

STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL

IN RE: :  
 :  
 :  
 APPLICATION OF HOMELAND TOWERS, : DOCKET NO. 509  
 LLC AND NEW CINGULAR WIRELESS :  
 PCS, LLC FOR A CERTIFICATE OF :  
 ENVIRONMENTAL COMPATIBILITY :  
 AND PUBLIC NEED FOR THE :  
 CONSTRUCTION, MAINTENANCE AND :  
 OPERATION OF A WIRELESS TELE- :  
 COMMUNICATIONS FACILITY :  
 LOCATED AT 1837 PONUS RIDGE ROAD, :  
 NEW CANAAN, CONNECTICUT : JUNE 2, 2022

**RESPONSES OF CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS  
TO CONNECTICUT SITING COUNCIL PRE-HEARING INTERROGATORIES**

On May 13, 2022, the Connecticut Siting Council (“Council”) issued Pre-Hearing Interrogatories to Cellco Partnership d/b/a Verizon Wireless (“Cellco”), relating to Petition No. 509. Below are Cellco’s responses.

**General**

**Question No. 1**

Provide details of the antennas and related equipment to be installed at the proposed facility.

**Response**

Cellco intends to install a total of nine (9) antennas and nine (9) remote radio heads (“RRH”) on a triangular antenna platform at the 95-foot level on the proposed Homeland tower. Copies of the antenna, RRH and generator specifications are included in Attachment 1. Cellco also intends to install two equipment cabinets, including a backup battery cabinet, a 30-kW propane fuel back-up generator and a 500-gallon propane tank within the fenced facility

compound.

Question No. 2

What is the estimated cost of Cellco's equipment, including installation?

Response

Cellco estimates the cost of its cell site radio equipment (\$150,000), back-up generator (\$25,000), Construction Contract and equipment installation (\$130,000), and miscellaneous electrical and fiber installation (\$25,000) at the proposed facility to be approximately \$330,000.

Question No. 3

How would the cost of Cellco's installation/colocation at the proposed site be recovered?

Response

The costs associated with providing Cellco customers with the nation's most reliable wireless service network, including the cost for development of network infrastructure (small cells and macro-cells), are paid for by the individuals, corporations and government entities that purchase Cellco's service.

**Site Search**

Question No. 4

When did Cellco commence a site search for this area? Identify the approximate center and radius of Cellco's site search area.

Response

Cellco established its New Canaan NW search ring in April of 2021. The center of the search ring was located at 41.170848857, -73.543140292 and had a radius of approximately one-half mile.

Question No. 5

Did Cellco examine other alternatives besides the proposed site? If yes, identify the locations and the reasons for their rejection.

Response

No. At the time Cellco established its search ring, it was aware that Homeland had completed its site search and entered into a lease agreement with the property owner at 1837 Ponus Ridge Road. Cellco quickly determined that the Homeland leased parcel would satisfy its wireless service objectives in the area and did not search for any additional alternative sites.

**Coverage/Capacity**

Question No. 6

How will the proposed site improve upon the existing wireless service in the area? Include data on roads in miles and the coverage area footprint in square miles.

Response

The need for significant wireless service improvements in northerly portions of New Canaan is well documented in Siting Council records, most recently in the Council's Docket No. 487, including comments from First Selectman Kevin Moynihan. As depicted on the coverage maps referenced below, Cellco currently has no reliable service in northwest New Canaan.

With antennas at the 95-foot level on the proposed Homeland tower site at 1837 Ponus Ridge Road will provided significant improvement to service in the area.

Street Name	700 MHz coverage in mi		850 MHz coverage in mi		1900 MHz coverage in mi		2100 MHz coverage in mi		3700 MHz coverage in mi	
	RSRP -85 dBm	RSRP -95 dBm	RSRP -85 dBm	RSRP -95 dBm	RSRP -85 dBm	RSRP -95 dBm	RSRP -85 dBm	RSRP -95 dBm	RSRP -85 dBm	RSRP -95 dBm
High Ridge Rd	1.43	2.9	1.3	1.7	0	0.9	0	0.85	0	0.85
Ponus Ridge Rd	2.5	3.73	2.23	3.5	0.1	0.8	0.05	0.3	0.05	0.3
West Rd	0.58	1.1	0.37	0.9	0	0	0	0	0	0
<b>Overall Coverage Footprint</b>	<b>4.24 Sq Mi</b>	<b>8.76 Sq Mi</b>	<b>2.83 Sq Mi</b>	<b>6.4 Sq Mi</b>	<b>0.19 Sq Mi</b>	<b>1.4 Sq Mi</b>	<b>0.14 Sq Mi</b>	<b>1.15 Sq Mi</b>	<b>0.24 Sq Mi</b>	<b>1.15 Sq Mi</b>

Question No. 7

What frequencies would be installed at the site? Would all frequencies provide both voice and data? Please explain.

Response

Cellco will deploy its 700 MHz, 850 MHz, 1900 MHz, 2100 MHz and 3700 MHz, frequencies at the New Canaan NW cell site. All frequencies would provide both voice and data services.

Question No. 8

What design thresholds are used for in-building and in-vehicle service?

Response

Cellco's design thresholds are Neg 95 dBm RSRP for in vehicle coverage and Neg 82 dBm RSRP for in in-building coverage.

Question No. 9

Provide coverage plots at select frequencies that includes Cellco's existing coverage in the area.

Response

Plots showing Cellco's existing wireless service in New Canaan are included in Attachment 2.

Question No. 10

Provide coverage plots at select frequencies that includes Cellco's existing and proposed coverage.

Response

Plots showing Cellco's existing wireless service together with the service from the proposed New Canaan NW facility are included in Attachment 3.

Question No. 11

Identify Cellco's adjacent sites with which the proposed facility would hand off signals. Include the address, antenna height, structure type, and the distance/direction to each site.

Response

Site ID	Site Name	Street Address	Latitude	Longitude	Antenna Centerline in feet	Structure Type	Distance from the NEW CANAAN NW CT and direction
65063	NEW CANAAN CT	39 Locust Ave., New Canaan, CT 06840	41.15	-73.5	45	Rooftop Facility	3.152 mi SE
65083	N STAMFORD CT	1590 Newfield Ave., Stamford, CT 06905	41.11	-73.5	143.5	Tower	4.082 mi S
65139	STAMFORD NW CT	366 Old Long Ridge Rd., Stamford, CT 06903	41.15	-73.6	98	Tower	2.866 mi W
78155	EAST WOODS	377 Smith Ridge Rd., Lewisboro, NY 10590	41.21	-73.5	123.6	Tower	3.297 mi NE
65230	SILVER HILL CT	208 Valley Rd., New Canaan, CT 06840	41.17	-73.5	106	Tower	3.832 mi E
78348	SOUTH POUND RIDGE_L	89 Westchester Avenue, Pound Ridge, NY 10576	41.19	-73.6	100	Tower	1.483 mi N

Question No. 12

Would the site be able to provide 5G services? If yes, at what frequencies?

Response

Yes. Cellco's 5G wireless services will utilize its 850MHz frequency in combination with 2100 MHz frequency using carrier aggregation initially and 3700 MHz frequency for future 5G technologies.

Question No. 13

Would the site provide capacity relief at adjacent Cellco facilities? If yes, identify the Cellco facilities and the frequencies and sectors at or near exhaustion that would benefit from capacity relief.

Response

For reasons evident on the coverage plots included in Attachment 2, the New Canaan NW Facility is primarily a “coverage” site. The proposed facility would, however, provide capacity relief to Cellco’s adjacent Stamford NW cell site, Beta sector antennas.

Question No. 14

What is the lowest height at which Cellco’s antennas could achieve its wireless service objectives from the proposed facility?

Response

The lowest antenna height at which Cellco can achieve its coverage objectives is 95 feet. Going lower on the proposed Homeland tower would result in a reduction of the overall coverage footprint, especially at the higher frequencies (1900MHz, 2100MHz).

**Backup Power**

Question No. 15

Identify Cellco’s emergency backup power source. Include fuel type, fuel storage capacity and estimated runtime of the backup power source before it would require refueling.

Response

Cellco intends to install a 30-kW propane-fueled generator and a 500-gallon propane tank at the proposed tower site. Under normal loading conditions, the proposed 30-kW generator could operate for approximately 120 to 168 hours before refueling would be necessary.

Question No. 16

Would a battery backup (if applicable) be used by Cellco to provide uninterrupted power and prevent a reboot condition? How long could the battery backup alone supply power to the facility?

Response

Yes, Cellco's proposed battery backup battery system would provide uninterrupted power to the cell site and prevent a reboot condition. The backup battery system is designed to keep the cell site operating for up to four (4) hours.

**Public Safety**

Question No. 17

Would Cellco's equipment support text-to-911 service? Is additional equipment required for this purpose?

Response

Yes.

Question No. 18

Would Cellco's antennas comply with federal E911 requirements?

Response

Yes.

Question No. 19

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

Response

Yes.



CERTIFICATE OF SERVICE

I hereby certify that on the 2<sup>nd</sup> day of June, 2022, a copy of the foregoing was sent, via electronic mail, to:

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Kenneth C. Baldwin

# **ATTACHMENT 1**

# MX10FRO840-xx

## NWAV™ X-Pol Ten-Port Antenna

**X-Pol Ten-Port 8 ft, 40° Fast Roll Off, with Smart Bias Ts, 698-4200 MHz:**

**2 ports 698-894 MHz, 4 ports 1695-2180 MHz, and 4 ports 3400-4200 MHz**

- Fast Roll Off (FRO™) azimuth beam pattern improves Intra- and Inter-cell SINR
- Excellent passive intermodulation (PIM) performance reduces harmful interference.
- Fully integrated (iRETs) with independent RET control for low band and mid band
- FET configured with internal RET for high band & ease of future network optimization.
- SON-Ready array spacing supports beamforming capabilities
- Suitable for 3G, 4G, and 5G interface technologies
- Integrated Smart Bias-Ts reduce leasing costs



### Fast Roll-Off antennas increase data throughput without compromising coverage

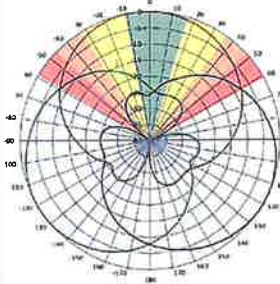
The horizontal beam produced by Fast Roll-Off (FRO) technology increases the Signal to Interference & Noise Ratio (SINR) by eliminating overlap between sectors.

#### Non-FRO antenna

Large traditional antenna pattern overlap creates harmful interference.

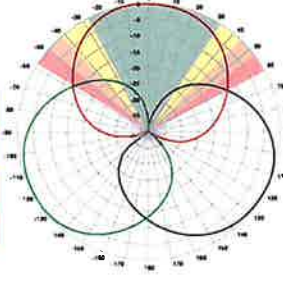
JMA's FRO antenna pattern minimizes overlap, thereby minimizing interference.

#### JMA FRO antenna



LTE throughput	SINR	Speed (bps/Hz)	Speed increase	CQI
Excellent	>19	>4.5	333+%	6-10
Good	15-18	3.3-4.5	277%	6-7
Fair	10-15	2-3.3	500%	4-5
Poor	<10	<2	0%	1-3

The LTE radio automatically selects the best throughput based on measured SINR.



Electrical specification (minimum/maximum)	Ports 1, 2		Ports 3, 4, 5, 6		
Frequency bands, MHz	698-798	824-894	1695-1880	1850-1990	1920-2180
Polarization	± 45°		± 45°		
Average gain over all tilts, dBi	17.4	17.8	18.9	19.6	20.2
Horizontal beamwidth (HBW), degrees <sup>1</sup>	44	40	39	36	34
Front-to-back ratio, co-polar power @180°± 30°, dB	>22.0	>22.0	>25.0	>25.0	>25.0
X-Pol discrimination (CPR) at boresight, dB	>21.0	>19.0	>18	>19	>20
Vertical beamwidth (VBW), degrees <sup>1</sup>	9.6	8.7	5.8	5.7	5.3
Electrical downtilt (EDT) range, degrees	2-12		0-9		
First upper side lobe (USLS) suppression, dB <sup>1</sup>	≤-18.0	≤-19.0	≤-16.0	≤-16.0	≤-16.0
Cross-polar isolation, port-to-port, dB <sup>1</sup>	25	25	25	25	25
Max VSWR / return loss, dB	1.5:1 / -14.0		1.5:1 / -14.0		
Max passive intermodulation (PIM), 2x20W carrier, dBc	-153		-153		
Max input power per any port, watts	300		250		
Total composite power all ports (1-10), watts	1500				

<sup>1</sup> Typical value over frequency and tilt



**MX10FRO840-xx**  
**NWAV™ X-Pol Ten-Port Antenna**

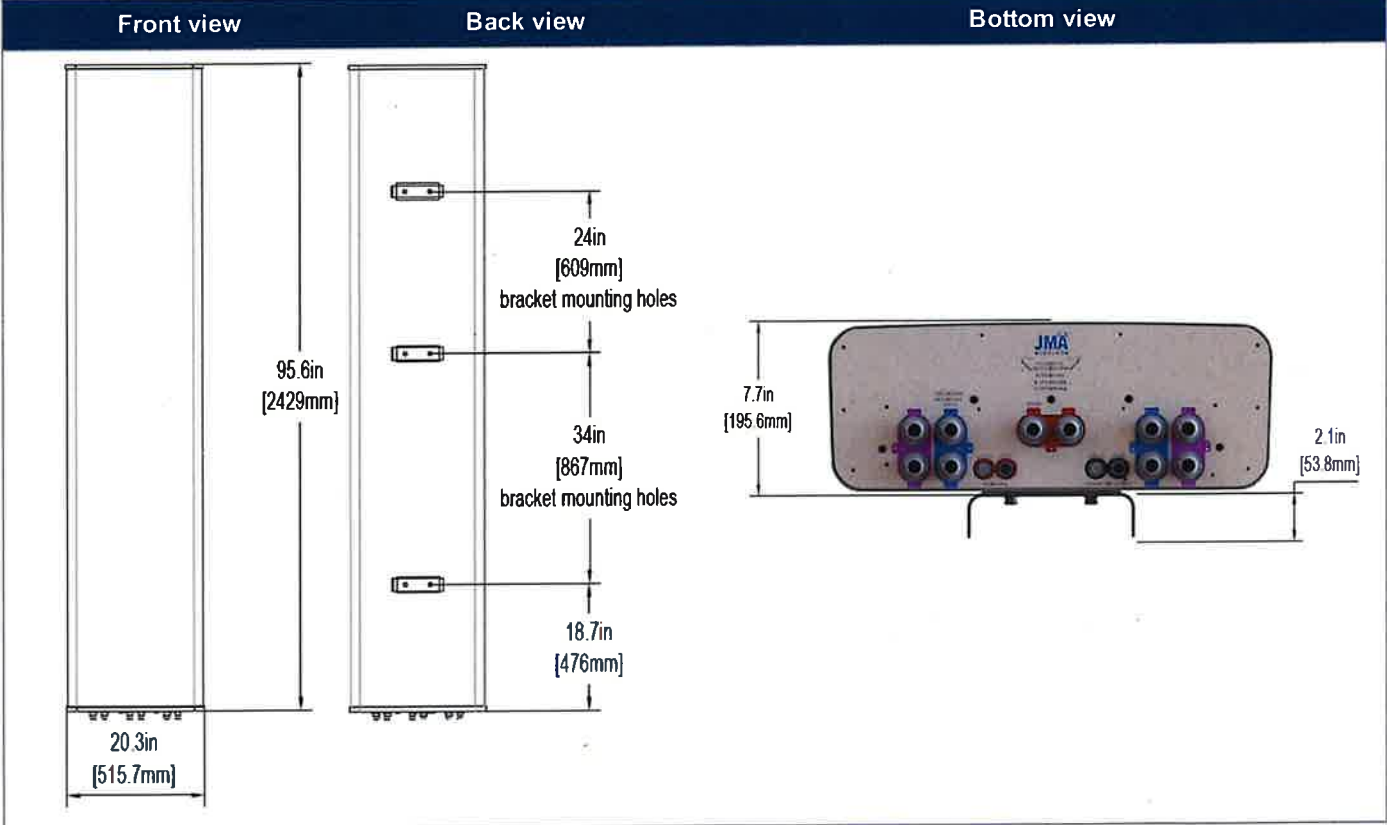
Electrical specification (minimum/maximum)	Ports 7, 8, 9, 10			
Frequency bands, MHz	3400-3550	3550-3700	3700-3950	3950-4200
Polarization	± 45°			
Average gain over all tilts, dBi	17.2	17.4	17.6	17.8
Horizontal beamwidth (HBW), degrees	44	42	40	39
Front-to-back ratio, co-polar power @180°± 30°, dB	>25	>25	>25	>25
Vertical beamwidth (VBW), degrees <sup>1</sup>	9.0	8.8	8.6	8.2
Electrical downtilt (EDT) range, degrees	2-12 orderable in 1 deg increments			
First upper side lobe (USLS) suppression, dB <sup>1</sup>	≤-16	≤-15	≤-16	≤-15
Cross-polar isolation, port-to-port, dB <sup>1</sup>	25	25	25	25
Max VSWR / return loss, dB	1.5:1 / -14.0			
Max input power per any port, watts	200			
Total composite power all ports (1-10), watts	1500			

<sup>1</sup> Typical value over frequency and tilt

\* For ports 7-10, the electrical downtilt is FET configured with internal RET, where the required electrical downtilt is defined at the time of order per the ordering information below.

Ordering information	
<b>Antenna model</b>	<b>Description</b>
MX10FRO840-xx (xx represents the FET in one degree increments for 3.4-4.2 GHz)	8F X- Pol 10 Port FRO 40° 2-12°/ 0-9°/ 2-12°, 4.3-10 & SBTs xx=02 thru 12 for each 1 degree tilt 3.4-4.2GHz Examples: MX10FRO840-02 – 2deg, MX10FRO840-09 – 9deg, MX10FRO840-12-12deg
<b>Optional accessories</b>	
<a href="#">AISG cables</a>	M/F cables for AISG connections
<a href="#">PCU-1000 RET controller</a>	Stand-alone controller for RET control and configurations
<a href="#">91900314-03</a>	Dual Mount Bracket (see 91900314 bracket document for details)

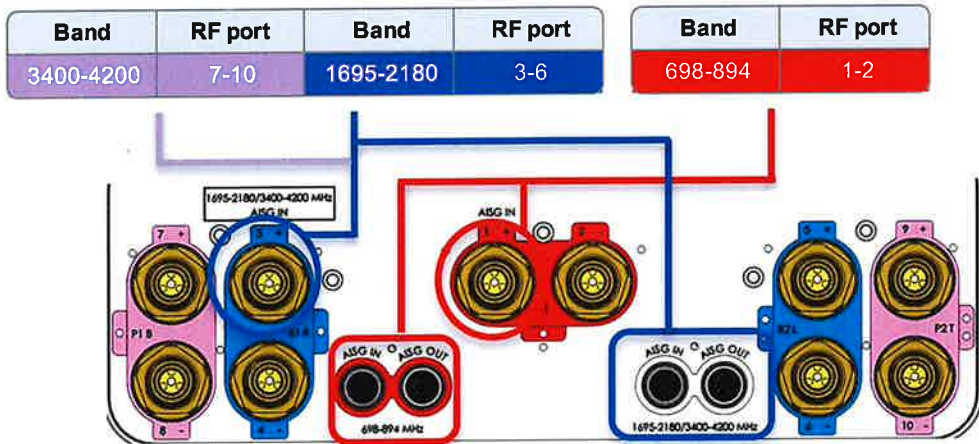
Mechanical specifications	
Dimensions height/width/depth, inches (mm)	95.6/ 20.3/ 7.7 (2429/ 515.7/ 195.6)
Shipping dimensions length/width/height, inches (mm)	100.6/ 23.8/ 14.5(2555/ 605/ 368)
No. of RF input ports, connector type, and location	10 x 4.3-10 female, bottom
RF connector torque	96 lbf·in (10.85 N·m or 8 lbf·ft)
Net antenna weight, lb (kg)	92 (41.7)
Shipping weight, lb (kg)	146.9 (66.6)
Antenna mounting and downtilt kit included with antenna	91900318, 91900319 (middle bracket)
Net weight of the mounting and downtilt kit, lb (kg)	29 (13.1)
Range of mechanical up/down tilt	-2° to 12°
Rated wind survival speed, mph (km/h)	150 (241)
Frontal, lateral, and rear wind loading @ 150 km/h, lbf (N)	247.4 (1101), 55.3 (246), 373.7 (1662)
Equivalent flat plate @ 100 mph and Cd=2, sq ft	4.98



Remote electrical tilt (RET 1000) information	
RET location	Integrated into antenna
RET interface connector type	8-pin AISG connector per IEC 60130-9 or RF port bias-t
RET connector torque	Min 0.5 N·m to max 1.0 N·m (hand pressure & finger tight)
RET interface connector quantity	2 pairs of AISG male/female connectors and 2 RF port Bias Ts
RET interface connector location	Bottom of the antenna
Total no. of internal RETs 698-894 MHz	1
Total no. of internal RETs 1695-2180 MHz	1
Total no. of internal RETs 3400-4200 MHz	1
RET input operating voltage, vdc	10-30
RET max power consumption, idle state, W	≤ 2.0
RET max power consumption, normal operating conditions, W	≤ 13.0
RET communication protocol	AISG 2.0 / 3GPP

**RET and RF connector topology**

Each RET device can be controlled either via the designated external AISG connector or RF smart bias-t port as shown below:



Note: The RET Device for 3400-4200 MHz is connected via the 1695-2180 Port 3 Bias T port or 1695-2180/3400-4200 MHz AISG ports.

Array topology														
5 sets of radiating arrays														
R1: 698-894 MHz														
B1: 1695-2180 MHz														
B2: 1695-2180 MHz														
P1: 3400-4200 MHz														
P2: 3400-4200 MHz														
	<table border="1"> <thead> <tr> <th>Band</th> <th>RF port</th> </tr> </thead> <tbody> <tr> <td>698-894</td> <td>1-2</td> </tr> <tr> <td>1695-2180</td> <td>3-4</td> </tr> <tr> <td>1695-2180</td> <td>5-6</td> </tr> <tr> <td>3400-4200</td> <td>7-8</td> </tr> <tr> <td>3400-4200</td> <td>9-10</td> </tr> </tbody> </table>	Band	RF port	698-894	1-2	1695-2180	3-4	1695-2180	5-6	3400-4200	7-8	3400-4200	9-10	
Band	RF port													
698-894	1-2													
1695-2180	3-4													
1695-2180	5-6													
3400-4200	7-8													
3400-4200	9-10													

# MX10FRO860-xx

## NWAV™ X-Pol Ten-Port Antenna

**X-Pol Ten-Port 8 ft, 60° Fast Roll Off, with Smart Bias Ts, 698-4200 MHz:**

**2 ports 698-894 MHz, 4 ports 1695-2180 MHz, and 4 ports 3400-4200 MHz**

- Fast Roll Off (FRO™) azimuth beam pattern improves Intra- and Inter-cell SINR
- Excellent passive intermodulation (PIM) performance reduces harmful interference.
- Fully integrated (iRETs) with independent RET control for low band and mid band
- FET configured with internal RET for high band & ease of future network optimization.
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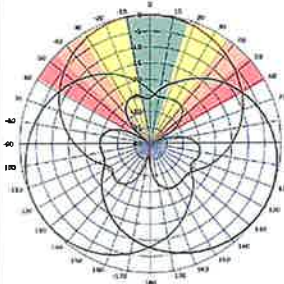
The horizontal beam produced by Fast Roll-Off (FRO) technology increases the Signal to Interference & Noise Ratio (SINR) by eliminating overlap between sectors.

#### Non-FRO antenna

Large traditional antenna pattern overlap creates harmful interference.

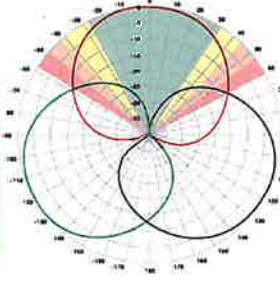
JMA's FRO antenna pattern minimizes overlap, thereby minimizing interference.

#### JMA FRO antenna



LTE throughput	SINR	Speed (bps/Hz)	Speed increase	CQI
Excellent	>18	>4.5	333+%	8-10
Good	15-18	3.3-4.5	277%	6-7
Fair	10-15	2.0-3.0	133%	4-5
Poor	<10	<2	0%	1-3

The LTE radio automatically selects the best throughput based on measured SINR.



Electrical specification (minimum/maximum)	Ports 1, 2		Ports 3, 4, 5, 6		
Frequency bands, MHz	698-798	824-894	1695-1880	1850-1990	1920-2180
Polarization	± 45°		± 45°		
Average gain over all tilts, dBi	15.9	16.2	17.4	17.9	18.0
Horizontal beamwidth (HBW), degrees <sup>1</sup>	61.0	57.0	58.0	55.0	55.5
Front-to-back ratio, co-polar power @180°± 30°, dB	>22.0	>21.0	>25.0	>25.0	>25.0
X-Pol discrimination (CPR) at boresight, dB	>15.0	>15.0	>15	>15	>15
Vertical beamwidth (VBW), degrees <sup>1</sup>	9.5	8.5	5.7	5.3	5.1
Electrical downtilt (EDT) range, degrees	2-12		0-9		
First upper side lobe (USLS) suppression, dB <sup>1</sup>	≤-15.0	≤-15.0	≤-16.0	≤-16.0	≤-16.0
Cross-polar isolation, port-to-port, dB <sup>1</sup>	25	25	25	25	25
Max VSWR / return loss, dB	1.5:1 / -14.0		1.5:1 / -14.0		
Max passive intermodulation (PIM), 2x20W carrier, dBc	-153		-153		
Max input power per any port, watts	300		250		
Total composite power all ports (1-10), watts	1500				

<sup>1</sup> Typical value over frequency and tilt



# MX10FRO860-xx

## NWAV™ X-Pol Ten-Port Antenna

Electrical specification (minimum/maximum)	Ports 7, 8, 9, 10			
Frequency bands, MHz	3400-3550	3550-3700	3700-3950	3950-4200
Polarization	± 45°			
Average gain over all tilts, dBi	16.6	16.8	17.5	17.5
Horizontal beamwidth (HBW), degrees	64	62	60	58
Front-to-back ratio, co-polar power @180°± 30°, dB	>25	>25	>25	>24
Vertical beamwidth (VBW), degrees <sup>1</sup>	9.0	8.2	7.7	7.2
Electrical downtilt (EDT) range, degrees	2-12 orderable in 1 deg increments			
First upper side lobe (USLS) suppression, dB <sup>1</sup>	≤-15	≤-15	≤-15	≤-15
Cross-polar isolation, port-to-port, dB <sup>1</sup>	25	25	25	25
Max VSWR / return loss, dB	1.5:1 / -14.0			
Max input power per any port, watts	200			
Total composite power all ports (1-10), watts	1500			

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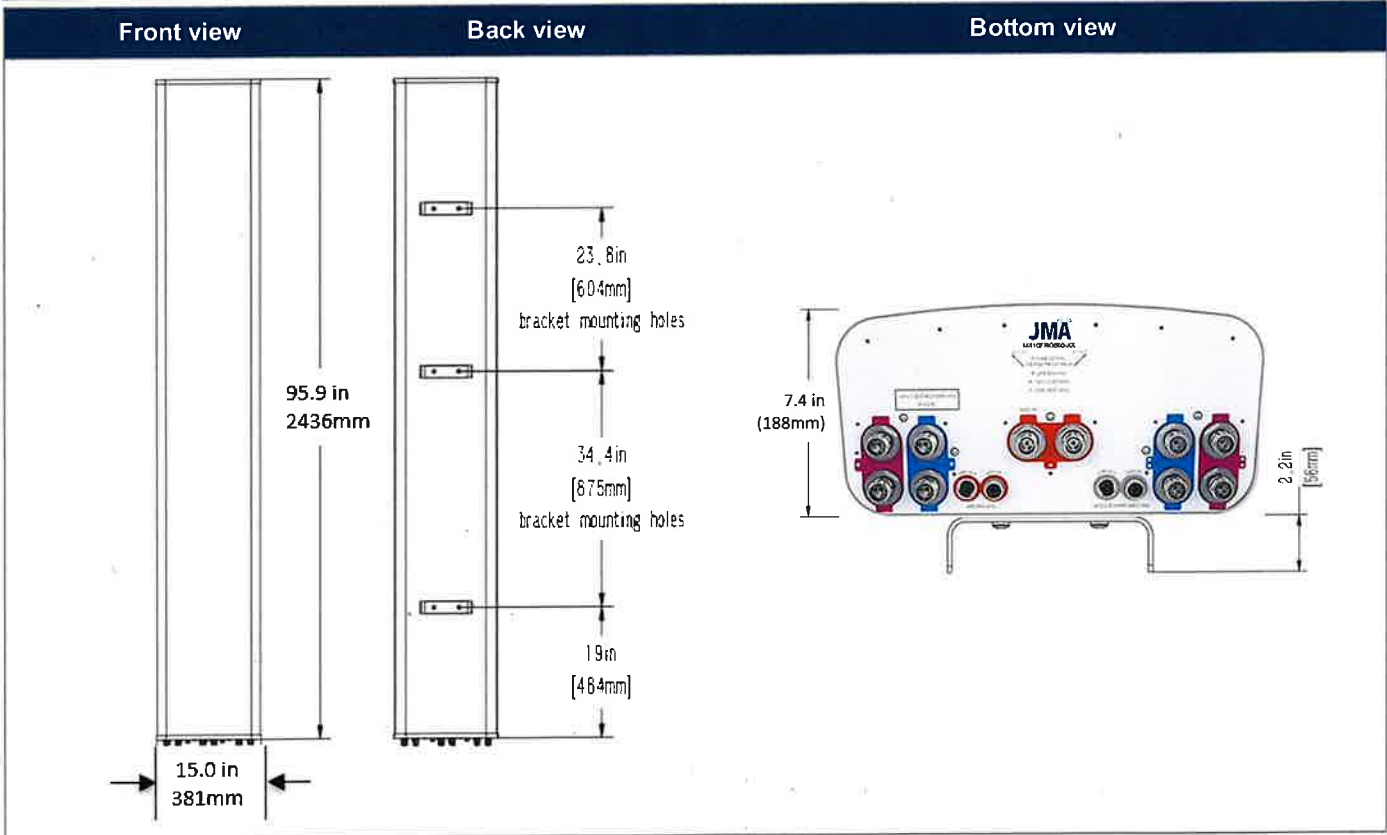
\* For ports 7-10, the electrical downtilt is FET configured with internal RET, where the required electrical downtilt is defined at the time of order per the ordering information below.

Ordering information	
Antenna model	Description
MX10FRO860-xx (xx represents the FET in one degree increments for 3.4-4.2 GHz)	8F X- Pol 10 Port FRO 60° 2-12°/ 0-9°/ 2-12°, 4.3-10 & SBTs xx=02 thru 12 for each 1 degree tilt 3.4-4.2 GHz Examples: MX10FRO860-02 – 2deg, MX10FRO860-09 – 9deg, MX10FRO860-12-12deg
Optional accessories	
<a href="#">AISG cables</a>	M/F cables for AISG connections
<a href="#">PCU-1000 RET controller</a>	Stand-alone controller for RET control and configurations
<a href="#">91900314-03</a>	Dual Mount Bracket (see 91900314 bracket document for details)



### Mechanical specifications

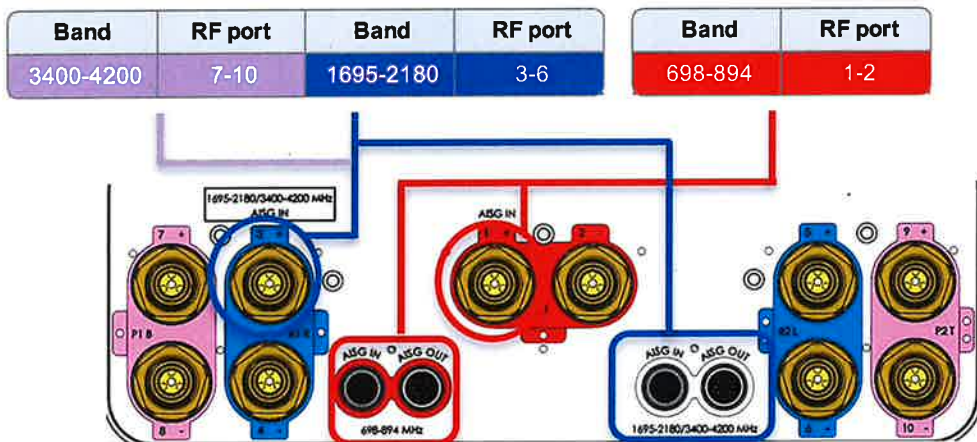
Dimensions height/width/depth, inches (mm)	95.9/ 15.0/ 7.4 (2436/ 381.0/ 188.0)
Shipping dimensions length/width/height, inches (mm)	106/ 20/ 14.5 (2692/ 508/ 368)
No. of RF input ports, connector type, and location	10 x 4.3-10 female, bottom
RF connector torque	96 lbf-in (10.85 N·m or 8 lbf-ft)
Net antenna weight, lb (kg)	66.0 (29.9)
Shipping weight, lb (kg)	119.9 (54.5)
Antenna mounting and downtilt kit included with antenna	91900318, 91900319 (middle bracket)
Net weight of the mounting and downtilt kit, lb (kg)	26 (11.82)
Range of mechanical up/down tilt	-2° to 12°
Rated wind survival speed, mph (km/h)	150 (241)
Frontal, lateral, and rear wind loading @ 150 km/h, lbf (N)	114.5 (509.9), 32.5 (144.7), 124.3 (553.6)
Equivalent flat plate @ 100 mph and Cd=2, sq ft	2.63



Remote electrical tilt (RET 1000) information	
RET location	Integrated into antenna
RET interface connector type	8-pin AISG connector per IEC 60130-9 or RF port bias-t
RET connector torque	Min 0.5 N·m to max 1.0 N·m (hand pressure & finger tight)
RET interface connector quantity	2 pairs of AISG male/female connectors and 2 RF port bias-ts
RET interface connector location	Bottom of the antenna
Total no. of internal RETs 698-894 MHz	1
Total no. of internal RETs 1695-2180 MHz	1
Total no. of internal RETs 3400-4200 MHz	1
RET input operating voltage, vdc	10-30
RET max power consumption, idle state, W	≤ 2.0
RET max power consumption, normal operating conditions, W	≤ 13.0
RET communication protocol	AISG 2.0 / 3GPP

### RET and RF connector topology

Each RET device can be controlled either via the designated external AISG connector or RF smart bias-t port as shown below:



Note: The RET Device for 3400-4200 MHz is connected via the 1695-2180 Port 3 Bias T port or 1695-2180/3400-4200 MHz AISG ports.

### Array topology

5 sets of radiating arrays R1: 698-894 MHz B1: 1695-2180 MHz B2: 1695-2180 MHz P1: 3400-4200 MHz P2: 3400-4200 MHz	<table border="1"> <thead> <tr> <th>Band</th> <th>RF port</th> </tr> </thead> <tbody> <tr> <td>698-894</td> <td>1-2</td> </tr> <tr> <td>1695-2180</td> <td>3-4</td> </tr> <tr> <td>1695-2180</td> <td>5-6</td> </tr> <tr> <td>3400-4200</td> <td>7-8</td> </tr> <tr> <td>3400-4200</td> <td>9-10</td> </tr> </tbody> </table>	Band	RF port	698-894	1-2	1695-2180	3-4	1695-2180	5-6	3400-4200	7-8	3400-4200	9-10	
	Band	RF port												
698-894	1-2													
1695-2180	3-4													
1695-2180	5-6													
3400-4200	7-8													
3400-4200	9-10													

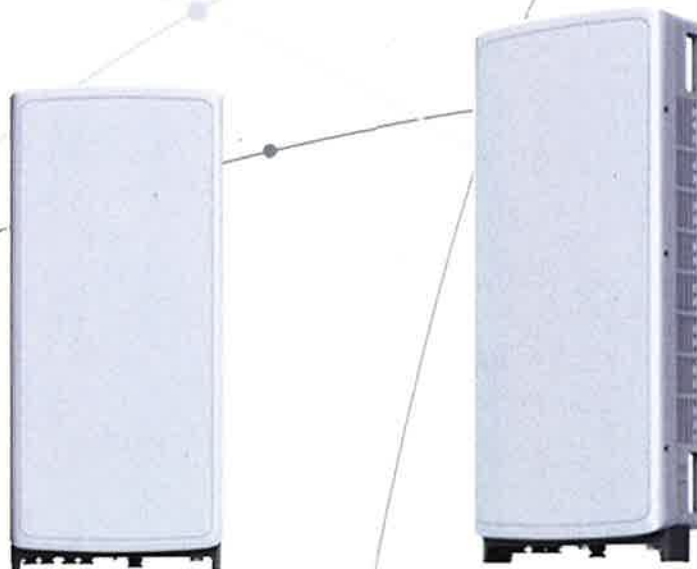
**SAMSUNG**

# **SAMSUNG** C-Band 64T64R Massive MIMO Radio

for High Capacity and Wide Coverage

Samsung C-Band 64T64R Massive MIMO Radio enables mobile operators to increase coverage range, boost data speeds and ultimately offer enriched 5G experiences to users in the U.S..

Model Code : MT6407-77A



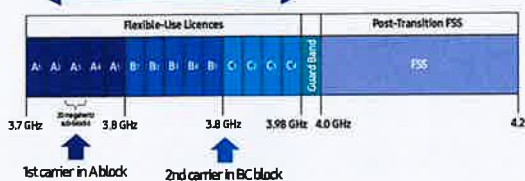
## Points of Differentiation

### Wide Bandwidth

With capability to support up to 2 CC carrier configuration, Samsung C-Band massive MIMO Radio supports 200 MHz bandwidth in the C-Band spectrum.

Samsung C-Band massive MIMO Radio covers the entire C-Band 280 MHz spectrum, so it can meet the operator's needs in current A block and future B/C blocks

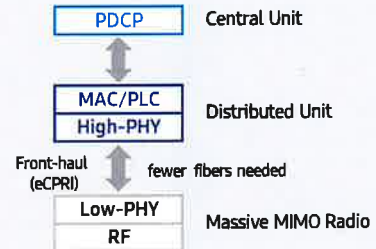
C-Band spectrum supported by Massive MIMO Radio



### Future Proof Product

Samsung C-Band 64T64R Massive MIMO radio supports not only CPRI but also eCPRI as front-haul interface.

It enables operators can cut down on OPEX/CAPEX by reducing front-haul bandwidth through low layer split and using ethernet based higher efficient line.



### Enhanced Performance

C-Band massive MIMO Radio creates sharp beams and extends networks' coverage on the critical mid-band spectrum using a large number of antenna elements and high output power to boost data speeds.

This helps operators reduce their CAPEX as they now need less products to cover the same area than before.

Furthermore, as C-Band massive MIMO Radio supports MU-MIMO (Multi-user MIMO), it enables to increase user throughput by minimizing interference.



### Well Matched Design

Samsung C-Band Massive MIMO radio utilizes 64 antennas, supports up to 280MHz bandwidth, and delivers a 200W output power. despite the above advanced performance, the Radio has a compact size of 50.9L and 79.4lbs. This makes it easy to install the Radio.

It is designed to look solid and compact, with a low profile appearance so that, when installed, harmonizes well with the surrounding environment.



## Technical Specifications

Item	Specification
Tech	NR
Band	n77
Frequency Band	3700 - 3980 MHz
EIRP	78.5dBm (53.0 dBm+25.5 dBi)
IBW/OBW	280 MHz / 200 MHz
Installation	Pole/Wall
Size/Weight	16.06 x 35.06 x 5.51 inch (50.86L)/ 79.4 lbs



# SAMSUNG

The background of the page features several thin, light blue curved lines that sweep across the space, creating a sense of motion and modernity. These lines are scattered across the page, with some intersecting and others remaining parallel.

## **About Samsung Electronics Co., Ltd.**

Samsung inspires the world and shapes the future with transformative ideas and technologies. The company is redefining the worlds of TVs, smartphones, wearable devices, tablets, digital appliances, network systems, and memory, system LSI, foundry and LED solutions.

129 Samsung-ro, Yeongtong-gu, Suwon-si Gyeonggi-do, Korea

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# SAMSUNG

## 700/850MHZ MACRO RADIO

### DUAL-BAND AND HIGH POWER FOR MACRO COVERAGE

Samsung's future proof dual-band radio is designed to help effectively increase the coverage areas in wireless networks. This 700/850MHz 4T4R dual-band radio has 4Tx/4Rx to 2Tx/2Rx RF chains options and a total output power of 320W; making it ideal for macro sites.

**Model Code** RF4440d-13A



Homepage  
[samsungnetworks.com](http://samsungnetworks.com)

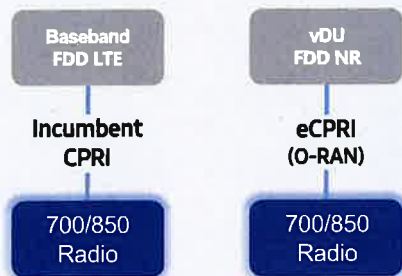


Youtube  
[www.youtube.com/samsung5g](http://www.youtube.com/samsung5g)

## Points of Differentiation

### Continuous Migration

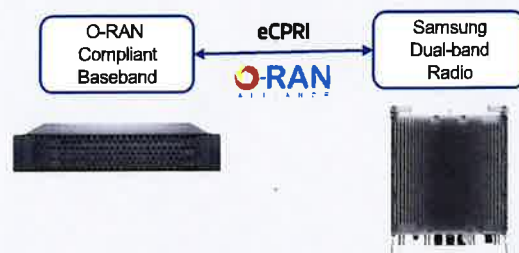
Samsung's 700/850MHz macro radio can support each incumbent CPRI interface as well as an advanced eCPRI interface. This feature provides installable options for both legacy LTE networks and added NR networks.



### O-RAN Compliant

A standardized O-RAN radio can help when implementing cost-effective networks because it is capable of sending more data without compromising additional investments.

Samsung's state-of-the-art O-RAN technology will help accelerate the effort toward constructing a solid O-RAN ecosystem.



### Optimum Spectrum Utilization

The number of required carriers varies according to site (region). The ability to support many carriers is essential for using all frequencies that the operator has available.

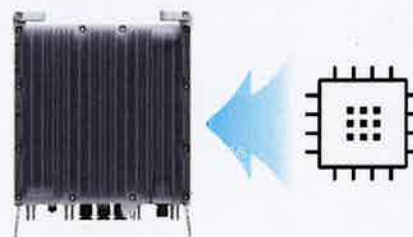
The new 700/850MHz dual-band radio can support up to 2 carriers in the B13 (700MHz) band and 3 carriers in the B5 (850MHz) band, respectively.



### Secured Integrity

Access to sensitive data is allowed only to authorized software.

The Samsung radio's CPU can protect root of trust, which is credential information to verify SW integrity, and secure storage provides access control to sensitive data by using dedicated hardware (TPM).



## Technical Specifications

Item	Specification
Tech	LTE / NR
Brand	B13(700MHz), B5(850MHz)
Frequency Band	DL: 746 – 756MHz, UL: 777 – 787MHz DL: 869 – 894MHz, UL: 824 – 849MHz
RF Power	(B13) 4 × 40W or 2 × 60W (B5) 4 × 40W or 2 × 60W
IBW/OBW	(B13) 10MHz / 10MHz (B5) 25MHz / 25MHz
Installation	Pole, Wall
Size/Weight	14.96 x 14.96 x 9.05inch (33.2L) / 70.33 lb

**SAMSUNG**

# AWS/PCS MACRO RADIO

DUAL-BAND AND HIGH POWER  
FOR MACRO COVERAGE

Samsung's future proof dual-band radio is designed to help effectively increase the coverage areas in wireless networks. This AWS/PCS 4T4R dual-band radio has 4Tx/4Rx to 2Tx/2Rx RF chains options and a total output power of 320W, making it ideal for macro sites.

**Model Code** RF4439d-25A



**Homepage**  
[samsungnetworks.com](http://samsungnetworks.com)



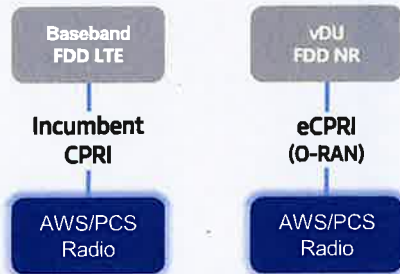
**Youtube**  
[www.youtube.com/samsung5g](http://www.youtube.com/samsung5g)



## Points of Differentiation

### Continuous Migration

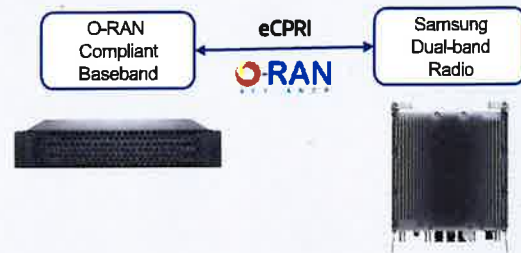
Samsung's AWS/PCS macro radio can support each incumbent CPRI interface as well as advanced eCPRI interfaces. This feature provides installable options for both legacy LTE networks and added NR networks.



### O-RAN Compliant

A standardized O-RAN radio can help in implementing cost-effective networks, which are capable of sending more data without compromising additional investments.

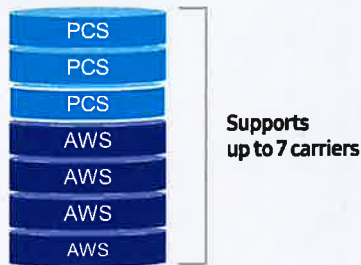
Samsung's state-of-the-art O-RAN technology will help accelerate the effort toward constructing a solid O-RAN ecosystem.



### Optimum Spectrum Utilization

The number of required carriers varies according to site (region). Supporting many carriers is essential for using all frequencies that the operator has available.

The new AWS/PCS dual-band radio can support up to 3 carriers in the PCS (1.9GHz) band and 4 carriers in the AWS (2.1GHz) band, respectively.



### Brand New Features in a Compact Size

Samsung's AWS/PCS macro radio offers several features, such as dual connectivity for baseband for both CDU and vDU, O-RAN capability, more carriers and an enlarged PCS spectrum, combined into an incumbent radio volume of 36.8L.



## Technical Specifications

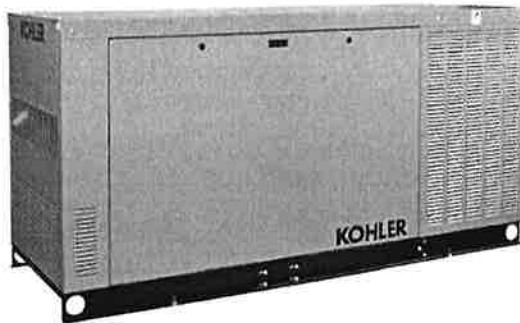
Item	Specification
Tech	LTE / NR
Brand	B25(PCS), B66(AWS)
Frequency Band	DL: 1930 – 1995MHz, UL: 1850 – 1915MHz DL: 2110 – 2200MHz, UL: 1710 – 1780MHz
RF Power	(B25) 4 × 40W or 2 × 60W (B66) 4 × 60W or 2 × 80W
IBW/OBW	(B25) 65MHz / 30MHz (B66) DL 90MHz, UL 70MHz / 60MHz
Installation	Pole, Wall
Size/Weight	14.96 x 14.96 x 10.04inch (36.8L) / 74.7lb



**EPA-Certified for Stationary  
Emergency Applications**

### Ratings Range

Standby:	kW	60 Hz
	kVA	30
		30-38



### The Kohler® Advantage

- **High Quality Power**  
Kohler generators provide advanced voltage and frequency regulation along with ultra-low levels of harmonic distortion for excellent generator power quality to protect your valuable electronics.
- **Extraordinary Reliability**  
Kohler is known for extraordinary reliability and performance and backs that up with a premium five-year or 2000 hour limited warranty.
- **All-Aluminum Sound Enclosure**  
Durable aluminum sound-attenuating enclosure.

### Generator Set Ratings

Alternator	Voltage	Ph	Hz	Natural Gas 130°C Rise		LP Gas 130°C Rise	
				Standby Rating kW/kVA	Amps	Standby Rating kW/kVA	Amps
4D8.3	120/208	3	60	30/38	106	30/38	106
	127/220	3	60	30/38	100	30/38	100
	120/240	3	60	30/38	92	30/38	92
	120/240	1	60	30/30	125	30/30	125
	139/240	3	60	30/38	92	30/38	92
	220/380	3	60	30/38	58	30/38	58
	277/480	3	60	30/38	46	30/38	46
347/600	3	60	30/38	37	30/38	37	
4P7BX	120/208	3	60	30/38	106	30/38	106
	127/220	3	60	30/38	100	30/38	100
	120/240	3	60	30/38	92	30/38	92
	120/240	1	60	30/30	125	30/30	125
	139/240	3	60	30/38	92	30/38	92
	220/380	3	60	30/38	58	30/38	58
277/480	3	60	30/38	46	30/38	46	
4E8.3	120/240	1	60	30/30	125	30/30	125
4Q7BX	120/240	1	60	30/30	125	30/30	125

RATINGS: All three-phase units are rated at 0.8 power factor. All single-phase units are rated at 1.0 power factor. Standby Ratings: The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Ratings are in accordance with ISO-8528-1 and ISO-3046-1. Obtain technical information bulletin (TIB-101) for ratings guidelines, complete ratings definitions, and site condition derates. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation of liability whatsoever.

### Standard Features

- Kohler Co. provides one-source responsibility for the generating system and accessories.
- The generator set and its components are prototype-tested, factory-built, and production-tested.
- The generator set accepts rated load in one step.
- A five-year/2000 hour limited warranty covers all generator set systems and components. A five-year extended comprehensive limited warranty is also available.
- Engine Features
  - Powerful and reliable 2.2 L turbocharged liquid-cooled engine
  - Electronic engine management system.
  - Simple field conversion between natural gas and LPG fuels while maintaining emission certification.
- Innovative Cooling System
  - Electronically controlled fan speeds minimize generator set sound signature.
- Alternator features:
  - Kohler's wound field excitation system with its unique PowerBoost™ design delivers great voltage response and short-circuit capability.
  - The unique Fast-Response® X excitation system delivers excellent voltage response and short-circuit capability using a rare-earth, permanent magnet (PM)-excited alternator.
  - The brushless, rotating-field alternator has broadrange reconnectability.
- Kohler designed controller for one-source system integration and remote communication. See Controller on page 3.
- Certifications
  - The generator set engine is certified by the Environmental Protection Agency (EPA) to conform to the New Source Performance Standard (NSPS) for stationary spark-ignited emissions.
  - UL 2200/cUL listing is available.
  - The generator set meets NFPA 110, Level 1, when equipped with the necessary accessories and installed per NFPA standards.
  - CSA certification is available.
  - Accepted by the Massachusetts Board of Registration of Plumbers and Gas Fitters.
- Approved for stationary standby applications in locations served by a reliable utility source.

# Alternator Specifications

Specifications	Alternator
Manufacturer	Kohler
Exciter type	Brushless, Wound-Field
Leads: quantity, type	
4D	12, Reconnectable
4E	4, 110-120/220-240 V
4PX	12, Reconnectable
4QX	4, 110-120/220-240 V
Voltage regulator	Solid State, Volts/Hz
Insulation:	NEMA MG1
Material	Class H
Temperature rise	130°C, Standby
Bearing: quantity, type	1, Sealed
Coupling	Flexible Disc
Amortisseur windings	Full
Voltage regulation, no-load to full-load	Controller Dependent
One-step load acceptance	100% of Rating
Unbalanced load capability	100% of Rated Standby Current
Peak motor starting kVA:	(35% dip for voltages below)
480 V	4D8.3 (12 lead) 120
240 V	4E8.3 (4 lead) 74
480 V	4P7BX (12 lead) 180
240 V	4Q7BX (4 lead) 113

- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting.
- Sustained short-circuit current enabling downstream circuit breakers to trip without collapsing the alternator field.
- Self-ventilated and dripproof construction.
- Windings are vacuum-impregnated with epoxy varnish for dependability and long life.
- Superior voltage waveform from a two-thirds pitch stator and skewed rotor.

# Application Data

## Engine

Engine Specifications	
Manufacturer	Kohler
Engine: model, type	KG2204T, 2.2 L, 4-Cycle Turbocharged
Cylinder arrangement	In-line 4
Displacement, L (cu. in.)	2.2 (134.25)
Bore and stroke, mm (in.)	91 x 86 (3.5 x 3.4)
Compression ratio	10.5:1
Piston speed, m/min. (ft./min.)	340 (1016)
Main bearings: quantity, type	5, plain alloy steel
Rated rpm	1800
Max power at rated RPM, kW (HP)	
LPG	47.8 (64.1)
Natural Gas	47.6 (63.9)
Cylinder head material	Cast Iron
Piston type and material	High Silicon Aluminum
Crankshaft material	Nodular Iron
Valve (exhaust) material	Forged Steel
Governor type	Electronic
Frequency regulation, no-load to full-load	Isochronous
Frequency regulation, steady state	±1.0%
Frequency	Fixed
Air cleaner type, all models	Dry

## Engine Electrical

Engine Electrical System	
Ignition system	Electronic
Battery charging alternator:	
Ground (negative/positive)	Negative
Volts (DC)	14
Ampere rating	90
Starter motor rated voltage (DC)	12
Battery, recommended cold cranking amps (CCA):	
Qty., rating for -18°C (0°F)	One, 630
Battery voltage (DC)	12
Battery group size	24

## Exhaust

Exhaust System	
Exhaust manifold type	Dry
Exhaust temperature at rated kW, dry exhaust, °C (°F)	610 (1130)
Maximum allowable back pressure, kPa (in. Hg)	7.5 (2.2)

## Fuel

Fuel System		
Fuel type	Natural Gas or LPG	
Fuel supply line inlet	1 NPTF	
Natural gas fuel supply pressure, kPa (in. H <sub>2</sub> O)	1.24-2.74 (5-11)	
LPG vapor withdrawal fuel supply pressure, kPa (in. H <sub>2</sub> O)	1.24-2.74 (5-11)	
Fuel Composition Limits *	Nat. Gas	LP Gas
Methane, % by volume	90 min.	—
Ethane, % by volume	4.0 max.	—
Propane, % by volume	1.0 max.	85 min.
Propene, % by volume	0.1 max.	5.0 max.
C <sub>4</sub> and higher, % by volume	0.3 max.	2.5 max.
Sulfur, ppm mass	25 max.	
Lower heating value, MJ/m <sup>3</sup> (Btu/ft <sup>3</sup> ), min.	33.2 (890)	84.2 (2260)

\* Fuels with other compositions may be acceptable. If your fuel is outside the listed specifications, contact your local distributor for further analysis and advice.

# Application Data

## Lubrication

### Lubricating System

Type	Full Pressure
Oil pan capacity, L (qt.) ‡	4.2 (4.4)
Oil added during oil change (on average), L (qt.) ‡	3.3 (3.5)
Oil pan capacity with filter, L (qt.) ‡	8.5 (9.0)
Oil filter: quantity, type ‡	1, Cartridge
‡ Kohler recommends the use of Kohler Genuine oil and filters.	

## Cooling

### Radiator System

Ambient temperature, °C (°F)	50 (122)
Engine jacket water capacity, L (gal.)	2.65 (0.7)
Radiator system capacity, including engine, L (gal.)	13.2 (3.5)
Engine jacket water flow, Lpm (gpm)	62 (16.4)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	22.5 (1280)
Water pump type	Centrifugal
Fan diameter, including blades, mm (in.)	qty. 3 @ 406 (16)
Fan power requirements (powered by engine battery charging alternator)	12 VDC, 18 amps each

## Operation Requirements

### Air Requirements

Radiator-cooled cooling air, m <sup>3</sup> /min. (scfm) ‡	51 (1800)
Combustion air, m <sup>3</sup> /min. (cfm)	1.6 (57)
Air over engine m <sup>3</sup> /min. (cfm)	25 (883)
‡ Air density = 1.20 kg/m <sup>3</sup> (0.075 lbm/ft <sup>3</sup> )	

### Fuel Consumption ‡

Natural Gas, m <sup>3</sup> /hr. (cfh) at % load	Standby Ratings
100%	11.9 (421)
75%	10.0 (355)
50%	8.2 (289)
25%	6.3 (223)
0%	4.5 (158)

LP Gas, m <sup>3</sup> /hr. (cfh) at % load	Standby Ratings
100%	4.6 (164)
75%	3.7 (131)
50%	2.8 (99)
25%	1.9 (66)
0%	1.0 (34)

‡ Nominal fuel rating: Natural gas, 37 MJ/m<sup>3</sup> (1000 Btu/ft.<sup>3</sup>)  
LP vapor, 93 MJ/m<sup>3</sup> (2500 Btu/ft.<sup>3</sup>)

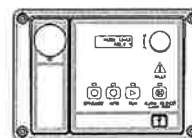
LP vapor conversion factors:

8.58 ft.<sup>3</sup> = 1 lb.

0.535 m<sup>3</sup> = 1 kg.

36.39 ft.<sup>3</sup> = 1 gal.

## Controller



### APM402 Controller

Provides advanced control, system monitoring, and system diagnostics for optimum performance and compatibility.

- Digital display and menu control provide easy local data access
- Measurements are selectable in metric or English units
- Remote communication thru a PC via network or serial configuration
- Controller supports Modbus® protocol
- Integrated hybrid voltage regulator with ±0.5% regulation
- Built-in alternator thermal overload protection
- NFPA 110 Level 1 capability

Refer to G6-161 for additional controller features and accessories.

Modbus® is a registered trademark of Schneider Electric.

## Sound Enclosure

- Durable aluminum, sound-attenuating enclosure with quiet operation of 57 dB(A) log average @ 7 m (23 ft.) at no load.
- Internally mounted silencer.
- Fade-, scratch, and corrosion-resistant Kohler® Power Armor™ automotive-grade textured finish.
- Acoustic insulation that meets UL 94 HF1 flammability classification and repels moisture absorption.

## Standard Features

- Alternator Protection
- Aluminum Sound Enclosure with Enclosed Silencer
- Battery Rack and Cables
- Flexible Fuel Line
- Gas Fuel System (includes fuel mixer, electronic secondary gas regulator, gas solenoid valve, and flexible fuel line between the engine and the skid-mounted fuel system components)
- Integral Vibration Isolation
- Local Emergency Stop Switch
- Low Fuel Pressure Switch (with NFPA fuel module)
- Oil Drain Extension
- Operation and Installation Literature
- Standard 5-Year Limited Warranty

## Available Options

### Approvals and Listings

- CSA Certified
- UL 2200 Listing

### Controller

- 15-Relay Dry Contact Board
- Communication Products
- Input/Output Module (2 inputs, 5 outputs)
- Lockable Emergency Stop (lockout/tagout)
- Low Fuel Pressure Warning Switch
- Manual Key Switch
- Manual Speed Adjust
- Remote Annunciator Panel
- Remote Emergency Stop
- Run Relay

### Enclosure Accessories

- Enclosure Doors for 291 kph (181 mph) Wind load

### Starting Aids\*

- Block Heater, 110-120 V
- Block Heater, 220-240 V

### Oil Pan Heater\*

- Oil Pan Heater, 110-120 V
- Oil Pan Heater, 190-240 V

\* One block heater or oil pan heater is required for ambient temperatures below 0°C (32°F). At temperatures below -18°C (0°F) installation of both heaters is required.

### Electrical System

- Alternator Strip Heater
- Battery
- Battery Charger, 6 Amp
- Battery Charger, 10 Amp w/Alarms
- Battery Heater
- Temperature Compensation for 10 Amp Battery Charger

### Miscellaneous

- Certified Test Report
- Engine Fluids Added
- Maintenance Kit (filters, spark plugs, oil)
- Rated Power Factor Testing

### Literature

- General Maintenance
- NFPA 110
- Overhaul
- Production

### Warranty

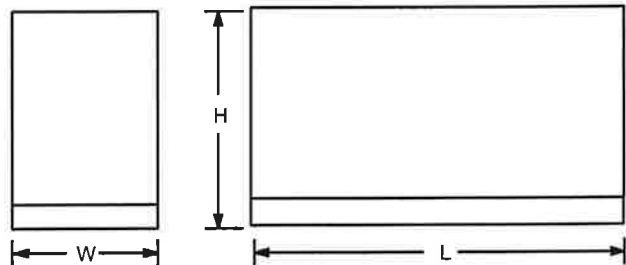
- Optional Extended 5-Year/2000 Hour Comprehensive Limited Warranty

### Other Options

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

## Dimensions and Weights

Overall Size, L x W x H, mm (in.): 2280 x 830 x 1182  
 (89.8 x 32.7 x 46.5)  
 Weight, with engine fluids, kg (lb.): 635 (1432)

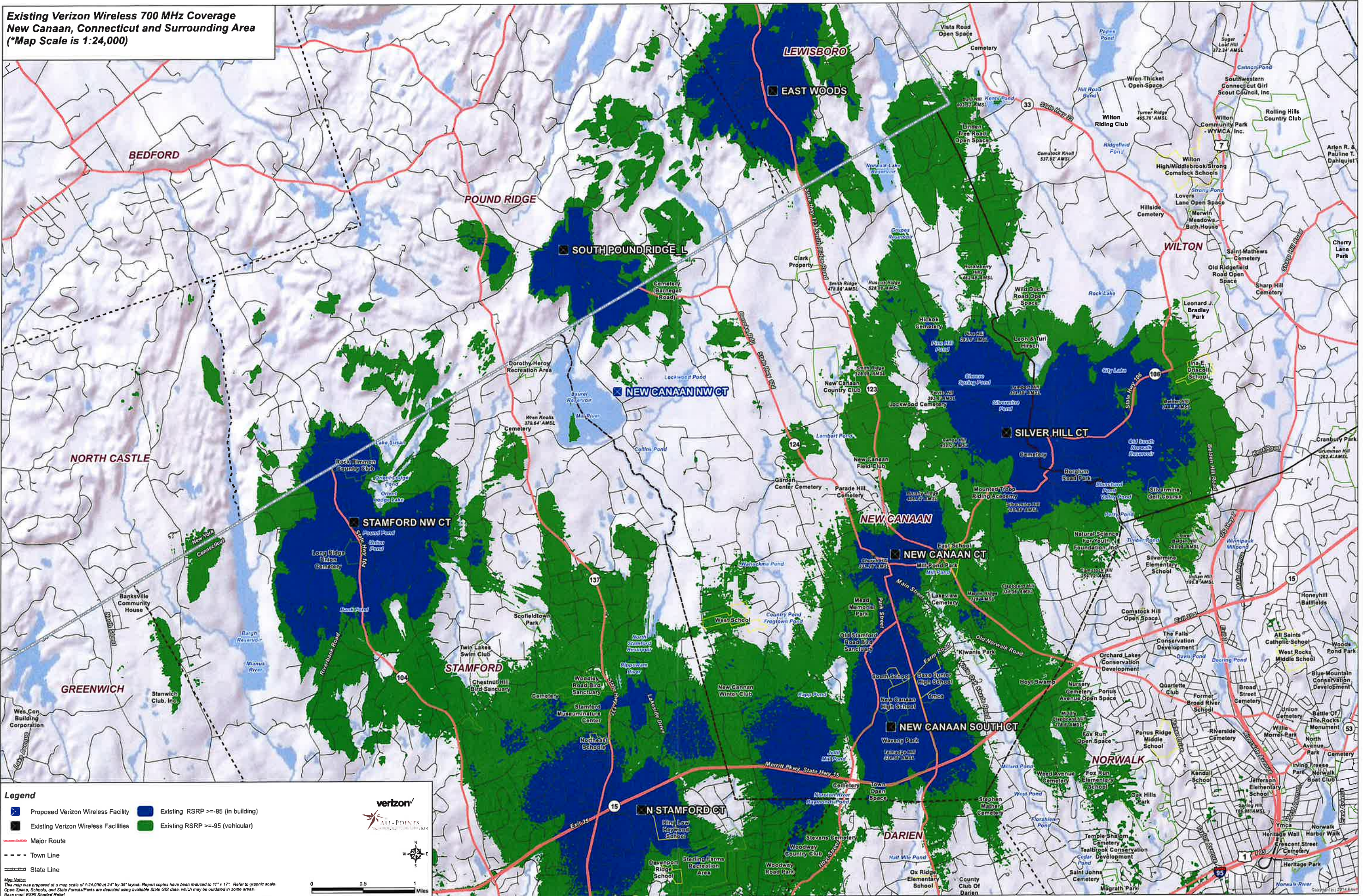


NOTE: This drawing is provided for reference only and should not be used for planning. Contact your local distributor for more detailed information.

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# **ATTACHMENT 2**

**Existing Verizon Wireless 700 MHz Coverage  
New Canaan, Connecticut and Surrounding Area  
(\*Map Scale is 1:24,000)**



**Legend**

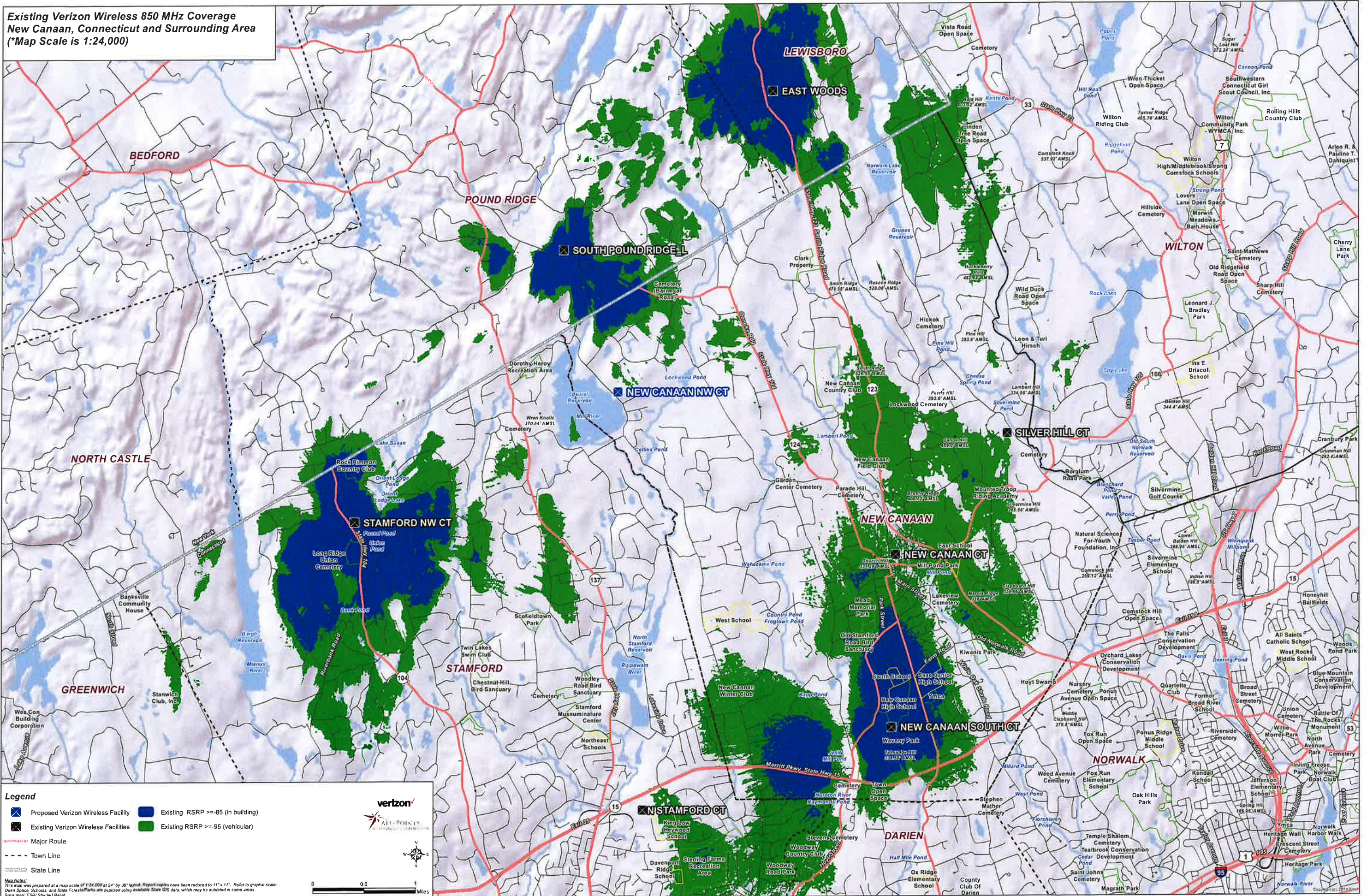
- Proposed Verizon Wireless Facility
- Existing RSRP >= -85 (in building)
- Existing Verizon Wireless Facilities
- Existing RSRP >= -95 (vehicular)
- Major Route
- Town Line
- State Line

**Map Notes:**  
This map was prepared at a map scale of 1:24,000 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: ESRI Shaded Relief.

**Scale:** 0 0.5 1 Miles

**Logos:** verizon, ALL-POINTS COMMUNICATIONS

**Existing Verizon Wireless 850 MHz Coverage  
New Canaan, Connecticut and Surrounding Area  
(\*Map Scale is 1:24,000)**



**Legend**

- Proposed Verizon Wireless Facility
- Existing Verizon Wireless Facilities
- Major Route
- Town Line
- State Line
- Existing RSRP >= -85 (in building)
- Existing RSRP >= -95 (vehicular)

**Map Notes:**  
This map was prepared at a map scale of 1:24,000 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: ESRI Shaded Relief

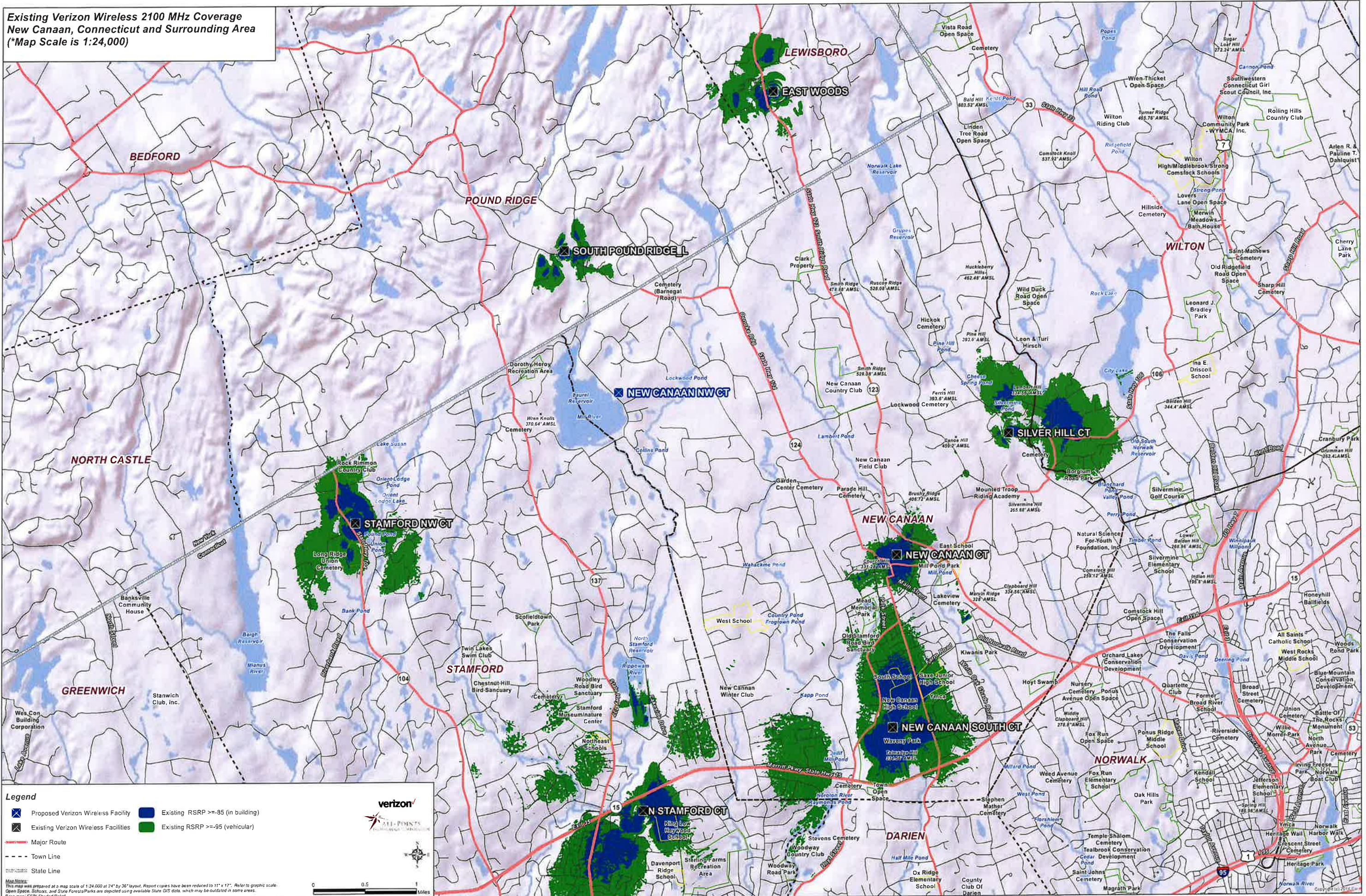


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**Existing Verizon Wireless 2100 MHz Coverage  
New Canaan, Connecticut and Surrounding Area  
(\*Map Scale is 1:24,000)**



**Legend**

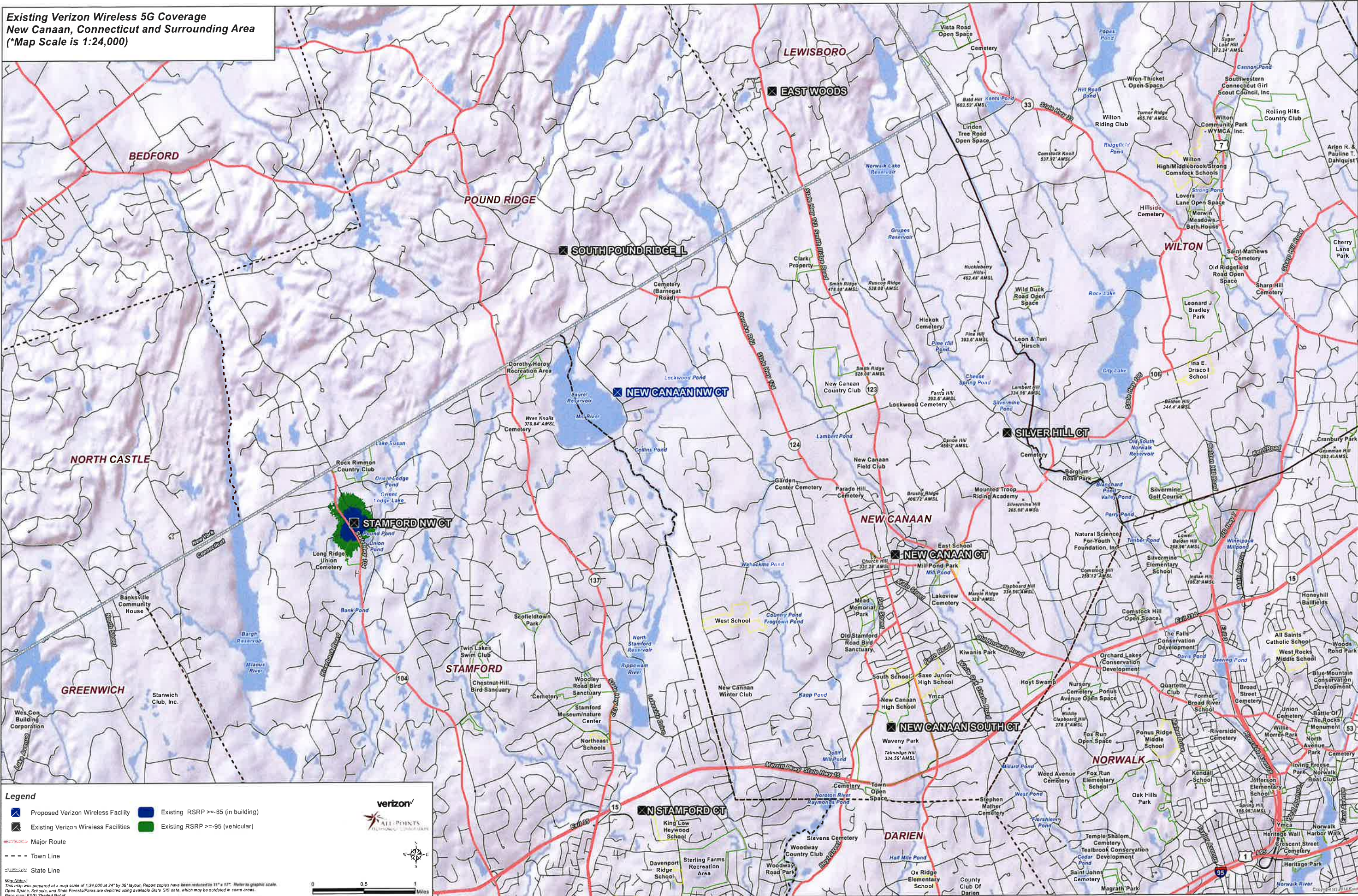
- ✕ Proposed Verizon Wireless Facility
- ✕ Existing Verizon Wireless Facilities
- Existing RSRP >= -85 (in building)
- Existing RSRP >= -95 (vehicular)
- Major Route
- - - Town Line
- - - - - State Line

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



C:\Users\jgibson\Documents\Map\GIS\Map\New Canaan\New Canaan NW CT.mxd  
 05/11/2011 10:00 AM  
 11" x 17"

**Existing Verizon Wireless 5G Coverage  
New Canaan, Connecticut and Surrounding Area  
(\*Map Scale is 1:24,000)**



**Legend**

- Proposed Verizon Wireless Facility
- Existing RSRP >= -85 (in building)
- Existing Verizon Wireless Facilities
- Existing RSRP >= -95 (vehicular)
- Major Route
- - - Town Line
- State Line

**Map Notes:**  
This map was prepared at a map scale of 1:24,000 at 24" by 35" 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: ESRI Shaded Relief

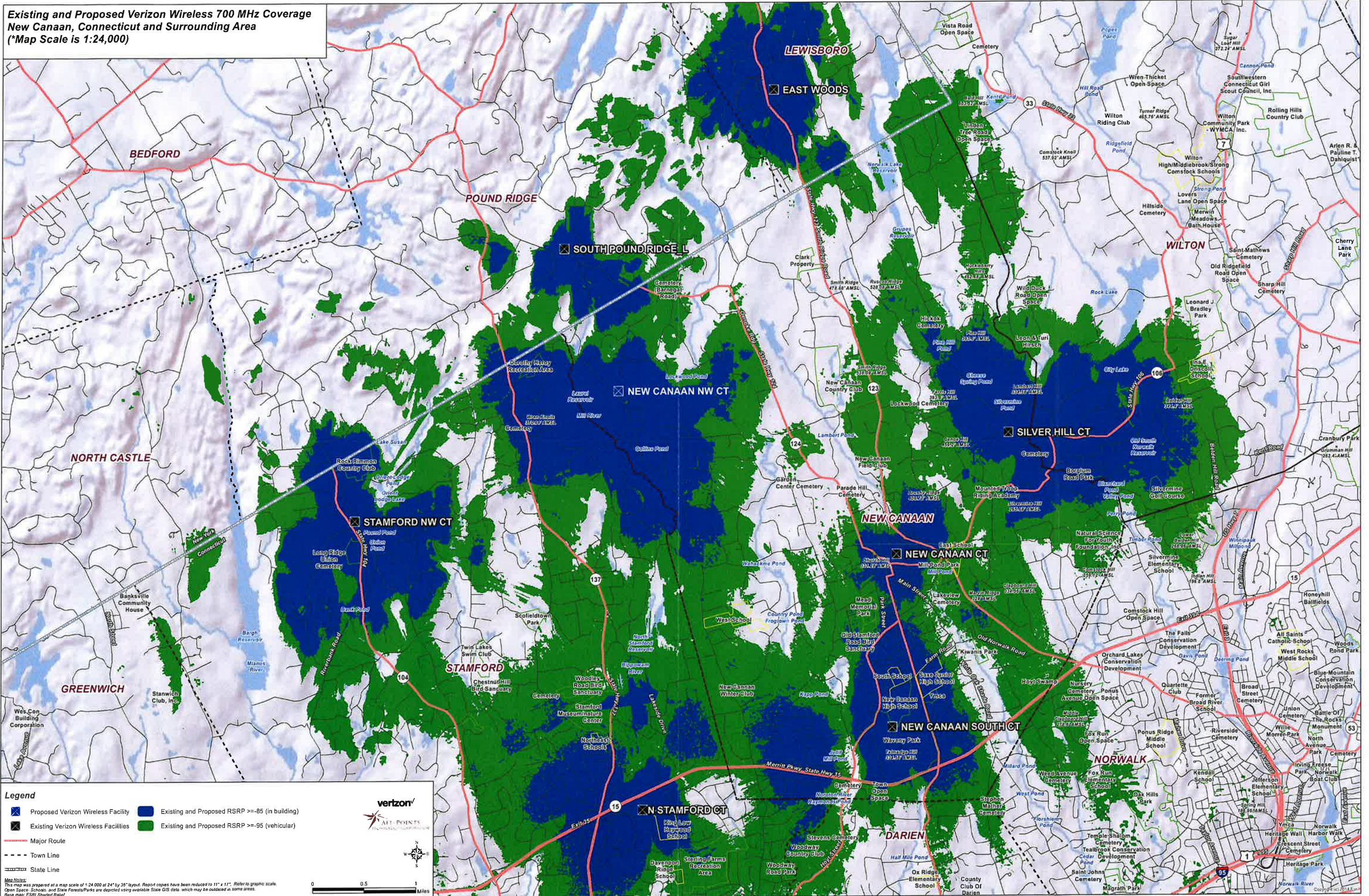
**Scale:** 0 0.5 1 Miles

**Logos:** Verizon, All-Points Wireless

Map Notes:  
This map was prepared at a map scale of 1:24,000 at 24" by 35" 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: ESRI Shaded Relief

# **ATTACHMENT 3**

**Existing and Proposed Verizon Wireless 700 MHz Coverage  
New Canaan, Connecticut and Surrounding Area  
(\*Map Scale is 1:24,000)**



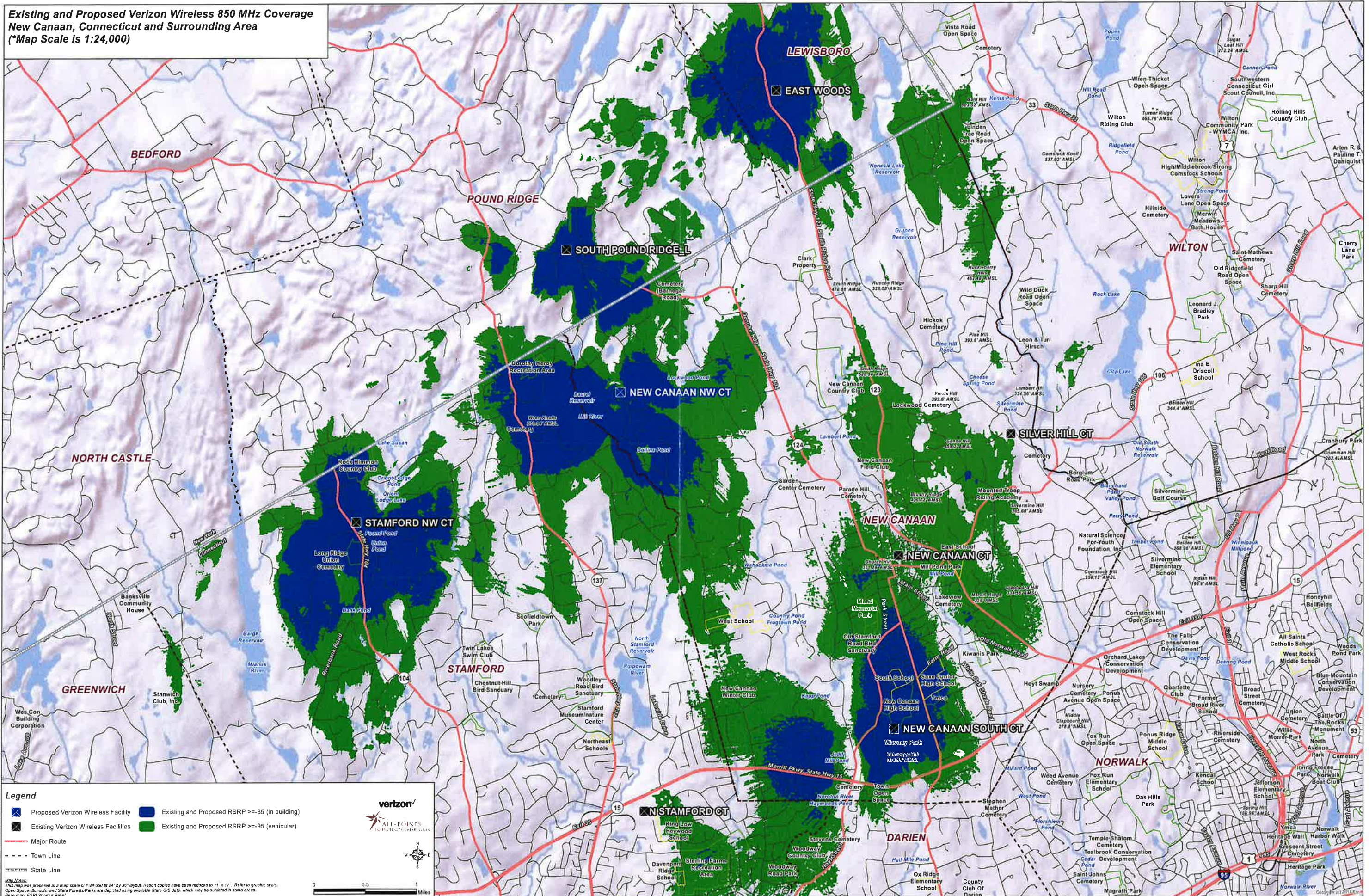
**Legend**

- Proposed Verizon Wireless Facility
- Existing and Proposed RSRP >= -85 (in building)
- Existing Verizon Wireless Facilities
- Existing and Proposed RSRP >= -95 (vehicular)
- Major Route
- - - Town Line
- = State Line

**Map Notes:**  
This map was prepared at a map scale of 1:24,000 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: ESRI, Stated Relief

**Verizon**  
ALL POINTS  
TECHNOLOGICAL CORPORATION

**Existing and Proposed Verizon Wireless 850 MHz Coverage  
New Canaan, Connecticut and Surrounding Area  
(\*Map Scale is 1:24,000)**



**Legend**

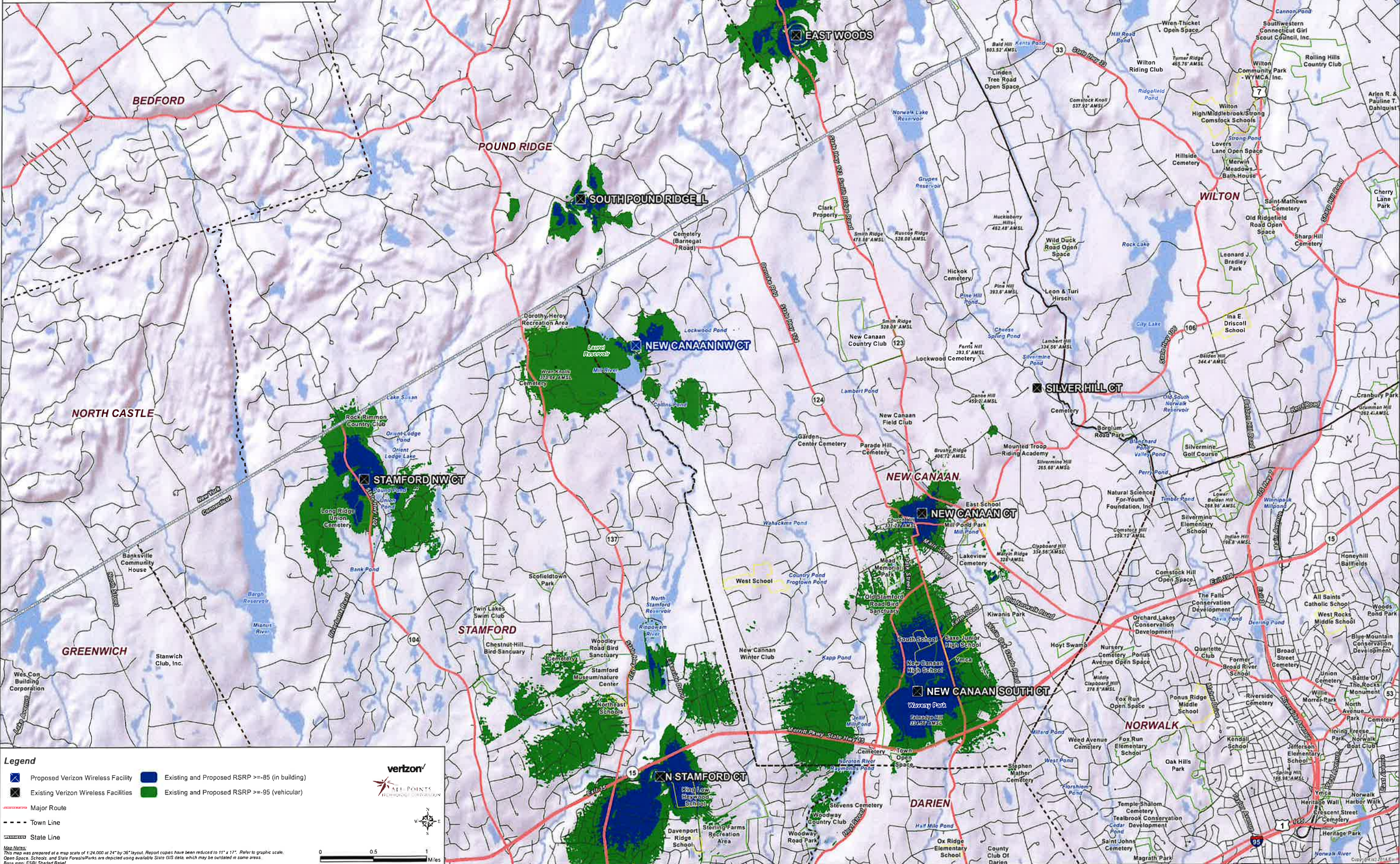
- Proposed Verizon Wireless Facility
- Existing and Proposed RSRP >= -85 (in building)
- Existing Verizon Wireless Facilities
- Existing and Proposed RSRP >= -95 (vehicular)
- Major Route
- Town Line
- State Line

**Map Notes:**  
This map was prepared at a map scale of 1:24,000 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: ESRI Shaded Relief

**Scale:** 0 0.5 1 Miles

**Logos:** verizon, ALL-POINTS TECHNOLOGY CORPORATION

**Existing and Proposed Verizon Wireless 1900 MHz Coverage  
New Canaan, Connecticut and Surrounding Area  
(\*Map Scale is 1:24,000)**



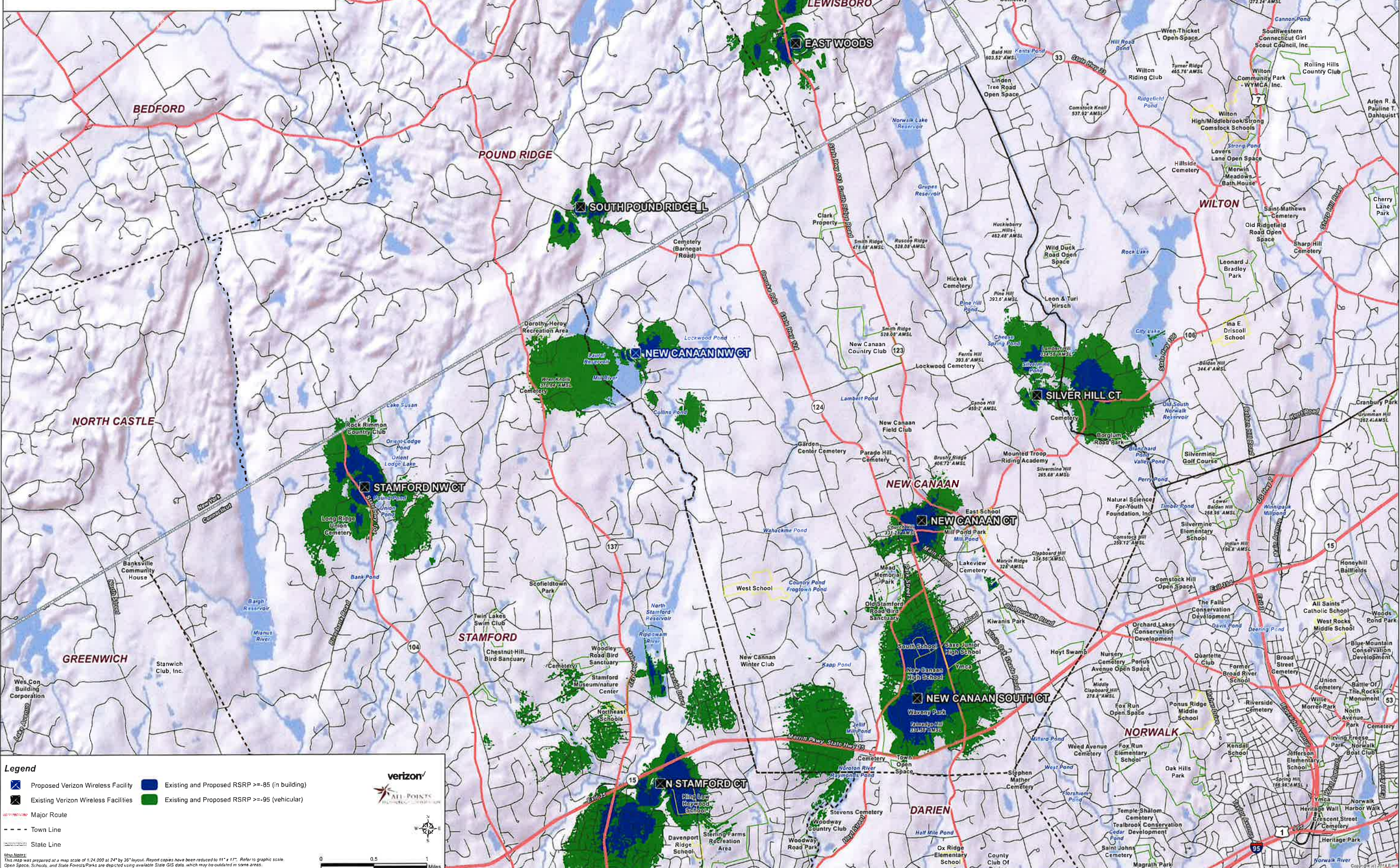
**Legend**

- Proposed Verizon Wireless Facility
- Existing and Proposed RSRP >= -85 (in building)
- Existing Verizon Wireless Facilities
- Existing and Proposed RSRP >= -95 (vehicular)

— Major Route  
- - - Town Line  
- - - - State Line

**Map Notes:**  
 This map was prepared at a map scale of 1:24,000 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: ESRI Shaded Relief

**Existing and Proposed Verizon Wireless 2100 MHz Coverage  
New Canaan, Connecticut and Surrounding Area  
(\*Map Scale is 1:24,000)**



**Legend**

- Proposed Verizon Wireless Facility
- Existing and Proposed RSRP >= -85 (in building)
- Existing Verizon Wireless Facilities
- Existing and Proposed RSRP >= -95 (vehicular)
- Major Route
- Town Line
- State Line

**Map Notes:**  
This map was prepared at a map scale of 1:24,000 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: ESRI Shaded Relief

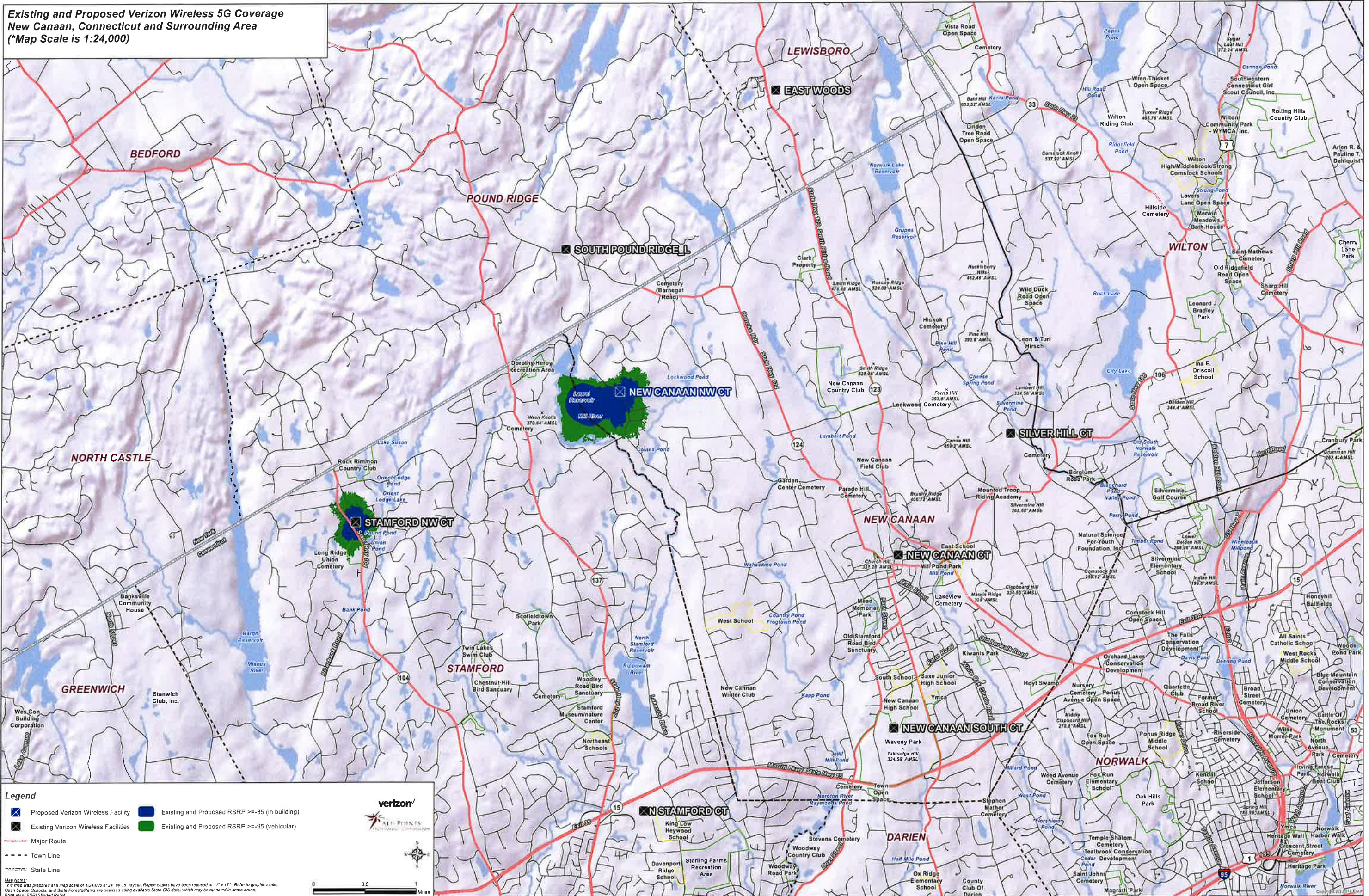
**Scale:** 0 0.5 1 Miles

**Logos:** Verizon, All Points

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**Existing and Proposed Verizon Wireless 5G Coverage  
New Canaan, Connecticut and Surrounding Area  
(\*Map Scale is 1:24,000)**



**Legend**

- Proposed Verizon Wireless Facility
- Existing Verizon Wireless Facilities
- Existing and Proposed RSRP >= -85 (in building)
- Existing and Proposed RSRP >= -95 (vehicular)
- Major Route
- - - Town Line
- - - State Line

**Map Notes:**  
This map was prepared at a map scale of 1:24,000 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: ESRI Shaded Relief

