carmel upon the granting of the change of zone requested herein.

WHEREFORE, Petitioners Centennial Golf Club of New York, LLC, by David Leibowits, member respectfully request that the Town Board of the Town of Carmel consider, review, and effectuate the requested change of zoning set forth herein.

Dated: Carmel, New York
April 30, 2019



William A. Shilling, Jr., Esq.
William A. Shilling, Jr., P.C.
Attorneys for Petitioners
122 Old Route 6
Carmel, New York 10512
(845) 225-7500

VERIFICATION

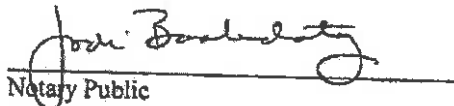
STATE OF NEW YORK)
) ss.:
COUNTY OF PUTNAM)

David Leibowits, being duly sworn, deposes and says:

I am one of the Petitioners herein. I have read the annexed Petition, know the contents thereof, and the same is true to my knowledge, except those matters that are stated to be alleged upon information and belief, and as to those matters, I believe them to be true upon my own investigation and knowledge.


David Leibowits

Sworn to before me this
30 day of April, 2019.


Notary Public

JODI ROBIN BAABDATY
NOTARY PUBLIC
State of Connecticut
My Commission Expires Nov. 30, 2023

TOWN BOARD
TOWN OF CARMEL: COUNTY OF PUTNAM
-----X

In the Matter of the Petition of

CENTENNIAL GOLF CLUB
OF NEW YORK, LLC

Petitioners,

For a Change of Zoning for Parcels of Real
Property
-----X

I

STATEMENT OF FACTS

The applicant purchased the subject property in 1996. Peter and David Leibowits created a 27-hole golf course in the Town of Carmel and the Town of Southeast in 1997-1998. It was created at a time when golf outings and banquets were in great demand. The twenty-seven holes made the acceptance of these functions possible while still keeping the golf course open to the general public.

The site has also become a venue for Town of Carmel groups for entertaining many social functions in the detached banquet room, often unrelated to golf.

At the time of the applicant's purchase, the zoning was R-1 which involved an entitlement to develop on one-acre parcels. The septic count was approved for 162 units which is an ongoing expense borne by applicant. Over the years, the applicant has paid over three million dollars in sewer capital charges alone.

The record is clear that the rate of golf course construction grew dramatically in the 1990's. However, the number of golfers slowly subsided and golf courses have increasingly been less profitable, leading to golf course owners under pressure to sell their land for more profitable uses.

Thus, applicant has incurred similar difficulties outlined herein. It is thus a necessary alternative being considered to re-develop the land residentially to sustain.

Golf courses are generally viewed by community residents as providing important areas of open space and recreation opportunities to the public at large. Conversely, neighboring land owners often oppose the prospect of housing complexes replacing the pastoral views created by golf courses. It is also fundamental that golf course re-development presents an opportunity for the municipality to negotiate desired community benefits.

The zone change proposed by the applicant will inure to the Town's benefit for several reasons. It will create needed residential single-family development to a community with declining school populations. It will create additional tax revenues for the Town of Carmel. Most importantly, the owner is aware of the planning initiatives outlined, and adopted by the Town, in the Greenway Compact Program, and is open-minded to conditions offered by the Town to restrict development and preserve open space. It is fundamental that the preservation of green and recreational space is a stated desired Town goal codified in §156-90.

II

Preservation of Open Space and Recreation Areas are a Legitimate Governmental Interest

As municipalities progress and adapt to changing environments and demographics, it must adopt new tools in order to develop stated goals and priorities. "Smart Growth" is often cited as a technique that offers towns and villages a way to attract new residents while providing and protecting green space and recreation areas to residents.

Smart growth is "sensible, planned growth that integrates economic development and job creation with community quality-of-life by preserving the built and natural environments." Smart growth has many advantages in boosting economic development while also prioritizing open space

and recreation opportunities. Benefits of smart growth expand beyond economic opportunities as well. Its use enhances environmental conditions, allows for calculated development, and makes communities more attractive to live in.

A central facet of smart growth is the use of cluster and conditional zoning in order to allow for development while simultaneously preserving open space. By utilizing these strategies, municipalities reap the rewards of development while ensuring that their green spaces will stay intact.

The Town of Carmel has indicated a desire to use smart growth by implementing §156-90 of the Town Code. The concepts expressed in the Greenway Connections report is directly on point with the desire to develop the subject premises. By reducing the required lot size and allowing for cluster development, the Town would be serving the goals of developing intelligently without changing the essential character of the community, and while ensuring open space and recreation.

The Greenway Connections report for Putnam County, titled, "Putnam County Pathways: A Greenway Planning Program Linking Putnam's Open Space, Historic, Cultural and Economic Resources," speaks directly to the desire to retain open space. One planning principle in the report is "Enhance the quality of life for Putnam County residents, residents of the Hudson River Valley and Hudson Highlands through intelligent stewardship of Putnam's land and water resources through sound planning, development, transportation and conservation policies." By allowing a smaller lot size requirement, the Town is enacting this goal since a significant portion of green space will be preserved as opposed to being developed.

A second planning principle is to, "Support and encourage the development of land use plans that present balanced growth policies where development is appropriately sited, housing is

affordable, watersheds are respected, historical assets are valued, natural resources and open space are protected, and recreational and cultural opportunities are diverse and numerous". This development falls squarely in line with these principles. This development would create a harmonious use of "built" and "non-built environments."

By implementing §156-90, the Town of Carmel has expressed a desire to implement more modern and flexible zoning and land use tools. This project seeks to utilize them. The requested relief would allow for attractive development while ensuring over 120 acres of space remains open and undevelopable.

III

Legal Justification for the Use of Conditional Zoning

The concept of "conditional zoning," whereby open space and recreational venues are preserved in exchange for favorable conditions to applicant, is fundamental in New York Law.

The traditional idea of zoning is that provisions alone burden and limit land uses. In certain circumstances legislative and land use boards will approve projects but permit favorable conditions to an applicant where recreation or open space concerns can be protected and preserved.

The entitlement for conditional zoning is found in the landmark case of *Church v. Town of Islip*, 8 NY 2d 254, where the Court upheld rezoning of a property subject to conditions. In that case, conditions to restrict the maximum size of buildings and other restrictions were in response to community needs. The Court stated the power to rezone includes the power to add new restrictions when particular circumstances require.

The Court stated "it is understandable that in the public interest and in the interest of protracted expediency the practice of granting zoning changes and conditioning their uses by means of privately imposed restrictive covenants has seemingly become widespread."

Furthermore, the Court stated “We are not of the opinion that such practice is contrary to the spirit of zoning ordinance and is beyond the statutory power of local legislative bodies” (emphasis supplied).

In *Matter of Citizens v. Common Council of City of Albany*, 56 AD 3d 1060, the Court changed its zoning from a commercial office district to a highway commercial district. The Court ruled that the action did not constitute “spot zoning” because it was part of a thoroughly considered plan calculated to best serve the community and the approved use was not totally different than that of the surrounding area.

Significantly, it has been held that “Any such legislative action is entitled to the strongest presumption of validity and will stand if there is a factual basis” (*Shepherd v. Village of Skaneateles*, 30 NY 115; *Wiggins v. Town of Somers*, 4 NY 2d 215). Further, it is well established that Courts are reluctant to overturn zoning amendments when it is well designed and passed after careful consideration (*In the Matter of Save our Forests Action Coalition v. City of Kingston*).

Furthermore, New York State Comptroller Opinion No. 79-698 supports the validity of conditional zoning. This opinion confirms the notion that, “a town board may impose reasonable conditions for the protection of neighboring property owners.”

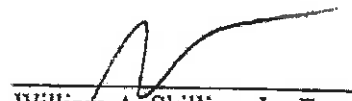
Conditional zoning, specifically related to golf courses, has been utilized across New York State. Locally, the Silo Ridge project in Amenia, New York utilized conditional zoning to allow for development while preserving open space. Of the project’s 670-acre footprint, 80 percent will be preserved as open space. Deed restrictions have been utilized in many instances to provide town boards with an assurance that the remaining undeveloped property would persist as open or recreational space. It is important to consider the developmental alternative to conditional zoning. Instead of preserving open space and recreation, sprawling fields and meadows would be

developed into residential units that are permitted as of right. (*\$500 Million Silo Ridge Project Breaks Ground*, The Poughkeepsie Journal, March 9, 2016)

The concept of conditional zoning has been affirmed not only in *Church*, but also in *Allison C. Collard v. Incorporated Village of Flower Hill* (52 N.Y.2d 594). In contrast, the concept of contractual zoning has been denied in *Madeline Levine v. Town of Oyster Bay* (26 A.D.2d 583). In conclusion, the use of conditional zoning offers municipalities the best of both worlds: the ability to preserve open and recreational space while simultaneously developing intelligently, boosting tax revenue, and offering much needed real estate inventory to bolster school district rolls.

WHEREFORE, we respectfully request that this application be in all respects granted and/or for such other and further relief as the Board deems appropriate.

Dated: Carmel, New York
April 30, 2019



William A. Shilling, Jr., Esq.
William A. Shilling, Jr., P.C.
Attorneys for Petitioners
122 Old Route 6
Carmel, New York 10512
(845) 225-7500

Exhibit A

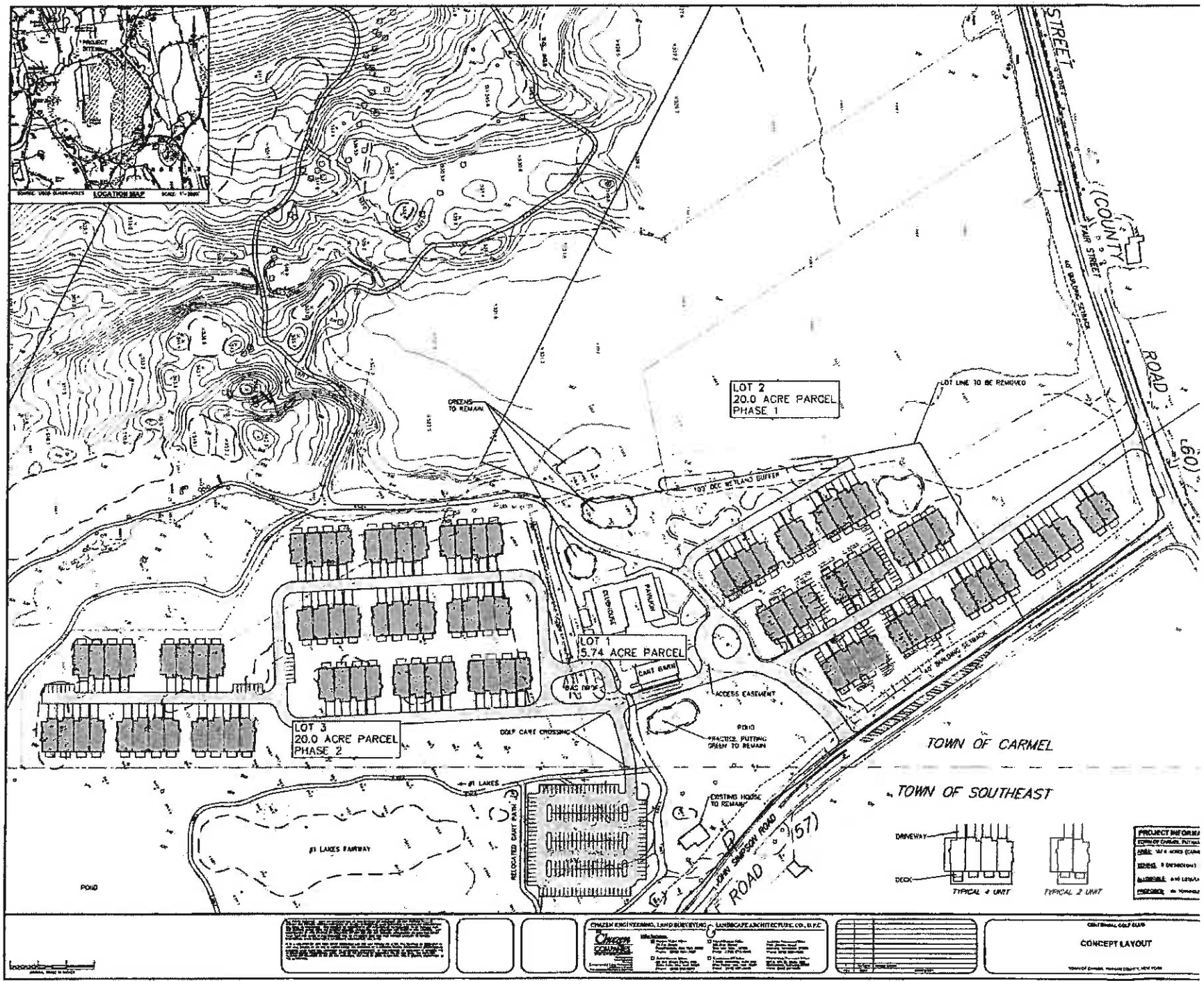


Exhibit B
(Please see pages 9 through 12)



MEMORANDUM

To: Chairman Gary & Members of the Planning Board
From: Patrick Cleary, AICP, CEP, PP, LEED AP
Date: November 11, 2018
Re: Multi-Family Housing Zoning

1.0 INTRODUCTION

In 2002 the Town of Carmel amended the Zoning for the Town by replacing its traditional hierarchy of multiple residential zoning districts (R-60, R-60/40, R-40/30, R-40/20, R-40/10, R-MF, R-MFA)¹ with a single 3-acre single family district as the Town's only residential zone. It was anticipated that up-zoning would reduce development pressures, including concerns over increases in school district enrollments, by slowing home building as fewer parcels would be available for development, which would correspondingly increase housing prices. The Town's action in 2002 for all practical purposes eliminated the potential for development of new market-rate multifamily housing options for the general population.

Having only one residential zone in the entire Town, which requires a minimum of 3 acres for the development of a residential dwelling unit, leaves those with more diverse needs unable to find housing within the Town. As illustrated by the data in this report, the Town of Carmel is composed of a population of varying ages and income levels. There is an unmet need to provide housing for entry level homebuyers, young people just out of college, millennials, divorcees, empty nesters who are preparing for retirement and older people who may prefer to live in a general population community rather than a designated senior housing complex. Experience has demonstrated that large lot 3-acre zoning promotes sprawl, requires more infrastructure, and creates isolated neighborhoods that rely solely on automobiles. Large lot zoning is not the most effective measure for providing environmental protection to New York City watershed lands, nor does it meet the needs of the Town's existing demographics. This "exclusionary" zoning makes the Town vulnerable to a federal fair housing

¹ Prior to 2002, in previously existing zoning districts such as R-40/10, higher density minimum lot area would apply only if public sewer and water were available.

lawsuit similar to Westchester County which affected many of its municipalities in recent years.

Currently, some limited provisions for multifamily housing exist in Town, but these are restricted to the waterfront of Lake Mahopac, which is already mostly fully developed. Multifamily Housing for the Elderly is permitted as a Special Permit Conditional use in the residential, commercial/business park and commercial zones. The conditions which need to be met in order to develop market-rate multifamily housing for the elderly include, among others, the following;

- The site must be in or contiguous to the residential zone and CBP or commercial zones.
- The site must be a minimum of 5 acres.
- The site must be served by municipal or community water and municipal or community sewer.

2.0 DEMOGRAPHIC ANALYSIS

Table 1 provides a summary of the population and housing statistics for the Town of Carmel. The Table provides a comparison of historic values from 2000 and 2010, compared to current 2018 data and provides a projection over the next 5 years to 2023.

As can be seen, according to the US Census data, the rate of growth which was approximately 14.4% over the previous decade, slowed to approximately 4% from 2000 to 2010 and has slowed to a projected 1.9% in the current decade. Projections by ESRI Demographic Forecasts indicate population growth will continue to decrease to an annual rate of one tenth of a percent. Taking a long lens look, growth of the Town was very tepid from 2000 to 2010 and has virtually stopped since 2010 which is the same time period when the impact of the Town's rezoning to exclusively large lots began to be felt.

The US Census data also indicates that during these same time periods the median age of Town residents has steadily increased from 37.1 in 2000 to 43.2 in 2018. This indicates the population is aging. Population aging is a trend that is being experienced throughout the region. In response, the Town placed an emphasis on providing housing for its Seniors. Putnam County and the Town of Carmel are aging at the fastest pace in the region. As a review of local real estate data confirms, existing homeowners are remaining in their homes and "aging in place", a likely result of the 2008 recession, and the lack of suitable housing alternatives.

The limited inventory of available housing choices has also restricted the influx of younger entry level residents. Increasing housing costs and a limited supply has

resulted in a steady decline in the ability to own a home. Steadily increasing prices make it hard for entry level homebuyers to get into the housing market. The housing market in Putnam and northern Westchester has continued to appreciate in value, putting home ownership out of reach for many entry level homebuyers.

A report was prepared by the Urban Land Institute (ULI) in conjunction with the Sierra Club and the American Institute of Architects (AIA) and the National Multi-Housing Council (NMHC), herein referred to as the ULI Study, entitled Higher Density Development Myth and Fact.² The Study provided data to refute popular myths which surround the potential development of multi-family housing. In the introduction the ULI Study states,

"New markets are emerging for real estate that offers a more convenient lifestyle than is offered by many low-density sprawling communities. New Compact Development with a mix of uses and housing types throughout the country are being embraced as a popular alternative to sprawl. At the core of the success of these developments is density, which is the key to making these communities walkable and vibrant."

Similar claims are made by ULI in their 2016 report "Emerging Trends in Real Estate® United States and Canada 2016"³, as discussed below.

As the housing market continues to sort itself out after the 2008 recession, a reasonable expectation is for the homeownership rate to settle in a narrow range around its 50-year average of 65 percent, indicating the rental and multifamily housing sectors will remain strong. This translates into the fact that housing demand will be greater across all residential segments.

Economic and demographic factors are influencing the housing market as it deals with issues around providing the type of housing desired by the baby boom generation, millennials, a population making an urban/suburban choice, and finding a way to provide housing that fits into the budgets of a changing workforce. A trend has emerged toward greater diversity in demand and supply across different sectors of the housing market.

In the Housing field, a simplistic focus on averages or medians can gravely miss key statistical points that can illuminate both opportunities and risks in the marketplace. Superior profit potential has skewed recent housing production toward the luxury end of product. What is not so obvious is that a shortfall of supply in the mid-to-lower end of the residential market is putting upward pressure on pricing for such units, exacerbating already severe budget limitations of entry-level home buyers.

² Higher-Density Development - Myth and Fact, Urban Land Institute, Sierra Club, National Multi-Housing Council, American Institute of Architects, Washington D.C. 2005.

³"Emerging Trends in Real Estate® United States and Canada 2016" Urban Land Institute, 2016

The percentage of renter occupied units in Carmel has grown from 14.8 percent to 20.9 percent. The ULI study confirms this trend around the country and states "One-third of Americans rent their housing." There has also been a significant migration of young persons out of Carmel to other areas in search of rental dwelling units and entry level housing within their budget. Young persons who witnessed the housing crisis of 2008 are also demonstrating a preference for rental housing because they view the stability of the investment in a home warily, and no longer assume that single-family home ownership is a sound investment in creating a nest-egg. Moreover, the paradigm of long-term employment stability is giving way to more transient and mobile employment in the "gig economy." Being tied down to a single-family home in the suburbs, which may prove to be a bad financial investment, is no longer the typical American Dream, particularly in the New York metropolitan area.

Entry level housing on small lots and condo ownership which do not result in an over extension of household budgets, will help to mitigate the risks of homeownership for first time home buyers. This is gateway housing for the Town. The ULI study indicates that housing preferences for millennials tend toward higher density housing. "Communities are being developed using the best concept of traditional communities-smaller lots, a variety of housing types, front porches and sidewalks, shops and offices within walking distance and public transit nearby."⁴

Table 1
Town of Carmel - Demographic Analysis

Year	2000	2010	2018	2023
Total Population	32,997	34,305	34,935	35,290
Median Age	37.1	41.2	43.2	43.7
Number of Households	10,838	11,672	11,874	11,989
Rate of Growth	1990-2000 14.4%	2000-2010 4.0%	2010-2018 1.9%	2018-2023 1.0%
Total Housing Units	11,274	12,348	12,624	12,862
Owner Occupied Housing Units	9,160	9,668	9,227	9,467
Renter Occupied Housing Units	1,678	2,004	2,647	2,522
% Renter Occupied	14.8%	16.2%	20.9%	19.6%
Median Home Value	\$375,600	\$459,200	\$459,320	\$506,379
Average Home Value	\$430,955	\$523,015	\$523,152	\$582,465
Median Household Income	\$77,406	\$98,226	\$106,822	\$116,638
Average Household Income	\$86,467	\$114,496	\$136,133	\$157,023
Source: US Census Data, ESRI Demographic Forecasts.				

⁴ Ibid, pg. 31

Table 1 shows the Town's median age has been steadily increasing since 2000. Also shown in Table 1, the Town's rate of growth has steadily decreased from slow growth in 2000 to almost no growth since 2010. The proportion of renter occupied housing has steadily increased due in part to the fact that there isn't any new entry level housing or condominiums available for sale.

Table 2 provides a detailed breakdown of the Carmel's population by age category for the years 2010, 2018 and projection to 2023 and a further projection extrapolated out to 2028. As Table 2 shows there has been a steady aging of the population. The numbers and percentages of the 35 to 55-year-old population is consistently decreasing while the number and percentage of the 55 to 75-year-old population is projected to continue to steadily rise and almost double in a 20-year period.

It is noteworthy that the 25 to 34-year cohort has the potential for growth showing a modest increase in the percentage of the population that is represented. This cohort would include recent college graduates looking for that first career job and is very likely composed of young people who have moved back in with their parents after college in addition to other entry level homebuyers. This population specifically includes those persons in a category ripe to utilize multifamily housing, if it were available.

Without an influx of young families, the family-oriented nature of the Town of Carmel and Putnam County will inevitably change. Community priorities will shift. Recreation facilities and municipal services will need to cater to an older population not a family-oriented community. Section 4.0 below discusses the impacts this type of shift is having on the Town's school districts.

As Table 2 shows, the age categories 35 to 55 and below are losing population and all categories 55 + are continuing to grow. The projected growth in Carmel over the eighteen-year period between 2010 and 2028 is only 1,340 persons.

Table 2 Town of Carmel - Detailed Age Profile								
Age	<25	25-34	35-44	45-54	55-64	65-74	75+	Total
Number of Persons								
2010	11,141	3,109	5,090	6,390	4,339	2,458	1,805	34,305
2018	10,311	3,790	4,109	5,506	5,418	3,451	2,350	34,935
2023 (projection)	9,512	4,177	4,546	4,643	5,642	3,921	2,849	35,290
2028 (projection)	8,775	3,885	4,319	4,861	6,066	4,391	3,348	35,645
Percent								
2010	32.4%	9.1%	14.8%	18.6%	12.6%	7.1%	5.3%	100%
2018	29.6%	10.8%	11.7%	15.8%	15.5%	9.9%	6.8%	100%
2023 (projection)	26.7%	11.9%	12.9%	13.2%	16.0%	11.2%	8.0%	100%
2028 (projection)	24.6	10.9	12.1	13.6	17.1	12.3	9.4	100%
Source: US Census; ESRI Demographic Forecasts								

Table 3 provides data on the 2018 household income, broken down by age category. In every age category between age 25 and 74, the highest percentage of household incomes is \$100,000 to \$149,999, indicating that this is the household income necessary to live in the Town of Carmel. There are also high percentages of the 45-54 and 55-64 age groups where the household income is over \$200,000. There is a marked decrease in incomes after age 75 with more than 75 percent of the over 75-year-old population having annual household incomes less than \$75,000. As this segment of the population continues to rise, the economic profile of the Town will change, which has the potential to hurt the business sector in the Town for years to come.

Table 3 Town of Carmel 2018 Household Income Profile							
Age	<25	25-34	35-44	45-54	55-64	65-74	75+
Total number of persons	10,311	3,790	4,109	5,506	5,418	3,451	2,350
Income by Household							
<\$34,999	11%	10.7%	8.3%	6.7%	10.3%	15%	34.6%
\$35,000-\$49,999	12.9%	7.6%	5.0%	4.4%	5.0%	6.6%	14.6%
\$50,000-\$74,999	27.7%	13.9%	9.6%	9.0%	10.7%	18.0%	26.3%
\$75,000-\$99,999	19.8%	17.2%	13.5%	11.1%	12.9%	16.2%	4.9%
\$100,000-\$149,999	17.8%	30.3%	24.8%	27.2%	23.4%	20.5%	9.7%
\$150,000-\$199,999	4.0%	9.2%	17.0%	16.5%	15.0%	9.8%	5.0%
\$200,000+	6.9%	11.0%	21.8%	25.2%	22.6%	13.9%	5.0%
Source: US Census; ESRI Demographic Forecasts. Table prepared by TMA 2018.							

Table 4 provides a comparison of population growth in the counties that make up the region including the lower Hudson Valley, southern Connecticut and northern New Jersey. As illustrated in Table 4 below, the 0.41 percent annual growth experienced in Putnam County during the period from 2000 to 2010 slowed to 0.12 percent annual growth during the period 2010 to 2018. This slowdown in growth is certainly influenced by the actions taken by the Carmel Town Board in 2002 in combination with the 2007 - 2008 recession. It is noteworthy that the growth in the surrounding Counties did not slow down to nearly the same extent, indicating the Zoning action taken by the Town of Carmel had a real impact. As Table 4 shows, the population density of 433 persons per square mile is by far the lowest of the Counties in the region, with only Orange County being close to the sparse density of Putnam County.

Table 4 Population Growth Comparison by County 2000 - 2023									
County	Land Area (Sq. Miles)	2000 Population	2010 Population	2010 Population Density (Person / Sq. Mile)	2018 Population	2023 Population Projection	2000-2010 Annual Rate	2010-2018 Annual Rate	2018-2023 Annual Rate Projection
Putnam	246	95,745	99,710	433	100,715	101,398	0.41%	0.12%	0.14%
Westchester	500	923,459	949,113	880	977,073	997,054	0.27%	0.35%	0.41%
Rockland	199	286,753	311,687	1,890	328,812	339,495	0.84%	0.65%	0.64%
Orange	839	341,367	372,813	471	393,529	407,897	0.89%	0.66%	0.72%
Bergen	247	884,118	905,116	4,070	951,353	979,924	0.24%	0.61%	0.59%
Fairfield	837	882,567	916,829	1,520	958,883	982,066	0.38%	0.55%	0.48%

Source: US Census; ESRI Demographic Forecast; Putnam County Department of Planning

As shown in Table 5, during this same time period, the over 50 population grew compared to the overall population. Putnam County has the highest percentage of seniors with 41.4 percent of the population over the age of 50 in 2018. The ESRI Demographic Forecasts show this trend is projected to continue with estimates of 43 percent of the total population being over 50 by 2023. This trend is directly related to the availability of senior housing in combination with the lack of new market-rate entry level housing that would attract young families. The current Carmel residential 3-acre zoning exacerbates these demographic trends by failing to provide balanced housing opportunities, especially for young people including millennials.

Given the current economic conditions, the existing smaller unit housing stock on smaller lots is not becoming available to young entry level buyers as existing residents are staying in their homes longer and ageing in place. The Town can rectify this by adding a non-age-restricted multi-family zone to balance the senior multi-family zone that currently exists in the Town.

Table 5 Population Age 50+ Comparison by County 2010 - 2023						
County	2010 Population 50+	2010 % of Total Population	2018 Population 50+	2018 % of Total Population	2023 Population Projection 50+	2023 % of Total Population
Putnam	34,831	34.9%	41,665	41.4%	43,579	43.0%
Westchester	326,888	34.4%	375,233	38.4%	397,142	39.8%
Rockland	100,395	32.2%	115,559	35.1%	121,326	35.7%
Orange	110,943	29.8%	134,130	34.1%	144,086	35.3%
Bergen	324,155	35.8%	379,590	39.9%	404,354	41.3%
Fairfield	303,038	33.1%	358,900	37.4%	383,056	39.0%

Source: ESRI Demographic Forecasts based upon US Census Data.

Table 6 provides a summary of the demographic profiles of the region. This comparison shows that Putnam has the lowest population, but the highest median age. Putnam County shows a steep drop in the rate of growth from 2000 to 2010 and an even steeper drop from 2010 to 2018 compared to the surrounding counties. The ESRI population projections to 2023 are also substantially lower than for the other counties. As shown in Table 5, the 2018 data shows that Putnam County has the highest percentage of over 50 population and this trend is expected to continue

through 2023. Putnam County also has the highest percentage of owner-occupied units (76%) compared to other counties, which are generally at about 64%.

Table 6
2018 Demographic Profile by County

County	2018 Population	2018 Median Age	Total Households 2018	Owner Occupied Housing Units 2018	Renter Occupied Housing Units 2018	Percent of Owner / Rental Housing units	Median Household Income 2018	Average Home Value 2018
Putnam	100,715	44.0	35,299	26,830	8,469	76% / 24%	\$103,445	\$498,140
Westchester	977,073	41.2	355,434	209,823	145,611	59% / 41%	\$95,623	\$752,190
Rockland	328,812	37.0	103,673	71,245	32,428	69% / 31%	\$97,147	\$559,161
Orange	393,529	37.2	131,853	84,155	47,698	64% / 36%	\$78,935	\$360,589
Bergen	951,353	42.6	348,209	221,653	126,556	64% / 36%	\$92,940	\$586,135
Fairfield	958,883	40.6	346,445	222,550	123,895	64% / 36%	\$90,961	\$632,735

Source: US Census; ESRI Demographic Forecast

3.0 SCHOOLDISTRICT ENROLLMENTS

The Town of Carmel is located primarily in the Carmel and Mahopac Central School Districts. There is a very small portion of the northeast corner of the Town located in the Brewster Central School District, which based upon the relative size is not included in this study.

According to the demographic projections provided by the Mahopac and Carmel Central School Districts, enrollments have been steadily declining in both the Carmel and Mahopac Central School Districts for more than ten years.

Peak enrollment for the Carmel CSD occurred in 2002 when enrollment was 4,956 students; compared to the 2018 enrollment which was 4,040 students, a reduction of 916 students or an 18.5 percent decline from peak enrollments. According to the projections made by Westchester Southern BOCES, this trend is expected to continue to 2023 and beyond, with the 2023 enrollment for the Carmel School District estimated at 3,662, which represents a 26.1 % decline from the peak enrollment. Carmel School District projections to 2028 estimate the student population to be 3,479, which is a reduction of approximately 1,500 students equating to an almost a 30% decline from peak enrollments district wide.

Similarly, peak enrollment for the Mahopac CSD occurred in 2004 when enrollment was 5,369 students; compared to the 2018 enrollment which was 4,138 students a reduction of 1,231 students or about a 22.9 % decline. This trend is expected to continue to 2028 and beyond, with the 2023 enrollment estimated at 3,671 which represents a 31.6 % decline from the peak enrollment of 2004. Projections for 2028 estimate 3,448 students which is a reduction of almost 2,000 students which equates to a decline of more than 35% compared to the 2004 peak enrollments.

Table 7 School Populations - Town of Carmel 2002 to 2028										
School District	Peak Year Enrollment	2010 Enrollment	2018 Enrollment	Decline from Peak to 2018	2023 Enrollment Projection	Decline from Peak to 2023	2023 Reduction in number of Students from Peak	2028 Enrollment Projection	Decline from Peak to 2028	2028 Reduction in number of Students from Peak
Carmel (Peak 2002)	4,956	4,581	4,040	18.5%	3,662	26.1%	1,294	3,479	29.8%	1,477
Mahopac (Peak 2004)	5,369	4,922	4,138	22.9%	3,671	31.6%	1,698	3,448	35.7%	1,921

Source: Mahopac School District, Superintendent of Business, July 2018
Carmel Superintendent of Business, Western Suffolk BOCES, NYS ED BEDS 2018

The Superintendent for Business in the Mahopac Central School District indicated, that although enrollments are declining there are no plans for expansion or contraction at this time⁵. A review of both school district's budget for the 2018-2019 school year indicates that both districts have allocated funds for School Bus Replacement and for the provision of School Safety Officers. No other capital improvements are currently scheduled.

A Review of current school enrollment and budget data and school enrollment projections for the next 5 to 10 years indicate continuing declines for both the Carmel and Mahopac School Districts by more than 30% compared to peak enrollments. This substantial declining enrollment trend has the potential to result in excess infrastructure, where the number of students is significantly lower than the enrollment capacity. The potential for the elimination of school clubs, sports teams and other extra-curricular activities will increase as enrollments continue to decline.

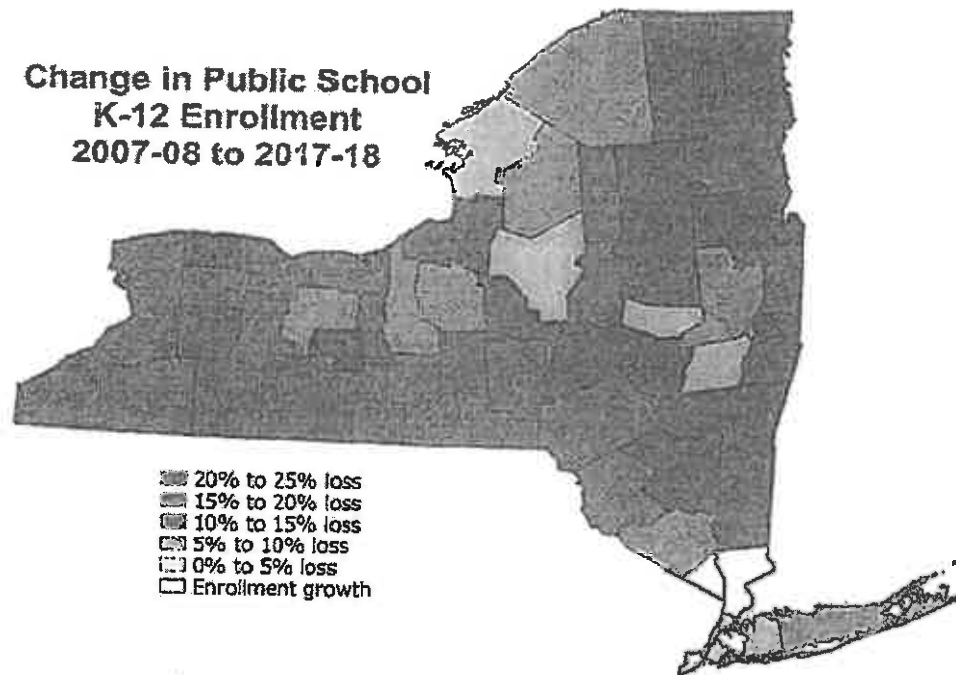
A recent report by the New York State Empire Center indicates enrollment reductions are taking place statewide with few exceptions.⁶ The map below focuses on trends over the past 10 years. It should be noted that both Westchester and Rockland Counties are seeing school enrollment growth.

In contrast, Putnam County is seeing enrollment losses of 20 to 25%. The Carmel and Mahopac School Districts have lost 21% of their enrollment since their respective peaks in 2002 and 2004 and are projected to lose up to 35 percent of their peak enrollment by the 2028 school year.

⁵ Phone call with Greg Sullivan, Superintendent for Business Mahopac CSD, July 11, 2018

⁶ NYS Empire Center Research & Data, September 2018; Data posted at <http://www.p12.nysed.gov/irs/statistics/enroll-n-staff/home/html>

**Change in Public School
K-12 Enrollment
2007-08 to 2017-18**



At the same time enrollments are declining, legacy costs, i.e. pensions, disability, state mandated expenses, which make up about 50% of the school budget costs continue to increase. Although school districts can take measures to control their operating expenses, the legacy costs are not optional and cannot be reduced.

An increase in residential development would result in an increase in the assessed valuation of the School Districts, which translates into additional school tax revenues. Since the infrastructure and staff resources are already in place, the costs for new students associated with multi-family housing would be minimal. It should also be noted that while market-rate multifamily housing would provide a significant increase in the districts assessed valuation, the ratio of students associated with multifamily housing is low compared to traditional single-family housing – and as such would not over-burden the schools. Families are having fewer children than the previous generation in general and market-rate multifamily housing results in an even lower generation of school age children. A review of the Census data in Table 9 indicates the make-up of the families today is much different that it was 25 years ago. Current demographic research is being conducted⁷. Preliminary data indicates that today's market-rate multi-family buyer has even fewer children than previously projected.

⁷ New Jersey Planning Conference January 25-28, 2018. Demographic Multipliers Progress, Research and Applications. David Listoken, Ph.D. CUPR.

The ULI study indicates that market-rate multifamily housing typically pays its own way. A typical mixed-use development with retail, office, and market-rate multifamily housing may subsidize the schools and other public services required by residents of low-density housing in the same community.⁸⁸ The ULI Study further states, "Thus, introducing higher density projects into a community will actually increase that community's revenue without significantly increasing the infrastructure and public service burdens." Blending market-rate multifamily housing into low-density communities can help pay for school expenses without drastic increases in the number of students. Diversifying housing options and adding amenities like shops and offices close by will improve the quality of life and attract businesses and people that will strengthen the community's economic stability. Increasing density provides a real economic boost to the community and helps pay for the infrastructure and public services that everyone needs.⁸⁹

The lack of market-rate multifamily housing for young people advances the demographic trend in Carmel that sees the population of people aged 35 to 55 declining, and the portion of people aged 55 and over growing significantly, creating significant adverse consequences for Carmel and Mahopac schools and other adverse economic and fiscal impacts. As shown in Table 2, by 2028 it is estimated that the population below 25 will be less than 25% of the overall population and that the over 55 population will constitute about 32% of the population. This population distribution will have ramifications as to where the emphasis is placed on allocating Town resources. This in turn has the potential to negatively affect the commercial businesses in the Town. Failed businesses will ultimately have a negative implication on the tax bases of the Carmel and Mahopac School Districts and hurt the hamlet business districts with empty stores and closed businesses.

4.0 NEED FOR MARKET-RATE MULTIFAMILY HOUSING

The severe slowdown in growth in Putnam County and the Town of Carmel compared to the surrounding counties indicates there are contributing factors that need to be addressed.

The demographic analysis above shows the declining population of persons 35-55 years old, the age cohorts most likely to have young families. There is a need for additional housing for this segment of the population. Aging baby boomers are tending to stay in their houses longer while ageing in place, closing out opportunities for the young home buyer and millennials to enter the housing market. The declining school enrollments underscore the need for additional young families to fill the existing school infrastructure, while at the same time increasing the assessed valuation in the districts to help to broaden the overall tax base. A review of the data presented in Table 3, illustrates that a household income of \$100,000 to \$149,999 is

⁸⁸ Higher-Density Development - Myth and Fact, Urban Land Institute, Sierra Club, National Multi-Housing Council, American Institute of Architects, Washington D.C. 2005. Pg. 11

⁸⁹ Ibid, Pg. 12

generally necessary to live in Carmel today. This is a significant number, typically requiring more than one income per household.

The current residential zoning in Carmel is almost exclusively restricted to single family homes on three acre lots, which does not provide for an array of balanced housing opportunities, particularly entry level housing for young households and transitional housing for divorcees and others in transition. The failure to provide balanced housing opportunities, exacerbates the current demographic trends especially for young people. This failure leads to the lost economic and fiscal benefits for the Town and the business community and could easily be defined as "exclusionary zoning." Younger families mature into families with higher incomes which results in more disposable income, which helps support the businesses and overall economic vitality of the Town.

The provision of multifamily housing can help to meet the Town's housing needs and alter the current demographic trends in the Town of Carmel and Putnam County of an aging population and increase in the number of younger people. The lack of young people creates a social void and results in a hole in the fabric of the community. Entry-level housing opportunities will serve to encourage the growth of this segment of the population. Younger families can have a positive impact on economic and fiscal matters, including impacts on real estate taxes and commercial businesses. As shown in the attached Table 10, family households of 3 to 5 people spend much more money in Carmel than smaller senior households of 1 to 2 people. Once comfortable with the Town and the school system, as members of the community, these people could eventually sell their entry level house and buy a larger single-family home on a larger lot for their expanding family in the Town and School District.

The ULI Study states, "Providing balanced housing options to people of all income groups is important to a region's economic vitality. The availability of multifamily housing helps attract and retain the workers needed to keep any economy thriving. In many American towns and cities, rapidly rising house prices are forcing working families to live farther away from their jobs."¹⁰

Most recently an article in the NY Times Real Estate section confirms that the trends predicted by ULI are indeed happening. ¹¹In this area, millennials desire to move to the suburbs and are looking for housing that meets their needs and fits their budget.

The millennials who are looking to buy houses today have somewhat different priorities compared to the generation before them. They are focused on a life balance and value their free time as much as their careers. They are looking for smaller lots, low maintenance, common amenities, and no need for major renovations. As described above they are usually balancing home and work with family life and want

¹⁰ Ibid, pg. 32

¹¹ NY Times, September 30, 2018, Real Estate

a home that's easy to maintain. Their needs are very similar to the needs of active adults 55+. The housing that is desirable for seniors is the same type of housing desirable to young families. Young people desire 2 to 3 bedrooms while seniors desire 2 bedrooms plus a home office. Common amenity space and low maintenance is important to both groups. Both of these populations clearly prefer new or recently updated housing in move-in condition.

Based upon the similarities in the needs of young people starting out and active adults 55+ or senior citizens, general population multifamily housing would likely accommodate a mix of young families and seniors. If the age restriction is lifted, the new non-age restricted communities likely will have a mix of 50% age 55 and up and 50% age 55 and below, similar to the mix at Heritage Hills in Somers¹². By encouraging the development of market-rate multifamily units that are conducive to senior living, i.e. master down single living level layouts, the Town can continue to provide for the needs of its seniors within general population communities. A combination of active adult housing for persons above age 55 and non-age restricted market-rate multi-family housing for young people can serve to address both the current and future needs of Carmel and Putnam demographics within the same new communities. If a senior wants to live in a community that is exclusively 55+, they have the option to buy at one of the 55 and over communities that currently exist in the Town.

Young entry level homebuyers will eventually get comfortable as community members of the Town and School Districts, and develop a tangible stake in the community. As they outgrow an entry-level home they will likely look to buy a larger single-family home in the Town of Carmel, utilizing the substantial number of larger single-family homes on 1 to 3 acres currently existing throughout Carmel.

The ULI Study supports these concepts. "Higher density development can be a viable housing choice for all income groups and people in all phases of their lives. Many financially secure baby boomers, who have seen their children leave the nest, have chosen to leave behind the yard maintenance and repairs required of a single-family house for the more carefree and convenient lifestyle multifamily housing provides. Interestingly, the baby boomers' children, the echo boomers, are entering the age where many will likely live in multifamily housing. Just entering careers, many are looking for the flexibility of multi-family living to follow job opportunities. Their grandparents, likely on a fixed income, may also prefer or need to live in multifamily housing as physical limitations may have made living in a single-family house too challenging."¹³

A recent Study (2017), by the National Association of Realtors (NAR) that millennials are finally buying residences of their own. Of all the homebuyers in the U.S. more than a third were millennials in 2017. They aren't buying in the cities where they

¹² Heritage Hills was constructed as an age-restricted community of more than 2,500 total units but was ultimately converted to a general population development based upon market conditions.

¹³ Ibid, pg. 32

have been renting for over a decade. Those who choose to own their home are packing their bags and moving largely to the suburbs.¹⁴

The ULI Study indicated "This country's population is changing, and so are its real estate preferences. For the first time there are more single-person households (26.4 percent) than married couples with children (23.3 percent). The groups growing the fastest, people in their mid-20's and empty nesters in their 50's, are the groups most likely to look for an alternative to low-density, single family housing."¹⁵ The most recent Census indicates this trend is continuing as illustrated in Table 8. Based upon the 2010 Census Data, there continue to be more single-person households (26.7 percent) than married couples with children (20.2 percent).

The Country's population is changing and so is family structure. It is no longer necessarily the norm to have two married parents, two to four children and a dog. There is a significant number of married couples without children, there are many blended families as a result of current divorce rates, there is a growing number of same sex family units and there are other types of non-family households.

Table 8 below shows the current statistics of households by type as reported in the 2010 US Census. These numbers are likely to show an even wider range when the Census is updated in 2020.

Table 8 Households by Type 2010 (Percentage of Total)	
Married Couples with Children	20.2%
Married Couples without Children	28.2%
Other Family Households	18.1%
Men Living Alone	11.9%
Women Living Alone	14.8%
Other non-Family Households	6.9%
Source: US Census 2010: DP-1	

The numbers in Table 8 above are striking. There are more married couples without children than there are married couples with children. The Town must adapt and address this real change in household types. The household makeup above is very different than just 20 or 30 years ago. Large lot single family housing no longer meets the needs of a majority of homebuyers today as shown by the data above and yet these new household configurations need somewhere to live that suits their needs.

5.0 EXCLUSIONARY ZONING

The current administration in Washington is continuing the direction of the prior administration by taking an aggressive stance regarding the enforcement of the Federal Fair Housing Act¹⁶. Ben Carson, Secretary of Housing and Urban Development, wants to spur the construction of multi-family housing all over the

¹⁴ Nation Association of Realtors Report, 2017

¹⁵ Ibid, pg. 29

¹⁶ NY Times, August 21, 2018.

Country. The goal is to end exclusionary zoning that restricts housing choices and affordability for the general population, particularly new homebuyers.

Exclusively large lot zoning does not meet the needs of the Town's existing demographics nor provide opportunities for future growth. This exclusionary zoning makes the Town very vulnerable to a federal fair housing lawsuit similar to Westchester County which affected many of its municipalities in recent years. The Federal Fair Housing Act, guarantees the opportunity to choose where one lives free from obstacles. This promise of fair housing choice requires vigorous enforcement of laws advancing the community's commitment to fair housing. A community must take appropriate actions to overcome the effects of any impediments to Affirmatively Further Fair Housing (AFFH). The provision of a diverse housing market that meets the needs of all members of the community is necessary to help in meeting these goals. Clearly the Town's current 3-acre zoning creates a barrier and severely limits the housing choices for many people. In addition, large lot zoning has a significant impact on housing affordability which leaves the Town vulnerable to a federal lawsuit similar to Westchester County.

6.0 SURROUNDING PROPERTY VALUES

The ULI Study concludes, "No discernible difference exists in the appreciation rate of properties located near higher-density development and those that are not. Some research even shows that higher-density development can increase property values."¹⁷

A well-designed multifamily development can add to the value of the surrounding neighborhood. There is more flexibility of design and opportunities for creativity in larger cluster developments in terms of landscaping, site layout, amenity packages and cohesive architecture. When designed well, the multifamily development creates a sense of place where a community of people live together.

The ULI publication provides the results of three separate studies which indicate the value of surrounding single family real estate does not suffer declines in value as a result of nearby market-rate multifamily development. One study by the National Association of Home Builders looked at data from the American Housing Survey, which is conducted every two years by the U.S. Census Bureau and the Department of Housing and Urban Development. It found that between 1997 and 1999, the value of single-family houses within 300 feet of an apartment or condo-minimum building went up 2.9 percent a year, slightly higher than the 2.7 percent rate for single-family homes without multifamily properties nearby. A long-term study by Harvard University's Joint Center for Housing Studies published in 2003 also confirmed that multifamily units pose no threat to nearby single-family house values, based on U.S. Census data from 1970 to 2000. Not only is there compelling evidence that increased density does not hurt property values of nearby neighbors; researchers at Virginia Tech University have concluded that over the long run, well-placed market-rate multifamily housing with attractive design and landscaping actually increases the overall value of detached houses nearby. They cite three possible reasons. First, the new condominiums could themselves be an indicator that an area's economy is vibrant

¹⁷ Ibid, Pg. 13

and growing. Second, multifamily housing may increase the pool of potential future homebuyers, creating more possible buyers for existing owners when they decide to sell their houses. Third, new multifamily housing, particularly as part of mixed-use development, often makes an area more attractive than nearby communities that have fewer housing and retail choices.¹⁸

TABLE 9 Average Annual Appreciation for Single Family Detached Homes in Proximity to Multifamily Housing				
	Not Near Multifamily	Near Multifamily	Near Low- Rise Multifamily	Near Mid- or High-Rise Multifamily
Appreciation Rate	2.66%	2.90%	2.91%	2.79%
Source: NAHB based upon American Community Housing Survey, US Census, US Department of Housing and Urban Development				

7.0 RETAIL GOODS & SERVICES

Attachment A, provides a comparison of the Retail Goods and Services expenditures for a general population multifamily housing community, based upon the example of Heritage Hills Village in the adjacent Town of Somers; to an all senior citizen housing community, based upon the example of Jefferson Village down Route 6, in the Town of Yorktown.

The data in the table shows the average annual household expenditure on various spending categories. As the table shows the median income and financial assets of the all senior development is equal to or less than half that of the general population community. Similarly, expenditures on food, apparel, entertainment, household expenses, transportation and travel are generally half from the senior community compared to the general population community. Younger families of 3-5 people eat out more after sporting events and other school activities. They also spend more on retail goods and services, i.e. clothes and shoes for growing children, electronics, groceries school supplies, etc.

The reduced income and expenditures of the senior population affects the economy of the Towns commercial base. Senior households of 1-2 persons, being on a fixed income, typically have less discretionary income to spend. Seniors needs also tend to be simpler, they don't need new sneakers every 6 months, nor a new soccer ball or ballet costume and constant new clothes purchases the same way a young family might.

The spending habits of young professionals and families supports and maintains a wider diversity of the Town's business types. These families are more likely to need a new car, purchase new computers or cell phones, spend money on pets and have a higher entertainment budget for movie, video games, sports centers, etc. A younger professional population will help create a stronger local economy, which will help

¹⁸ Ibid, Pg. 14

retain and attract businesses. The differential in consumer expenditure potential between senior households and young professionals and families will help to feed the Town of Carmel business community allowing it to thrive and prosper and will result in increased sales tax revenue to Putnam County.

Market-rate multi-family housing, which serves as entry-level housing, has the ability to attract younger households, due to the difference in monthly housing expenses compared to a large single-family home on three acres. It also provides a housing option for young people who have grown up in Carmel and those looking to return to Carmel after college to continue to live, work and shop in the area. This could also help divorced persons to remain close to their families.

Appendix A also provides a comparison to the Retail Goods & Services of a typical single-family development in the Town of Carmel, based upon the example of the Willow Ridge Development. As the Table shows there are similar spending patterns for the Multifamily Mixed-use development as there are from the single-family residential neighborhood.

An important aspect of the provision of multifamily housing is the provision of a growing and ready supply of future occupants for the larger move-up single-family housing stock already existing in the Town. Once an entry level resident has established roots in the community, they are more likely to look for housing in Town to grow into. These people will have a stake in the community, be comfortable with the schools and other community programs and have established spending patterns that support the local economy. General population multi-family housing provides this opportunity while at the same time bringing new residents who will support the local economy in a similar manner to single family housing. Multi-family housing will not only serve as entry level housing but will also be a viable option for seniors.

8.0 OTHER CONSIDERATIONS

8.1 Brain Drain

Putnam County and the surrounding area is a great place to raise a family. The new homebuyers of the 1960's thru the 1980's raised many families here. Those children are now grown and starting families of their own. The lack of housing options for persons in the entry level housing market, generally the population (25 - 40) is forcing many people who grew up in Carmel to leave or not return. Young persons who do not return to the area after attending college results in a lost potential for them to utilize their education here. The lack of multi-family housing in Carmel is contributing to the brain drain problem in Carmel and the lower Hudson Valley. The lack of such housing is forcing educated millennials to leave the area or not even consider moving here in search of housing choices or reasonably priced housing that meets their needs. This is a loss to the business community, the many volunteer organizations and to the larger corporations who have located in the region and support the economy.

8.2 Community Needs

The Town government is tasked with the job of meeting their resident's needs. Carmel's aging population will have an impact on the Town's priorities for recreation facilities, municipal services and spending. If the existing demographic trends continue, such priorities will need to shift away from facilities serving families and be shifted toward a clearly growing senior population. This creates a negative disincentive cycle as fewer services for families will encourage even more families to leave or not to come to Carmel to live and raise a family.

In a similar manner, the infrastructure needs and curriculum of the Town's School districts will need to adjust if school enrollments continue to decline. There may also be budgeting conflicts as a growing number of residents no longer have students enrolled in the school and are thus less inclined to support increases in expanding school budgets. By 2028 the reduction in school enrollment is projected to approach 35%. Continuing legacy costs will continue to rise without any way to slow down the cost increases. This trend can already be felt. The 2018 Budget for the Carmel Central School District passed by a vote of 578 to 554, not an overwhelming margin. The voting margin on the school budget in Mahopac was more supportive at 1,261 to 573 in support of the 2018-2019 Budget.

Infrastructure needs in general are a continuing concern of Putnam County and the local municipalities. Putnam County has recently (July 2018) published a study entitled Putnam County Commercial Corridors Study¹⁹ which identifies the need for additional sewer infrastructure and transportation improvements by region in the County. The County acknowledges the need for diversity of housing, identifies the infrastructure improvements necessary to support a higher density of housing and acknowledges the contribution additional development would provide to help defray the costs of the associated costs of the improvements. Carmel is fortunate to have areas that are already serviced by municipal water and sewer and are ideal areas for both non-age restricted multifamily housing and senior housing developments. It should be noted that a common community septic and common community sewer is a viable option for clustered multifamily development in areas where sewer is not available. Common community water supply (wells) is also a viable option where municipal water service is not available.

Volunteer organizations such as the volunteer fire department, volunteer ambulance, Lions, Knights of Columbus, scout leaders, sports programs etc. are most typically populated by young family-oriented persons. A lack of housing that meets the needs of this population will result in fewer persons who are inclined to volunteer in the many valuable community organizations that help create real community character and a special Town. Continuing Town and School legacy costs will continue to rise without any way to slow down the cost increases.

¹⁹Putnam County Commercial Corridors Study, July 2018

8.3 Traffic

As discussed in Section 5.0, the housing needs of active adults, seniors and young millennials are similar. It is likely that a general population multifamily housing project could include a significant percentage of residents over the age of 55 who would be looking for a cost-effective, maintenance free lifestyle. Trip generation characteristic of a 100 % age 55 and above community compared to a mixed non-age restricted community where approximately half the residents are below age 55, would be similar. Trip generation rates for senior housing and non-age restricted multifamily housing development are among the lowest residential trip rates.

The ULJ study confirms the comparatively low trip generation rates of multifamily housing compared to traditional single-family suburban housing and indicates that single family detached houses have an average of 10 trips per day, whereas a multifamily unit has an average of 6.3 trips per day. This is consistent with NYS DOT counts which indicates that traffic volumes have gone down over the past 10 years, leaving additional capacity on area roadways.

The number of trips per unit is going down. The most recent (2017) Institute of Transportation Engineers (ITE), publication Trip Generation 10th Edition the average total trips per day for Single family is 9.5 compared to the average total trips per day from a multifamily unit of 5.4 trips. Both of these factors have dropped since the last edition of Trip Generation. Multifamily residents typically have fewer cars and fewer drivers than a typical suburban single-family residence. Multifamily living is also more conducive to transit opportunities. Even in semi-rural environments, the concentration of population in a multi-family development lends itself to being a designated bus stop or car-pooling location.

9.0 RECOMMENDATIONS

Zoning is the legal mechanism for implementation of a community's goals with regard to development including housing and business development. Revisiting the concept of general population, non-age restricted multifamily housing in the Town would provide for balance in the Towns housing options to help to address the unmet need for entry level and maintenance free housing options for all ages. It would also allow the Town to comply with the Federal Fair Housing Law.

It is recommended that the existing multi-family development provision that erroneously remains in the Zoning Code (§156-28), even though the use is currently prohibited in Town, be re-used and updated to allow for the use.

Then following zoning text is recommended:

Key:

Text in black is existing

~~Text in Red is proposed to be deleted~~

Text in Blue is proposed to be added.

§ 156-28 Multifamily developments.

A. In the R Residential Zones, C - Commercial and C-BP - Commercial Business Park Zones, multifamily developments and their on-site accessory uses for parking and recreation shall be permitted ~~as a garden apartment design or townhouse design,~~ provided that:

- (1) The site of the development shall be at least ~~10~~ 5 acres for multi-family developments of 39 or fewer units, or 10 acres for multi-family developments of 40 units or more.
- (2) The site of a multi-family development consisting of 40 or more units in the R - Residential zoning district must be adjacent to property located within the C - Commercial or C/BP - Commercial Business Park zoning districts in the Town of Carmel.
- (3) The site of a multi-family development consisting of 40 or more units in either the C - Commercial or C/BP - Commercial Business Park zoning districts must be adjacent to property located within the R - Residential zoning district in the Town of Carmel.
- (4) The maximum permitted density shall not exceed five units per acre, ~~in a R-MF and 3.4 units per acre in an R-MFA Zone.~~
- (5) Multi-family developments consisting of 40 or more units must have its primary access driveway directly off a State Highway located in the Town of Carmel, and said access shall not run through land in any another municipality.
- (6) All multi-family developments consisting of 40 or more units shall be served by municipal or community water and municipal or community sewer or septic.
- (7) For each housing unit there shall be provided a minimum of two on-site parking spaces for each three-bedroom unit, 1.5 on-site parking spaces for each two-bedroom unit, 1 on-site parking space for each one-bedroom unit and 1.25 on-site parking spaces for each studio unit. Additionally, 2 guest parking space shall be provided for every 5 units. ~~two on site parking spaces as defined in this chapter. However, for multifamily developments (nonapartment) that are designated for occupancy by the elderly exclusively, there shall be a minimum of 1.5 on-site parking spaces for every dwelling unit. No parking space shall be located in a front setback area or within 10 feet of any side or rear lot line, with the exception of driveway parking for townhouses.~~
- (8) The building height for a multi-family development of 40 or more units shall not exceed ~~35~~ 40 feet. A maximum of 3 stories shall be permitted above an enclosed or semi-enclosed garage. The building height for a multi-family development of 39 or fewer units shall not exceed 35 feet. A maximum of 2 stories shall be permitted above an enclosed or semi-enclosed garage.

- (9) Coverage of the lot by buildings shall not exceed 30% for multi-family developments of 40 or more units, or 35% for multi-family developments of 39 or fewer units.
- (10) There shall be a distance of ~~at least 50 feet~~ between all buildings of a distance sufficient to meet Fire Code access requirements.
- (11) No building shall exceed a length of 200 feet in multi-family developments of 40 or more units, or 100 feet in length in multi-family developments of 39 or fewer units.
- (12) There shall be a perimeter building setback area of at least ~~100~~ 50 feet for apartment developments and 30 feet for detached buildings and townhouses, on all sides of the site. A comprehensive landscaping and screening plan shall be provided which shall be designed to mitigate visual impacts created by the multi-family development.
- (13) A total of not less than 300 square feet per dwelling unit shall be improved with recreational facilities, such as swimming pools, tennis, basketball and other court games, playground or other recreational equipment, gazebos, or walking, jogging or fitness trails for the use of the residents of the site and their guests. Such facilities shall not be operated for profit. No such recreational facilities shall be required for developments of 8 units or less.
- (14) In addition to the required 300 square feet per dwelling unit which shall be provided for recreational facilities for use by the residents of the site, the applicant shall pay to the Town of Carmel an amount to be established annually by the Town Board and on file in the office of the Town Clerk, for each dwelling unit shown on the site plan prior to the issuance of the certificate of occupancy. This amount shall constitute a trust fund to be used by the Town exclusively for park, playground or other recreational purposes, including the acquisition of property.
- (15) A landscaped buffer area of at least ~~10~~ 15 feet in width shall be provided along all property lines and around all parking areas. Such buffer planting shall be maintained at a height of at least four feet to satisfactorily screen the parking area.
- (16) No multifamily development ~~in a R-District~~ with direct access to a State Road shall contain more than 150 dwelling units per lot.
- (17) No multi-family development with direct access to a County or Local Road shall contain more than 39 dwelling units for projects served by municipal or community sewer and municipal or community water, or 20 units served by a subsurface septic system.
- (18) Adequate water supplies shall be made available the entire year for fire protection purposes. These sources may be pressured systems, cisterns or dry hydrants. The quantity available must meet NFPA Standard 1231

entitled "Standard on Water Supplies for Suburban and Rural Fire Fighting," primarily Tables 5-1.1(a) and (b). All water supply distribution points shall be readily accessible and so located that the maximum travel distance for fire-fighting apparatus shall not exceed 1,000 feet from distribution point to farthest delivery point.

- (19) All apartment buildings shall contain a fire suppression system.
- (20) A minimum of 650 square feet shall be provided for all dwelling units. The maximum number of bedrooms in an multi-family dwelling unit shall be three.
- (21) All requirements of the New York State Uniform Fire Prevention and Building Code and all applicable State, County and Town regulations shall be met.

Attachment A

Retail Goods and Services Expenditures												
				Median						Household		Annual

	2018 Population	Households	Median Age	Household Income	Financial Assets	Food At Home	Food away from Home	Apparel & Services	Entertainment & Recreation	Furnishings & Equipment	Household Operations	Transportation	Travel	Household Total
Heritage Village Somers	2,715	1,240	55.6	\$115,246	\$70,012	\$14,298	\$6,979	\$3,625	\$5,778	\$2,367	\$3,010	\$9,759	\$3,220	\$49,086
Jacksonville Yorktown	2,132	1,216	69.1	\$44,061	\$35,889	\$4,510	\$9,583	\$1,759	\$2,968	\$1,219	\$1,543	\$5,007	\$1,570	\$22,159
Census Tract 115 Block group 4 including Public Active Adult	1,778	722	48.6	\$72,320	\$47,731	\$6,266	\$5,143	\$2,713	\$4,105	\$1,669	\$2,183	\$6,779	\$2,255	\$31,063
Census Tract 115 Block group 3 including Willow Ridge	1,259	480	65.5	\$119,110	\$68,500	\$8,145	\$6,787	\$3,680	\$5,579	\$2,223	\$3,078	\$9,005	\$3,256	\$41,757
Town of Carmel	34,935	15,874	43.2	\$106,822	\$61,444	\$7,396	\$6,184	\$3,334	\$5,037	\$2,025	\$2,765	\$8,248	\$2,885	\$97,874

These figures represent the average spending in certain categories per household on an annual basis for comparison. They do not represent all household spending.

Exhibit C

CENTENNIAL GOLF PROPERTIES		
CSD #2 CAPITAL COST UNIT C		
Parcel	Units	Tax
44.2.4.1	3.99	\$ 3,734.62
44.2.4.2	20.85	\$ 19,515.50
44.2.3.2	13.34	\$ 12,860.57
44.2.3.1	13.78	\$ 12,898.01
44.2.2.2	25.71	\$ 24,064.44
44.2.2.1	84.39	\$ 78,988.63
Annual Total	162.06	\$ 152,061.77
Parcels-To-Date (18 Years)	17	\$ 2,585,050.09

CSD #2 O & M		
Parcel	Units	Tax
44.2.4.1	0	\$ -
44.2.4.2	0	\$ -
44.2.3.2	0	\$ -
44.2.3.1	0	\$ -
44.2.2.2	0	\$ -
44.2.2.1	23.8	\$ 4,284.07
Annual Total	23.8	\$ 4,284.07

CSD #2 WWTP	Flow In GPD	Note
Design Capacity	1,100,000	Assumed
Current Flow	750,000	Assumed
Unassigned Capacity	350,000	
Assigned	Carmel	
Less 10 Percent operating range	110,000	
Reserve Capacity	240,000	

Proposed Project Flow	Carmel	Southeast
Number of Units	40	80
ADF /unit	220	330
Total GPD per town	8,800	26,400
Project GPD	35,200	

Availability	Units C	GPM
Units	162.06	48,618
Existing	23.8	7,140
Available	138.26	41,478
Proposed	120	35,200
Difference	18.26	6,278

CSD # 2 CENTENNIAL GOLF PROPERTIES CAPITAL BOND PAYMENT				
Year #	Year	CSD Capital Cost	Cumulative	Per Benefit Unit
1	1997	\$ 152,061.77	\$ 152,061.77	\$ 938.31
2	1998	\$ 152,061.77	\$ 304,123.54	\$ 1,876.61
3	1999	\$ 152,061.77	\$ 456,185.31	\$ 2,814.92
4	2000	\$ 152,061.77	\$ 608,247.08	\$ 3,753.22
5	2001	\$ 152,061.77	\$ 760,308.85	\$ 4,691.53
6	2002	\$ 152,061.77	\$ 912,370.62	\$ 5,629.83
7	2003	\$ 152,061.77	\$ 1,064,432.39	\$ 6,568.14
8	2004	\$ 152,061.77	\$ 1,216,494.16	\$ 7,506.44
9	2005	\$ 152,061.77	\$ 1,368,555.93	\$ 8,444.75
10	2006	\$ 152,061.77	\$ 1,520,617.70	\$ 9,383.05
11	2007	\$ 152,061.77	\$ 1,672,679.47	\$ 10,321.36
12	2008	\$ 152,061.77	\$ 1,824,741.24	\$ 11,259.66
13	2009	\$ 152,061.77	\$ 1,976,803.01	\$ 12,197.97
14	2010	\$ 152,061.77	\$ 2,128,864.78	\$ 13,136.28
15	2011	\$ 152,061.77	\$ 2,280,926.55	\$ 14,074.58
16	2012	\$ 152,061.77	\$ 2,432,988.32	\$ 15,012.89
17	2013	\$ 152,061.77	\$ 2,585,050.09	\$ 15,957.10
FUTURE				
18	2014	\$ 152,061.77	\$ 2,737,111.86	\$ 16,895.75
19	2015	\$ 152,061.77	\$ 2,889,173.63	\$ 17,834.41
20	2016	\$ 152,061.77	\$ 3,041,235.40	\$ 18,773.06

SUMMARY

Total Bond Benefit Units	162.06
O & M	23.8
Town of Carmel Development Potential/Zoning	40
Total projected Benefit Units usage	63.8
Percentage of Total	39.37%
Overage on 20 year bond	\$ (1,843,957.73)