# STATE OF CONNECTICUT CONNECTICUT SITING COUNCIL

IN RE:

:

APPLICATION OF CELLCO DOCKET NO. 469

PARTNERSHIP D/B/A VERIZON

WIRELESS FOR A CERTIFICATE OF

ENVIRONMENTAL COMPATIBILITY AND

PUBLIC NEED FOR THE CONSTRUCTION,

MAINTENANCE AND OPERATION OF A

WIRELESS TELECOMMUNICATIONS

FACILITY AT 520 BAILEY HILL ROAD IN

KILLINGLY, CONNECTICUT : SEPTEMBER 21, 2016

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

On September 7, 2016, the Connecticut Siting Council ("Council") issued Pre-Hearing Questions to Cellco Partnership d/b/a Verizon Wireless ("Cellco"), relating to the above-captioned docket. Below are Cellco's responses.

#### Question No. 1

Of the letters sent to abutting property owners, how many certified mail receipts were received? If any receipts were not returned, which owners did not receive their notice? Were any additional attempts made to contact those property owners? For example, was a second notice provided by First Class Mail?

#### Response

Cellco received return receipts from thirty-five (35) of the forty-one (41) abutters notified. Five (5) of Cellco's notice packages were returned by the Post Office marked "unclaimed".

These abutter notices were resent by regular mail. The one remaining abutter's notice was sent regular mail on September 9, 2016.

#### Question No. 2

On page 8 of the Application, Cellco notes that the tower would be designed to accommodate a 20-foot increase in height. Would the foundation be designed accordingly?

Response

Yes.

#### Question No. 3

Quantify the amounts of cut and fill that would be required to develop the proposed facility.

# Response

As shown on the project site plan (Application – Tab 1 – Sheet C-2), no significant grading is required for the development of the Dayville Facility compound and access road. Therefore, no cuts or fills are anticipated.

#### Question No. 4

Would any blasting be required to develop the site, or would Cellco utilize other means such as mechanical chipping in the event that ledge is encountered?

#### Response

Cellco does not anticipate the need for blasting to construct the proposed facility. If the site is approved, Cellco will commission a full geo-technical study to determine the nature of sub-surface conditions and determine, more definitively, whether blasting will be required.

#### Question No. 5

Page 18 of the Application notes that the proposed facility would be located in the Federal Emergency Management Agency (FEMA) Zone X. Is this the "unshaded" Zone X, shown behind Tab 16 of the Application, as the area above the elevation of the 0.2 percent annual

chance flood?

#### Response

Yes. The facility is proposed to be located in the "unshaded" flood zone X.

#### Question No. 6

Why is the proposed equipment platform elevated above grade?

## Response

The equipment platform is raised approximately three (3) feet above grade to avoid snow from accumulating around the equipment cabinets, battery cabinet and back-up generator.

#### Question No. 7

Would flush-mounted antennas or antennas attached to the tower at the proposed height via T- arms provide the required coverage? Would either configuration result in reduced coverage and/or necessitate greater antenna height with multiple levels of antennas? Explain.

#### Response

Cellco could install its antennas on a T-arm and not experience any service problems.

For maintenance purposes however, a low profile platform is preferred. The use of flush-mounted antennas would have a significant negative impact on service in the area (approximately 3 dB loss of service), and would require Cellco's use of two antenna levels on the tower. A flush-mounted antenna configuration could further limit Cellco's ability to deploy new technologies and antenna types at this site and limit space available to other carriers who might look to share this tower.

#### Question No. 8

What measures are proposed for the site to ensure security and deter vandalism?

#### Response

The Dayville Facility compound will be surrounded by an eight (8) foot fence and a locked gate. Cellco's equipment, battery system and back-up generator are also located in secure cabinets.

#### Question No. 9

Regarding the chain link fence, is it correct to say that two-inch mesh is a standard or typical size? Has Cellco considered either a smaller than two-inch mesh as an anti-climbing measure or two-inch mesh with anti-climb mesh material (or privacy slats) installed? If approved, could the final fence design be included in the Development and Management Plan (D&M Plan)?

#### Response

Yes, two-inch mesh is a typical size used at Cellco's cell sites. Smaller mesh is available but may not permit the installation of privacy slats. An anti-climbing mesh material can be included as a part of the final Development and Management (D&M) Plan, if required by the Council.

### Question No. 10

According to the Federal Aviation Administration (FAA) Summary Report under Tab 17 of the Application, no notice to the FAA is required. Is any tower marking or lighting required?

#### Response

No FAA obstruction marking or lighting is required.

#### Question No. 11

Would Cellco initially provide service for all four frequency bands (i.e. 700 MHz, 850 MHz, 1900 MHz, and 2100 MHz) at the proposed facility, or would it deploy certain frequency

bands initially and others in the future? Explain.

# Response

Initially, Cellco will deploy only 700 MHz service at the Dayville Facility. Additional frequencies would be deployed and activated as required to meet service demands of Cellco's customers.

#### Question No. 12

On Pages 8 and 9 of the Application, Cellco notes several of its existing sites in the vicinity of the proposed site. Identify those sites that would interact with the proposed facility?

Response

The Dayville Facility will interact with its existing Killingly North, Killingly, Killingly Center, Danielson and Danielson 2 cell sites.

## Question No. 13

Would all four frequency bands be used to transmit voice and data?

# Response

Cellco is capable of transmitting voice and data services in each of its licensed frequencies, 700 MHz, 850 MHz, 1900 MHz and 2100 MHz. As mentioned in Response No. 11, however, initially only 700 MHz frequencies will be deployed at the Dayville Facility.

#### Question No. 14

What is the lowest height at which Cellco's antennas could achieve its coverage objectives from the proposed site?

#### Response

Cellco's proposed antennas are currently proposed at the lowest centerline height (150 feet above ground level ("AGL")) necessary for Cellco to meet its wireless service objectives in

the area.

#### Question No. 15

Could the required coverage and capacity upgrade needs be met by a series of small cell facilities or a distributed antenna system instead of the proposed macro tower facility?

#### Response

Technically, it is possible that a series of small cell installations could provide wireless service to the area around the Dayville Facility. The actual number of small cell facilities that would be needed to provide coverage comparable to that from the proposed Dayville Facility is not known but would be significant given the overall size of the area that Cellco is attempting to serve and the topography in Killingly. Also, it would be difficult to penetrate some of the more rural residential areas near the proposed Dayville Facility using small cells as it would require the installation of antennas on private property. The use of a macro-cell tower site, as proposed in this Application, presents the most efficient and cost effective means of enhancing wireless service in this area.

#### Question No. 16

In the Application, Cellco submitted existing propagation maps for all four frequency bands and proposed propagation maps for 700 MHz, 1900 MHz, and 2100 MHz. Provide the proposed propagation map for 850 MHz.

#### Response

A copy of the propagation map requested is included in Attachment 1.

#### Question No. 17

Similar to the proposed propagation maps, submit propagation maps for all four frequency bands (i.e. 700 MHz, 850 MHz, 1900 MHz, and 2100 MHz) assuming that the tower

is ten feet shorter than proposed (i.e. antennas are installed at a centerline height of 140 feet above ground level).

#### Response

The propagation maps requested are included in <u>Attachment 2</u>.

#### Question No. 18

What is the signal strength for which Cellco designs its system? For in-vehicle coverage? For in-building coverage? Provide this data for all four frequency bands.

#### Response

Cellco designs its LTE network using a 120 dB Reverse Link Operational Path Loss ("RLOPL") standard. For its CDMA service, Cellco's minimum design threshold signal strength is -85 dBm for in-vehicle service and -75 dBm for in-building service.

#### Question No. 19

What is the existing signal strength within the area Cellco is seeking to cover from this site for all four frequency bands?

#### Response

Signal strength in the area that Cellco is trying to cover with the Dayville Facility ranges from 103 dB RLOPL to 127 dB RLOPL at 700 MHz; -78 dBM to -107 dBM at 850 MHz; and 117 dB RLOPL to 139 dB RLOPL at 2100 MHz. Cellco does not current have any coverage in the area at 1900 MHz.

#### Question No. 20

Does Cellco have any statistics on dropped calls and/or ineffective attempts in the vicinity of the proposed facility? If so, what do they indicate? Does Cellco have any other indicators of substandard service in this area? If so, describe the results.

#### Response

Dropped call and ineffective attempt data at the surrounding site exists but does not currently exceed Cellco's thresholds for service. Coverage maps included behind Tab 6 of the Application also illustrate the gaps that currently exist along Route 101 in the vicinity of the Dayville Facility in all of Cellco's operating frequencies. The Dayville Facility will also provide capacity relief to Cellco's Beta sector antennas at the Killingly cell site.

#### Question No. 21

On page 7 of the Application, Cellco provided the proposed coverage areas in square miles for all four frequency bands. Provide such data assuming that the tower is ten feet shorter than proposed (i.e. antennas are installed at a centerline height of 140 feet above ground level).

Response

The coverage data at 140 feet is not significantly different than the coverage data at 150 feet. With antennas at 140 feet AGL, the proposed Dayville Facility will provide reliable wireless service to a 5.14 mile portion of Route 101, and an overall area of 38.29 square miles at 700 MHz frequencies; a 5.09 mile portion of Route 101, and an overall area of 33.78<sup>1</sup> square miles at 850 MHz frequencies; a 2.93 mile portion of Route 101, and an overall area of 7.17 square miles at 1900 MHz frequencies; and a 4.91<sup>2</sup> mile portion of Route 101, and an overall area of 14.69 square miles at 2100 MHz frequencies.

<sup>&</sup>lt;sup>1</sup> On page 7 of the Application the overall area in square miles of service at 850 MHz is incorrect. This figure should be 34.53 square miles and not 23.84 square miles.

<sup>&</sup>lt;sup>2</sup> On page 7 of the Application the miles of service along Route 101 at 2100 MHz is incorrect. This figure should be 4.91 miles and not 2.87 miles.

## Question No. 22

Provide the individual lengths of the coverage gaps in miles for all main roads (e.g. roads with route numbers) that would be covered by the proposed facility for each of the four frequency bands.

## Response

Main Roads	700 MHz	850 MHz	1900 MHz	2100 MHz
Route 101	* 1.78	1.51	4.91	4.55

# Question No. 23

Provide the individual lengths of the coverage gaps in miles for all secondary roads (e.g. roads without a route number) that would be covered by the proposed facility for each of the four frequency bands.

# Response

Secondary Roads	700 MHz	850 MHz	<u>1900 MHz</u>	<u>2100 MHz</u>
Valley Road	0.6 miles	0.6 miles	1.06 miles	0.97 miles
Coomer Hill Rd	No gap	No gap	1.02 miles	0.89 miles
Cook Hill Rd	No gap	1.33 miles	No gap	0.72 miles
Slater Hill Rd	0.6 miles	0.43 miles	No gap	1.42 miles
Ledge Rd	· 0.3 miles	0.3 miles	1.45 miles	1.48 miles
Bailey Hill Rd	No gap	0.25 miles	2.1 miles	2.8 miles
Bear Hill Rd	0.67 miles	No gap	0.8 miles	1.66 miles

#### Ouestion No. 24

Provide an estimate of the residential population living within the area that would be covered from the proposed facility.

### Response

Based on 2010 Census information Cellco anticipates that there are approximately 7,033 people living within the largest (700 MHz) coverage footprint of the Dayville Facility.

#### Question No. 25

Provide an estimated traffic count for all main roads (e.g. roads with route numbers) that would be covered from the proposed facility.

#### Response

Route 101 in Killingly is the only "main road" the proposed Dayville Facility is designed to cover. According to information available on the Connecticut Department of Transportation web site, the average daily trips along Route 101 are 8,100 vehicles at the intersection of Route 101 and Dog Hill Road; 7,100 vehicles at the intersection of Route 101 and Breakneck Hill Road; 6,500 vehicles at the intersection of Route 101 and Valley Road; and 4,500 vehicles at Route 101 and State Line Road.

#### Question No. 26

Have any other wireless carriers expressed an interest in co-locating on the proposed facility to date? Has the Town of Killingly expressed an interest in co-locating emergency services antennas on the tower? Would Cellco provide space for municipal emergency services antennas if requested?

#### Response

To date, no other wireless carrier has expressed any interest in sharing the Dayville tower.

Likewise, the Town Killingly has not expressed any interest.

#### Question No. 27

Is Cellco's proposed diesel backup generator for Cellco's use only?

#### Response

Yes. Cellco's new cell site equipment configuration calls for the use of a battery back-up system as the sole back-up power source for its radio equipment. The smaller 15 kW generator is used only to recharge the battery system and would be too small to power other carriers' equipment.

### Question No. 28

How many gallons of fuel would the generator's diesel fuel tank hold?

### Response

The generator maintains a 54 gallon diesel fuel tank as part of the unit.

#### Question No. 29

Would the backup generator have containment measures to protect against fuel, oil, or coolant leakage? For example, would it have a double-walled fuel tank and a recessed floor under the engine compartment? If approved, could the final plans for containment measures be included in the D&M Plan?

#### Response

The generator's diesel fuel tank is double-wall, providing for secondary containment of the diesel fuel. The tank system also maintains a leak detection system and an over-fill protection valve to prevent excess fuel from reaching the tank during refueling operations. In addition, a spill protection kit will be maintained within the fenced compound near the generator unit.

#### Question No. 30

What would be the respective run time for Cellco's diesel backup generator, assuming it is running at full load?

#### Response

At "full load", the 15 kW generator with 54 gallons of diesel fuel can run for approximately 53 hours before refueling would be required. At times of "normal loading" the generator can run for approximately 60-65 hours before refueling would be required.

#### Question No. 31

Would there be any interruption in service between the time power goes out and the generator starts, or would Cellco have a battery backup system that would provide "seamless" uninterrupted power? If Cellco has a battery backup system, how many hours of storage would the battery system have before the batteries are depleted? Or would the battery backup be the primary source of power with the generator acting to keep the batteries charged?

#### Response

The back-up generator would start after a 60 second commercial power outage has elapsed. Similarly, the generator does not shut off until commercial power has been restored for a total of at least 60 seconds. When not in use, the back-up generator is set for testing (cycling) once every two weeks for a period of approximately 30 minutes. When commercial power is available to the cell site the back-up battery systems are charged by the commercial power connection. This keeps the battery system at peak charge at all times. During an interruption in commercial power service the generator will provide power to Cellco's radio equipment and to keep the backup battery system at peak charge.

#### Question No. 32

Would the backup generator run periodically for maintenance purposes, e.g. twenty minutes per week? If yes, could this be scheduled during daytime hours rather than nighttime hours?

#### Response

Yes. When not in use, the back-up generator is set for testing (cycling) once every two weeks for a period of approximately 30 minutes. The generator is typically exercised during daytime hours unless otherwise directed by the Council.

#### Question No. 33

Identify the safety standards and/or codes by which equipment, machinery, or technology would be used or operated at the proposed facility,

#### Response

- 2005 Connecticut State Building Code, inclusive of the 2005 Connecticut
   Supplement to the 2005 CSBC and the 2009, 2011 & 2013 amendments.
- TIA/EIA-222-F "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures".
- TIA-222-G-1 "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures".

#### Question No. 34

Will the proposed facility support text-to-911 service? Is additional equipment required for this purpose?

#### Response

Yes, the proposed Dayville Facility will be capable of supporting text-to-911 service as

soon as the Public Safety Answering Point (PSAP) is capable of receiving text-to-911. No new equipment is required to provide this service.

#### Question No. 35

Are you aware of any Public Safety Answering Points in the area of the proposed site that are able to accept text-to-911?

# Response

The applicant is not aware of any PSAPs in the Killingly area.

## Question No. 36

Approximately how many residences would have year-round views of the tower?

Approximately how many residences would have seasonal views of the tower? Generally, on which streets would these residences be located?

#### Response

It is possible that year-round views might exist on one or two nearby residential properties along Bailey Hill Road. Also, two or three neighboring properties along Bailey Hill Road may also have seasonal views when the leaves are off the deciduous trees.

#### Question No. 37

Is the majority of the year-round visibility area on the subject property?

# Response

Yes, the vast majority of year-round visibility would occur on portions of the 648 acre subject parcel, along portions of the driveway, and extending out from the cell site down to Bailey Hill Road.

#### Question No. 38

Is the proposed project located within The Last Green Valley National Heritage Area? If

yes, how would the proposed project impact The Last Green Valley National Heritage Area?

Response

Yes, the project site is located within The Last Green Valley National Heritage Area ("NHA"). Based on the relatively small physical scale of the project area and associated limited visibility of the proposed Dayville tower, this facility would have no material effect on resources within the NHA.

By way of background, the Town of Killingly is one of 35 towns included in the NHA, which encompasses an approximately 1,100 square-mile area in eastern Connecticut and south-central Massachusetts. The corridor is generally defined by the Quinebaug and Shetucket Rivers systems and the surrounding hills. The Corridor is known for its high concentration of State Parks, State Forests and other reserves such as the Yale Forest and the Norcross Wildlife Sanctuary. Of the 600,000 acres in the Corridor, more than 100,000 acres are Public/Reserved lands. The NHA was designated as such in 1994 by the U.S. Congress, which recognized the region as possessing significant natural and cultural resources. The 26 Connecticut municipalities included in the Corridor are Ashford, Brooklyn, Canterbury, Chaplin, Coventry, Eastford, Franklin, Griswold, Hampton, Killingly, Lebanon, Lisbon, Mansfield, Norwich, Plainfield, Pomfret, Preston, Putnam, Scotland, Sprague, Sterling, Thompson, Union, Voluntown, Windham and Woodstock.

According to the Siting Council's telecommunications databases, there are at least 100 towers located in these 26 Connecticut municipalities within the NHA, including towers used by emergency service providers, radio and television broadcasts, private dispatch, and wireless telecommunications. In the Town of Killingly there are at least five existing

facilities of this nature. (See Attachment 3).

#### Question No. 39

To date, has Cellco received a response from the State Historic Preservation Office (SHPO) regarding the proposed project? If yes, provide a copy of such response.

#### Response

Yes. Cellco is in receipt of an opinion letter from the SHPO, concurring with its previous determination of No Effect on historic properties. A copy of the SHPO's response letter is in Attachment 4.

#### Question No. 40

Would the tower be located within a DEEP-designated Aquifer Protection Area?

Response

According to the CT DEEP Aquifer Protection Areas Map for Killingly, the proposed tower is not located within an Aquifer Protection Area ("APA"). Please see the attached APA Map included in <u>Attachment 5</u>. The nearest APA to the proposed tower is the Brooklyn Wellfield (APA B 68) located approximately three (3) miles southwest of the proposed Dayville tower location.

#### Question No. 41

On Sheet C-2, Cellco is proposing an overhead utility crossing of Bailey Hill Road. Has Cellco considered underground or "trenching" utilities across Bailey Hill Road (to reach the new pole) to reduce the visual impact? If approved, could the final utility route, subject to the electric distribution company, be included in the D&M Plan?

#### Response

Cellco is willing to consider underground utility service crossing Bailey Hill Road.

Cellco is committed to working with the Council and the utility companies on the final utility design plan and will include that information in the D&M Plan, if the facility is approved.

#### Question No. 42

What, if any, stealth tower design options would be feasible to employ at this site?

Response

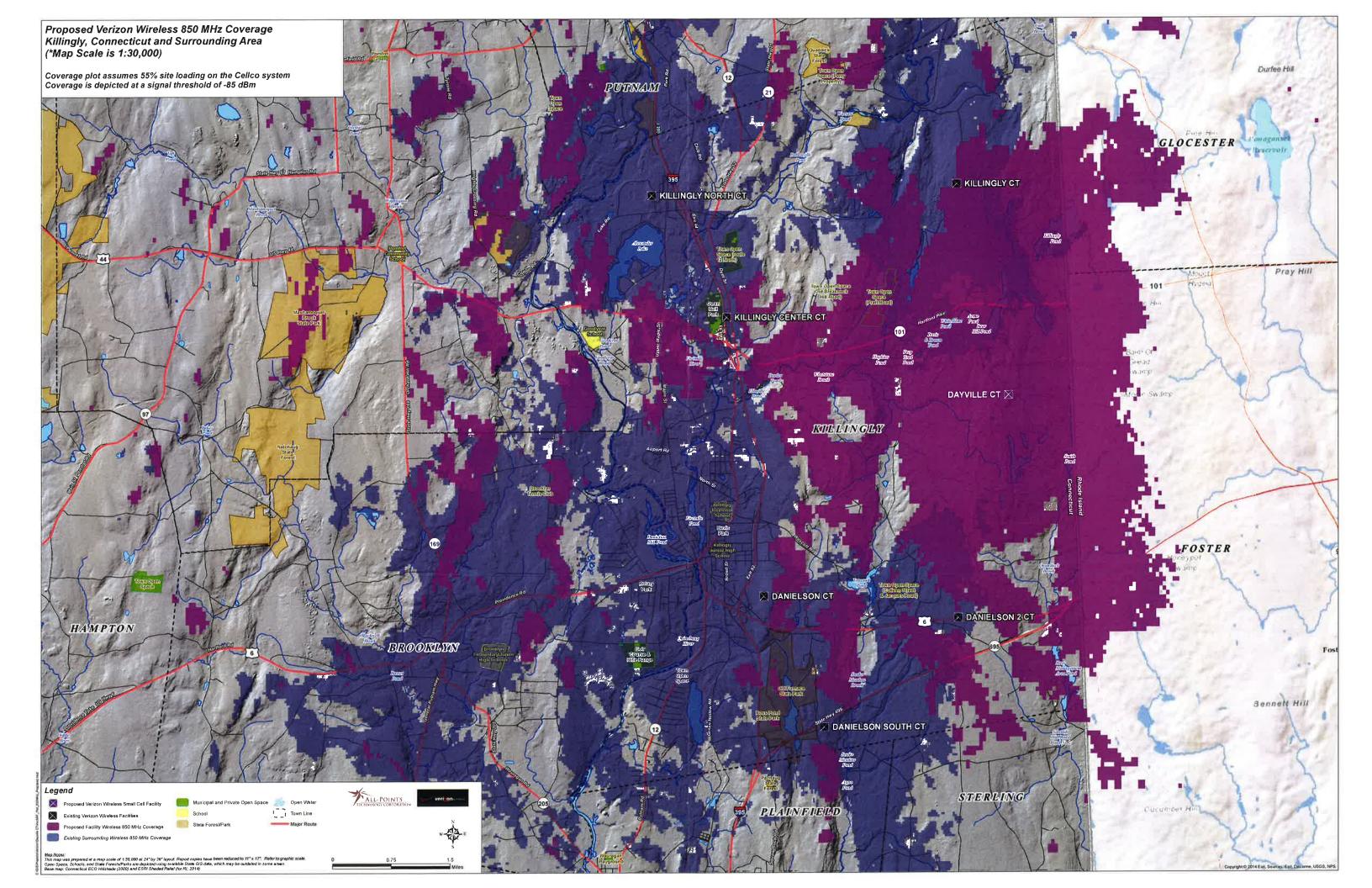
Based on the very limited visibility of the proposed Dayville facility tower, concealment considerations do not appear warranted.

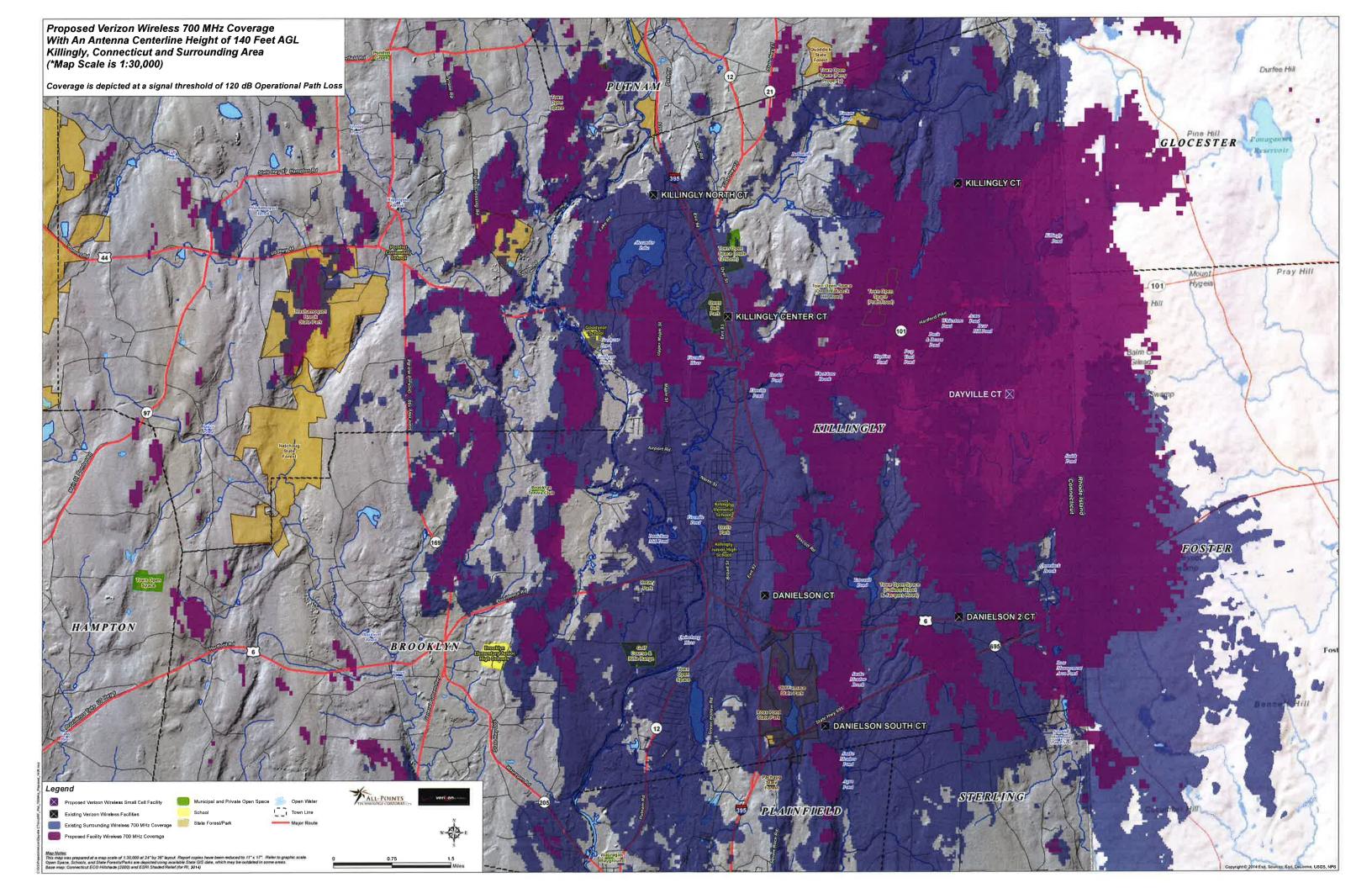
#### Question No. 43

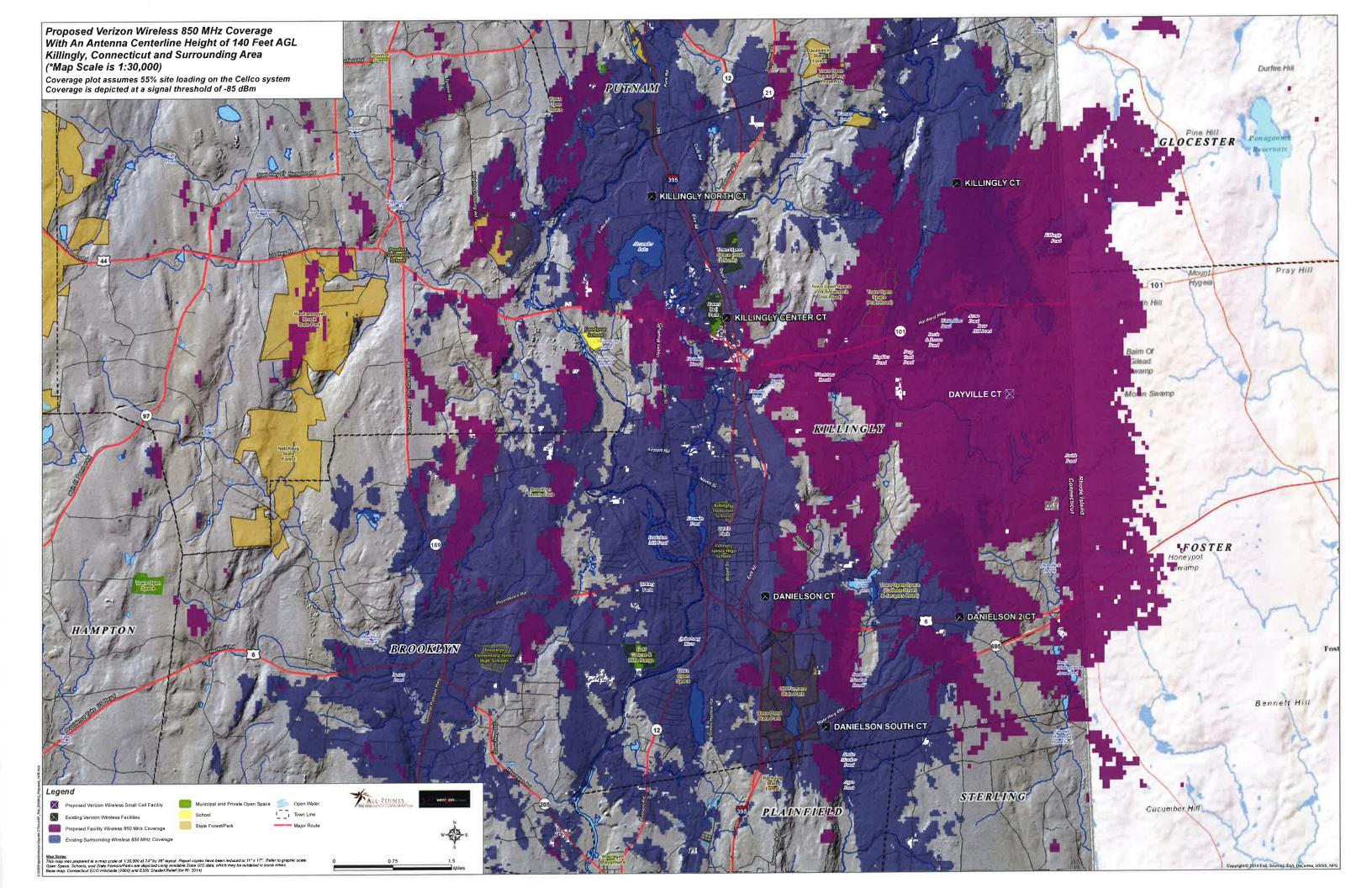
Given the proposed "open canopy" equipment pad design instead of an enclosed equipment shelter, is it correct to say that no air conditioning units are required to keep the radio equipment cool? Does Cellco expect that the "open canopy" design with outdoor radio equipment would still meet DEEP noise standards at the property boundaries?

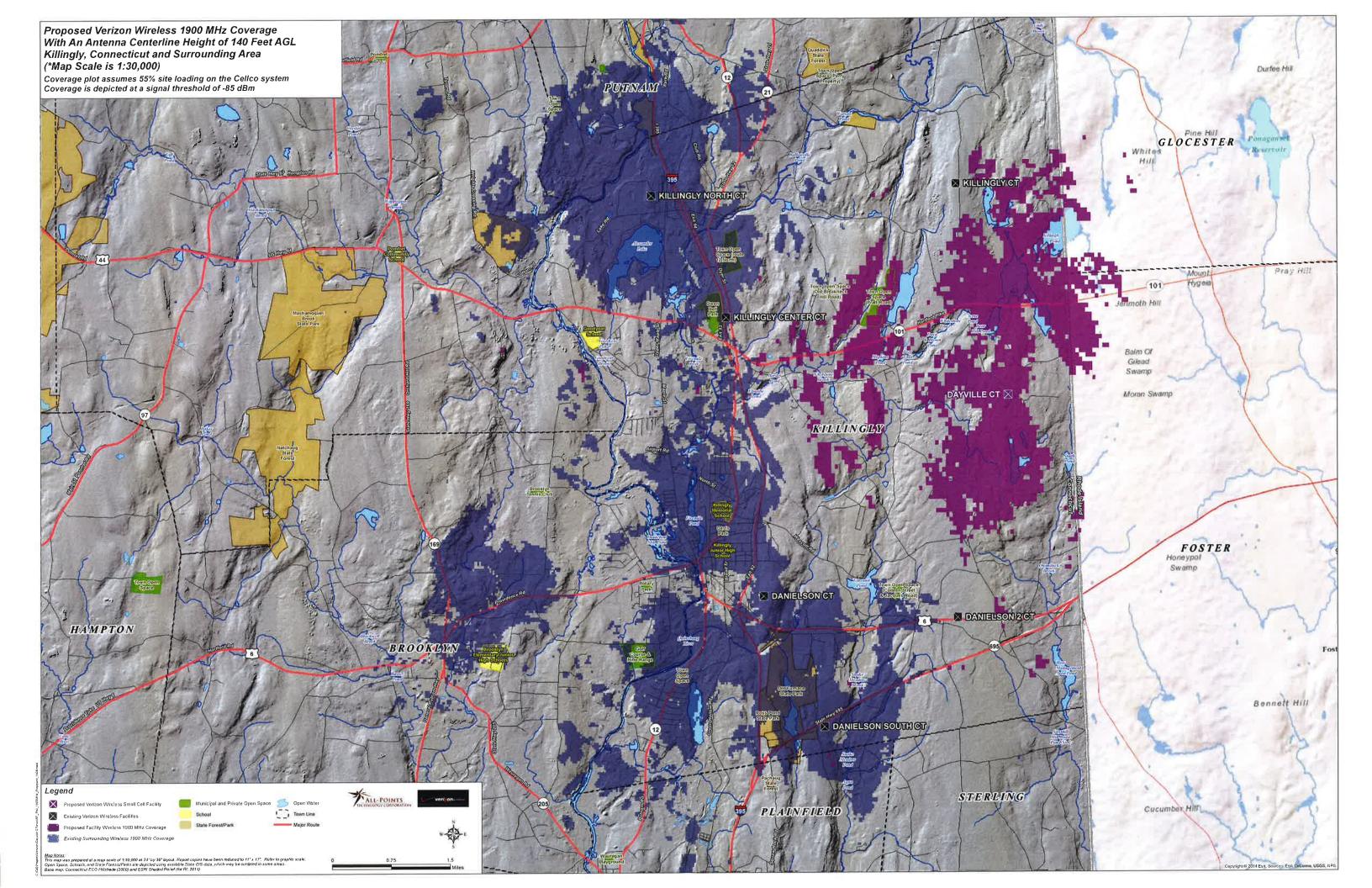
#### Response

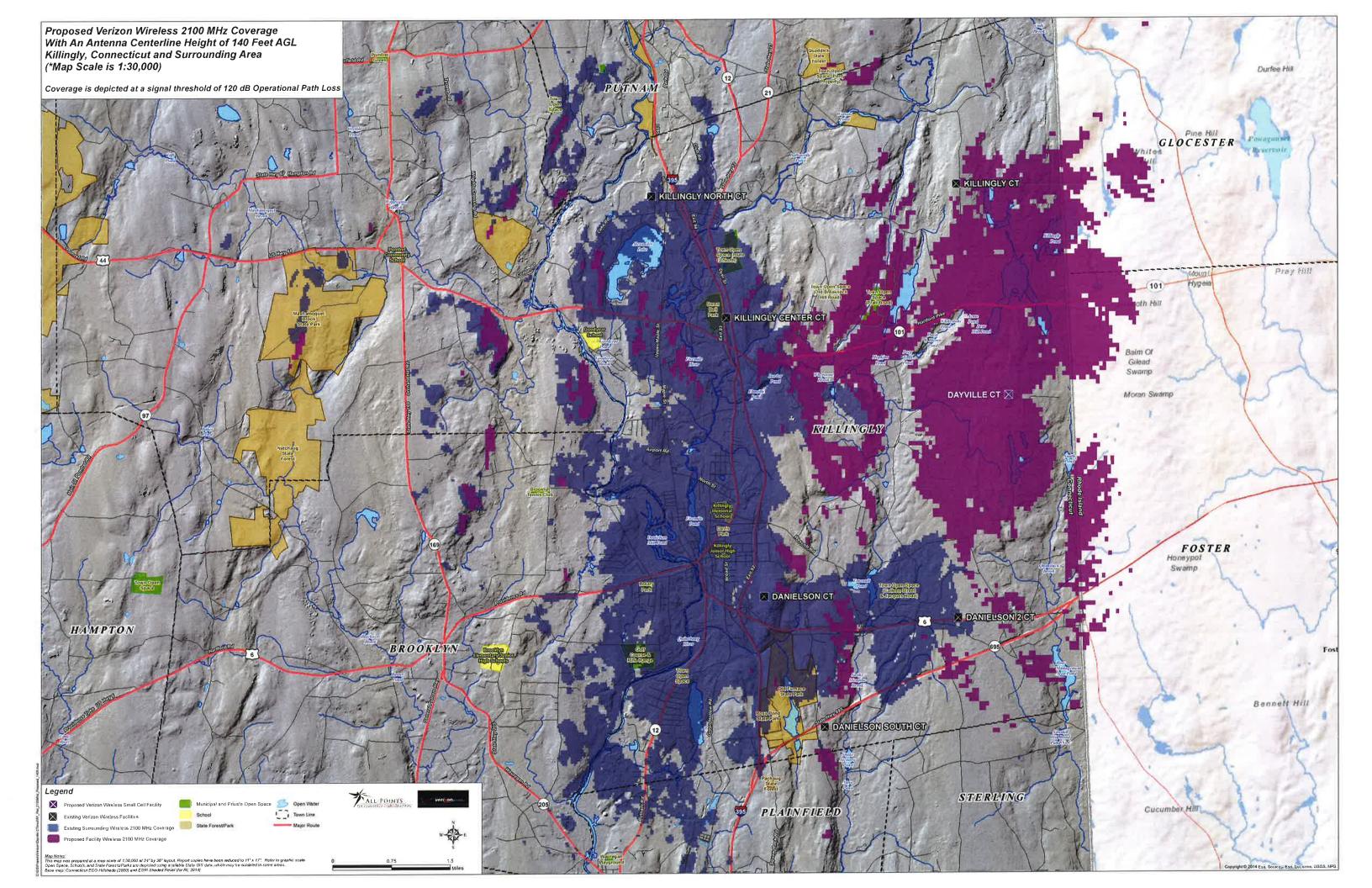
Correct. The new "open canopy" equipment configuration does not require the use of any type of air conditioning units. The only noise generating equipment on Cellco's platform is the back-up generator. Manufacturer's specifications describe noise levels as being 59 dBA at a distance of 25 feet from the unit, well within State and local noise standards (70 dBA). The closest property line is more than 200 feet from the facility compound.

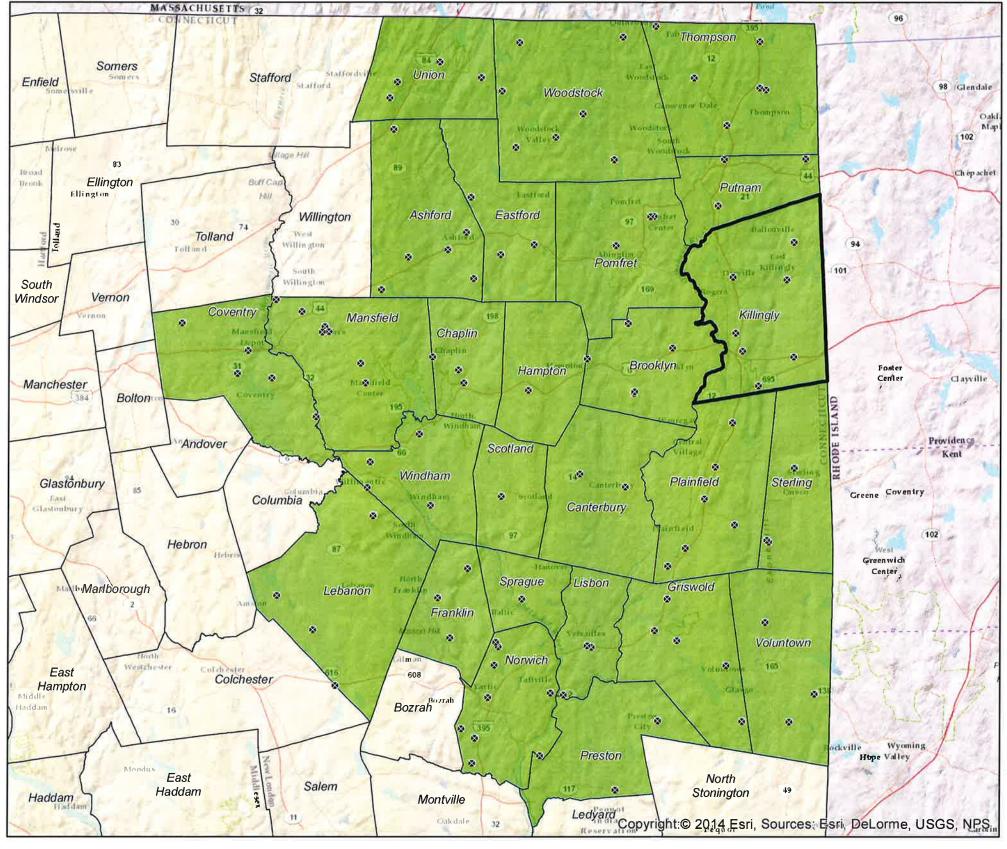












# Existing Towers Within The Last Green Valley, CT

Number of Towers
6
5
2
3
1
5
3
3
5
1
7
5
3
7
9
6
3
2 3
1
1
3
6
4
3
4
7
108



#### Legend

Existing Towers (Connecticut Siting Council Database; last updated 8-12-2016)

Town of Killingly (Dayville)

Town Within The Last Green Valley

Connecticut Town



1 inch equals 6 miles







# Department of Economic and Community Development



August 23, 2016

Mr. Lucas Karmazinas All-Points Technology Corporation 3 Saddlebrook Drive Killingworth, CT 06419

Subject:

Proposed Telecommunications Facility

520 Bailey Hill Road

Killingly, CT Verizon Wireless

#### Dear Mr. Karmazinas:

The State Historic Preservation Office is in receipt of the proposal for the above-referenced project, submitted for review and comment pursuant to the National Historic Preservation Act and in accordance with Federal Communications Commission regulations.

After completing review of 520 Bailey Hill Road, All-Points Technology has in their professional opinion stated that there will be no historic properties affected by the proposed 153 foot monopole tower with antennas within a 50' by 50' fenced enclosure. Based on the information provided to this office, SHPO concurs that no historic properties will be affected by this undertaking.

The State Historic Preservation Office appreciates the opportunity to review and comment upon this project. These comments are provided in accordance with the Connecticut Environmental Policy Act and Section 106 of the National Historic Preservation Act. For further information please contact Todd Levine, Environmental Reviewer, at (860) 256-2759 or todd.levine@ct.gov.

Sincerely.

Catherine Labadia

Deputy State Historic Preservation Officer

# **AQUIFER PROTECTION AREAS**

Killingly, CT August 1, 2016

Level A APA (Final Adopted)

Level A APA (Final)

Level B APA (Preliminary)

Town Boundary

NOTE: The Aquifer Protection Areas were delineated through Connecitcut's Level A and Level B Mapping Processes. Aquifer Protection Areas are delineated for active public water supply wells in stratified drift that serve more than 1000 people, in accordance with Sections 22a-354c and 22a-354z of the Connecticut General Statutes. Level B Mapping delineates a preliminary aquifer protection area, providing an estimate of the land area from which the well draws its water. Level A Mapping delineates the final Aquifer Protection Area, which becomes the regulatory boundary for land use controls designed to protect the well from contamination. As Level A Mapping is completed for each well field and approved by DEEP, it replaces the Level B Mapping. Final Adopted Level A Areas are those where towns have land use regulations for them.

Masschusetts and Rhode Island Wellhead Protection Areas may be shown for informational purposes.

#### QUESTIONS:

Bureau of Water Protection and Land Reuse Planning and Standards Division Phone: (860) 424-3020



www.ct.gov/deep/aquiferprotection



STATE OF CONNECTICUT DEPARTMENT OF
ENERGY & ENVIRONMENTAL PROTECTION 79 Elm Street Hartford, CT 06106-5127

