STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE:	:	
	:	
APPLICATION OF FLORIDA TOWER PARTNERS LLC D/B/A NORTH ATLANTIC TOWERS FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION, MAINTENANCE, AND OPERATION, OF A TELECOMMUNICATIONS FACILITY AT 62-64 CODFISH HILL ROAD, BETHEL, CONNECTICUT	:	DOCKET NO. 458
	:	MAY 26, 2015

RESPONSES OF INTERVENOR, CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS TO CONNECTICUT SITING COUNCIL PRE-HEARING QUESTIONS

On May 15, 2015, the Connecticut Siting Council ("Council") issued Pre-Hearing Questions to Intervenor, Cellco Partnership d/b/a Verizon Wireless ("Cellco"), relating to the above-captioned docket. Below are Cellco's responses.

Question No. 1

What FCC licensed frequencies does Cellco utilize in Fairfield County?

Response

In Fairfield County and throughout the State of Connecticut Cellco is licensed to operate in the 700 MHz, 850 MHz, 1900 MHz, and 2100 MHz frequency ranges.

Question No. 2

Which frequencies would Cellco install at the proposed site, e.g. 700 MHz, 850 MHz, 1900 MHz, etc.? Would antennas serving all of these frequencies be installed initially, or would

some be installed at a later date?

Response

Cellco intends to install antennas for each of its licensed frequencies. Initially, however, Cellco will only activate Long Term Evolution (LTE) services in its 700 MHz and 2100 MHz frequencies.

Question No. 3

Are all frequencies used to transmit voice and data services? Are all frequencies LTE capable? Please explain.

Response

Until recently, Cellco was generally utilizing its 850 MHz and 1900 MHz frequencies to transmit CDMA voice services and data services and its 700 MHz and 2100 MHz frequencies to transmit long-term evolution (LTE) data services only. Earlier this year, Cellco launched LTE voice services to those customers who may have purchased new wireless equipment and devises. Ultimately, Cellco hopes to transition all of its voice and data services to its LTE platform.

Question No. 4

What is the service level threshold for which Cellco designs its system? Is the threshold the same for each frequency?

Response

Cellco designs its fourth generation (4G) LTE network with a service level threshold of

120 dB Reverse Link Operational Path Loss (RLOPL) in all frequencies. Cellco's design threshold for its older third generation (3G) CDMA network still utilizes the -85 dBm design threshold discussed in prior dockets.

Question No. 5

Please describe Cellco's need for the facility in regards to coverage and/or capacity. Include coverage modeling and/or capacity information that demonstrates existing and proposed service.

Response

Cellco identifies the proposed cell site as its "Bethel East" cell site and assumes, for the purpose of these responses, that its antennas will be located at a height of 140 feet above ground level ("AGL") at the Site 1 location and 160 feet AGL at the Site 2 location.

Cellco needs the proposed Bethel East cell site to fill significant gaps in service along portions of Routes 302 and 58 in Bethel and portions of western Newtown and northern Redding. The proposed Bethel East cell cite will also provide capacity relief to Cellco's surrounding cell sites, particularly, the existing Bethel CT cell site.

Included in Attachment 1 are coverage maps showing Cellco's current wireless service in Bethel alone (Maps 1 – 4) and together with the service that Cellco would realize from the proposed Site 1 Facility (Maps 5 – 8) and the Site 2 Facility (Maps 9 – 12).

Question No. 6

What is the predicted coverage footprint for each frequency used at the proposed site (in square miles)?

Response

Site 1 – Cellco Antennas at 140' AGL

Frequency (MHz)	Cover Footprint (Sq. Miles)
700	17.05
850	9.38
1900	8.23
2100	7.76

Site 2 – Cellco Antennas at 160' AGL

Frequency (MHz)	Cover Footprint (Sq. Miles)
700	16.40
850	8.93
1900	7.82
2100	7.60

Question No. 7

Will the proposed facility support text-to-911 service? Is additional equipment required for this purpose? Is Cellco aware of any Public Safety Answering Points in the area of the proposed site that are able to accept text-to-911?

Response

Yes. The Bethel East cell site will support text-to-911 as soon as the Public Safety Answering Point (PSAP) is capable of receiving text-to-911. No additional cell site equipment is necessary to support the service. Cellco is not aware of any PSAP in the Bethel area capable of receiving text-to-911 at this time.

Question No. 8

Would Cellco's installation comply with the intent of the *Warning, Alert and Response Network Act of 2006?*

Response

Yes.

Question No. 9

Provide a cost estimate for Cellco's equipment/installation.

Response

Cellco's estimated equipment and installation cost are as follows:

1.	Cell Site Radio Equipment	$300,000
2.	Antenna and Cables	$80,000
3.	Power System	$40,000
4.	Equipment Shelter	$90,000

Question No. 10

When was the search area for this proposed facility issued?

Response

Cellco identified a need for the Bethel East cell site and established a formal "search area" in 2013. Due to budget constraints at that time, however, a formal site search effort did not commence.

Question No. 11

Did Cellco investigate other properties prior to deciding to locate on the proposed facility? Please list the properties investigated and reasons for their rejection.

Response

No. As mentioned above in response to Q11, Cellco did not commence a formal site search effort in this area.

Question No. 12

Describe Cellco's ground equipment and emergency power source.

Response

Cellco intends to install its typical 12' x 30' shelter at this site to house its radio equipment, backup battery system and 35 kW back-up (diesel) generator.

Question No. 13

Provide a power density analysis according to the methodology prescribed in the FCC Office of Engineering and Technology Bulletin No. 65E, Edition 97-01 (August 1997) assuming all Cellco antennas are directed at the base of the tower and all channels are operating simultaneously.

Response

Worst-case General Power Density calculations for Cellco's antennas on the Site 1 and Site 2 towers are included in Attachment 2.

Respectfully submitted,

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

By _____

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Its Attorneys

CERTIFICATE OF SERVICE

I hereby certify that on the 26th day of May, 2015, a copy of the foregoing was sent, via electronic mail, to:

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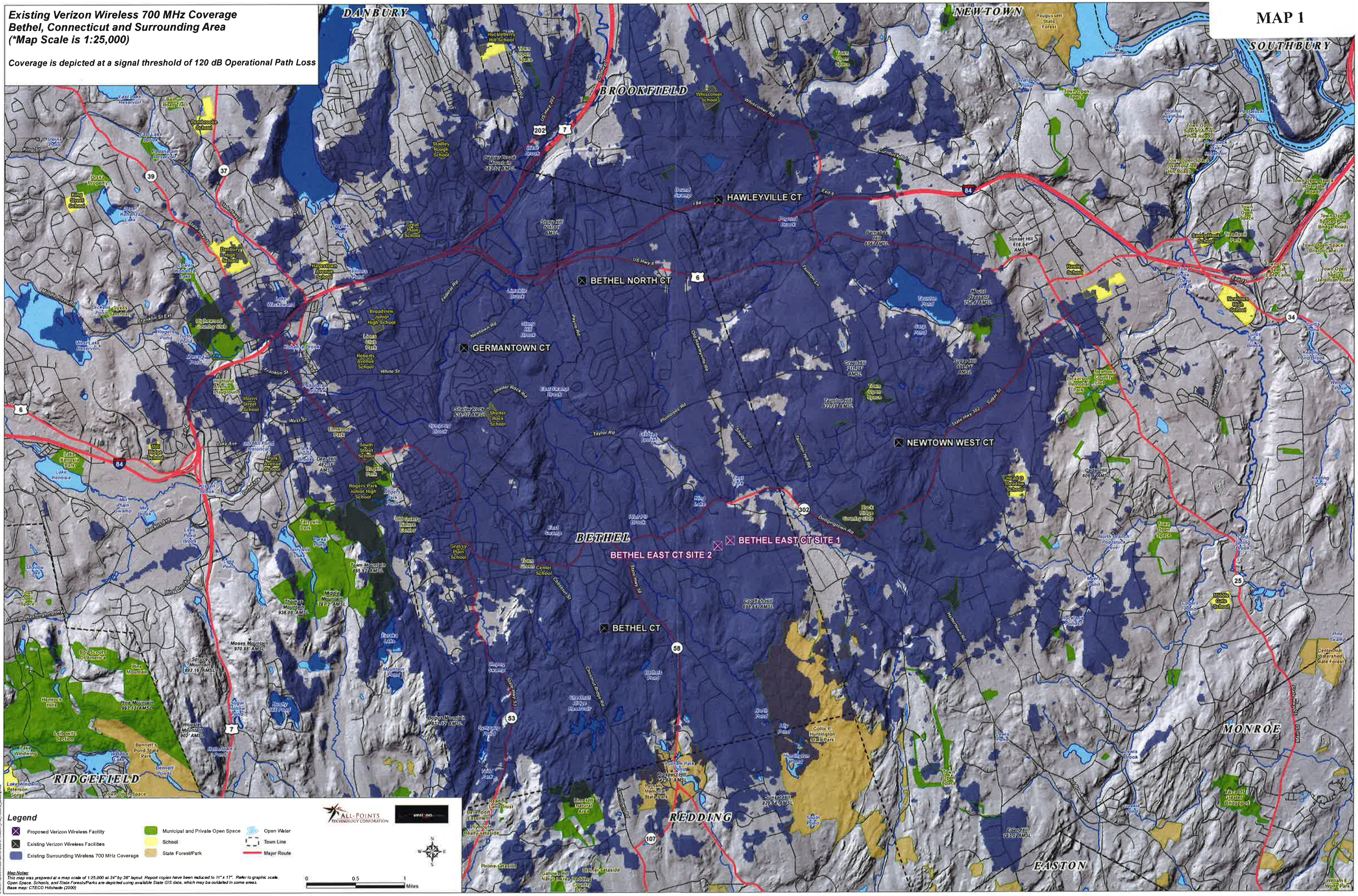
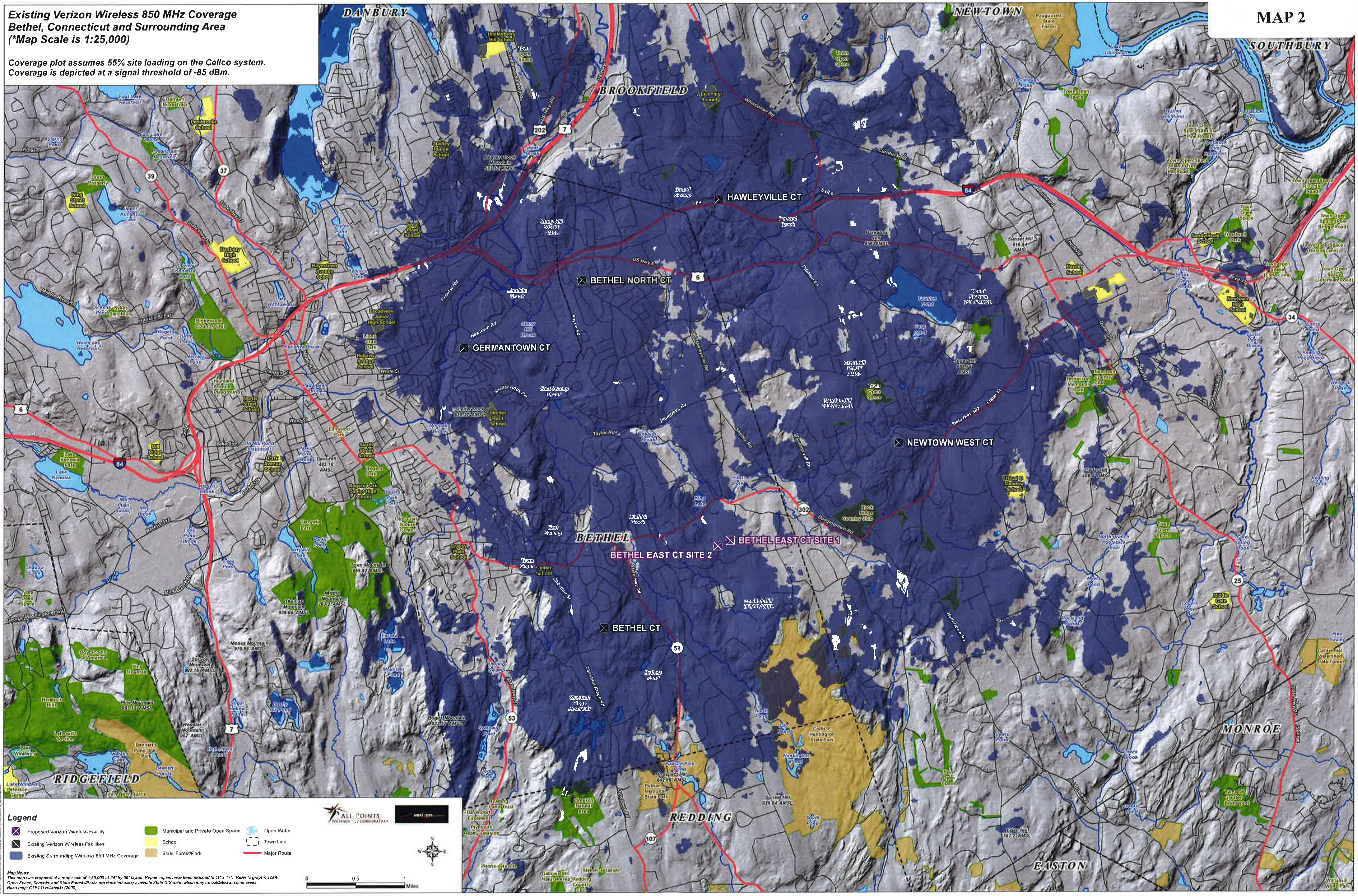
ATTACHMENT 1

MAP 1



Existing Verizon Wireless 700 MHz Coverage
Bethel, Connecticut and Surrounding Area
(*Map Scale is 1:25,000)
Coverage is depicted at a signal threshold of 120 dB Operational Path Loss
DANBURY
NEWTOWN
SOUTHBURY
BROOKFIELD
HAWLEYVILLE CT
BETHEL NORTH CT
GERMANTOWN CT
NEWTOWN WEST CT
BETHEL
BETHEL EAST CT SITE 1
BETHEL EAST CT SITE 2
BETHEL CT
MONROE
RIDGEFIELD
REDDING
EASTON
Legend
Proposed Verizon Wireless 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
ALL-POINTS TECHNOLOGY CORPORATION
Map Notes:
This map was prepared at a map scale of 1:25,000 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: CTECO Hillshade (2000)
0
0.5
1
Miles

MAP 2



Existing Verizon Wireless 850 MHz Coverage
Bethel, Connecticut and Surrounding Area
(*Map Scale is 1:25,000)
Coverage plot assumes 55% site loading on the Cellco system.
Coverage is depicted at a signal threshold of -85 dBm.
DANBURY
NEWTOWN
SOUTHBURY
BROOKFIELD
BETHEL
MONROE
RIDGEFIELD
REDDING
EASTON
HAWLEYVILLE CT
BETHEL NORTH CT
GERMANTOWN CT
NEWTOWN WEST CT
BETHEL EAST CT SITE 1
BETHEL EAST CT SITE 2
BETHEL CT
Legend
Proposed Verizon Wireless 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
ALL-POINTS TECHNOLOGY CORPORATION
Map Notes:
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Base map: CTECO Hillshade (2000)
0
0.5
1
Miles

MAP 3

Existing Verizon Wireless 1900 MHz Coverage
Bethel, Connecticut and Surrounding Area
(*Map Scale is 1:25,000)

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

DANBURY
NEW-TOWN
SOUTHBURY
BROOKFIELD
HAWLEYVILLE CT
BETHEL NORTH CT
GERMANTOWN CT
NEWTOWN WEST CT
BETHEL
BETHEL EAST CT SITE 1
BETHEL EAST CT SITE 2
BETHEL CT
RIDGEFIELD
REDDING
EASTON
MONROE

Legend

- Proposed Verizon Wireless 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

ALL-POINTS TECHNOLOGY CORPORATION

verizon wireless

Map Notes:
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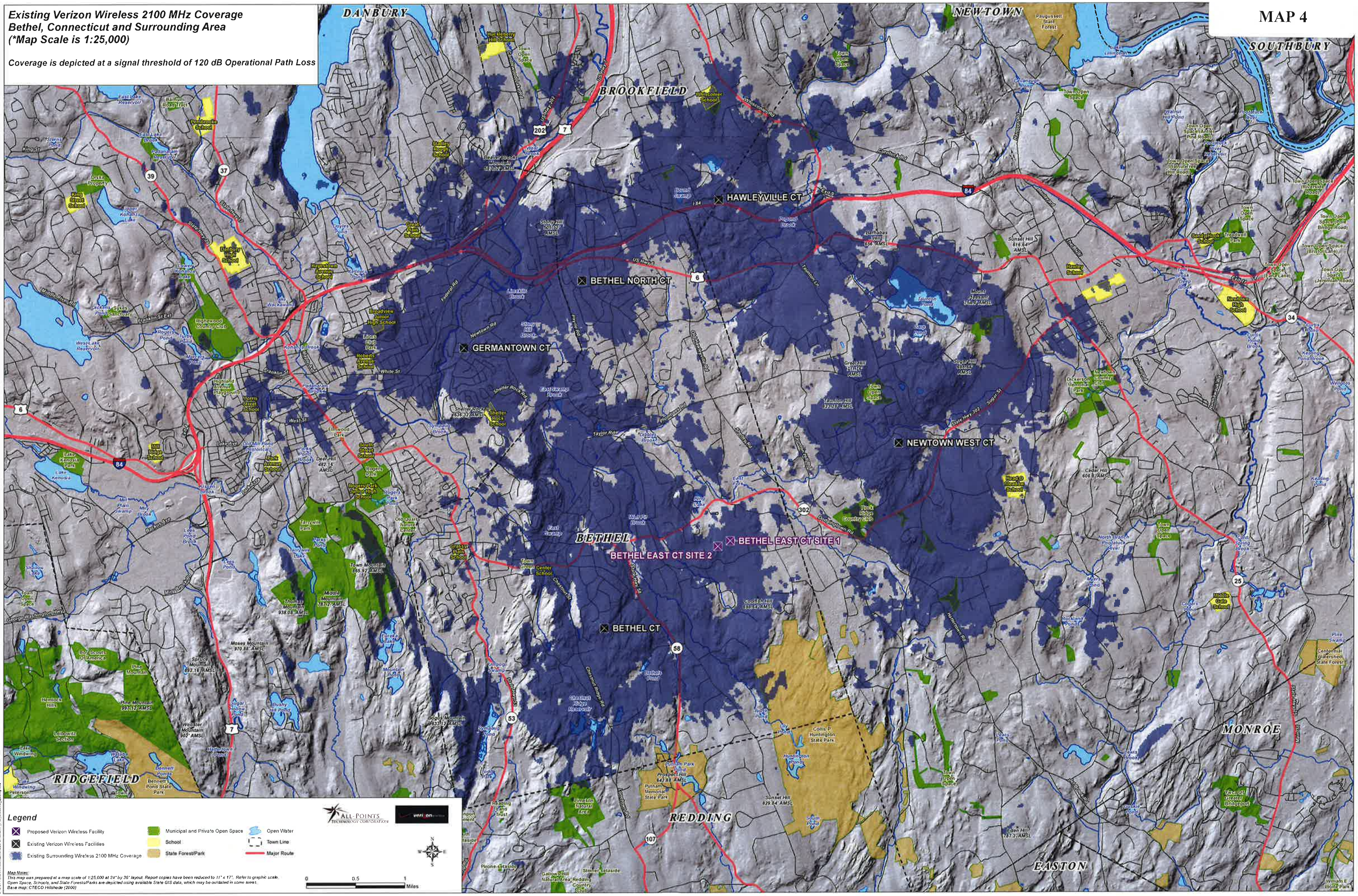
Open Space, Schools, and State Forests/Parks are depicted using available State GIS data, which may be outdated in some areas.
Base map: CTECO Hillshade (2006)

0 0.5 1 Miles


Existing Verizon Wireless 2100 MHz Coverage
Bethel, Connecticut and Surrounding Area
(*Map Scale is 1:25,000)
Coverage is depicted at a signal threshold of 120 dB Operational Path Loss
MAP 4
DANBURY
NEWTOWN
SOUTHBURY
BROOKFIELD
HAWLEYVILLE CT
BETHEL NORTH CT
GERMANTOWN CT
NEWTOWN WEST CT
BETHEL
BETHEL EAST CT SITE 1
BETHEL EAST CT SITE 2
BETHEL CT
MONROE
RIDGEFIELD
REDDING
EASTON
Legend
Proposed Verizon Wireless 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
ALL-POINTS TECHNOLOGY CORPORATION
Map Notes
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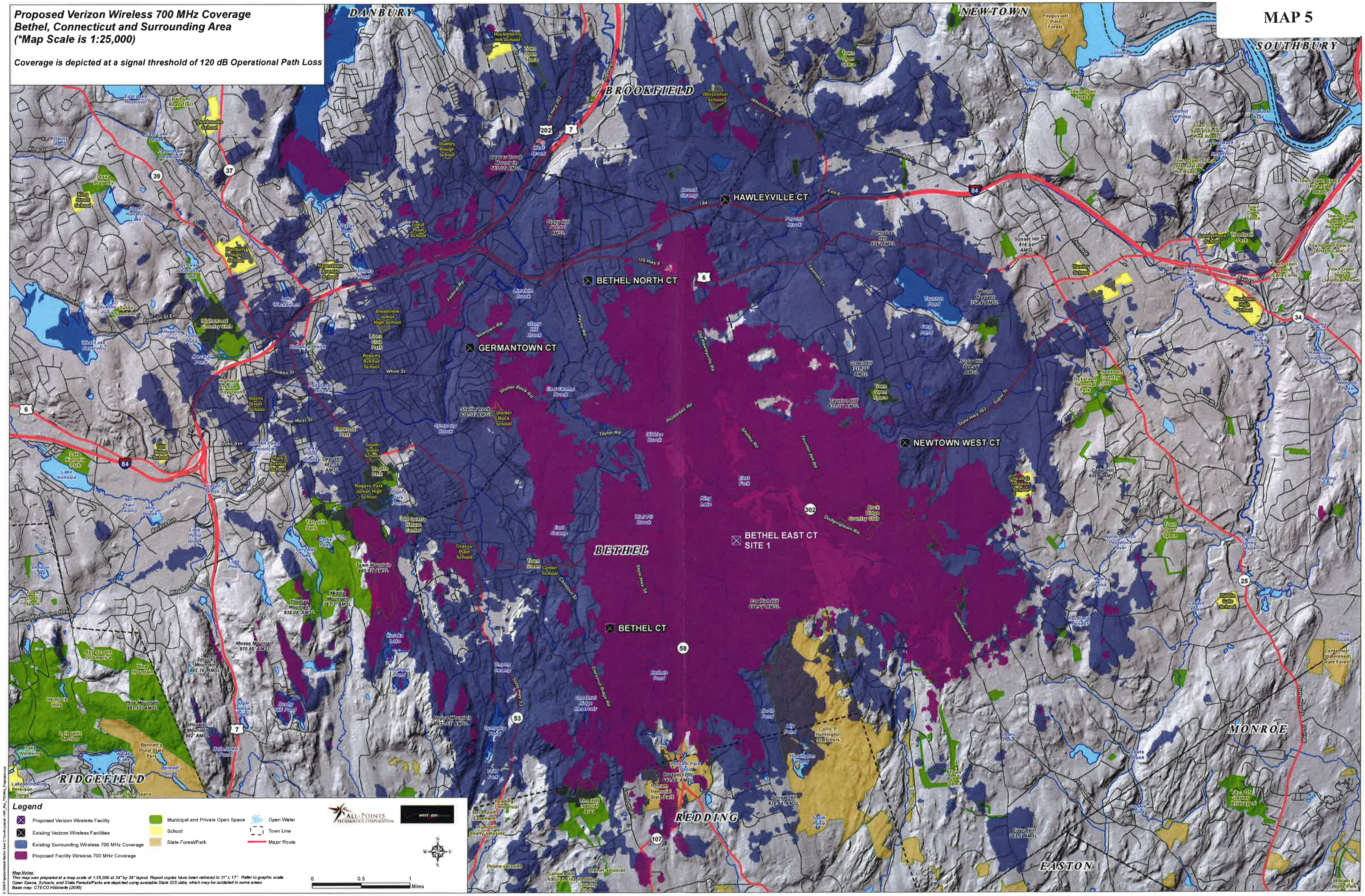
Open Space, Schools, and State Forests/Parks are depicted using available State GIS data, which may be outdated in some areas.
Base map: CTECO Hillshade (2000)
0 0.5 1 Miles


MAP 5
Proposed Verizon Wireless 700 MHz Coverage
Bethel, Connecticut and Surrounding Area
(*Map Scale is 1:25,000)
Coverage is depicted at a signal threshold of 120 dB Operational Path Loss
DANBURY
NEWTOWN
SOUTHBURY
BROOKFIELD
HAWLEYVILLE CT
BETHEL NORTH CT
GERMANTOWN CT
NEWTOWN WEST CT
BETHEL
BETHEL EAST CT
SITE 1
BETHEL CT
MONROE
RIDGEFIELD
REDDING
EASTON
Legend
Proposed Verizon Wireless 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
Map Notes:
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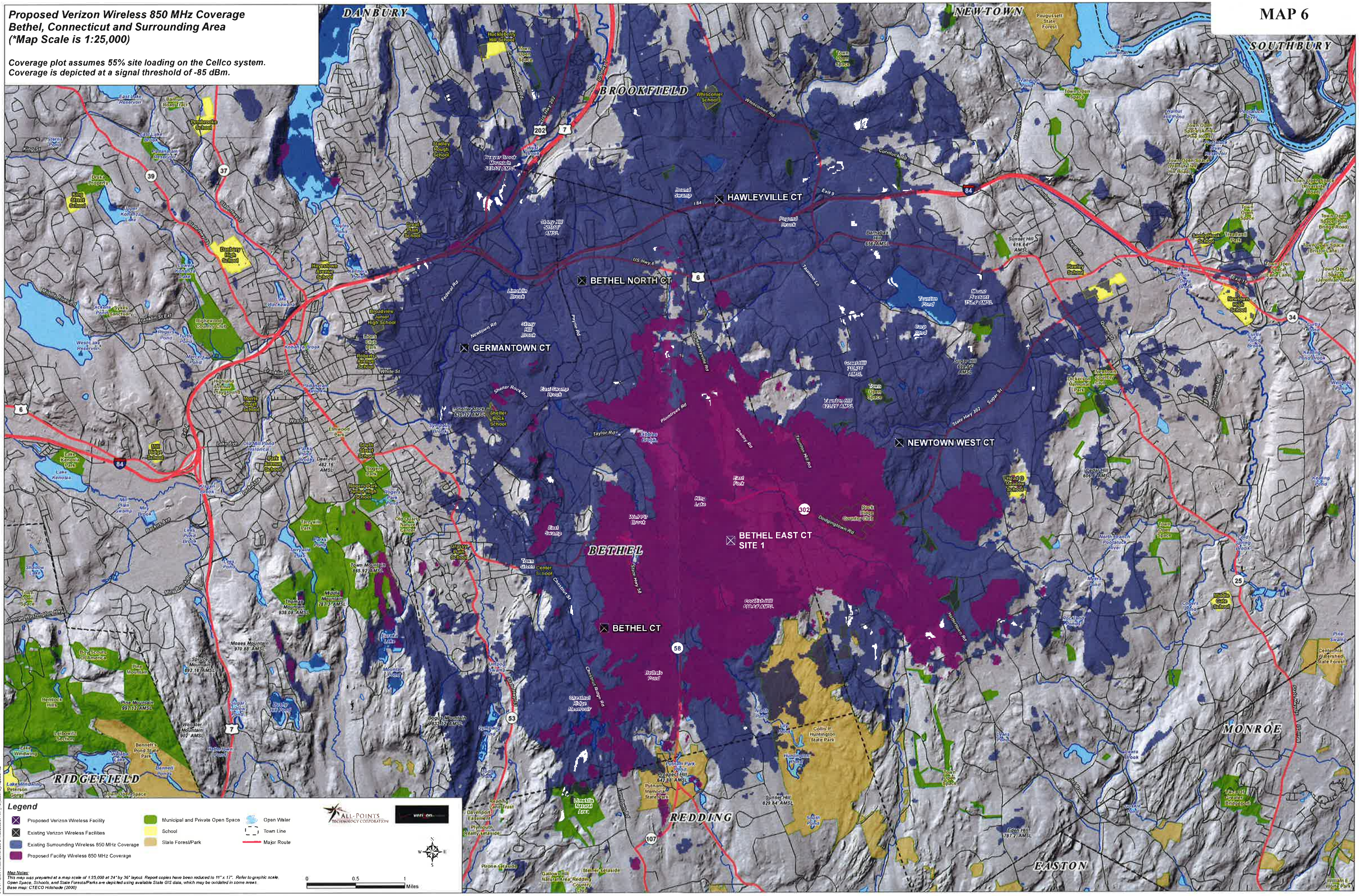
Base map: CTECO Hillshade (2000)
0
0.5
1
Miles


MAP 6
Proposed Verizon Wireless 850 MHz Coverage
Bethel, Connecticut and Surrounding Area
(*Map Scale is 1:25,000)
Coverage plot assumes 55% site loading on the Cellco system.
Coverage is depicted at a signal threshold of -85 dBm.
DANBURY
NEWTOWN
SOUTHBURY
BROOKFIELD
HAWLEYVILLE CT
BETHEL NORTH CT
GERMANTOWN CT
NEWTOWN WEST CT
BETHEL EAST CT
SITE 1
BETHEL
BETHEL CT
MONROE
RIDGEFIELD
REDDING
EASTON
Legend
Proposed Verizon Wireless Facility
Existing Verizon Wireless Facilities
Existing Surrounding Wireless 850 MHz Coverage
Proposed Facility Wireless 850 MHz Coverage
Municipal and Private Open Space
School
State Forest/Park
Open Water
Town Line
Major Route
ALL-POINTS TECHNOLOGY CORPORATION
Map Notes:
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Open Space, Schools, and State Forests/Parks are depicted using available State GIS data, which may be outdated in some areas.
Base map: CTECO Hillshade (2000)
0
0.5
1
Miles
N
S
W
E

MAP 7

Proposed Verizon Wireless 1900 MHz Coverage
Bethel, Connecticut and Surrounding Area
(*Map Scale is 1:25,000)

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

DANBURY
NEWTOWN
SOUTHBURY
BROOKFIELD
HAWLEYVILLE CT
BETHEL NORTH CT
GERMANTOWN CT
NEWTOWN WEST CT
BETHEL EAST CT SITE 1
BETHEL
BETHEL CT
RIDGEFIELD
REDDING
EASTON
MONROE

Legend

- Proposed Verizon Wireless Facility
- Existing Verizon Wireless Facilities
- Existing Surrounding Wireless 1900 MHz Coverage
- Proposed Facility Wireless 1900 MHz Coverage
- Municipal and Private Open Space
- School
- State Forest/Park
- Open Water
- Town Line
- Major Route

ALL-POINTS TECHNOLOGY CORPORATION

verizon wireless

0 0.5 1 Miles

Map Notes:
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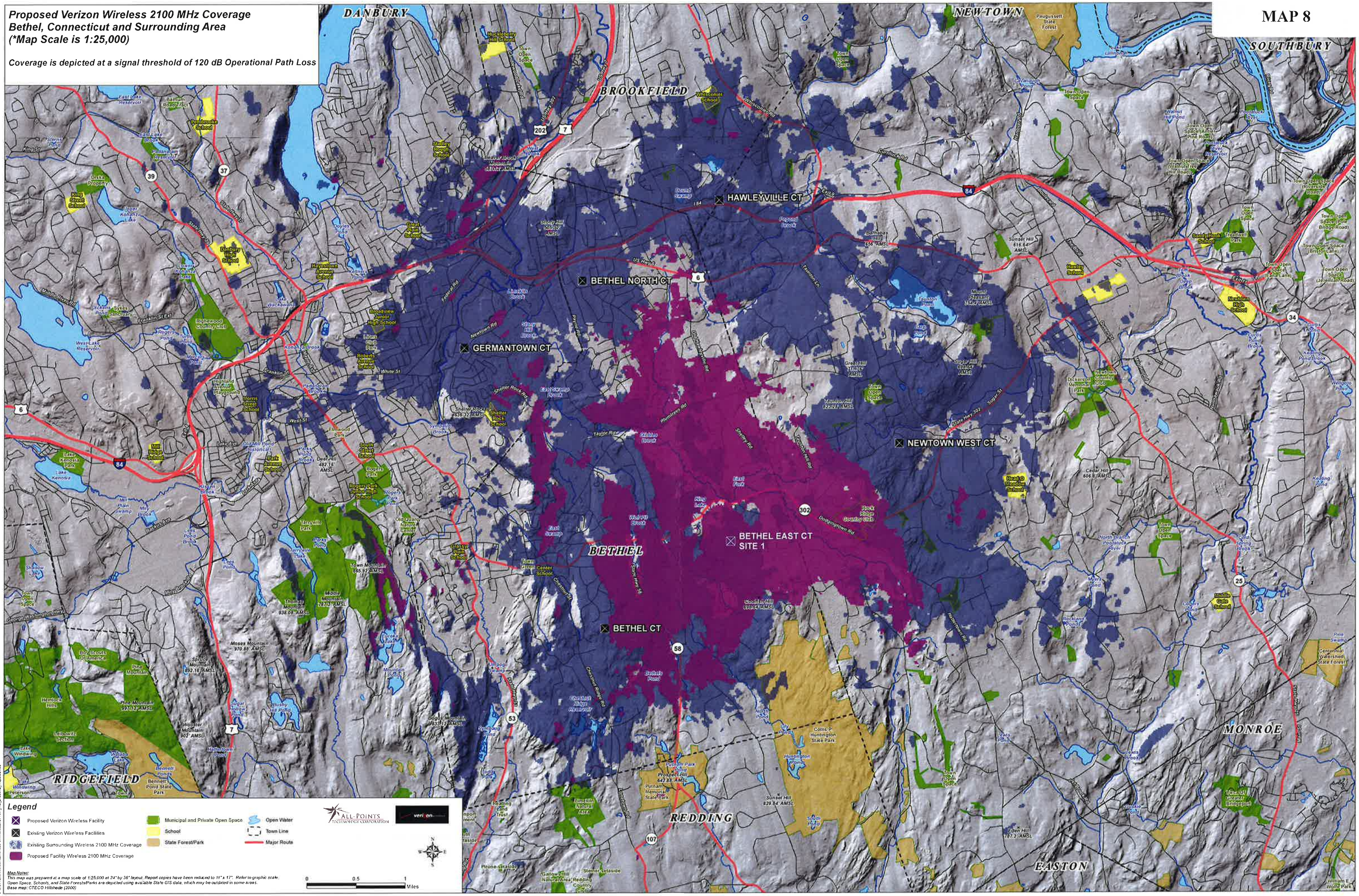
Open Space, Schools, and State Forests/Parks are depicted using available State GIS data, which may be outdated in some areas
Base map: CTECO Hillshade (2000)



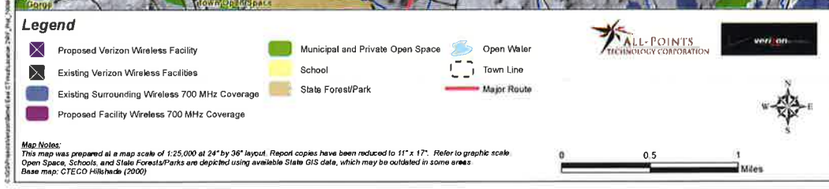
MAP 8
Proposed Verizon Wireless 2100 MHz Coverage
Bethel, Connecticut and Surrounding Area
(*Map Scale is 1:25,000)
Coverage is depicted at a signal threshold of 120 dB Operational Path Loss
DANBURY
NEWTOWN
SOUTHBURY
BROOKFIELD
BETHEL
RIDGEFIELD
REDDING
MONROE
EASTON
HAWLEYVILLE CT
BETHEL NORTH CT
GERMANTOWN CT
NEWTOWN WEST CT
BETHEL EAST CT SITE 1
BETHEL CT
Legend
Proposed Verizon Wireless 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
Map Notes:
This map was prepared at a map scale of 1:25,000 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: CTECO Hillshade (2000)
0
0.5
1
Miles

MAP 9

Proposed Verizon Wireless 700 MHz Coverage
Bethel, Connecticut and Surrounding Area
(*Map Scale is 1:25,000)

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

DANBURY
NEW-TOWN
SOUTHBURY
BROOKFIELD
HAWLEYVILLE CT
BETHEL NORTH CT
GERMANTOWN CT
NEWTOWN WEST CT
BETHEL EAST CT
SITE 2
BETHEL
BETHEL CT
RIDGEFIELD
REDDING
MONROE
EASTON



ALL-POINTS TECHNOLOGY CORPORATION

verizon

0 0.5 1 Miles

Map Notes:
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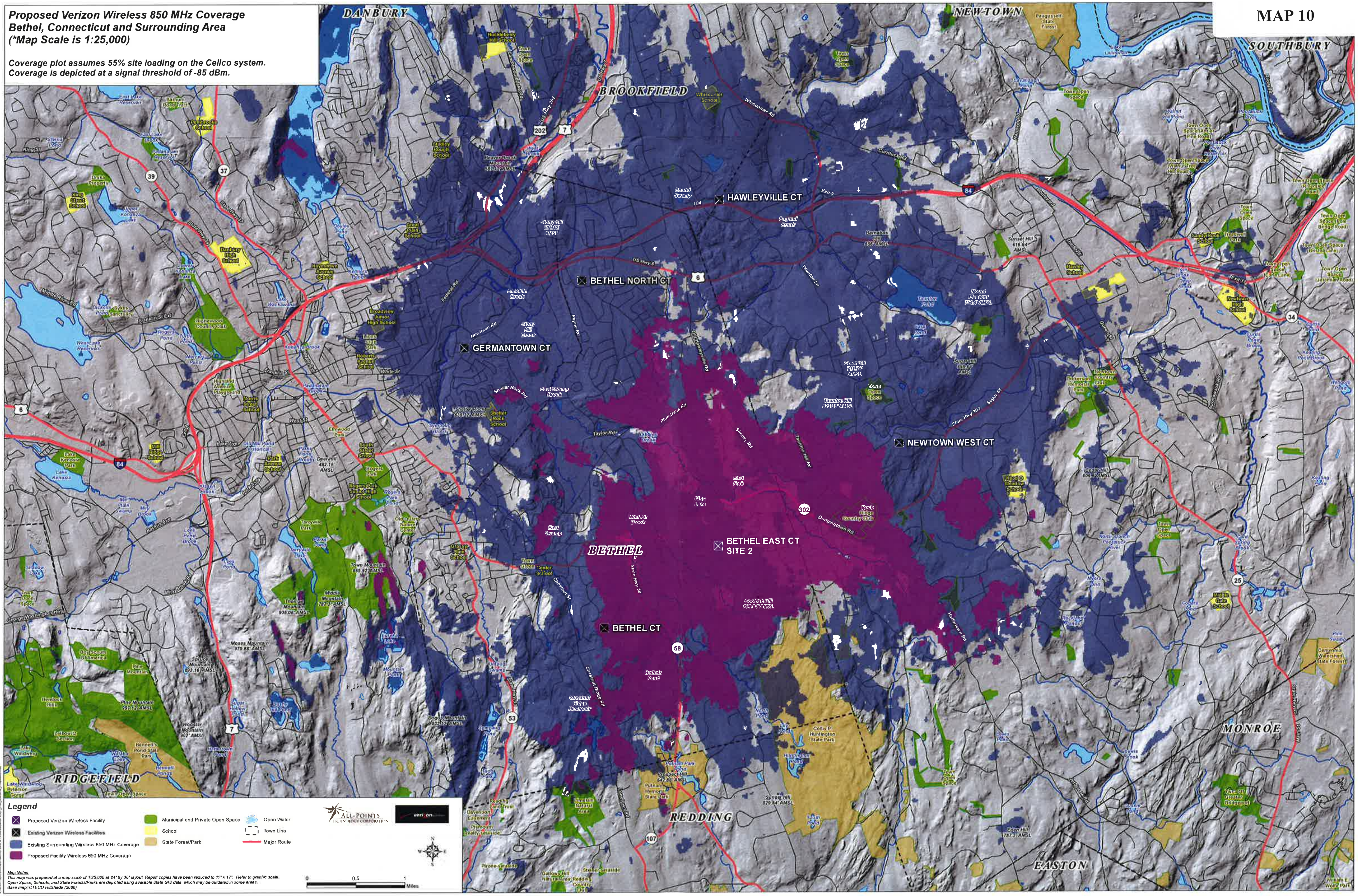
Open Space, Schools, and State Forests/Parks are depicted using available State GIS data, which may be outdated in some areas.
Base map: CTECO Hillshade (2000)



Proposed Verizon Wireless 850 MHz Coverage
Bethel, Connecticut and Surrounding Area
(*Map Scale is 1:25,000)
Coverage plot assumes 55% site loading on the Cellco system.
Coverage is depicted at a signal threshold of -85 dBm.
MAP 10
DANBURY
NEWTOWN
SOUTHBURY
BROOKFIELD
BETHEL
RIDGEFIELD
REDDING
EASTON
MONROE
HAWLEYVILLE CT
BETHEL NORTH CT
GERMANTOWN CT
NEWTOWN WEST CT
BETHEL EAST CT
SITE 2
BETHEL CT
Legend
Proposed Verizon Wireless Facility
Existing Verizon Wireless Facilities
Existing Surrounding Wireless 850 MHz Coverage
Proposed Facility Wireless 850 MHz Coverage
Municipal and Private Open Space
School
State Forest/Park
Open Water
Town Line
Major Route
ALL-POINTS TECHNOLOGY CORPORATION
Map Notes:
This map was prepared at a map scale of 1:25,000 at 24" by 36" layout. Report copies have been reduced to 11" x 17". Refer to graphic scale.
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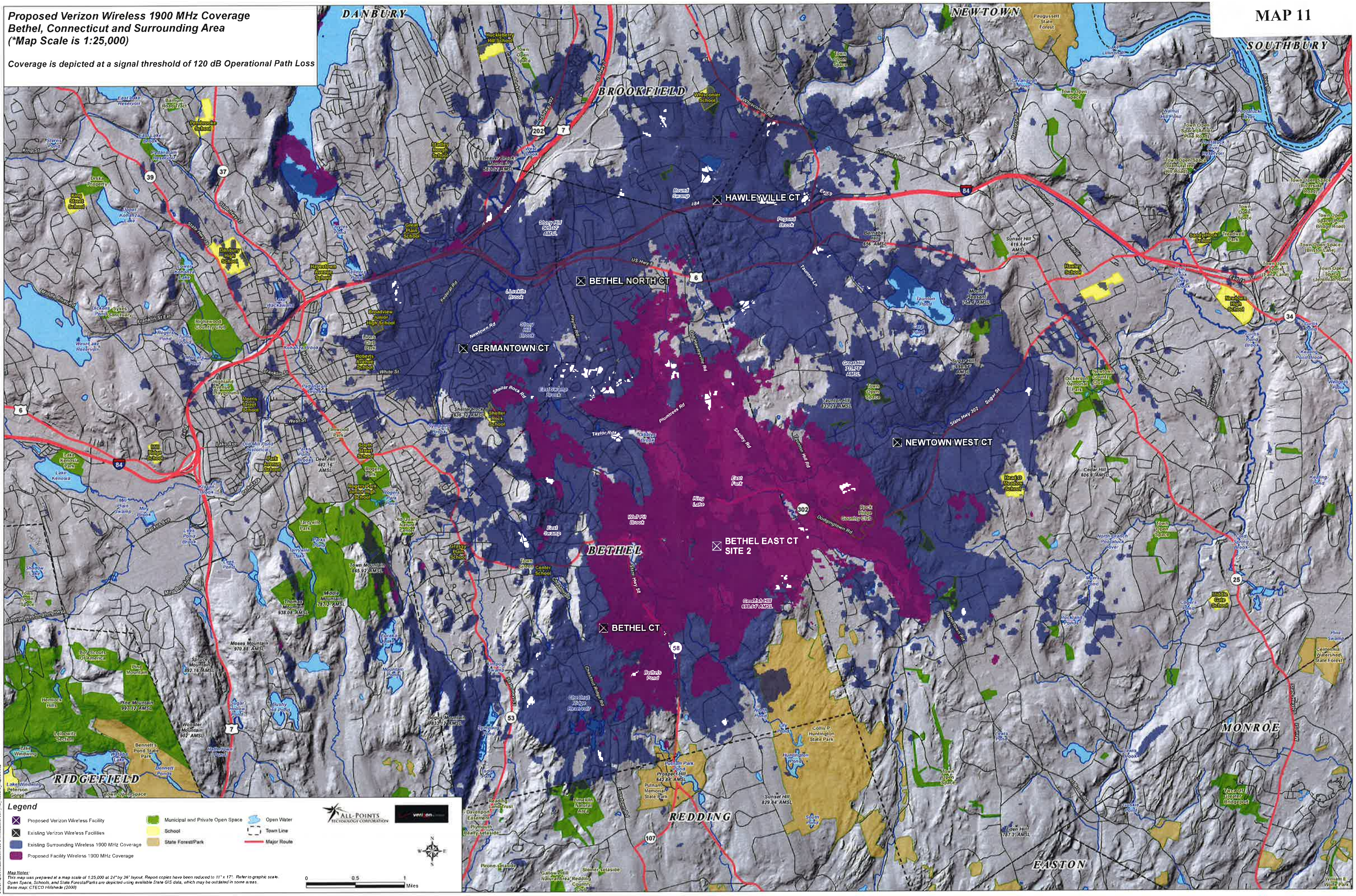
Base map: CTECO Hillshade (2000)
0
0.5
1
Miles

MAP 11

Proposed Verizon Wireless 1900 MHz Coverage
Bethel, Connecticut and Surrounding Area
(*Map Scale is 1:25,000)

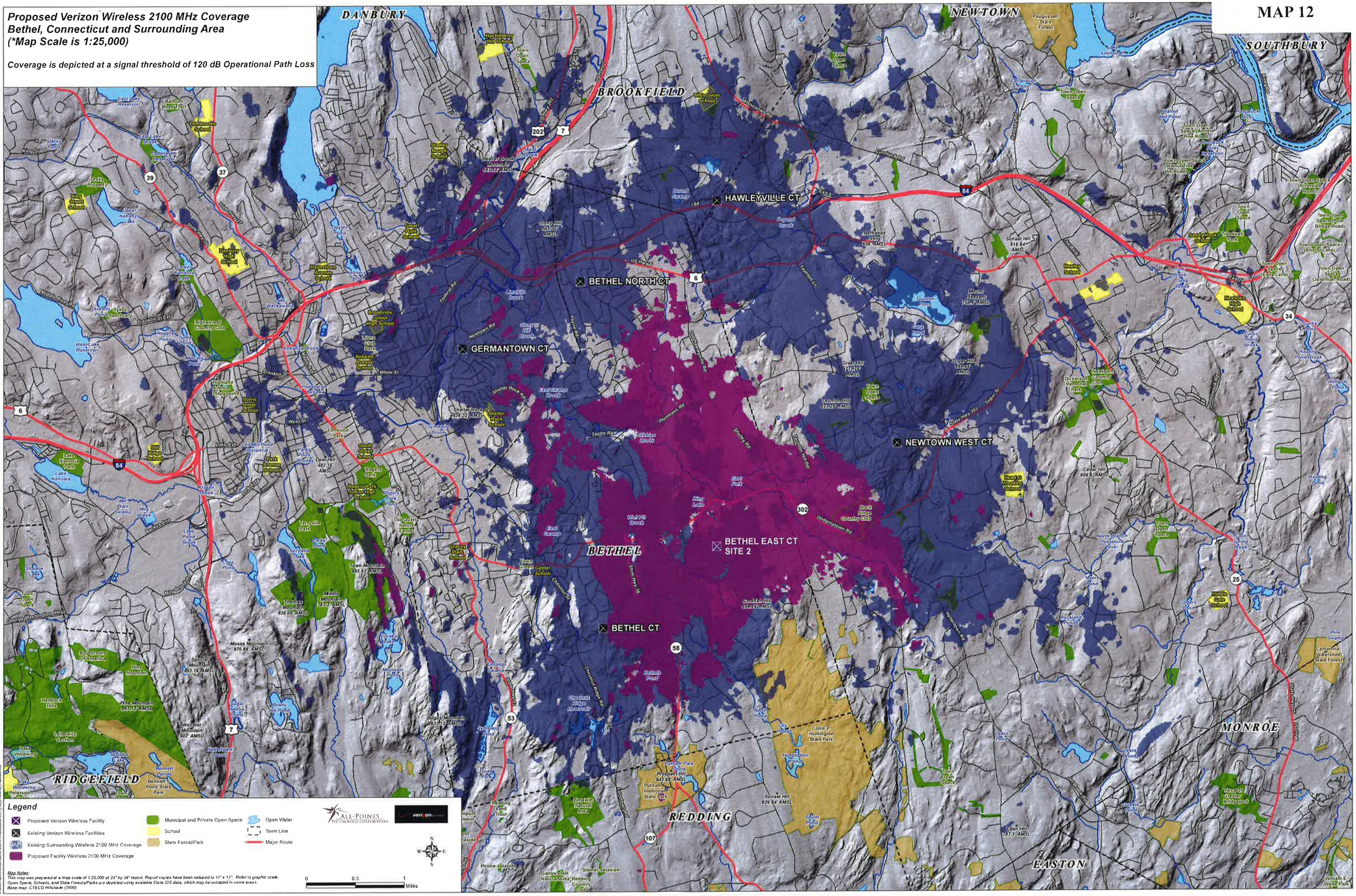
Coverage is depicted at a signal threshold of 120 dB Operational Path Loss


DANBURY
NEWTOWN
SOUTHBURY
BROOKFIELD
BETHEL
RIDGEFIELD
REDDING
MONROE
EASTON
HAWLEYVILLE CT
BETHEL NORTH CT
GERMANTOWN CT
NEWTOWN WEST CT
BETHEL EAST CT
SITE 2
BETHEL CT
Legend
Proposed Verizon Wireless Facility
Existing Verizon Wireless Facilities
Existing Surrounding Wireless 1900 MHz Coverage
Proposed Facility Wireless 1900 MHz Coverage
Municipal and Private Open Space
School
State Forest/Park
Open Water
Town Line
Major Route
ALL-POINTS
TECHNOLOGY CORPORATION
Miles

MAP 12

Proposed Verizon Wireless 2100 MHz Coverage
Bethel, Connecticut and Surrounding Area
(*Map Scale is 1:25,000)

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



DANBURY
NEWTOWN
SOUTHBURY
BROOKFIELD
HAWLEYVILLE CT
BETHEL NORTH CT
GERMANTOWN CT
NEWTOWN WEST CT
BETHEL EAST CT
SITE 2
BETHEL
BETHEL CT
MONROE
RIDGEFIELD
REDDING
EASTON
Legend
Proposed Verizon Wireless 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
verizon
Miles

ATTACHMENT 2

Site Name: BETHEL EAST, CT (Location 1)
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	1667	1667	140	0.0306	1.0	3.06%
VZW Cellular	869	9	420	3780	140	0.0694	0.579333333	11.97%
VZW AWS	2145	1	1750	1750	140	0.0321	1.0	3.21%
VZW 700	746	1	745	745	140	0.0137	0.497333333	2.75%
Total Percentage of Maximum Permissible Exposure								20.99%

*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.

Site Name: BETHEL EAST, CT (Location 2)
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	1667	1667	160	0.0234	1.0	2.34%
VZW Cellular	869	9	407	3663	160	0.0515	0.579333333	8.88%
VZW AWS	2145	1	1750	1750	160	0.0246	1.0	2.46%
VZW 700	746	1	745	745	160	0.0105	0.497333333	2.10%
Total Percentage of Maximum Permissible Exposure								15.79%

*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.