Robinson + Cole

KENNETH C. BALDWIN

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Hartford, CT 06103-3597
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Fax (860) 275-8299
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Direct (860) 275-8345

Also admitted in Massachusetts

December 1, 2015

Via Hand Delivery

Sean Hendricks, Town Manager
Town of Killingly
172 Main Street
Danielson, CT 06239

Re: **Submission of Technical Information Concerning a Proposal to Construct a Wireless Telecommunications Facility at 520 Bailey Hill Road, Killingly, Connecticut**

Dear Mr. Hendricks:

This firm represents Cellco Partnership d/b/a Verizon Wireless ("Cellco"), in its proposal to construct a new wireless telecommunications facility on an approximately 648-acre parcel at 520 Bailey Hill Road in Killingly (the "Property"). The Property is owned by Tri Lakes LLC. The proposed telecommunications facility is known as Cellco's "Dayville Facility". This Technical Report is submitted pursuant to Connecticut General Statutes ("Conn. Gen. Stat.") § 16-50*l*(g), which establishes local input requirements for the siting of a wireless telecommunications facility under the jurisdiction of the Connecticut Siting Council (the "Council"). This statutory provision requires the submission of technical information to the municipality where a proposed facility will be located and any municipality within 2,500 feet of the proposed facility location.

Correspondence and/or communications regarding the information contained in this report should be addressed to:

Anthony Befera
Verizon Wireless
99 East River Drive
East Hartford, CT 06108

A copy of all such correspondence or communications should also be sent to Cellco's attorneys:

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597

Cellco intends to submit an application to the Council for a Certificate of Environmental Compatibility and Public Need ("Certificate") for the construction, maintenance and operation of a wireless telecommunications facility at the Property. The Dayville Facility would interact with Cellco's existing Killingly, Killingly North, Killingly Center, Danielson and Danielson South cell sites.

The Dayville Facility would provide improved coverage to existing service gaps in Killingly and capacity relief to Cellco's Killingly (Beta sector) cell site that is currently operating at or near its capacity limits. Plots showing coverage from Cellco's existing cell sites in the area, alone and together with the predicted coverage from the proposed Dayville Facility are included in Attachment 1. These plots show areas of coverage from Cellco's existing cell sites (blue shading), existing gaps in reliable wireless service, and the coverage footprint from the Dayville Facility (purple shading) in Cellco's 700 MHz, 1900 MHz and 2100 MHz frequencies.[1]

Cell Site Information

The proposed Dayville Facility would be located in the northerly portion of an approximately 648-acre parcel at 520 Bailey Hill Road in Killingly. The Property is owned by Tri Lakes LLC and is located in Killingly's Rural Development zone district.

The proposed wireless facility will consist of a 150-foot monopole tower located within a 50' x 50' fenced compound and 100' x 100' leased area. Cellco will install nine (9) panel-type antennas at the centerline height of 150 feet above ground level ("AGL"). Cellco's antennas would extend to an overall height of approximately 153 feet AGL. Equipment associated with Cellco's antennas and a diesel fueled back-up generator would be located on a 12' x 26' concrete pad near the base of the tower. Access to the Dayville Facility would extend from Bailey Hill Road over an existing gravel driveway a distance of approximately 582 feet, then over a short

[1] Cellco does not intend to deploy 850 MHz frequencies at the Dayville Facility.

driveway extension an additional distance of approximately 92 feet to the cell site. Project plans for the Dayville Facility are included in Attachment 2.

Connecticut Siting Council Jurisdiction

Municipal jurisdiction over the siting of the proposed telecommunications facility described in this report is pre-empted by provisions of the Public Utilities Environmental Standards Act ("PUESA"), Conn. Gen. Stat. § 16-50g et seq. The PUESA gives exclusive jurisdiction over the location, type and modification of telecommunications towers, to the Council (Conn. Gen. Stat. § 16-50x(a); 16-50i(a)(6)). Accordingly, the telecommunications facility described in this report is exempt from the Town's land use regulations.

Upon receipt of an application, the Council will assign a docket number and, following a completeness review, set a docket schedule, including a hearing date. At that time, the Town may choose to become an intervenor or party in the proceeding. Other procedures followed by the Council include serving the applicant and other participants with interrogatories, holding a pre-hearing conference, and conducting a public hearing. The public hearing would be held at a location in the Town. Following the public hearing, the Council will issue findings of fact, an opinion and a decision and order. Prior to construction, the Council will also require the Applicant to submit a development and management plan ("D&M Plan") which is, in essence, a final site development plan showing the details of the facility incorporating any conditions imposed by the Council. These procedures are also outside the scope of the Town's jurisdiction and are governed by the Connecticut General Statutes, the Regulations of Connecticut State Agencies, and the Council's Rules of Practice. If the Council approves the cell site described in this report, Cellco will submit to the Building Official an application for approval of a building permit. Under Section 16-50x of the General Statutes, which provides for the exclusive jurisdiction of the Council, the building official must honor the Council's decision.

Municipal Consultation Process

Pursuant to Section 16-50*l* of the General Statutes, Town officials are entitled to receive technical information regarding the proposed telecommunications facility at least ninety (90) days prior to the filing of an application with the Council. This Technical Report is provided to the Town in accordance with these provisions and includes information on the need for improved reliable wireless service in the area; the location of existing wireless facilities in Killingly; details of the proposed facility; the location of alternative sites considered and rejected; the location of schools and commercial day care facilities in the area and the aesthetic impacts of the facility on those schools and day care facilities, if any; a description of the site selection process; and a

discussion of potential environmental effects associated with the proposed facility.

Not later than sixty (60) days after the initial consultation meeting, the municipality may, in cooperation with Cellco, hold a public information hearing on the facility proposal. If such a hearing is held, the applicant must notify all abutting landowners and publish notice of the hearing in a newspaper of general circulation in the municipality, at least fifteen (15) days prior to the hearing.

Not later than thirty (30) days after the initial consultation meeting, the municipality may present Cellco with alternative sites, including municipal parcels, for its consideration. If not previously considered, these alternatives will be evaluated and discussed in its application to the Council.

Pursuant to Section 16-50*l*(e) of the General Statutes, Cellco must provide a summary of the Town's comments and recommendations, if any, to the Council within fifteen (15) days of the filing of an application.

Need for the Proposed Wireless Facility

The proposed Dayville Facility described in this Technical Report is needed so that Cellco can provide enhanced wireless voice and data services in portions of Killingly, Connecticut. More particularly, the Dayville Facility will provide additional wireless "coverage" along portions of Route 101 and local roads in the area around the Property. The Dayville Facility will also provide capacity relief to Cellco's existing Killingly (Beta sector) cell site which is currently operating at or beyond its capacity limits. The Dayville Facility, described in this report, would improve coverage and provide network capacity relief in the area, improving, overall, Cellco's ability to provide high quality, reliable wireless services in the area.

Environmental Effects

In our experience, the primary impact of a wireless facility such as the proposed Dayville Facility is visual. The visual impact of the proposed facility will vary from place to place around the site location, depending upon factors such as vegetation, topography, distance from the tower, and the location of buildings in the sight-line of the cell site.

To more fully assess the visual impact of the Dayville Facility, Cellco's consultant, All-Points Technology Corporation ("APT") has prepared a Visibility Analysis. This analysis indicates that a majority of the year-round visibility of the proposed 150-foot tower at the

Property would be limited to the site and surrounding locations on the Property and would encompass an area of approximately 23.5-acres. When the leaves are off the trees, views of the proposed tower through the trees (a/k/a seasonal views) may occur over a larger area (approximately 238 additional acres) around the tower site. (*See* Attachment 3).

Pursuant to the provisions of Conn. Gen. Stat. § 16-50p(a)(3)(G), new telecommunications facilities must be located at least 250 feet from schools (defined in C.G.S. §10-154a) and commercial day care facilities (defined in C.G.S. §19a-77(a)(1)) unless the location selected is acceptable to the Town's chief elected official or the Council finds that the facility will not have a substantial adverse effect on the aesthetics or scenic quality of the neighborhood where the school or commercial day care use is located. The proposed Dayville Facility is not located within 250 feet of any building containing a school or commercial day care facility.

Based on field surveys and related environmental investigations, Cellco has determined that the construction of the Dayville Facility will have no direct impact on inland wetlands or watercourses, within or near the tower compound. Cellco anticipates that all other physical environmental effects associated with the proposed facility would be minimal.

Radio Frequency Emissions

The Federal Communications Commission ("FCC") has adopted a standard (the "Standard") for exposure of radio frequency ("RF") emissions from telecommunications base stations like the Dayville Facility. To ensure compliance with the Standard, Cellco has performed a worst-case RF emissions calculation for the proposed facility according to the methodology described in FCC Office of Science and Technology Bulletin No. 65 ("OST Bulletin 65"). This calculation is a conservative, worst-case approximation of RF emissions at the closest accessible point to the antenna (i.e., the base of the tower), and with all antennas transmitting simultaneously on all channels at full power. The worst-case calculated RF emissions level for Cellco's antennas at the 150-foot level on the proposed tower would be 8.80% of the FCC Standard. (*See* Attachment 4.) Actual RF emissions levels from this facility will be far less than this "worst-case" approximation.

Scenic Natural Historic or Recreational Impacts

To further assess the environmental impacts of the proposed facility, Cellco is working with its consultant team to prepare a National Environmental Policy Act ("NEPA") Environmental Screening Checklist (the "NEPA Checklist") and other related environmental

reviews to determine if the facility will have any significant adverse environmental effects. The NEPA Checklist will include information from the Environmental and Geographic Information Center of the Connecticut Department of Energy and Environmental Protection ("DEEP"), the U.S. Fish and Wildlife Service ("USFWS") and the State Historic Preservation Officer ("SHPO"). Copies of the DEEP, USFWS and the SHPO determinations will also be submitted as a part of the Council Application.

Site Search Process

Cellco conducted a search for suitable cell site locations in Killingly and identified the Property as a site that would satisfy its wireless service objectives in the area. In addition to the proposed location, Cellco identified and investigated two (2) possible facility locations in the area. The alternative site considered was rejected by the landowner who was unwilling to enter into a lease. (*See* Attachment 5).

Tower Sharing

As stated above, Cellco intends to build a tower that is capable of supporting its antennas and those of additional wireless telecommunications providers, including Town of Killingly emergency service providers, if a need exists. The provision to share the tower is consistent with the intent of the General Assembly when it adopted Conn. Gen. Stat. § 16-50aa and with Council policy. The availability of space on the proposed tower may reduce, if not eliminate, the need for additional towers in Killingly for the foreseeable future.

Conclusion

This Technical Report is submitted in accordance with Conn. Gen. Stat. § 16-50*l* which requires Cellco to supply the Town with information regarding its proposed Dayville Facility. This report includes information regarding the site selection process, public need, and the potential environmental impacts of the facility. Cellco submits that its proposed Dayville Facility would not have any significant adverse environmental effects. Moreover, Cellco submits that the public need for high quality wireless service, and a competitive framework for providing such service has been determined by the FCC to be in the public interest and that such public need far outweighs any perceived environmental effects of the proposed facility.

Please contact me if you have any additional questions regarding the proposed facility.

Sincerely,

Kenneth C. Baldwin

KCB/kmd
Enclosures
Copy to (*via hand delivery*):
Keith Thurlow, Chair, Killingly Planning and Zoning Commission
Sandy Eggers, Chair, Killingly Inland Wetlands and Watercourses Commission
Anthony R. Befera, Verizon Wireless
Elizabeth Jamieson, Verizon Wireless

ATTACHMENT 1

Existing Verizon Wireless 700 MHz Coverage
Killingly, Connecticut and Surrounding Area
(*Map Scale is 1:30,000)

Coverage is depicted at a signal threshold of 120 dB Operational Path Loss

PUTNAM
KILLINGLY NORTH CT
KILLINGLY CT
KILLINGLY CENTER CT
DAYVILLE CT
KILLINGLY
GLOCESTER
Pray Hill
DANIELSON CT
DANIELSON 2 CT
DANIELSON SOUTH CT
HAMPTON
BROOKLYN
PLAINFIELD
STERLING
FOSTER

Legend

- Proposed Verizon Wireless Small Cell Facility
- Existing Verizon Wireless Facilities
- Existing Surrounding Wireless 700 MHz Coverage
- Municipal and Private Open Space
- School
- State Forest/Park
- Open Water
- Town Line
- Major Route

Map Notes:
This map was prepared at a map scale of 1:30,000 at 24" by 36" layout. Report copies have been reduced to 11" x 17". Refer to graphic scale.
Open Space, Schools, and State Forests/Parks are depicted using available State GIS data, which may be outdated in some areas.
Base map: Connecticut ECO Hillshade (2000) and ESRI Shaded Relief (for RI, 2014).

0 0.75 1.5 Miles

Proposed Verizon Wireless 700 MHz Coverage
Killingly, Connecticut and Surrounding Area
(*Map Scale is 1:30,000)

Coverage is depicted at a signal threshold of 120 dB Operational Path Loss

PUTNAM
KILLINGLY NORTH CT
KILLINGLY CT
KILLINGLY CENTER CT
DAYVILLE CT
KILLINGLY
GLOCESTER
DANIELSON CT
DANIELSON 2 CT
DANIELSON SOUTH CT
HAMPTON
BROOKLYN
PLAINFIELD
STERLING
FOSTER

Legend

- Proposed Verizon Wireless Small Cell Facility
- Existing Verizon Wireless Facilities
- Existing Surrounding Wireless 700 MHz Coverage
- Proposed Facility Wireless 700 MHz Coverage
- Municipal and Private Open Space
- School
- State Forest/Park
- Open Water
- Town Line
- Major Route

ALL-POINTS TECHNOLOGY CORPORATION

verizon

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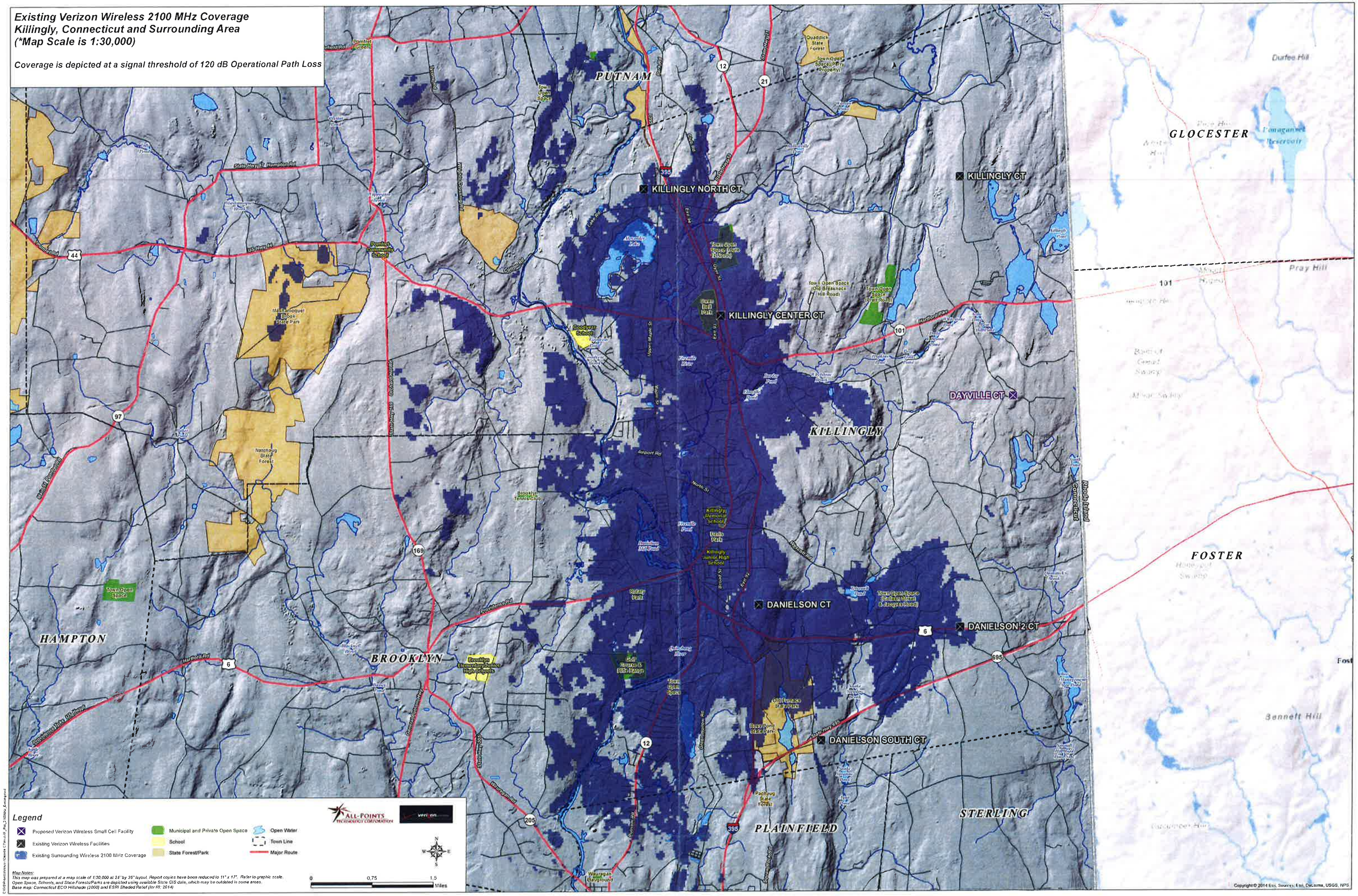
Base map: Connecticut ECO Hillshade (2000) and ESRI Shaded Relief (for RI; 2014)

0 0.75 1.5 Miles


Existing Verizon Wireless 2100 MHz Coverage
Killingly, Connecticut and Surrounding Area
(*Map Scale is 1:30,000)
Coverage is depicted at a signal threshold of 120 dB Operational Path Loss
PUTNAM
GLOCESTER
KILLINGLY NORTH CT
KILLINGLY CT
KILLINGLY CENTER CT
DAYVILLE CT
KILLINGLY
FOSTER
DANIELSON CT
DANIELSON 2 CT
DANIELSON SOUTH CT
HAMPTON
BROOKLYN
STERLING
PLAINFIELD
Legend
Proposed Verizon Wireless Small Cell Facility
Existing Verizon Wireless Facilities
Existing Surrounding Wireless 2100 MHz Coverage
Municipal and Private Open Space
School
State Forest/Park
Open Water
Town Line
Major Route
Map Notes:
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0
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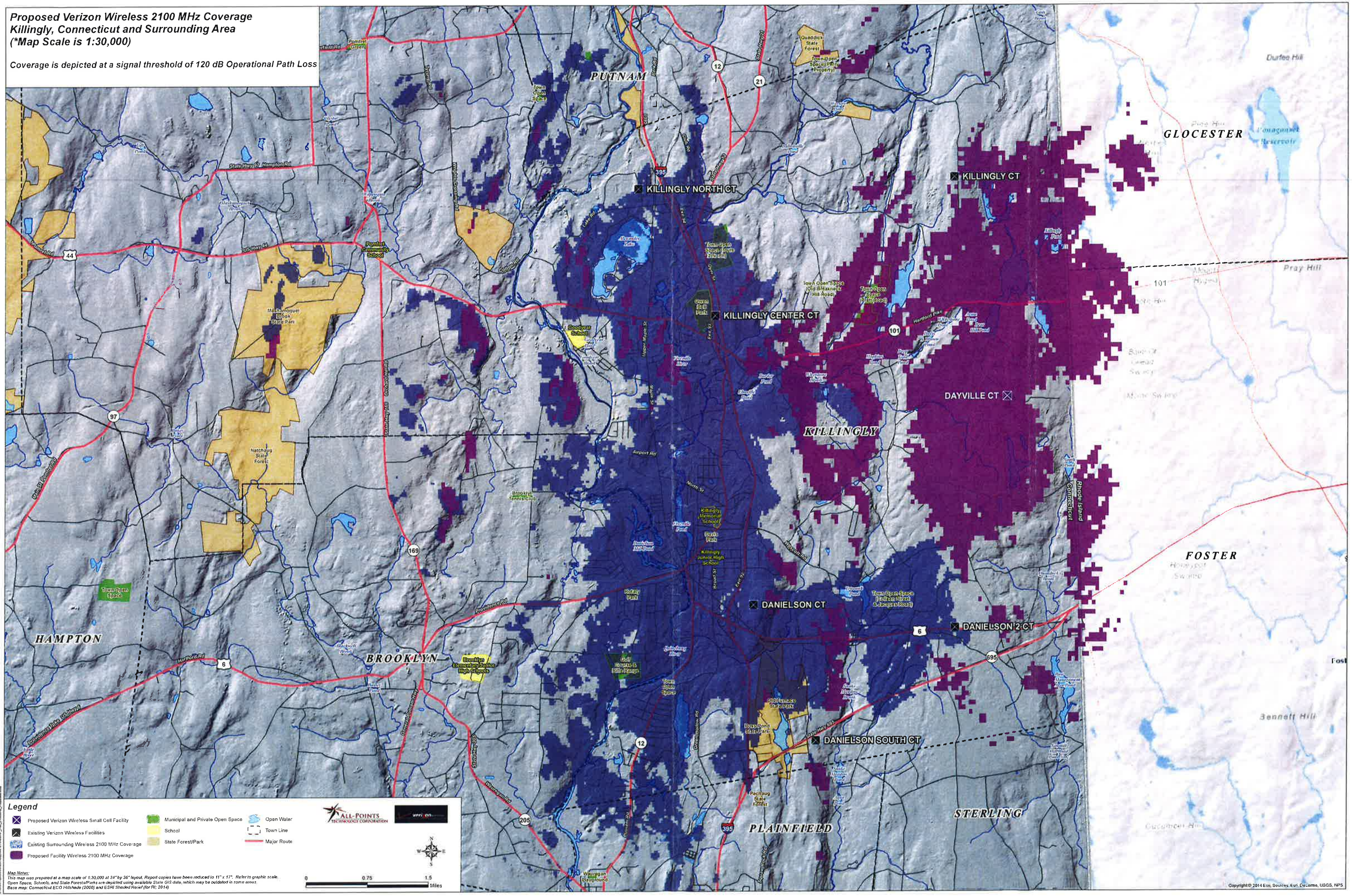
1.5
Miles
Copyright© 2014 Esri, Sources: Esri, DeLorme, USGS, NPS


Proposed Verizon Wireless 2100 MHz Coverage
Killingly, Connecticut and Surrounding Area
(*Map Scale is 1:30,000)
Coverage is depicted at a signal threshold of 120 dB Operational Path Loss
PUTNAM
KILLINGLY NORTH CT
KILLINGLY CT
GLOCESTER
KILLINGLY CENTER CT
DAYVILLE CT
KILLINGLY
DANIELSON CT
DANIELSON 2 CT
DANIELSON SOUTH CT
HAMPTON
BROOKLYN
PLAINFIELD
STERLING
FOSTER
Connecticut
Rhode Island
Durfee Hill
Pray Hill
Bennett Hill
Natchaug State Forest
Mashamoquet Brook State Park
Quaddick State Forest
Town Open Space (Perry Property)
Pomfret Community School
Goodyear School
Owen Bell Park
Killingly Memorial School
Davis Park
Killingly Junior High School
Rotary Park
Golf Course & Rifle Range
Brooklyn Elementary/Junior High Schools
Brooklyn Tennis Club
Town Open Space
Old Furnace State Park
Ross Pond State Park
Pachaug State Forest
Wauregan Playground
Town Open Space (Colleen Street & Jacques Road)
Town Open Space (Old Breakneck Hill Road)
Town Open Space (Pratt Road)
US Hwy 44
State Hwy 97 Hampton Rd
Hartford Rd
Providence Rd
Providence Pike US Hwy 6
Hartford Pike
Airport Rd
North St
Broad St
Upper Maple St
Maple St
Lake Rd
Cotton Rd
Wrights Crossing Rd
Tyrone Rd
State Hwy 169
State Hwy 205
State Hwy 695
State Hwy 12
State Hwy 21
Wauregan Rd
Putnam Rd
Green Hollow Rd
Squaw Rock Rd
Wescott Rd
Main St Pomfret Rd
Pomfret Rd
12
21
44
97
101
169
205
395
6
695
Legend
Proposed Verizon Wireless Small Cell Facility
Existing Verizon Wireless Facilities
Existing Surrounding Wireless 2100 MHz Coverage
Proposed Facility Wireless 2100 MHz Coverage
Municipal and Private Open Space
School
State Forest/Park
Open Water
Town Line
Major Route
ALL-POINTS TECHNOLOGY CORPORATION
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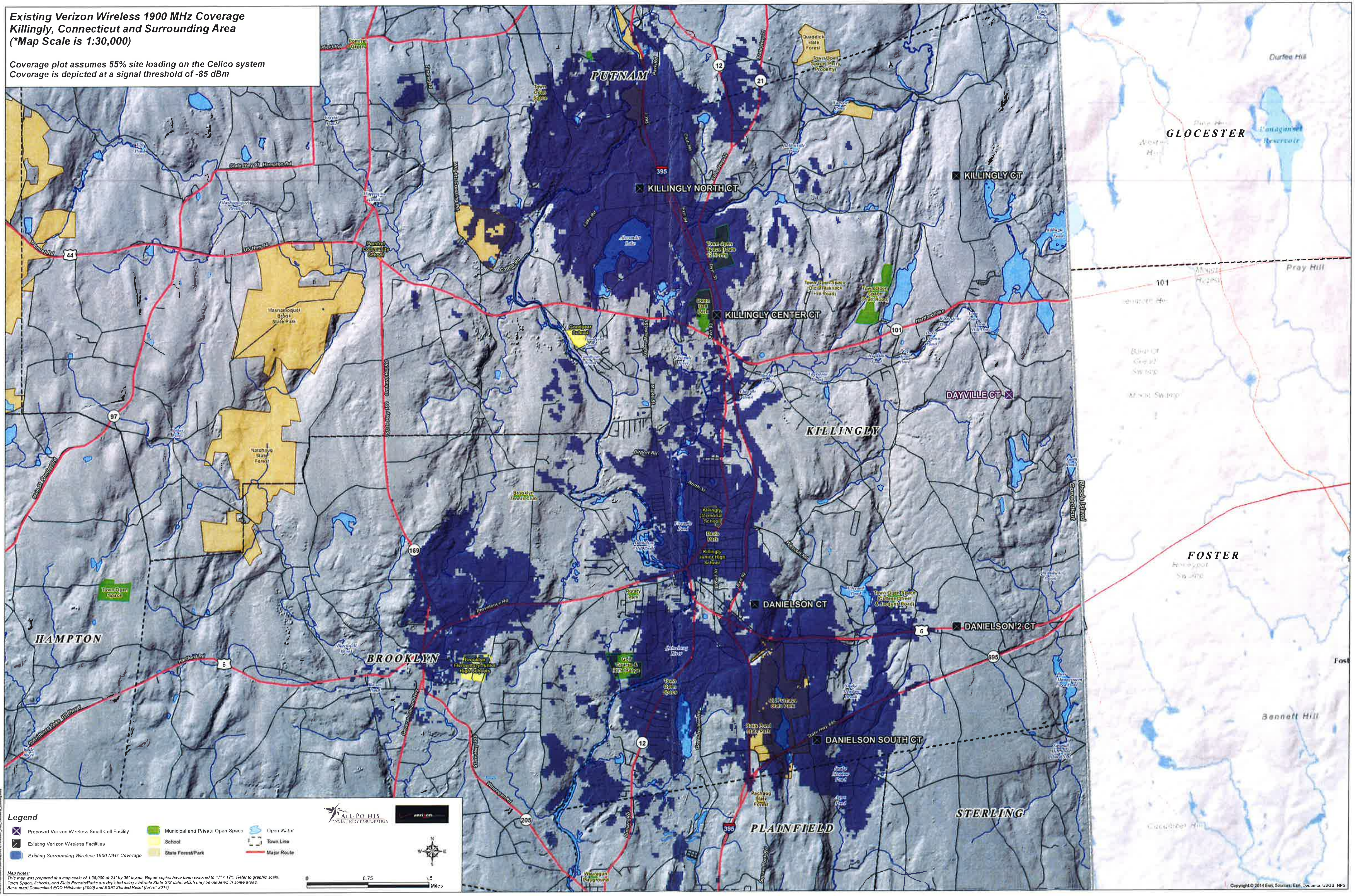
Copyright© 2014 Esri, Sources: Esri, DeLorme, USGS, NPS

Existing Verizon Wireless 1900 MHz Coverage
Killingly, Connecticut and Surrounding Area
*(*Map Scale is 1:30,000)*

Coverage plot assumes 55% site loading on the Cellco system
Coverage is depicted at a signal threshold of -85 dBm


PUTNAM
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KILLINGLY CT
KILLINGLY CENTER CT
DAYVILLE CT
KILLINGLY
DANIELSON CT
DANIELSON 2 CT
DANIELSON SOUTH CT
GLOCESTER
FOSTER
HAMPTON
BROOKLYN
STERLING
PLAINFIELD
Mashamoquet Brook State Park
Natchaug State Forest
Durfee Hill
Pray Hill
Bennett Hill
Connecticut
Rhode Island
395
101
6
12
21
44
97
169
205
695
Copyright © 2014 Esri, Sources: Esri, DeLorme, USGS, NPS
Legend
Proposed Verizon Wireless Small Cell Facility
Existing Verizon Wireless Facilities
Existing Surrounding Wireless 1900 MHz Coverage
Municipal and Private Open Space
School
State Forest/Park
Open Water
Town Line
Major Route
Map Notes:
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Base map: Connecticut ECO Hillshade (2000) and ESRI Shaded Relief (for RI; 2014)
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1.5
Miles
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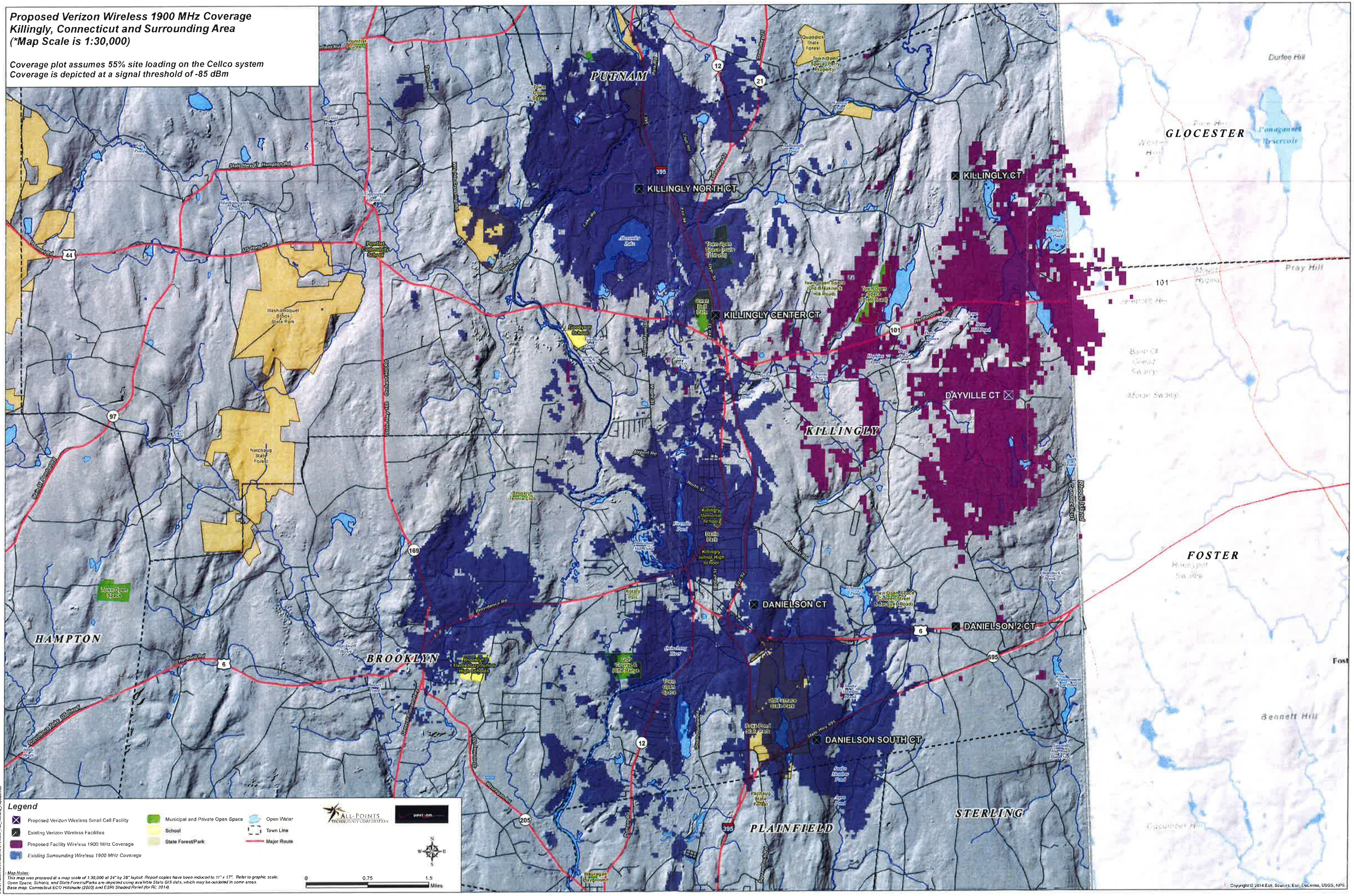
W
ALL-POINTS TECHNOLOGY CORPORATION



Proposed Verizon Wireless 1900 MHz Coverage
Killingly, Connecticut and Surrounding Area
(*Map Scale is 1:30,000)
Coverage plot assumes 55% site loading on the Cellco system
Coverage is depicted at a signal threshold of -85 dBm
PUTNAM
KILLINGLY NORTH CT
KILLINGLY CT
KILLINGLY CENTER CT
GLOCESTER
DAYVILLE CT
KILLINGLY
FOSTER
DANIELSON CT
DANIELSON 2 CT
HAMPTON
BROOKLYN
DANIELSON SOUTH CT
STERLING
PLAINFIELD
Mashamoquet Brook State Park
Natchaug State Forest
Legend
Proposed Verizon Wireless Small Cell Facility
Existing Verizon Wireless Facilities
Proposed Facility Wireless 1900 MHz Coverage
Existing Surrounding Wireless 1900 MHz Coverage
Municipal and Private Open Space
School
State Forest/Park
Open Water
Town Line
Major Route
ALL-POINTS TECHNOLOGY CORPORATION
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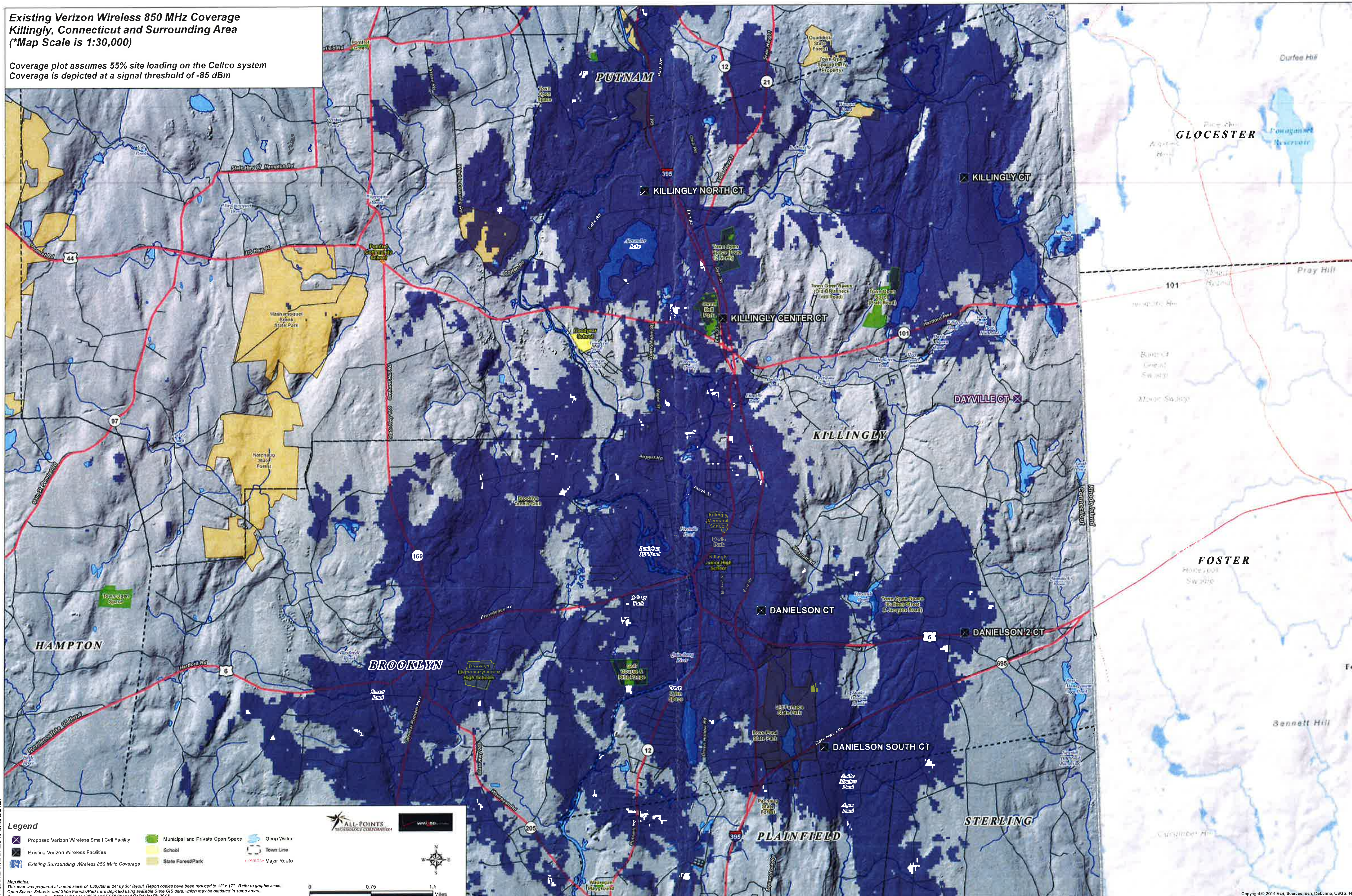
0
0.75
1.5
Miles
Copyright © 2014 Esri. Sources: Esri, DeLorme, USGS, NPS


Existing Verizon Wireless 850 MHz Coverage
Killingly, Connecticut and Surrounding Area
(*Map Scale is 1:30,000)
Coverage plot assumes 55% site loading on the Cellco system
Coverage is depicted at a signal threshold of -85 dBm
PUTNAM
KILLINGLY NORTH CT
KILLINGLY CT
KILLINGLY CENTER CT
GLOCESTER
DAYVILLE CT
KILLINGLY
FOSTER
DANIELSON CT
DANIELSON 2 CT
HAMPTON
BROOKLYN
DANIELSON SOUTH CT
STERLING
PLAINFIELD
Mashamoquet Brook State Park
Natchaug State Forest
Quaddick State Forest
Old Furnace State Park
Ross Pond State Park
Pachaug State Forest
Legend
Proposed Verizon Wireless Small Cell Facility
Existing Verizon Wireless Facilities
Existing Surrounding Wireless 850 MHz Coverage
Municipal and Private Open Space
School
State Forest/Park
Open Water
Town Line
Major Route
Map Notes:
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0 0.75 1.5 Miles
ALL-POINTS TECHNOLOGY CORPORATION
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ATTACHMENT 2

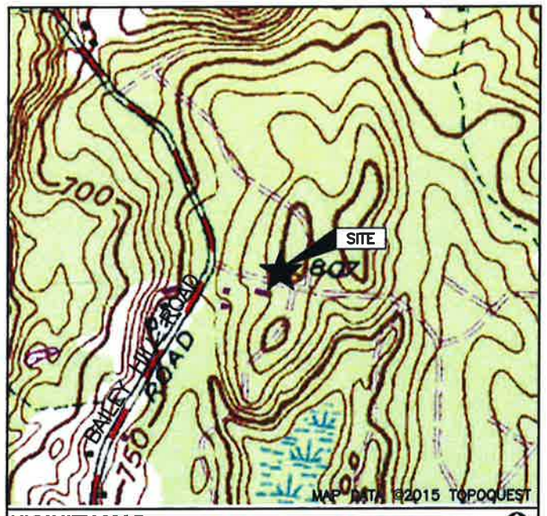
CELLCO PARTNERSHIP

d.b.a. verizon wireless

WIRELESS COMMUNICATIONS FACILITY

DAYVILLE CT

520 BAILEY HILL ROAD
KILLINGLY, CT 06241



VICINITY MAP SCALE: 1"=500'-0"

DIRECTIONS TO SITE:

99 E RIVER DR, EAST HARTFORD, CT 06108
HEAD NORTHEAST ON E RIVER DR
TURN LEFT ONTO THE CT-2 E RAMP TO NORWICH
FOLLOW I-84 E TO CT-74 E IN TOLLAND.
MERGE ONTO I-84 E
TAKE EXIT 69 FOR CONNECTICUT 74 TOWARD U.S. 44/WILLINGTON/PUTNAM
TURN RIGHT ONTO CT-74 E
TURN LEFT ONTO US-44 E
CONTINUE STRAIGHT ONTO CT-101 E
TURN RIGHT ONTO BAILEY HILL RD
SLIGHT LEFT TO STAY ON BAILEY HILL RD
TURN LEFT, 520 BAILEY HILL RD, DAYVILLE, CT 06241

CONSULTANT TEAM

PROJECT ENGINEER

HUDSON DESIGN GROUP, LLC
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 3090
NORTH ANDOVER, MA 01845
TEL: 1-(978)-557-5553
FAX: 1-(978)-336-5586

MEP ENGINEER

HUDSON DESIGN GROUP, LLC
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 3090
NORTH ANDOVER, MA 01845
TEL: 1-(978)-557-5553
FAX: 1-(978)-336-5586

PROJECT SUMMARY

SITE NAME:	DAYVILLE CT
SITE ADDRESS:	520 BAILEY HILL ROAD KILLINGLY, CT 06241
PROPERTY OWNER:	TRI LAKES, LLC P.O. BOX 28 WATERTOWN, CT 06795
APPLICANT:	CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS 99 EAST RIVER DRIVE EAST HARTFORD, CT 06108
SITE ACQUISITION CONTACT:	STEPHEN SCHANDLER STRUCTURE CONSULTING GROUP 99 EAST RIVER DRIVE. 9TH FL EAST HARTFORD, CT 06108
LEGAL/REGULATORY COUNSEL:	KENNETH C. BALDWIN ESQ. ROBINSON + COLE LLP (860)275-8345
LATITUDE:	N41° 49' 56.76"
LONGITUDE:	W71° 48' 33.23"

SCOPE OF WORK INFO.

VERIZON WIRELESS IS PROPOSING TO INSTALL THE FOLLOWING IMPROVEMENTS TO THE EXISTING TELECOMMUNICATION SITE:

- NEW PANEL ANTENNAS: (3) ANTENNA PER SECTOR WITH (3) SECTORS, FOR A TOTAL OF (9) ANTENNAS.
- NEW RRHs: (3) RRHs PER SECTOR WITH (3) SECTORS, FOR A TOTAL OF (9) RRHs

NEW JUNCTION BOXES: (1) JUNCTION BOX TOTAL.
ITEMS LISTED ABOVE TO BE MOUNTED ON PROPOSED MONOPOLE.

- NEW EQUIPMENT CABINETS: (2) CABINETS ON PROPOSED 12'-0"x26'-0" EQUIPMENT CONCRETE PAD W/GENERATOR.

ITEMS LISTED ABOVE TO BE INSTALLED WITHIN PROPOSED 50'x50' FENCED COMPOUND.

- NEW POWER AND TELCO SERVICES WILL BE ROUTED UNDERGROUND FROM PROPOSED UTILITY POLE TO PROPOSED ELECTRICAL METER AND HOFFMAN BOX ON PROPOSED H-FRAME.
- FINAL UTILITY ROUTING TO BE DETERMINED/VERIFIED BY UTILITY COMPANIES.

SHEET INDEX

SHT. NO.	DESCRIPTION
T-1	TITLE SHEET
C-1	ABUTTERS PLAN
C-2	SITE PLAN
A-1	COMPOUND PLAN
A-2	ELEVATION

PREPARED FOR: CELLCO PARTNERSHIP D.B.A.
verizon wireless

Hudson Design Group LLC
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 3090
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

Daniel P. Hamm

CHECKED BY: DJR

APPROVED BY: DPH

SUBMITTALS

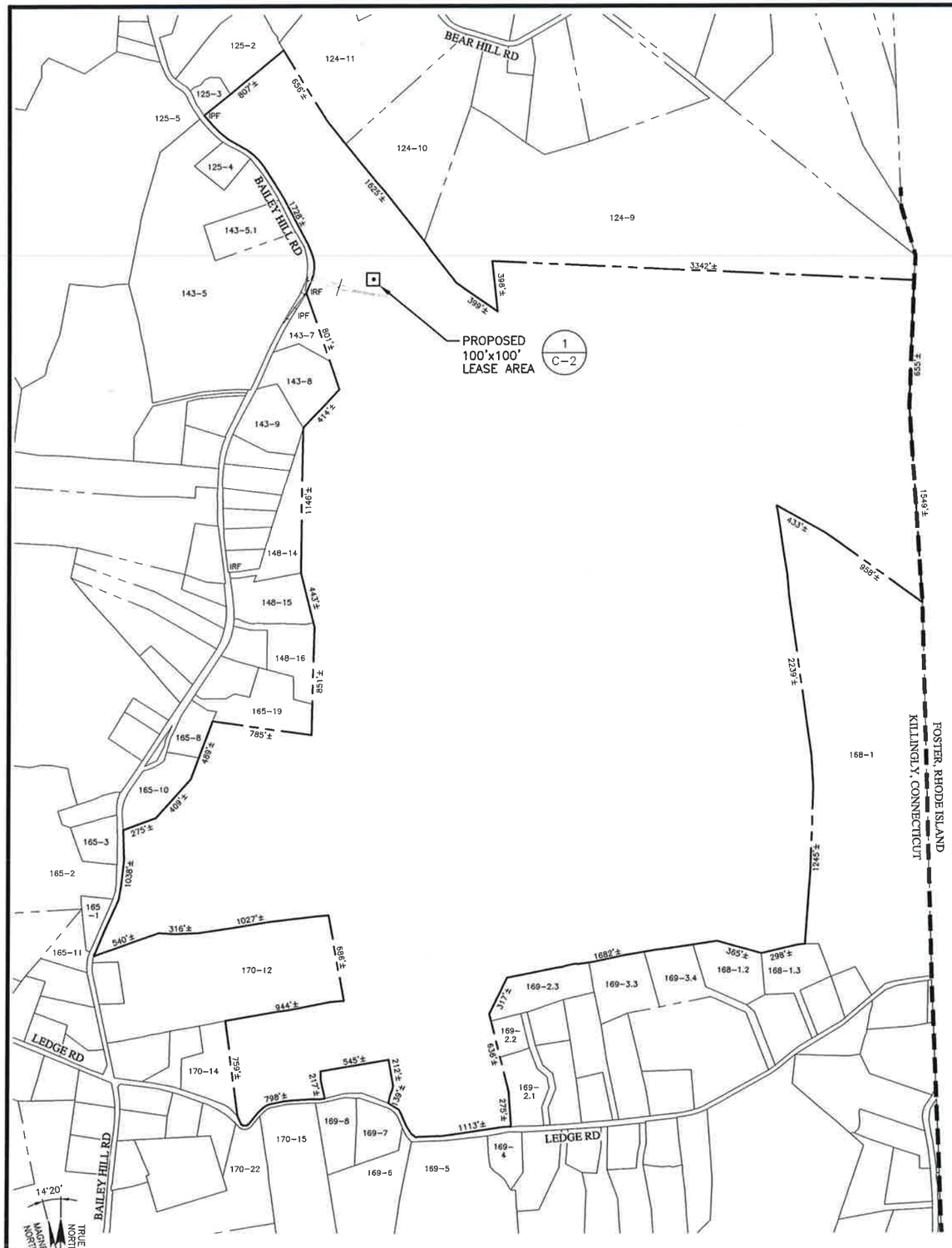
REV.	DATE	DESCRIPTION	BY
1	11/04/15	REVISED PER COMMENTS	MC
0	09/22/15	ISSUED FOR REVIEW	GC

SITE NAME:
DAYVILLE CT

SITE ADDRESS:
520 BAILEY HILL ROAD
KILLINGLY, CT. 06241

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1



ABUTTERS PLAN (1 / C-2)
22x34 SCALE: 1"=500'-0"
11x17 SCALE: 1"=1000'-0"

GRAPHIC SCALE
0 250 500 1000 1500 FEET

ABUTTERS LIST

124-9
239 Bear Hill Rd
Frances E. & Robert Pechie
225 Bear Hill Rd
Dayville, CT 06241

124-10
199 Bear Hill Rd
Julia A. Jussaume
P.O. Box 339
Dayville, CT 06241-0339

124-11
189 Bear Hill Rd
Frances Pechie
225 Bear Hill Rd
Dayville, CT 06241

125-2
810 Bailey Hill Rd
Roland D. Jacques
810 Bailey Hill Rd
Dayville, CT 06241

125-3
806 Bailey Hill Rd
Theresa R. Bernier
806 Bailey Hill Rd
Dayville, CT 06241

125-4
779 Bailey Hill Rd
Robert, Virginia & Susan
Griswold
P.O. Box 273
East Killingly, CT 06243-0273

125-5
817 Bailey Hill Rd
Theresa R. Bernier
806 Bailey Hill Rd
Dayville, CT 06241

143-5
721 Bailey Hill Rd
Walter P. Hall, III
721 Bailey Hill Rd
Dayville, CT 06241

143-5.1
755 Bailey Hill Rd
Walter P. & June R. Hall
P.O. Box 48
East Killingly, CT 06243

143-7
724 Bailey Hill Rd
Walter P. Hall, III
721 Bailey Hill Rd
Dayville, CT 06241

143-8
710 Bailey Hill Rd
Larry V. & Judith Lawrence
710 Bailey Hill Rd
Dayville, CT 06241

143-9
688 Bailey Hill Rd
Walter E. & Debra Gene
Opperman
688 Bailey Hill Rd
Dayville, CT 06241

148-14
624 Bailey Hill Rd
William W. Gould, Jr.
624 Bailey Hill Rd
Dayville, CT 06241

148-15
630 Bailey Hill Rd
Jennifer Chapman
630 Bailey Hill Rd
Dayville, CT 06241

148-16
624 Bailey Hill Rd
Arthur P. & Geraldine Rickey
624 Bailey Hill Rd
Dayville, CT 06241

165-1
509 Bailey Hill Rd
Jean E. & Donald J. Carter
509 Bailey Hill Rd
Dayville, CT 06241

165-2
525 Bailey Hill Rd
Herbert A. & Karen M. Oatley
525 Bailey Hill Rd
Dayville, CT 06241

165-3
539 Bailey Hill Rd
Michael Oatley, Michelle Klein
& Roberta Flaherty
160 Creamery Brook Rd
Brooklyn, CT 06234

165-8
582 Bailey Hill Rd
David T. & Judith E. Rzucidlo
582 Bailey Hill Rd
Dayville, CT 06241

165-10
566 Bailey Hill Rd
Ronald J. & Judith M.
Rousselle
566 Bailey Hill Rd
Dayville, CT 06241

165-11
495 Bailey Hill Rd
Sean J. & Tina M. Whiteley
495 Bailey Hill Rd
Dayville, CT 06241

165-19
594 Bailey Hill Rd
David T. Rzucidlo
582 Bailey Hill Rd
Dayville, CT 06241

168-1
430 Ledge Rd
George M. & Starlet M. Lenth
375 Ledge Rd
Dayville, CT 06241

168-1.2
402 Ledge Rd
George M. & Starlet M. Lenth
375 Ledge Rd
Dayville, CT 06241

168-1.3
400 Ledge Rd
George M. & Starlet M. Lenth
375 Ledge Rd
Dayville, CT 06241

169-2.1
304 Ledge Rd
Michael R. & Deborah Comtois
304 Ledge Rd
Dayville, CT 06241

169-2.2
306 Ledge Rd
Eric M. Quinn
306 Ledge Rd
Dayville, CT 06241

169-2.3
308 Ledge Rd
Jeffrey Ferron
308 Ledge Rd
Dayville, CT 06241

169-3.3
390 Ledge Rd
George M. & Starlet M. Lenth
375 Ledge Rd
Dayville, CT 06241

169-3.4
386 Ledge Rd
George M. & Starlet M. Lenth
375 Ledge Rd
Dayville, CT 06241

169-4
295 Ledge Rd
Todd & Justin Loomis
265 Ledge Rd
Dayville, CT 06241

169-5
275 Ledge Rd
Harold J. & Patricia S. Swaine
255 Ledge Rd
Dayville, CT 06241

169-6
255 Ledge Rd
Wendy L. Brennan
255 Ledge Rd
Dayville, CT 06241

169-7
275 Ledge Rd
Harold J. &
Patricia S. Swaine
255 Ledge Rd
Dayville, CT 06241

169-8
225 Ledge Rd
Susan E. Erskine
P.O. Box 606
Dayville, CT 06241-0606

170-12
476 Bailey Hill Rd
Pauline C. Terwilliger
492 Bailey Hill Rd
Dayville, CT 06241-1919

170-14
172 Ledge Rd
Joseph G. Keller, Jr.
172 Ledge Rd
Dayville, CT 06241

170-15
203 Ledge Rd
Susan E. Erskine
P.O. Box 606
Dayville, CT 06241-0606

170-22
406 Bailey Hill Rd
Thomas Cader
406 Bailey Hill Rd
Danielson, CT 06239

SOURCE:

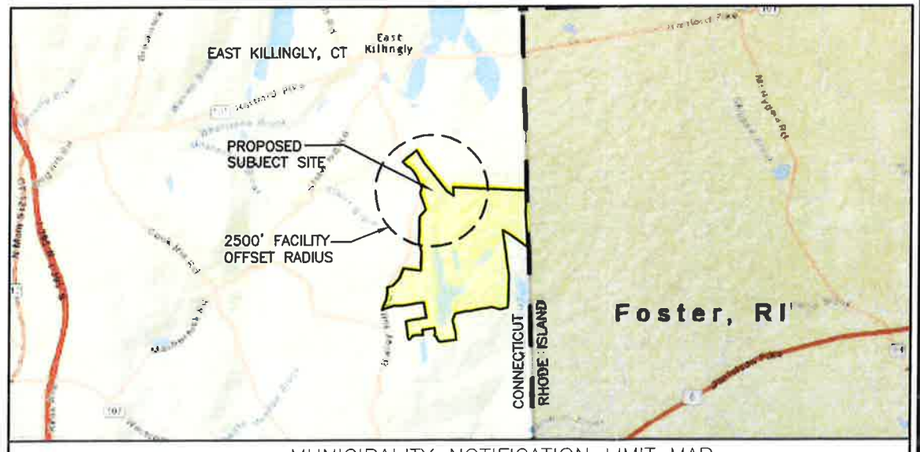
NORTHEAST SURVEY CONSULTANTS, ABUTTERS PLAN AND EXISTING CONDITIONS DATED 8/26/15

SITE SPECIFIC NOTES:

1. VERIFY AZIMUTHS W/ RF ENGINEER.

LEGEND:

- PROPERTY LINE–SUBJECT PARCEL
- PROPERTY LINE–ABUTTERS
- STATE LINE
- CONTOUR LINE
- DELINEATED WETLAND LINE
- (E) BUILDING
- XXX–XX ASSESSORS MAP–BLOCK–LOT NO.
- (E) TREE LINE



MUNICIPALITY NOTIFICATION LIMIT MAP

PREPARED FOR: CELLCO PARTNERSHIP D.B.A.
verizonwireless

Hudson Design Group LLC
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 3090
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED
PROFESSIONAL ENGINEER

Daniel P. Hamm

CHECKED BY: DJR

APPROVED BY: DPH

SUBMITTALS

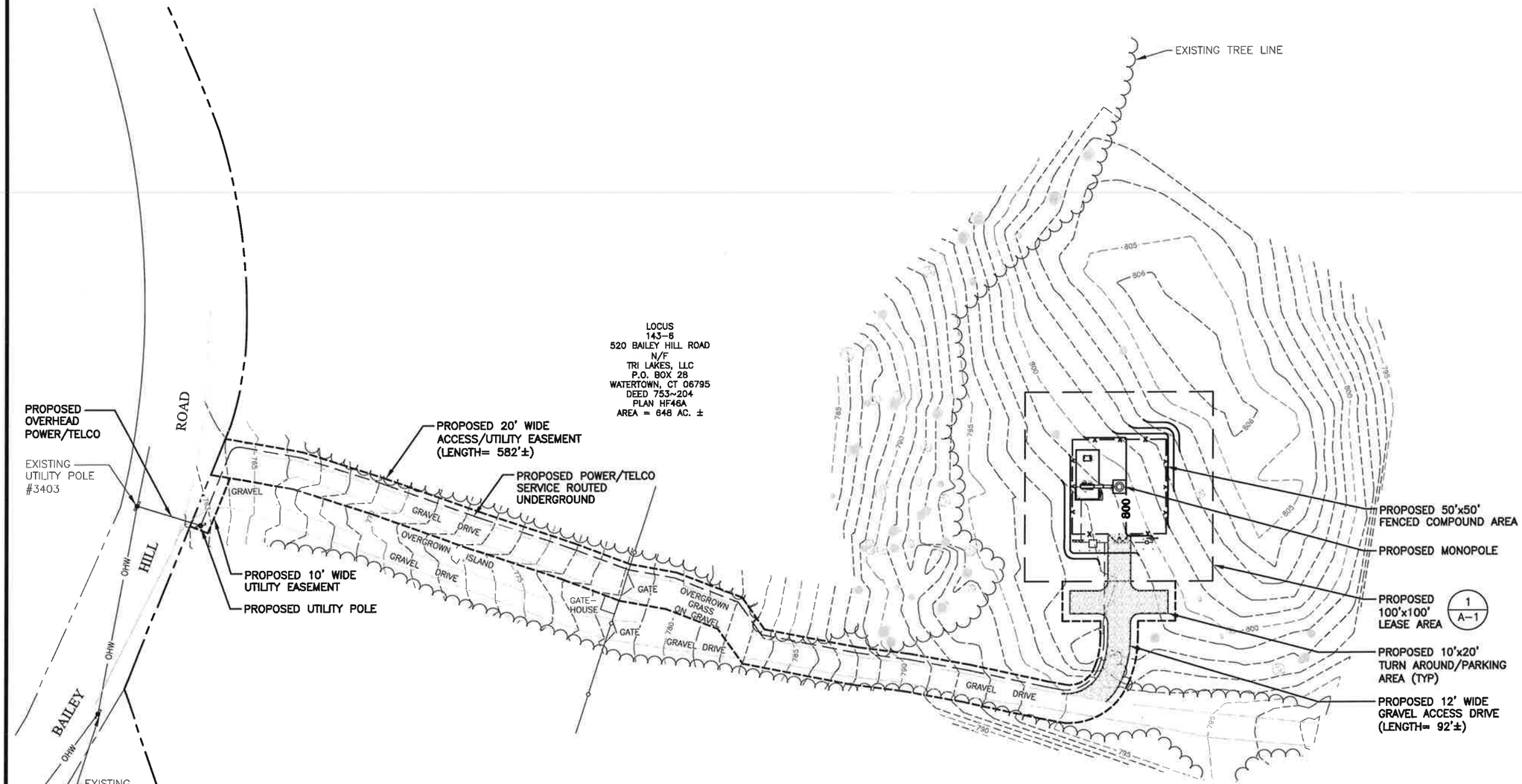
REV.	DATE	DESCRIPTION	BY
1	11/04/15	REVISED PER COMMENTS	MC
0	09/22/15	ISSUED FOR REVIEW	GC

SITE NAME:
DAYVILLE CT

SITE ADDRESS:
520 BAILEY HILL ROAD
KILLINGLY, CT. 06241

SHEET TITLE
ABUTTERS PLAN

SHEET NUMBER
C-1



14°20'
MAGNETIC NORTH
TRUE NORTH

SITE PLAN (1 / C-2)
22x34 SCALE: 1"=30'-0"
11x17 SCALE: 1"=60'-0"

GRAPHIC SCALE
0 15 30 60 90 FEET

LEGEND:

- PROPERTY LINE-SUBJECT PARCEL
- PROPERTY LINE-ABUTTERS
- STATE LINE
- CONTOUR LINE
- DELINEATED WETLAND LINE
- (E) BUILDING
- XXX-XX ASSESSORS MAP-BLOCK-LOT NO.
- (E) TREE LINE

PREPARED FOR: CELLCO PARTNERSHIP D.B.A.

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SUBMITTALS

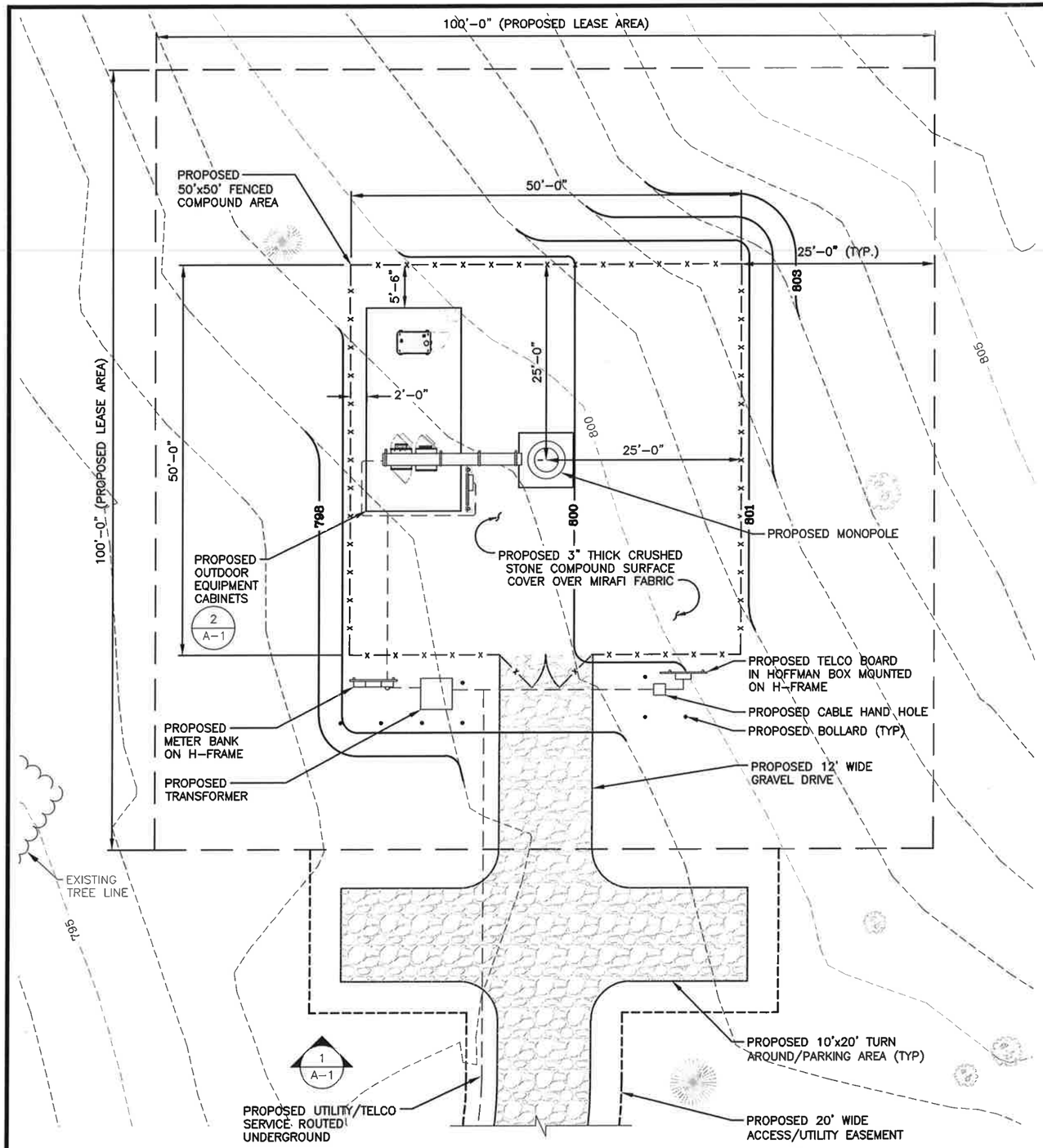
REV.	DATE	DESCRIPTION	BY
1	11/16/15	REVISED PER COMMENTS	MC
0	09/22/15	ISSUED FOR REVIEW	GC

SITE NAME:
DAYVILLE CT

SITE ADDRESS:
520 BAILEY HILL ROAD
KILLINGLY, CT. 06241

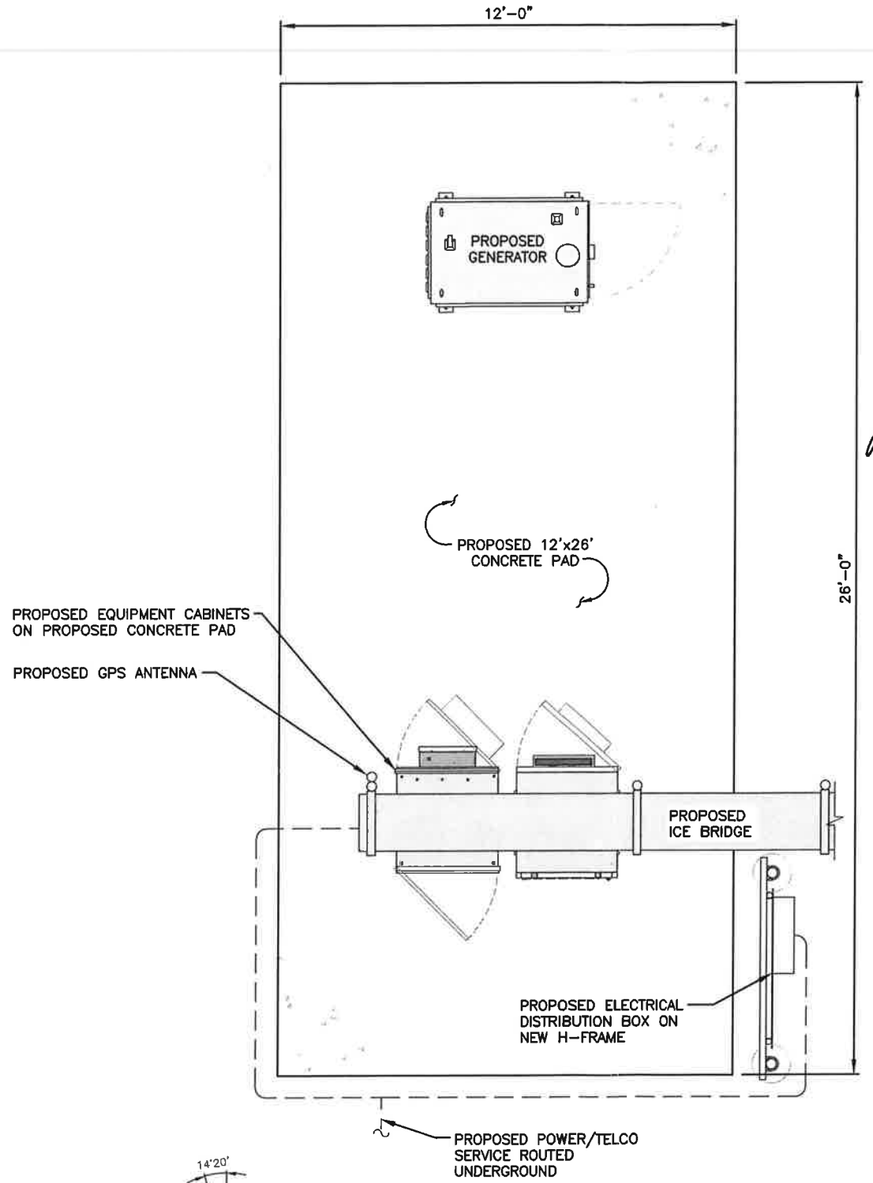
SHEET TITLE
SITE PLAN

SHEET NUMBER
C-2



COMPOUND PLAN (1 / A-1)
22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0"

GRAPHIC SCALE
0 4 8 16 24 FEET



EQUIPMENT PLAN (2 / A-1)
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"

GRAPHIC SCALE
0 1 2 4 6 FEET

PREPARED FOR: CELLCO PARTNERSHIP D.B.A.
verizonwireless

Hudson Design Group LLC
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STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

Daniel P. Hamm

CHECKED BY: DJR

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	11/04/15	REVISED PER COMMENTS	MC
0	09/22/15	ISSUED FOR REVIEW	GC

SITE NAME:
DAYVILLE CT

SITE ADDRESS:
520 BAILEY HILL ROAD
KILLINGLY, CT. 06241

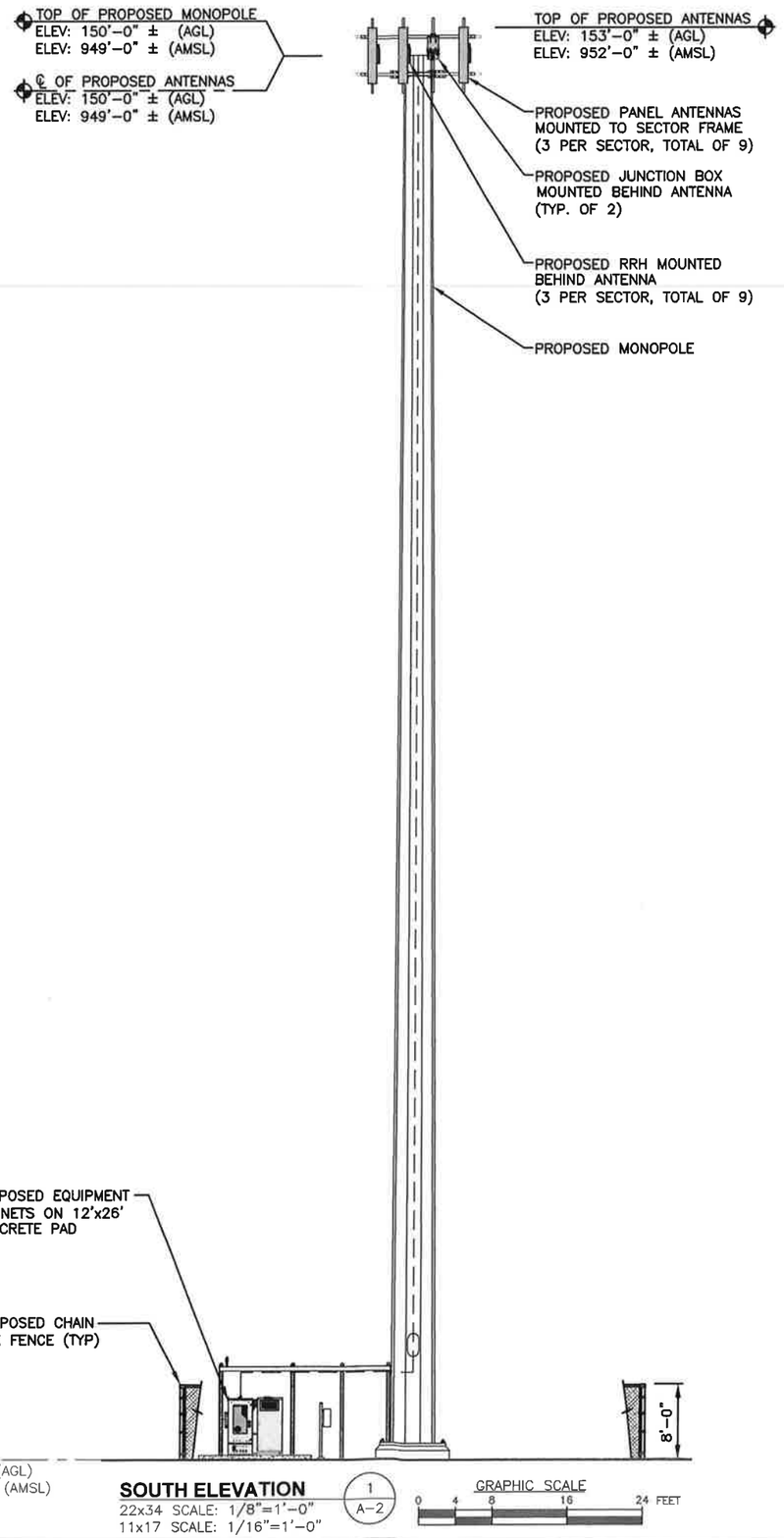
SHEET TITLE
COMPOUND PLAN

SHEET NUMBER
A-1

PROPOSED ANTENNA INFORMATION

SECTOR	STATUS	AZIMUTH	CABLE LENGTH
ALPHA	PROPOSED	0	195
BETA	PROPOSED	120	195
GAMMA	PROPOSED	240	195

NOTE: CABLE LENGTH = EXACT LENGTH PLUS 25'



SOUTH ELEVATION (1 / A-2)
22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0"

GRAPHIC SCALE
0 4 8 16 24 FEET

PREPARED FOR: CELLCO PARTNERSHIP D.B.A.
verizonwireless

Hudson Design Group LLC
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BUILDING 20 NORTH, SUITE 3090
N. ANDOVER, MA 01845
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STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

Daniel P. Hamm

CHECKED BY: DJR

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	11/04/15	REVISED PER COMMENTS	MC
0	09/22/15	ISSUED FOR REVIEW	GC

SITE NAME:
DAYVILLE CT

SITE ADDRESS:
520 BAILEY HILL ROAD
KILLINGLY, CT. 06241

SHEET TITLE
ELEVATION

SHEET NUMBER
A-2

ATTACHMENT 3

ALL-POINTS
TECHNOLOGY CORPORATION

VISIBILITY ANALYSIS

DAYVILLE CT
520 BAILEY HILL ROAD
KILLINGLY, CONNECTICUT

Prepared for:

Verizon Wireless
99 East River Drive
East Hartford CT 06108

Prepared by:

All-Points Technology Corporation, P.C.
3 Saddlebrook Drive
Killingworth, CT 06419

NOVEMBER 2015

Project Introduction

Cellco Partnership d/b/a Verizon Wireless is considering the development of a new wireless communications facility ("Facility") at 520 Bailey Hill Road in Killingly, Connecticut (the "Property"). At the request of Verizon Wireless, All-Points Technology Corporation, P.C. ("APT") prepared this Visibility Analysis to evaluate the potential visual impacts associated with the proposed Facility from within a two-mile radius (the "Study Area"). About one-third of the Study Area falls within the neighboring State of Rhode Island to the east.

Site Description and Setting

The approximately 648-acre Property is located east of Bailey Hill Road in a rural development district of eastern Killingly. The Property consists primarily of undeveloped woods, accessible via a dirt drive off Bailey Hill Road. An abandoned security shed is located immediately east of Bailey Hill Road and a network of overgrown dirt jeep trails traverse the Property.

The area proposed for the Facility (the "Site") is located on the west end of the Property within an overgrown open field, at an approximate ground elevation of 799 feet Above Mean Sea Level ("AMSL"). The proposed Facility would include a 150-foot tall steel monopole surrounded by a 50-foot by 50-foot, gravel base equipment compound. Verizon Wireless would place its antenna array center line at 150 feet above ground level ("AGL") such that the tops of the antennas would extend to approximately 153 feet AGL.

Land use within the immediate vicinity of the Property is a mix of agricultural land, rural residential development and dense woods. The topography within the Study Area is characterized generally by steep to rolling hills and valleys; ground elevations range from approximately 340 feet AMSL to 810 feet AMSL. The tree cover within the Study Area (consisting of mixed deciduous hardwoods with interspersed stands of conifers) occupies approximately 6,407 acres of the 8,042-acre study area (±80%).

Methodology

APT used the combination of a predictive computer model and in-field analysis to evaluate the visibility associated with the proposed Facility on both a quantitative and qualitative basis. The predictive model provides a measurable assessment of potential visibility throughout the entire Study Area including private properties and other areas inaccessible for direct observations. The in-field analyses included a crane test and reconnaissance of the Study Area to record existing conditions, verify results of the model, inventory visible and nonvisible locations, and provide photographic documentation from publicly accessible areas. A description of the procedures used in the analysis is provided below.

Preliminary Computer Modeling

Computer modeling tools were used to predict those areas where at least a portion of the Facility is estimated to be visible including TerrSet, an image analysis program developed by Clark Labs at Clark University. Project- and Study Area-specific data were incorporated into the computer model, including the site location, its ground elevation and the proposed Facility height, as well as the surrounding topography and existing vegetation, which are the primary features that can block direct lines of sight.

Information used in the model included lidar[1]-based digital elevation data and customized land use data layers developed specifically for this analysis. Lidar is a remote-sensing technology that develops elevation data in meters by measuring the time it takes for laser light to return from the surface to the instrument's sensors. The varying reflectivity of objects also means that the returns can be classified based on the characteristics of the reflected light, normally into categories such as "bare earth," "vegetation," "road," or "building." The system is also designed to capture many more data points than older radar-based systems. Thus, lidar-based digital elevation models ("DEM"s) have a much finer resolution and can also identify the different features of the landscape at the time that it was captured.

Viewshed analysis using lidar data provide a much more detailed view of the potential obstacles (especially trees and buildings), and therefore the viewshed modeling produces results with many smaller areas of visibility than those produced by using radar-based DEMs. Its precision makes lidar a superior source of data, but at present it is only available for limited areas of the state. The viewshed results are also checked against the most current aerial photographs in case significant changes (a new housing development, for example) have occurred since the time the lidar data was captured.

The lidar-based DEM created for this analysis represents topographic information for the state of Connecticut that was derived through the spatial interpolation of airborne LiDAR-based data collected in the years 2007 through 2012 and has a horizontal resolution of approximately two (2) feet. In addition, multiple land use data layers were created from the Natural Resources Conservation Service (through the USDA) aerial photography (1-meter resolution, flown in 2012) using IDRISI image processing tools. The IDRISI tools develops light reflective classes defined by statistical analysis of individual pixels, which are then grouped based on common reflective values such that distinctions can be made automatically between deciduous and coniferous tree species, as well as grassland, impervious surface areas, surface water and other distinct land use features.

With these data inputs, the model is then queried to determine where the top of the Facility can be seen from any point(s) within the Study Area, given the intervening existing topography and vegetation. The results of the preliminary analysis are depicted on the attached maps and are intended to provide a representation of those areas where portions of the Facility may potentially be visible to the human eye without the aid of magnification, based on a viewer eye-height of 5 feet above the ground and the combination of intervening

[1] Lidar (a word invented to mean "light radar") may also be referred to as LiDAR, an acronym for Light Detection and Ranging. It is a technology that utilized lasers to determine the distance to an object or surface. LiDAR is similar to radar, but incorporates laser pulses rather than sound waves. It measures the time delay between transmission and reflection of the laser pulse.

topography and tree canopy (year-round) and tree trunks (seasonally, when the leaves are off the deciduous trees). The shaded areas of predicted visibility shown on the map denote locations from within the Study Area which the proposed Facility may potentially be visible year-round (in yellow) above the tree canopy and/or seasonally, through the trees (during "leaf-off" conditions; depicted in orange). The Facility however may not necessarily be visible from all locations within those shaded areas. It is important to note that the computer model cannot account for mass density, the height, diameter and branching variability of the trees, or the degradation of views that occur with distance. In addition, each point – or pixel - represents about one square meter in area, and thus is not predicting visibility from all viewpoints through all possible obstacles. Although large portions of the predicted viewshed may theoretically offer visibility of the Facility, because of these unavoidable limitations the quality of those views may not be sufficient for the human eye to recognize the tower or discriminate it from other surrounding objects. Visibility also varies seasonally with increased, albeit obstructed, views occurring during "leaf-off" conditions. Beyond the density of woodlands found within the given Study Area, each individual tree has its own unique trunk, pole timber and branching pattern characteristics that provide varying degrees of screening in leafless conditions which cannot be precisely modeled.

Once the data layers were entered, image processing tools were applied and overlaid onto USGS topographic base maps and aerial photographs to achieve an estimate of locations where the Facility might be visible. Additional data was reviewed and incorporated into the visibility analysis, including protected private and public open space, parks, recreational facilities, hiking trails, schools, and historic districts. No trail systems are located within the Study Area. Based on a review of publicly-available information, no designated state scenic roads exist within the Study Area.

Field Reconnaissance

To supplement and fine tune the results of the computer modeling efforts, APT completed in-field verification activities consisting of a crane test, vehicular and pedestrian reconnaissance, and photo-documentation.

Crane Test and Field Reconnaissance

A crane test and field reconnaissance were conducted June 25, 2015 to evaluate the visibility associated with the proposed Facility and to obtain photographs for use in this report. The crane test consisted of raising man bucket affixed to the crane's boom arm to a height of 160 feet AGL[2] at the proposed Facility location. Weather conditions were favorable for the in-field activities, with calm winds (less than 5 miles per hour) and mostly sunny skies. Once the boom arm was secured, APT conducted a Study Area reconnaissance by driving along the local and State roads and other publicly accessible locations to document and inventory where the boom/man bucket could be seen above/through the tree canopy. Visual observations from the reconnaissance were also used to evaluate the results of the preliminary visibility mapping and identify any discrepancies in the initial modeling.

[2] The height of 160 feet was used for radio frequency propagation testing.

Photographic Documentation and Simulations

During the crane test and field reconnaissance, APT drove the public roads within the Study Area and recorded observations, including photo-documentation, of those areas where the man-bucket/boom arm was and was not visible. Photographs were obtained from several vantage points to document the views of a proposed Facility. The geographic coordinates of the camera's position at each photo location were logged using global positioning system ("GPS") technology. Photographs were taken with a Canon EOS 6D digital camera body and Canon EF 24 to 105 millimeter ("mm") zoom lens, with the lens set to 50 mm.

> *"The lens that most closely approximates the view of the unaided human eye is known as the normal focal-length lens. For the 35 mm camera format, which gives a 24x36 mm image, the normal focal length is about 50 mm.[3]"*

Final Visibility Mapping

Information obtained during the field reconnaissance was incorporated into the mapping data layers, including observations of the crane test, the photo locations, areas that experienced recent land use changes and those places where the initial model was found to over-predict visibility. Once the additional data was integrated into the model, APT re-calculated the visibility of the proposed Facility from within the Study Area to assist in producing the final viewshed map.

Photographic Simulations

One (1) photographic simulation was generated to portray a scaled rendering of the proposed Facility from where it will be visible on a year-round basis. Using field data, site plan information and 3-dimension (3D) modeling software, spatially referenced models of the site area and Facility were generated and merged. The geographic coordinates obtained in the field for the photograph locations were incorporated into the model to produce virtual camera positions within the spatial 3D model. Photo simulations were then created using a combination of renderings generated in the 3D model and photo-rendering software programs[4].

For presentation purposes in this report, the photographs were taken with a 50 mm focal length and produced in an approximate 7-inch by 10.5-inch format. When viewing in this format size, we believe it is important to provide the largest representational image while maintaining an accurate relation of sizes between objects within the frame of the photograph.

---

[3] Warren, Bruce. Photography, West Publishing Company, Eagan, MN, c. 1993, (page 70).

[4] As a final step, the accuracy and scale of select simulations are tested against photographs of similar existing facilities with recorded camera position, focal length, photo location, and tower location.

Photo-documentation of the crane test and the photo-simulation of the proposed Facility are presented in the attachment at the end of this report. The crane test photos are intended to provide visual reference points for the approximate height and location of the proposed Facility relative to the scene. The photo-simulation is intended to provide the reader with a general understanding of the different views that might be achieved of the Facility.

Photograph Locations

The table below summarizes characteristics of the photographs and simulations presented in the attachment to this report including a description of each location, view orientation, the distance from where the photo was taken relative to the proposed Facility and the general characteristics of that view. The photo locations are depicted on the visibility analysis maps provided as attachments to this report.

View	Location	Orientation	Distance to Site	View Characteristics
1	Bailey Hill Road	East	±500 Feet	Year-round
2	Bailey Hill Road	Northeast	±0.17 Mile	Not Visible
3	Bailey Hill Village	Northeast	±2.16 Miles	Not Visible
4	Mashentuck Road at Cook Hill	Northeast	±2.04 Miles	Not Visible
5	Mountain View Landing	Southeast	±1.60 Miles	Not Visible
6	Slater Hill Road	Southeast	±0.91 Mile	Not Visible
7	Bailey Hill Road	Southeast	±1.03 Miles	Not Visible
8	Bailey Hill Road	Southeast	±1.08 Miles	Not Visible
9	Bailey Hill Road	Southeast	±1.10 Miles	Not Visible
10	Bailey Hill Road	Southeast	±1.23 Miles	Not Visible
11	Hartford Pike	Southeast	±1.20 Miles	Not Visible
12	Hartford Pike	Southeast	±1.14 Miles	Not Visible
13	Pine Knolls Drive	Southwest	±0.79 Mile	Not Visible
14	Quinns Hill Road	Southeast	±1.97 Miles	Not Visible
15	Bear Hill Road	Southeast	±1.01 Miles	Not Visible
16	Bear Hill Road	Southeast	±0.77 Mile	Not Visible
17	Bear Hill Road	Southeast	±0.20 Mile	Not Visible

Visibility Analysis Results

Results of this analysis are graphically displayed on the viewshed maps provided in the attachment at the end of this report. Areas from where the proposed Facility would be visible year-round comprise a total of approximately 23.5 acres and are primarily limited to the Site and surrounding locations on the Property. The one publicly-accessible location where the 160-foot tall boom arm could be seen was at the entrance of the Property at Bailey Hill Road (Photo 1).

When the leaves are off the trees, seasonal views through intervening tree trunks and branches are anticipated to occur over some nearby locations within an area of 238± additional acres. This includes select locations along Bailey Hill Road within approximately 0.25 mile of the Property, private and undeveloped land to the west (including a large portion of the Property), and potentially on the eastern shoulder of Mashentuck Mountain, at distances over 1.75 miles away.

The combination of the dense, mature tree canopy and fairly rugged topography severely limit opportunities for direct lines of sight to the Facility. Although the topography is variable, changes in elevation throughout the Study Area do not rise to sufficient heights in open areas to allow views over the intervening tree line towards the Site. Residential neighbors in the immediate vicinity of the Property have substantial amounts of mature trees and other vegetation that will serve to obstruct the Site and proposed Facility.

Proximity to Schools And Commercial Child Day Care Centers

No views of the proposed Facility would occur at schools or commercial child day care centers. The nearest school, Killingly Central School is located at 60 Soap Street in Dayville, nearly four (4) miles to the northwest. The nearest commercial child day care center, Susan Whites Day Care, is located at 1031 Hartford Pike, approximately 1.9 miles to the northwest.

Limitations

The viewshed maps presented in the attachment to this report depict areas where the proposed Facility may potentially be visible to the human eye without the aid of magnification based on a viewer eye-height of 5 feet above the ground and intervening topography, tree canopy and structures. This analysis may not necessarily account for all visible locations, as it is based on the combination of computer modeling, incorporating 2012 aerial photographs, and in-field observations from publicly-accessible locations. No access to private properties was provided to APT personnel. This analysis does not claim to depict the only areas, or all locations, where visibility may occur; it is intended to provide a representation of those areas where the Facility is likely to be seen.

The simulations provide a representation of the Facility under similar settings as those encountered during the crane test and reconnaissance. Views of the Facility can change throughout the seasons and the time of day, and are dependent on weather and other atmospheric conditions (e.g., haze, fog, clouds); the location, angle and intensity of the sun; and the specific viewer location. Weather conditions on the day of the crane test included mostly sunny skies and the photo-simulation presented in this report provides an accurate portrayal of the Facility during comparable conditions.

ATTACHMENTS

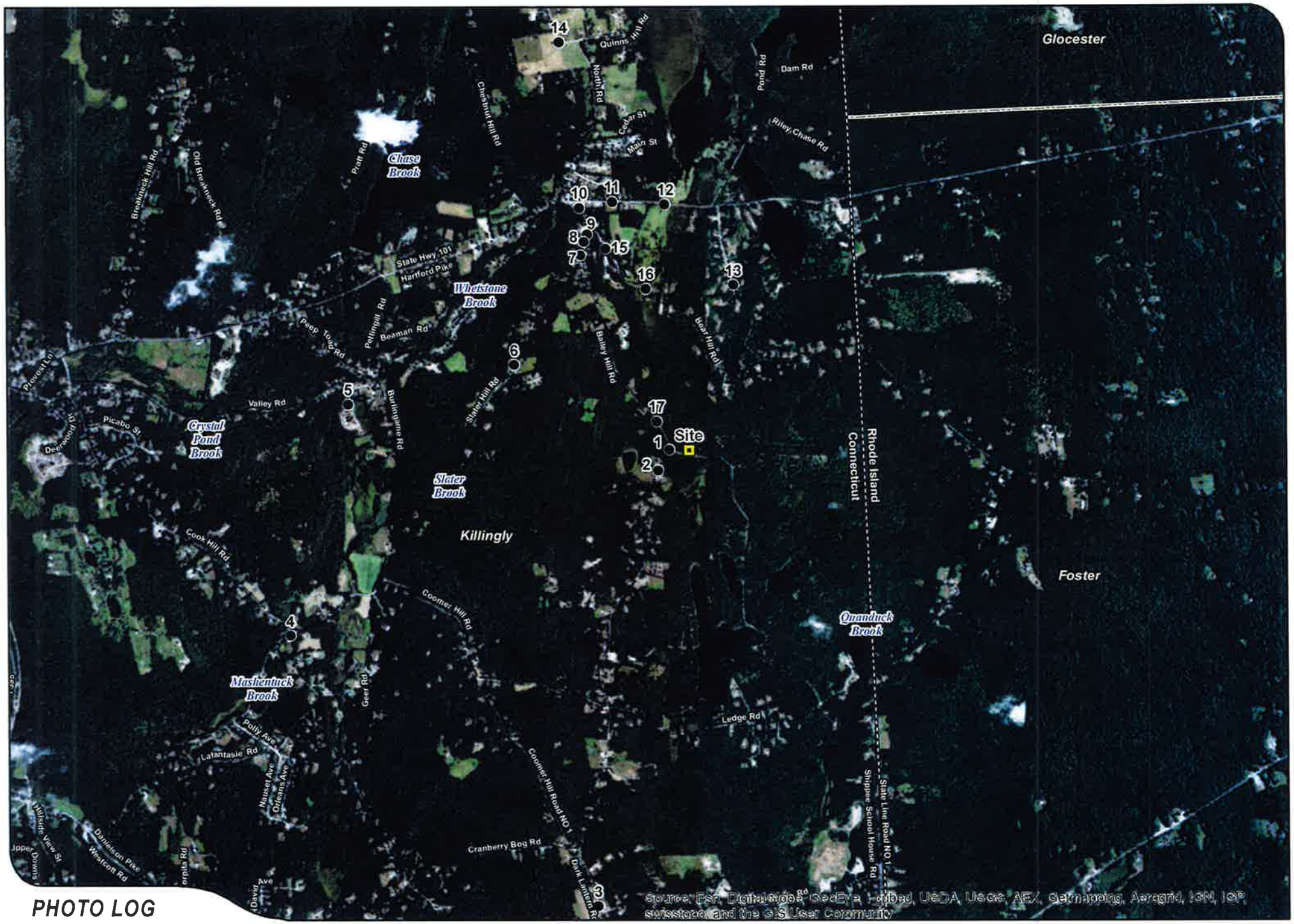

PHOTO LOG

Legend

Site ● Photo Location

N W E S

3,000 1,500 0 3,000 Feet

1 inch = 3,000 feet

ALL-POINTS verizon

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
1	**BAILEY HILL ROAD**	**EAST**	**+/- 500 FEET**	**YEAR ROUND**

ALL-POINTS TECHNOLOGY CORPORATION

verizon

PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
1	**BAILEY HILL ROAD**	**EAST**	**+/- 500 FEET**	**YEAR ROUND**

ALL-POINTS TECHNOLOGY CORPORATION

verizon

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
2	**BAILEY HILL ROAD**	**NORTHEAST**	**+/- 0.17 MILE**	**NOT VISIBLE**

ALL-POINTS TECHNOLOGY CORPORATION

verizon

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
3	**BAILEY HILL VILLAGE**	**NORTHEAST**	**+/- 2.16 MILES**	**NOT VISIBLE**

ALL-POINTS TECHNOLOGY CORPORATION

verizon

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
4	**MASHENTUCK ROAD AT COOK HILL**	**NORTHEAST**	**+/- 2.04 MILE**	**NOT VISIBLE**

ALL-POINTS TECHNOLOGY CORPORATION

verizon

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
5	**MOUNTAIN VIEW LANDING**	**SOUTHEAST**	**+/- 1.60 MILES**	**NOT VISIBLE**

ALL-POINTS TECHNOLOGY CORPORATION

verizon

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
6	**SLATER HILL ROAD**	**SOUTHEAST**	**+/- 0.91 MILE**	**NOT VISIBLE**

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verizon

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
7	**BAILEY HILL ROAD**	**SOUTHEAST**	**+/- 1.03 MILES**	**NOT VISIBLE**

ALL-POINTS TECHNOLOGY CORPORATION

verizon

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
8	**BAILEY HILL ROAD**	**SOUTHEAST**	**+/- 1.08 MILES**	**NOT VISIBLE**

ALL-POINTS TECHNOLOGY CORPORATION

verizon

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
9	**BAILEY HILL ROAD**	**SOUTHEAST**	**+/- 1.10 MILES**	**NOT VISIBLE**

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verizon

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
10	**BAILEY HILL ROAD**	**SOUTHEAST**	**+/- 1.23 MILES**	**NOT VISIBLE**

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verizon

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
11	**HARTFORD PIKE**	**SOUTHEAST**	**+/- 1.20 MILES**	**NOT VISIBLE**

ALL-POINTS TECHNOLOGY CORPORATION

verizon

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
12	**HARTFORD PIKE**	**SOUTHEAST**	**+/- 1.14 MILES**	**NOT VISIBLE**

ALL-POINTS TECHNOLOGY CORPORATION

verizon

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
13	**PINE KNOLLS DRIVE**	**SOUTHWEST**	**+/- 0.79 MILE**	**NOT VISIBLE**

ALL-POINTS TECHNOLOGY CORPORATION

verizon

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
14	**QUINNS HILL ROAD**	**SOUTHEAST**	**+/- 1.97 MILES**	**NOT VISIBLE**

ALL-POINTS TECHNOLOGY CORPORATION

verizon

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
15	**BEAR HILL ROAD**	**SOUTHEAST**	**+/- 1.01 MILES**	**NOT VISIBLE**

ALL-POINTS TECHNOLOGY CORPORATION

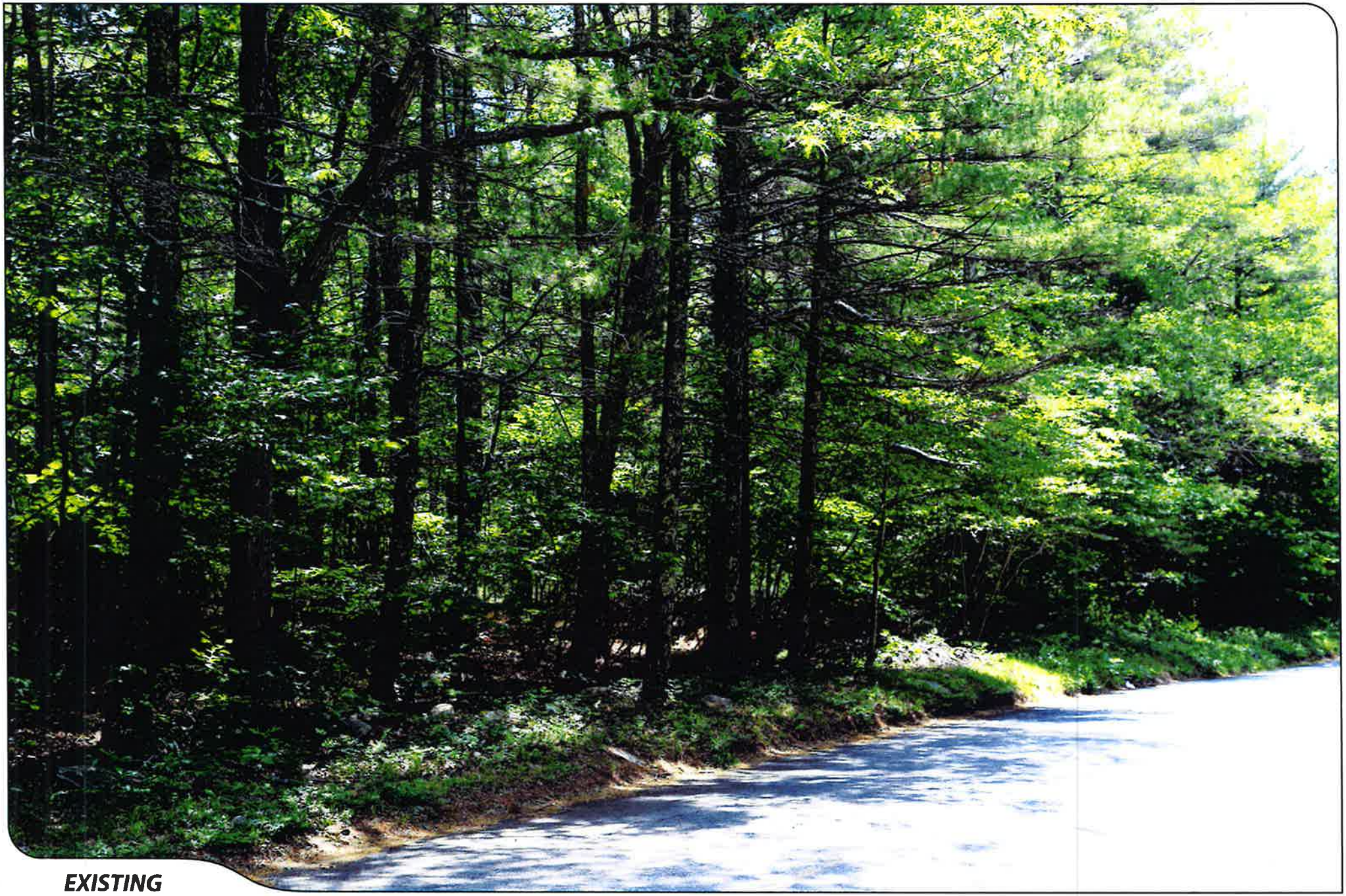
verizon

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
16	**BEAR HILL ROAD**	**SOUTHEAST**	**+/- 0.77 MILE**	**NOT VISIBLE**

ALL-POINTS TECHNOLOGY CORPORATION

verizon

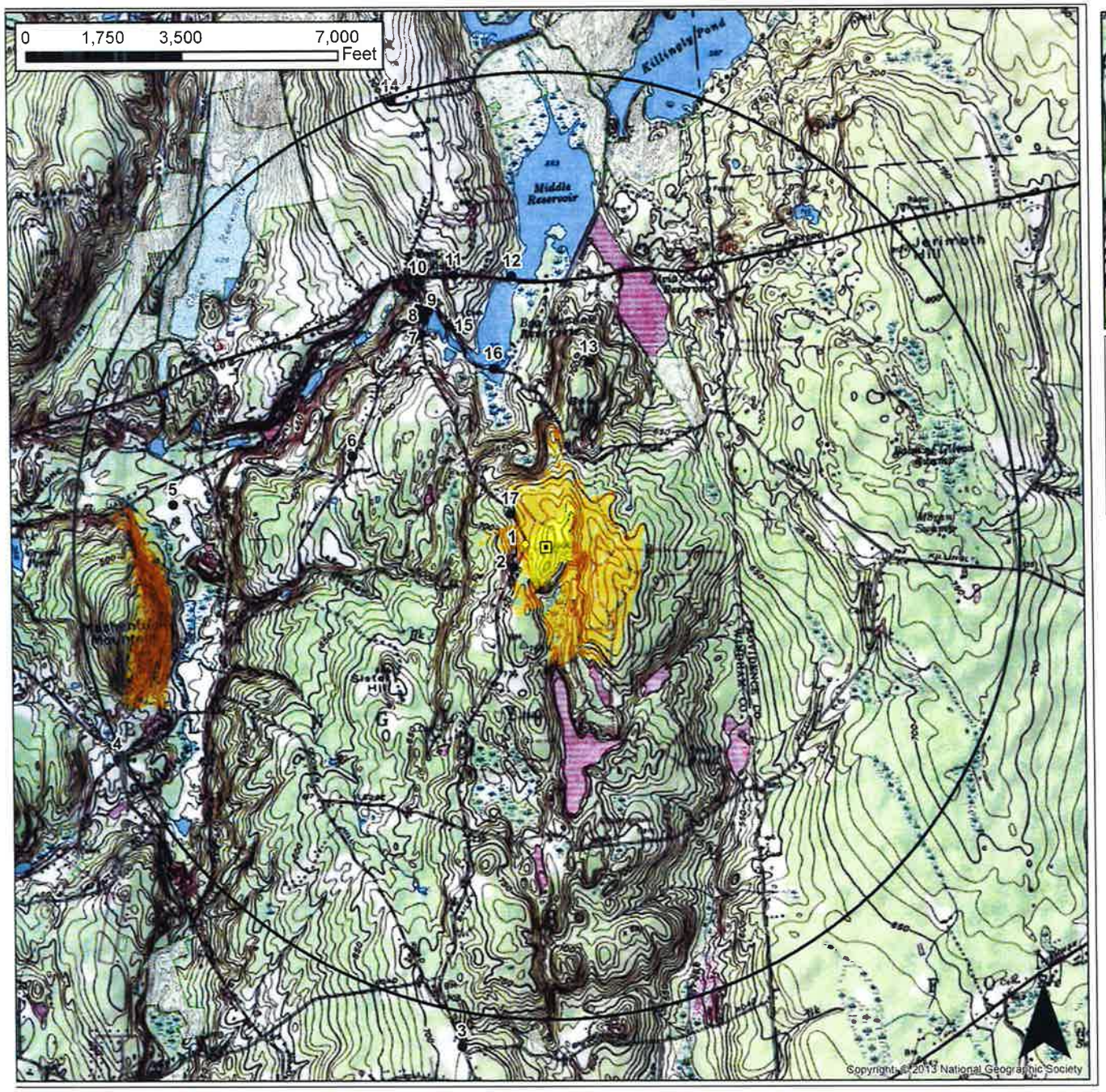


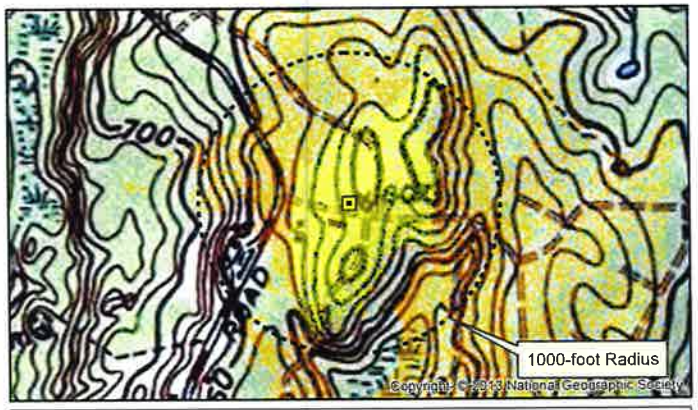
EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
17	**BEAR HILL ROAD**	**SOUTHEAST**	**+/- 0.20 MILE**	**NOT VISIBLE**

ALL-POINTS TECHNOLOGY CORPORATION

verizon





Viewshed Map – Topo Base

Proposed Wireless Telecommunications Facility
Dayville CT
520 Bailey Hill Road, Killingly, CT

Proposed facility height is 150 feet AGL.
Forest canopy height is derived from lidar data.
Study area encompasses a two-mile radius and includes 8,042 acres of land.

Map compiled 10/23/2015

Map information field verified by APT on 06/25/2015.

Only those resources located within the extent of the map are depicted. For a complete list of data sources consulted for this analysis, please refer to the Documentation Page.

Legend

- Proposed Tower

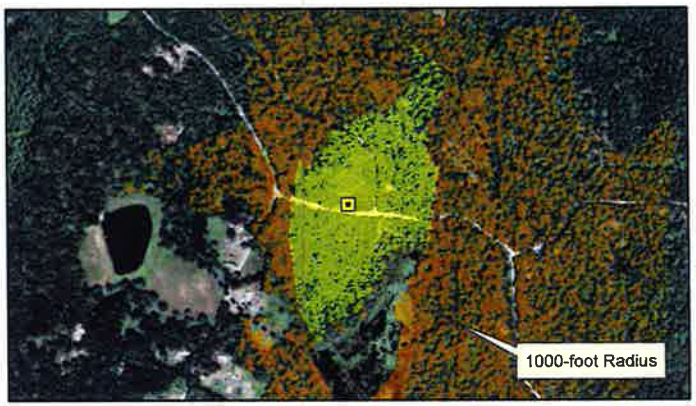
Photo Locations

- Not Visible
- Year-round Views
- Predicted Seasonal Visibility (238 Acres)
- Predicted Year-Round Visibility (23.5 Acres)
- Towns
- 2-Mile Study Area
- Open Space

Location

verizon wireless

ALL-POINTS TECHNOLOGY CORPORATION



Viewshed Map – Aerial Base

Proposed Wireless Telecommunications Facility
Dayville CT
520 Bailey Hill Road, Killingly, CT

Proposed facility height is 150 feet AGL.
Forest canopy height is derived from lidar data.
Study area encompasses a two-mile radius and includes 8,042 acres of land.

Map compiled 10/23/2015

Map information field verified by APT on 06/25/2015.

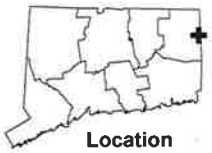
Only those resources located within the extent of the map are depicted. For a complete list of data sources consulted for this analysis, please refer to the Documentation Page.

Legend

- Proposed Tower

Photo Locations

- Not Visible
- Year-round Views
- Predicted Seasonal Visibility (238 Acres)
- Predicted Year-Round Visibility (23.5 Acres)
- Towns
- 2-Mile Study Area
- Open Space



Location

verizon

ALL-POINTS TECHNOLOGY CORPORATION

DOCUMENTATION

SOURCES CONSULTED FOR VIEWSHED MAPS
520 Bailey Hill Road
Dayville, Connecticut

Physical Geography / Background Data
Center for Land Use Education and Research, University of Connecticut (http://clear.uconn.edu)
- *Land Use / Land Cover (2006)
- *Coniferous and Deciduous Forest (2006)
- *LiDAR data – topography (2000)

United States Geological Survey
- *USGS topographic quadrangle maps – Danielson (1984)

National Resource Conservation Service
- *NAIP aerial photography (2012)

Department of Transportation data
- ^State Scenic Highways (updated monthly)

Heritage Consultants
- ^Municipal Scenic Roads

Cultural Resources
Heritage Consultants
- ^National Register
- ^ Local Survey Data

Dedicated Open Space & Recreation Areas
Connecticut Department of Energy and Environmental Protection (DEEP)
- *DEEP Property (May 2007)
- *Federal Open Space (1997)
- *Municipal and Private Open Space (1997)
- *DEEP Boat Launches (1994)

Connecticut Forest & Parks Association
- ^Connecticut Walk Books East –
  The Guide to the Blue-Blazed Hiking Trails of Eastern Connecticut, 19th Edition, 2006.

Other
- ^ConnDOT Scenic Strips (based on Department of Transportation data)

*Available to the public in GIS-compatible format (some require fees).
^ Data not available to general public in GIS format. Reviewed independently and, where applicable, GIS data later prepared specifically for this Study Area.

NOTE Not all the sources listed above appear on the Viewshed Maps. Only those features within the scale of the graphic are shown.

LIMITATIONS
The visibility analysis map(s) presented in this report depict areas where the proposed Facility may potentially be visible to the human eye without the aid of magnification based on a viewer eye-height of 5 feet above the ground and intervening topography, tree canopy heights and structures. This analysis may not necessarily account for all visible locations, as it is based on the combination of computer modeling, incorporating 2012 aerial photographs, and in-field observations from publicly-accessible locations. No access to private properties beyond the host Property was provided to APT personnel. This analysis does not claim to depict the only areas, or all locations, where visibility may occur; it is intended to provide a representation of those areas where the Facility is likely to be seen.

The photo-simulations in this report are provided for visual representation only. Actual visibility depends on various environmental conditions, including (but not necessarily limited to) weather, season, time of day, and viewer location.

ATTACHMENT 4

Site Name: Dayville, CT
Cumulative Power Density

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target	Calculated Power Density	Maximum Permissable Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm^2)	(mW/cm^2)	(%)
VZW PCS	1970	1	1567	1566.575	150	0.0250	1.0	2.50%
VZW Cellular	869	9	0	0	150	0.0000	0.579333333	0.00%
VZW AWS	2145	1	2329	2329	150	0.0372	1.0	3.72%
VZW 700	746	1	802	802	150	0.0128	0.497333333	2.58%

Total Percentage of Maximum Permissible Exposure 8.80%

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

MHz = Megahertz
mW/cm^2 = milliwatts per square centimeter
ERP = Effective Radiated Power

Absolute worst case maximum values used.

ATTACHMENT 5

Cellco Partnership d/b/a Verizon Wireless
520 Bailey Hill Road
Killingly, Connecticut

Dayville Facility

Site Search Summary

Section 16-50j-74(j) of the Regulations of Connecticut State Agencies requires the submission of a statement that describes "the narrowing process by which other possible sites were considered and eliminated." In accordance with this requirement, descriptions of the general site search process, the identification of the applicable search area and the alternative locations considered for development of the proposed telecommunications facility in eastern Killingly are provided below.

Site Search Process

To initiate its site selection process in an area where wireless service problems have been identified, Cellco first establishes a "site search ring" or "site search area". In any search ring or search area, Cellco seeks to avoid the unnecessary proliferation of towers and to reduce the potential adverse environmental effects of the cell site, while at the same time maximizing the quality of service provided from a particular facility. These objectives are achieved by initially locating existing towers and other sufficiently tall structures within and near the site search area. If any are found, they are evaluated to determine whether they are capable of supporting Cellco's telecommunications antennas and related equipment at a location and elevation that satisfies its technical requirements.

The list of available locations may be further reduced if, after preliminary negotiations, the property owners withdraw a site from further consideration. From among the remaining locations, the proposed sites are selected by eliminating those that have greater potential for adverse environmental effects and fewer benefits to the public (i.e., those requiring taller towers; those with substantial adverse environmental impacts, or in densely populated residential areas; and those with limited ability to share space with other public or private telecommunications service providers). It should be noted that in any given site search, the weight afforded to factors considered in the selection process will vary depending upon the availability and nature of sites within the search area.

Need for the Dayville Facility

Within approximately five (5) miles of the proposed Dayville Facility, Cellco maintains six (6) macro-cell telecommunications facilities and was recently approved to install a new small cell facility. The macro-cell facilities are identified as Cellco's Killingly, Killingly Center, Killingly North, Danielson, Danielson South and Danielson 2 cell sites. Cellco's Killingly facility consists of antennas on a tower at 1375 North Road in Killingly. Cellco's Killingly Center facility consists of antennas on a tower at 79 Putnam Pike in Dayville. Cellco's Killingly North facility consists of antennas on a water tank at 190 Louisa Viens Drive in Dayville.

Cellco's Danielson facility consists of antennas on a tower at 246 East Franklin Street in Danielson. Cellco's Danielson 2 facility consists of antennas on a tower at 812 Providence Pike in Danielson. The Danielson SC2 facility is a 2100 MHz frequency facility that will not interact with the proposed Dayville cell site.

These existing facilities currently provide wireless service in the area around the proposed Dayville Facility location. Cellco's existing facilities are currently operating at or near their current capacity limits, resulting in a significant reduction in reliable wireless service in the area. Unfortunately, there are no other existing towers or other sufficiently tall structures available in this area. Construction of a new tower, therefore, is required to resolve Cellco's wireless service problems. Because the proposed tower site provides, primarily, capacity relief to its network, Cellco can keep the overall height of the structure lower than that which might be needed for a pure "coverage site".

Identification of the Dayville Search Area

The purpose of the proposed Dayville Facility is to provide additional coverage and network capacity relief in eastern portions of Killingly. (*See* attached Search Area Map).

Sites Investigated

Cellco identified and investigated a total of two (2) parcels in the Dayville search area. A listing of the sites investigated is provided below.

1. **520 Bailey Hill Road, Killingly, CT:** Cellco entered into a lease agreement with the property owner, Tri Lakes LLC for a new tower site on the 648-acre parcel east of Bailey Hill Road.

2. **721 Bailey Hill Road, Killingly, CT:** The owner of this parcel was not interested in leasing ground space to Cellco for a tower site.


Beaman Rd
Valley Rd
Slaters Hill Rd
Bear Hill Rd
E Killingly Rd
Dayville CT
Bailey Hill Rd
Goomer Hill Rd
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Lake Albert