

**DOCKET NO. 196** - Crown Atlantic Company LLC and Cellco Partnership d/b/a Verizon Wireless application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a cellular telecommunications facility off Hi-Top Hill Road, Voluntown, Connecticut; or 232 Pendleton Hill Road, Voluntown, Connecticut; or Glasgo Road and Preston City Road, Griswold, Connecticut. }  
Connecticut }  
Siting }  
Council }  
June 20, 2001

**Findings of Fact**  
**Introduction**

1. Crown Atlantic Company LLC (Crown) and Cellco Partnership (Cellco) d/b/a Verizon Wireless (Verizon) in accordance with provisions of General Statutes §§ 16-50g through 16-50aa applied to the Connecticut Siting Council (Council) on June 30, 2000, for the construction, operation, and maintenance of a cellular telecommunications facility in either Voluntown or Griswold, Connecticut, to provide cellular coverage within the New London New England County Metropolitan Area. The proposed prime site is off of Hi-Top Hill Road in Voluntown, Connecticut. The proposed alternate one site is at 232 Pendleton Hill Road in Voluntown, Connecticut. The proposed alternate two site is located off of Glasgo Road and Preston City Road in Griswold, Connecticut. (Crown 1, pp. 1-3)
2. The party in this proceeding is the applicant. Intervenors are Richard H. Finley, the Town of Voluntown, the Town of Griswold, and Springwich Cellular Limited Partnership (Springwich). (Tr. 1, 4:00 p.m., pp. 5-6)
3. Public notice of the application was published in the Norwich Bulletin on June 27 and June 28, 2000. (Crown 1, p. 6, Crown 3)
4. Pursuant to General Statutes § 16-50m, the Council, after giving due notice thereof, held a public hearing on September 25, 2000, beginning at 4:00 p.m. and continuing at 7:00 p.m. in the gymnasium of the Voluntown Elementary School, 195 Main Street, Voluntown, Connecticut. (Tr. 1, p. 3)
5. The Council and its staff made inspections of the proposed prime and alternate one and alternate two sites on September 25, 2000. During the field inspection, the applicant flew a balloon at each of the proposed sites to simulate the heights of the towers proposed at these locations, with an additional 10 feet of tether attached to each balloon to accommodate shifting winds of approximately three knots. (Tr. 1, pp. 50-51)
6. On January 25, 2001, the Council reopened this docket and held a public hearing at 10 Franklin Square, New Britain, Connecticut, for the limited purpose of analyzing coverage and potential coverage from existing towers. (Tr. 1/25/01, p. 4)

**Cellular Service Design**

7. The cellular system design provides for frequency reuse and handoff, is capable of orderly expansion, and is compatible with other cellular systems. (Crown 1, p. 9)

8. The cellular system Cellco would employ at its proposed Voluntown/Griswold site would be completely digital. Cellco coverage designs are now based on hand-held portable units. Users of analog cellular telephones would not be able to place a call using the proposed Voluntown/Griswold facility. Over ninety percent of the Cellco system has been converted from analog to digital. (Tr. 1, pp. 38-39)
9. Cellco currently uses signal level thresholds of -90 dbm and -75 dbm for acceptable mobile and hand-held unit coverage respectively. Cellco finds -90 dbm coverage generally acceptable for mobile (in-vehicle) units, but inadequate for hand-held units. Cellco determined its coverage gaps based on a -90 dbm signal strength. (Cellco 11, Q. 19)

### **Need**

10. In 1981, the Federal Communications Commission (FCC) recognized a public need for technical improvement, wide-area coverage, high-quality service, and competition in the provision of mobile telephone service. (Crown 1, p. 7)
11. In issuing cellular licenses, the Federal government has preempted the determination of public need for cellular service by the states, and has established design standards to ensure technical integrity and nationwide compatibility among all systems. (Crown 1, p. 7)
12. The FCC has issued two licenses for the provision of cellular service at the wholesale level in each market area. Cellco is the non-wireline provider for cellular service in the Voluntown/Griswold area. (Crown 1, pp. 7-8)
13. The FCC license to construct and operate a cellular system in the New London NECMA was transferred to Cellco Partnership with FCC approval on May 24, 1995. (Cellco 1, Section 10)
14. In 1996, the United States Congress recognized a nationwide need for high quality wireless telecommunications services, including cellular telephone service. Through the Federal Telecommunications Act of 1996, Congress seeks to promote competition, encourage technical innovations, and foster lower prices for telecommunications services. (Crown 1, p. 7)

### **Site Search**

15. In its search for a cell site in the Voluntown/Griswold area which began with lease negotiations in 1997, Cellco identified and investigated seven potential sites, including the three included in the application, within or near a 0.8-mile radius in Voluntown. Cellco investigated two parcels of property off of Rockville Road in Voluntown. These sites were rejected for providing inadequate coverage to Cellco's existing coverage gaps along Route 138 and Route 165 in Voluntown and Griswold, and because Cellco was unable to contact one property owner. A parcel off of Pond Meadow Road in Voluntown was rejected as too far from the center of the Cellco search area. A site off Pendleton Hill Road in Voluntown was eliminated because the property owner was not interested in leasing space on the property. (Cellco 1, Section 2, pp. 3-4; Tr. 2, p. 53))
16. Cellco identified four existing communications towers located within approximately five miles of the site search area: a 150-foot tower owned by SBA, Inc. located at 131 Bishop Crossing, Griswold; a 160-foot tower owned by New Site Management LLC (the Cellco Jewett City site with Cellco antennas at 160 feet) at 257 Norman Road, Griswold; a 195-foot tower owned by Wireless Solutions,

Inc. at 2172 Gulliver Town Road, Griswold; and a 180-foot Sprint PCS tower located at 1439 Voluntown Road in Griswold. (Cellco 1, Section 2, p. 1)

### **Site Plans and Equipment Buildings**

17. Each proposed site would include a 100-foot by 100-foot leased parcel on which a 55-foot by 60-foot enclosed compound would be constructed. Three 12-foot by 20-foot concrete pads would be constructed at each proposed site to support future equipment shelters, and a 12-foot by 30-foot building constructed to house Verizon's telecommunications equipment. A 275-gallon diesel fuel tank would be installed to fuel the emergency generator. The tank would be double-walled and contain leak detection alarms. The emergency generator would be installed on a 5-foot by 10-foot concrete pad. (Cellco 1, Section 3, p. 5, Section 4, p. 5, Section 5, p. 5; Cellco 10, Q. 17)
18. Each proposed tower and equipment compound would be enclosed by an 8-foot high-security fence and gate. A crushed stone surface would be established within the tower compound. There would be sufficient room for a fifth concrete pad within the equipment compound to allow for future carrier expansion. (Tr. 2, p. 35; Cellco 1, p. 3)

### **Proposed Prime Site**

19. The proposed prime site is a wooded undeveloped 1.89-acre parcel of land on the north side of the end of Hi-Top Hill Road in Voluntown owned by William K.A and Dana M. Van Duyn. The property slopes slightly, and has an elevation of 400 feet above main sea level (AMSL). The trees on the site consist mostly of black oak with a canopy height of approximately 60 feet. (Cellco 1, p. 2; Cellco 1, Section 3, p. 6; DEP Comments, p.1)
20. The proposed prime site is bordered to the north by a block of the Pachaug State Forest, to the east, west and south by residential lots, and is zoned Rural District. According to the Town of Voluntown Plan of Conservation and Development, the prime site is within an area designated for low density residential uses. There are 10 homes within a 1000-foot radius of the prime site, the nearest of which is approximately 400 feet to the east. (Cellco 1, Section 3, p. 3, p. 6; Cellco 1, p. 15; Cellco 2a, p. 16)
21. Cellco would construct a 180-foot monopole at the proposed prime site, approximately six feet in width at the base and three feet in width at the top. The tower would be designed to withstand pressures equivalent to a 90 mph wind with one-half inch solid ice accumulation in accordance with Electronic Industries Association Standard EIA/TIA 222-E, Structural Standards for Steel Antenna Towers and Support Structures. (Cellco 1, Section 3, p. 8)
22. Verizon would attach 12 cellular panel antennas to the monopole on a triangular platform at approximately 150 feet above ground level (AGL). A global positioning system (GPS) antenna would be attached at approximately 70 feet AGL. (Cellco 1, Section 3, p. 8)
23. Platforms for other future antennas would be attached 140 feet AGL, 160 feet AGL, 170 feet AGL and 180 feet AGL. (Cellco 1, Section 3, p. 9)
24. The fall zone of the proposed prime tower would extend onto the Pachaug State Forest, one residential lot to the west, and one residential lot to the east. (Tr. 2, p. 40; Cellco 1, Section 3, p. 3; Cellco 10, Q. 11, Q. 12)

25. Access into the prime site would be from Hi-Top Hill Road along a new gravel driveway 300 feet in length and 12 feet in width within a 25-foot wide access easement. Utilities would be brought in overhead from Hi-Top Hill Road. (Cellco 1, p. 2; Cellco 1, Section 3, p. 1, p. 4, p. 5; Tr. 2, 9/25/00, p. 38)
26. The approximate costs of construction to Cellco and for Verizon for the proposed prime site are estimated as follows:

Cell site radio equipment	\$ 650,000
Tower and antennas	120,000
Power Systems	45,000
Building Costs	65,000
Miscellaneous Costs	150,000
(including site preparation and installation)	_____
Total Costs	\$1,030,000

(Cellco 1, p. 24)

#### **Proposed Alternate One Site**

27. The proposed alternate one site is within a 19.46 acre parcel of land at 232 Pendleton Hill Road (Route 49) in Voluntown, Connecticut owned by P. Elomaa. The proposed site contains mostly black oak trees with a 50-foot canopy and an understory of chestnut tree sprouts, blueberry bushes, and white pine trees. The proposed site has an elevation of 320 feet AMSL. (Cellco 1, p. 2; DEP Comments, 9/18/00, p.2; Cellco 9)
28. The proposed alternate one site is bordered by a block of the Pachaug State Forest to the south and west, by a residential lot to the north and by Pendleton Hill Road approximately 1400 feet to the east. (Cellco 1, Section 4, p. 4; DEP Comments, 9/19/00, p. 2)
29. There are three homes within a 1000-foot radius of the proposed alternate one site, the nearest of which is approximately 900 feet to the east. A small unoccupied cabin and tent stand on property approximately 250 feet to the north. The proposed site is designated as undeveloped land by the Voluntown Plan of Conservation and Development, and is zoned Rural District. (Cellco 1, p. 15; Cellco 2a, p. 16; Cellco 1, Section 4, p. 6; Tr. 1, p. 52; Tr. 2, p. 39)
30. Cellco would construct a 180-foot monopole at the proposed alternate one site, approximately six feet in width at the base, tapering to three feet in width at the top, designed to withstand pressures equivalent to a 90 mph wind with one-half inch solid ice accumulation, in accordance with Electronic Industries Association Standard EIA/TIA 222-E, Structural Standards for Steel Antenna Towers and Antenna Support Structures. (Cellco 1, Section 4, p. 8)
31. Verizon would attach 12 cellular panel antennas on the monopole on a triangular platform at approximately 150 feet AGL. A GPS antenna would be attached at approximately 70 feet AGL. Platforms for future antennas would be attached 140 feet AGL, 160 feet AGL, 170 feet AGL and 180 feet AGL. (Cellco 1, Section 4, pp. 8-9)

32. The fall zone of the proposed alternate one tower would include property owned by an adjacent landowner and the Pachaug State Forest, but would not include a small camp on this property. The proposed site could be moved to keep the fall zone out of the Pachaug State Forest. (Cellco 1, Section 4, p. 4; Cellco 10, Q. 12; Tr. 2, pp. 51, 52, p. 55)
33. Access into the alternate one site would be from Pendleton Hill Road along an existing gravel driveway for approximately 150 feet, and then along a new 2000-foot long driveway within a 30-foot wide access easement. Utilities would be brought in overhead from Pendleton Hill Road. (Cellco 1, Section 4, p. 1, p. 4; Cellco 1, p. 3; Tr. 2, 9/25/00, p. 38)
34. The approximate costs of construction to Cellco and for Verizon for the proposed alternate one site are estimated as follows:

Cell site radio equipment	\$ 650,000
Tower and antennas	120,000
Power Systems	45,000
Building Costs	65,000
Miscellaneous Costs (including site preparation and installation)	275,000
	_____
Total Costs	\$1,155,000

(Cellco 1, pp. 24-25)

#### **Proposed Alternate Two Site**

35. The proposed alternate two site is within a 53 acre parcel of land off Glasgo Road (Route 201) and Preston City Road (Route 165) in the Town of Griswold, owned by Duane A. and K.L. Button. The site is within a pasture on property known as Buttonwood Farm. The compound would be within a level mostly cleared section of pasture, containing boulders, with an elevation of 320 feet AMSL. (DEP Comments, 9/18/00, pp. 2-3; Cellco 1, Section 5, p. 1; Cellco 9)
36. The proposed alternate two site is surrounded by agricultural land and is zoned R-40 Residential. The site is designated for commercial use and low density residential use in the Town of Griswold Plan of Development map. (Cellco 1, pp. 19-20; Cellco 2d, Figure 16; Cellco 9)
37. There are two homes within 1000 feet of the proposed site, the nearest of which is 800 feet to the west. (Cellco 1, p. 15)
38. Cellco would construct a 199-foot monopole at the proposed alternate two site, approximately six feet in width at the base and 3 feet in width at the top. The tower would be designed to withstand pressures equivalent to a 90 mph wind with one-half inch solid ice accumulation in accordance with Electronic Industries Association Standard EIA/TIA 222-E, Structural Standards for Steel Antenna Towers and Antenna Support Structures. (Cellco 1, Section 5, p. 8)
39. Verizon would attach 12 cellular panel antennas on a triangular antenna platform at approximately 196.5 feet AGL. A GPS antenna would be attached at approximately 70 feet AGL. Platforms for future antennas would be attached 156.6 feet AGL, 166.5 feet AGL, 176.5 feet AGL, 186.5 feet AGL, and 196.5 feet AGL. (Cellco 1, Section 5, pp. 8-9)

40. The fall zone of the proposed alternate two tower would include the property of one adjacent property owner to the east. (Cellco 1, Section 5, p. 3)
41. Access into the proposed alternate two site would be via a new 1200-foot long driveway from Glasgo Road. Although an initial portion already exists as an unpaved road, most of the access road would be a new road within a 25-foot wide access easement. Utilities would be brought in overhead from Glasgo Road. To construct the access road, 24 large white pines would have to be removed within the pasture. (Cellco 1, Section 5, p. 1, p. 4; Cellco 1, p.3; DEP Comments, 9/18/00, pp. 2-3; Tr. 2, 9/25/00, p. 38)
42. The approximate costs of construction to Cellco and for Verizon for the proposed alternate two site are estimated as follows:

Cell site radio equipment	\$ 650,000
Tower and antennas	130,000
Power Systems	45,000
Building Costs	65,000
Miscellaneous Costs (including site preparation and installation)	200,000
	_____
Total Costs	\$1,090,000

(Cellco 1, p. 25)

### **Environmental Considerations**

43. The proposed prime and alternate one sites contain no known existing populations of Federal or State endangered, threatened or species of special concern. The Department of Environmental Protection (DEP) has records of one State endangered species, the sharp-shinned hawk (*Accipiter striatus*) and two species of state special concern, the eastern box turtle (*Terrapene carolina*) and the wood turtle (*Clemmys insculpta*), occurring in the vicinity of the proposed alternate two site. (Cellco 1, Section 6, DEP letters of 3/17/00, 4/28/00, and 6/5/00)
44. The DEP recommended that surveys for the presence of the sharp-shinned hawk be conducted at the alternate two site, and determined the eastern box turtle and wood turtle would be less affected by the project; formal surveys were therefore not required for the two turtle species. A wildlife biologist conducted a survey for the presence of sharp-shinned hawks on September 10, 2000 at the alternate two site and did not observe this species, which may already have begun its migration. Three stands of eastern white pine were identified as possible sharp-shinned hawk nesting sites on the 53-acre alternate two parcel. One of the potential nesting areas is along the proposed route of the access road from Glasgo Road. Pending approval of the lessor, the access road route could be altered to avoid the potential hawk nesting areas. (Tr. 1, pp. 47-48; Cellco 8; Cellco 13)
45. No wetlands or watercourses would be impacted during the construction of any of the three sites proposed in the application. (Tr. 1, pp. 49-50; Cellco 1, p. 21; Cellco 1, Section 3, p. 6; Cellco 1, Section 4, p. 6; Cellco 9)

46. The State Historic Preservation Office (SHPO) has determined that construction of the proposed prime and alternate one sites would have no effect on historic, architectural, or archaeological resources listed on or eligible for the National Register of Historic Places. The SHPO noted the proposed alternate two site possesses moderate to high sensitivity for prehistoric and historic archaeological resources, and recommended a professional reconnaissance be undertaken to identify and evaluate archaeological resources. The Mashantucket Pequot Museum and Research Center (MPMRC) subsequently conducted an archaeological reconnaissance survey of the proposed alternate two site which recovered no cultural materials. The MPMRC then recommended no further archaeological investigations. (Cellco 1, Section 7, SHPO letters of March 16, 2000, April 3, 2000, May 17, 2000; Cellco 14, p. 3, p. 4, p. 18)
47. On July 13, 2000, the SHPO stated no further archaeological investigations were warranted for the proposed alternate two site, and that the proposed project would have no effect on the State's archaeological heritage. (Cellco 7)
48. The number of trees six inches in diameter or greater at breast height which would be removed during the construction of the access roads and tower compounds at the proposed sites are as follows: proposed prime site, 49; alternate one site, 129; and alternate two site 67. (Cellco 10, Q. 15)
49. The cut and fill in cubic yards required for the construction of each proposed site and access road is estimated in the table below as follows:

<u>Site</u>	<u>Area Disturbed (s.f.)</u>	<u>Cut (cubic yards)</u>	<u>Fill (cubic yards)</u>
Prime	6,700	-	-
Alternate One	48,000	-	-
Alternate Two	26,500	550	330

(Cellco 10, Q. 15)

50. Crown would install silt fence and/or hay bales along the down-gradient side of all construction at an approved site in accordance with the Connecticut Guidelines for Soil Erosion and Sediment Control. It is uncertain as to whether blasting would be required during the construction of any of the proposed sites. (Cellco 10, Q. 16; Cellco 10, Q. 15)
51. Crown uses an airspace program to determine if a proposed tower would be a hazard to air navigation. The Federal Aviation Administration (FAA) requires notification of a proposed tower only if such a tower would be a hazard to navigation or operational procedures. Towers 200 feet or greater in height generally require marking or lighting by the FAA. None of the three proposed towers in this application would require marking or lighting. The nearest airport is Richmond Airport in Rhode Island, approximately 11.42 nautical miles to the northeast. (Tr. 1, pp. 17-18, p.22; Tr. 2, p. 71)
52. The electromagnetic radiofrequency power densities, calculated using the FCC Office of Engineering and Technology Bulletin 65, August 1997, using conservative worst-case approximation of radiofrequency power density levels at the base of each tower, with all Cellco antennas transmitting simultaneously on all channels at full power would be 0.030 mW/cm<sup>2</sup> (5.2 percent of the American National Standards Institute (ANSI) Standard) for the proposed prime and alternate one antennas mounted 150 feet AGL; and 0.0176 mW/cm<sup>2</sup> (3.0 percent of the ANSI Standard) for antennas mounted 197 feet AGL at the proposed alternate two tower site. (Cellco 1, pp. 17-18)

**Visibility**

53. The visibility of the proposed prime tower from various locations in the area would be as follows:

**Visibility of Proposed 180-foot Prime Tower**

<b><u>Location</u></b>	<b><u>Visibility</u></b>	<b><u>Approx. Distance (feet)</u></b>
Route 165 (from north)	No	2800
Pendleton Hill Rd. (from northeast)	No	1100
Pendleton Hill Rd. (from southeast)	Yes	2500
Kinney Road	No	4400
Route 165 (from west)	Yes	2000
Doanville Pond	No	3400

(Cellco 1, section 3, pp. 11-17, aerial photograph)

54. The proposed prime tower would be visible from six existing homes at or near the cul-de-sac atop Hi-Top Hill Road. A residence at 77 Hi-Top Hill Road would have a clear view of the tower. Motorists driving east on Hi-Top Hill Road would also have a view of the tower. (DEP Comments 9/18/00, pp. 1-2; Tr. 2, p. 45, p. 78)

55. The visibility of the proposed alternate one tower from various locations in the area would be as follows:

**Visibility of Proposed 180-foot Alternate One Tower**

<b><u>Location</u></b>	<b><u>Visibility</u></b>	<b><u>Approx. Distance (ft.)</u></b>
Pendleton Hill Rd. (from east)	No	1300
Pendleton Hill Rd. (from southeast)	No	3000
Kinney Road	No	3400
Doaneville Pond	No	3800
Route 165	No	2800
Pendleton Hill Rd. (from northeast)	No	1900

(Cellco 1, Section 4, pp. 11-18)

56. The proposed alternate tower would not be visible from any homes in this area, and there are no other short range visible receptors at this site. (DEP Comments, 9/18/00, p. 2; Cellco 1, Section 4, aerial photograph)



57. The visibility of the proposed alternate two tower from various locations in the area would be as follows:

**Visibility of Proposed 199-foot Alternate Two Tower**

<b><u>Location</u></b>	<b><u>Visibility</u></b>	<b><u>Approx. Distance (ft.)</u></b>
Glasgo Pond	No	2000
Kinney Road	Yes	3400
Pachaug State Forest Boundary	No	1500
Glasgo Road (Route 201)	Yes	2800
Pachaug Pond	Yes	2600
Preston City Road	Yes	1000

(Cellco 1, Section 5, pp. 11-17, Cellco 10, PHQ. 12, map))

58. No homes or buildings other than farm buildings are visible from the proposed alternate two site. The proposed alternate two tower would be visible along substantial portions of Route 165 and Route 201. (DEP Comments, 9/18/00, p. 3)

**Coverage Needs**

59. Existing Connecticut Cellco facilities in Plainfield (to the north), Jewett City (to the west), two sites in North Stonington (to the south) have gaps in cellular coverage in the Griswold-Voluntown area. In addition, Cellco has sites in Exeter, Rhode Island and in Hopkinton, Rhode Island (to the east) that provide some coverages into Connecticut. The primary purpose of this application is to provide coverage to these gaps and provide additional traffic handling capacity to the Griswold-Voluntown area. (Crown 1, p. 9; Tr. 1, p. 28, p. 34; Cellco 2g, Section 1; Cellco 10, Q. 3, Tr. 1/25/01, p. 12; Cellco 20)

60. In addition to the Griswold-Voluntown area, Cellco seeks to establish future sites in the areas of Preston City and Preston (to the west and southwest, respectively) and in locations east and north of Plainfield. Cellco plans to develop a cell site to cover Route 49 north of Voluntown after establishing a site in Voluntown. Cellco will also require a future site on Route 138 in Rhode Island. (Tr. 1, pp. 28-29; Tr. 1/25/01, p. 24; Cellco 11, Q. 18)

61. Although Cellco notified other telecommunications providers of potential available tower space at the three proposed sites in this application, only one, Springwiche Cellular, (Springwiche) indicated an interest in attaching antennas to the proposed prime and alternate one towers at the 180-foot level. The alternate two tower could improve Springwiche coverage, but to a lesser degree than the proposed prime or alternate one towers. Cellco has now been informed by Springwiche they could use the alternate two tower if it is approved by the Council. (Tr. 1, pp. 23-25; Tr. 2, pp. 90-91, Tr. 4/30/01, p. 55)

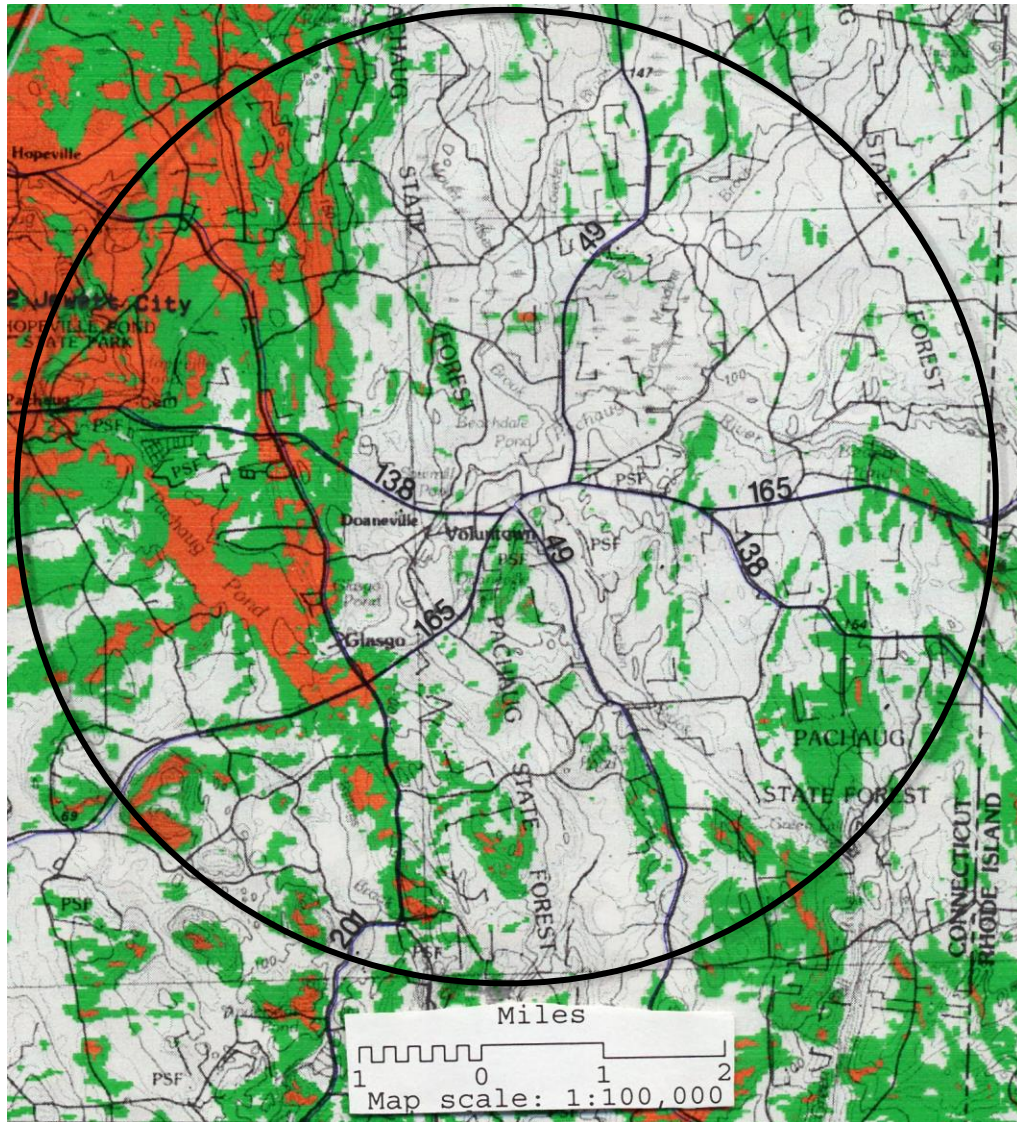
62. Cellco proposed towers which are 180 feet in height at the proposed prime and alternate one tower sites solely to provide space for other telecommunication carriers to attach their antennas. Cellco did not require antennas greater than 150 feet AGL to meet its coverage needs at the proposed prime and alternate one sites. (Tr. 1, p. 22, p. 23)

63. On April 27, 2000, Crown representatives met separately with the First Selectman of the Towns of Griswold and Voluntown to discuss the proposed application to the Council. On May 24, 2000, Town officials of Griswold and Voluntown requested Cellco consider using two recently constructed towers in the area as antenna sites. (Cellco 4, letter of 5/24/00)
64. On June 14, 2000, Cellco responded to inquiries of Griswold and Voluntown Town officials regarding use of existing towers by stating that the existing 195-foot Wireless Solutions tower on Gulliver Road in Griswold was rejected by Cellco because it was "...too far from the Cellco search area and would not provide Cellco with adequate coverage to existing gaps along Routes 138, 165, and 49." Cellco further stated that the 180-foot Sprint tower on Route 138 in Griswold was neither approved nor constructed at the time of the Cellco site search, and that attaching Cellco antennas to the highest available level on this tower, 170 feet AGL, would leave a 1.25-mile gap on Route 138, and a 3-mile gap on Route 165. The Wireless Solutions tower and Sprint PCS tower are approximately 2.8 miles apart. Cellco did not indicate it had initially explored using these two towers in conjunction as antenna sites to cover existing gaps. (Cellco 4, letter of 6/14/00; Cellco 1, section 2, p. 1; Cellco 10, Q. 2, map)
65. The existing Wireless Solutions tower off 2172 Gulliver Road in Griswold has space available for future antennas at the 185-foot, and 175-foot levels. The site has an elevation of approximately 400 feet AMSL. (Cellco 1, section 5, p. 2; Cellco 10, Q. 2)
66. Springwich investigated use of the existing Wireless Solutions tower at 185-feet AGL and found it would provide Springwich with enhanced coverage along Routes 165 and 201, with lesser coverage provided to the north along Route 49 and along Route 138. (Tr. 2, p. 92)
67. The Wireless Solutions tower on Gulliver Road is the closest existing tower to the proposed alternate two site, standing approximately 5000 feet south of the alternate two site. (Cellco 10, Q. 2)

68. Existing Cellco coverage within a radius of approximately four miles of the intersection of Routes 49, 138, and 165, indicates the following coverage gaps now occur. Gaps are defined as areas receiving < -90 dbm coverage.

**Existing Coverage**

<b><u>Route</u></b>	<b><u>Existing Gaps (approx. miles) &lt; -90 dbm</u></b>
49	6.4
138	4.8
165	5.6
201	<u>1.0</u>
	17.8 miles
	Total gaps

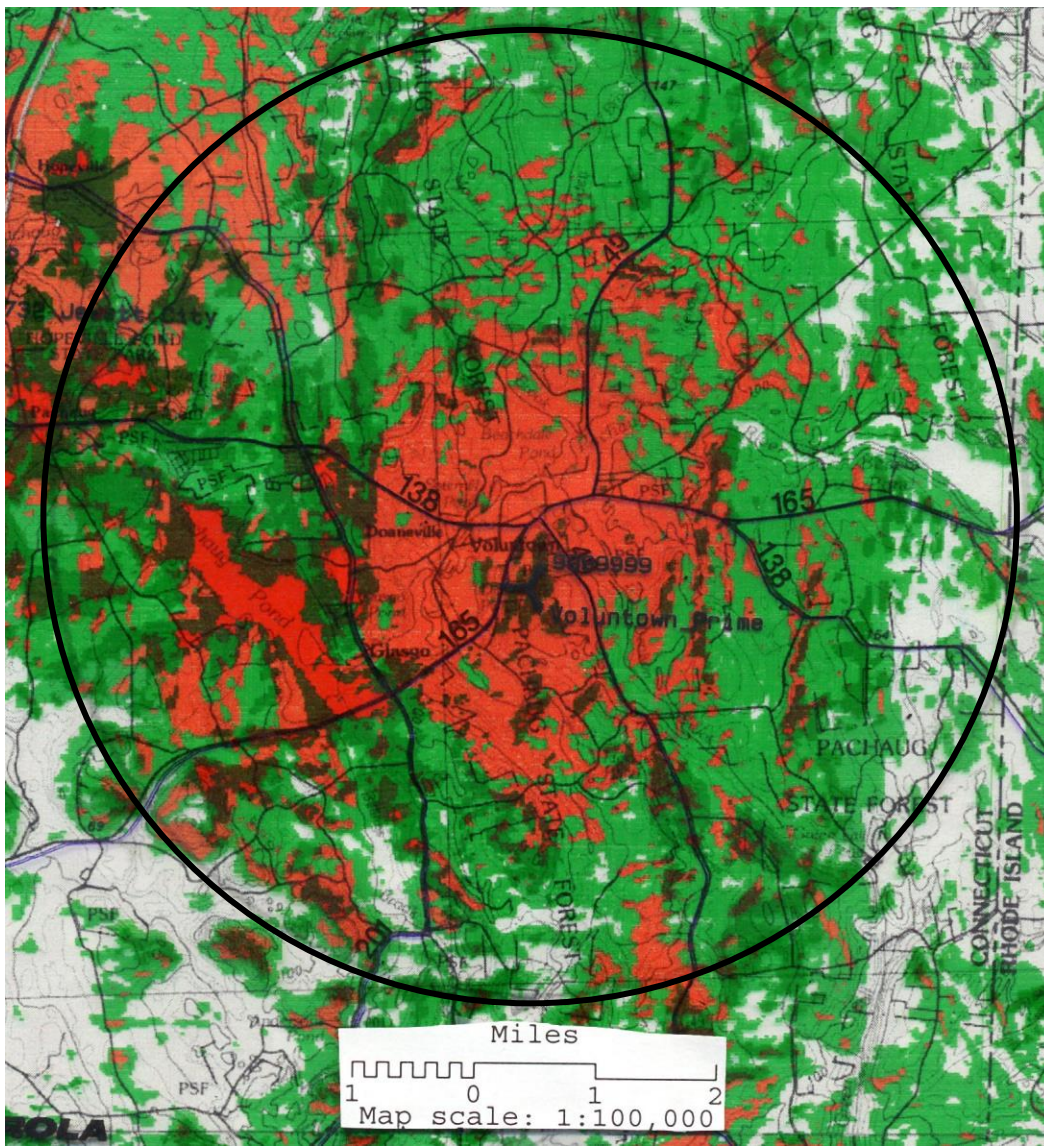


(Cellco 23, Q. 21, Q. 22, maps)

69. Placing Cellco antennas on the proposed prime site tower at a point 150 feet AGL would leave the following coverage gaps within approximately a four mile radius of the intersection of Routes 49, 138, and 165 site:

**Proposed Prime Site Tower**

<u>Route</u>	<u>Gaps (approx. miles)</u> <u>&lt; -90 dbm</u>
49	0.0
138	0.4
165	0.4
201	<u>0.2</u>
	1.0 miles
	Total gaps

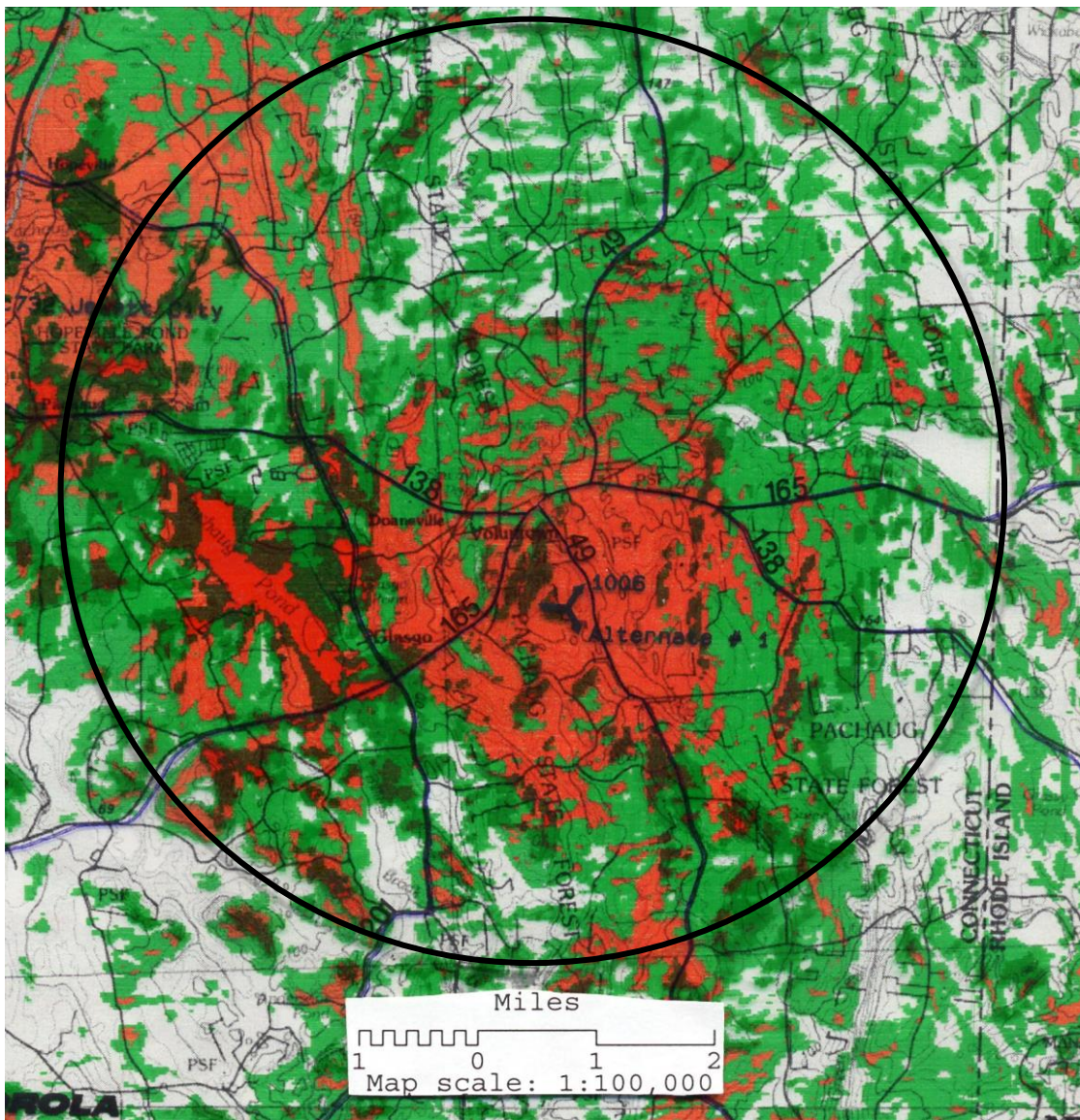


(Cellco 10, Q. 9, map; Cellco 23, Q. 21, Q. 22, maps)

70. Placing Cellco antennas on the proposed alternate one site tower at a point 150 feet AGL would leave the following coverage gaps within approximately a four mile radius of the intersection of Routes 49, 138, and 165.

**Proposed Alternate One Site Tower**

<u>Route</u>	<u>Gaps ( approx. miles)</u> <u>&lt; -90 dbm</u>
49	0.4
138	0.5
165	0.5
201	<u>0.5</u>
	1.9 miles
	Total gaps

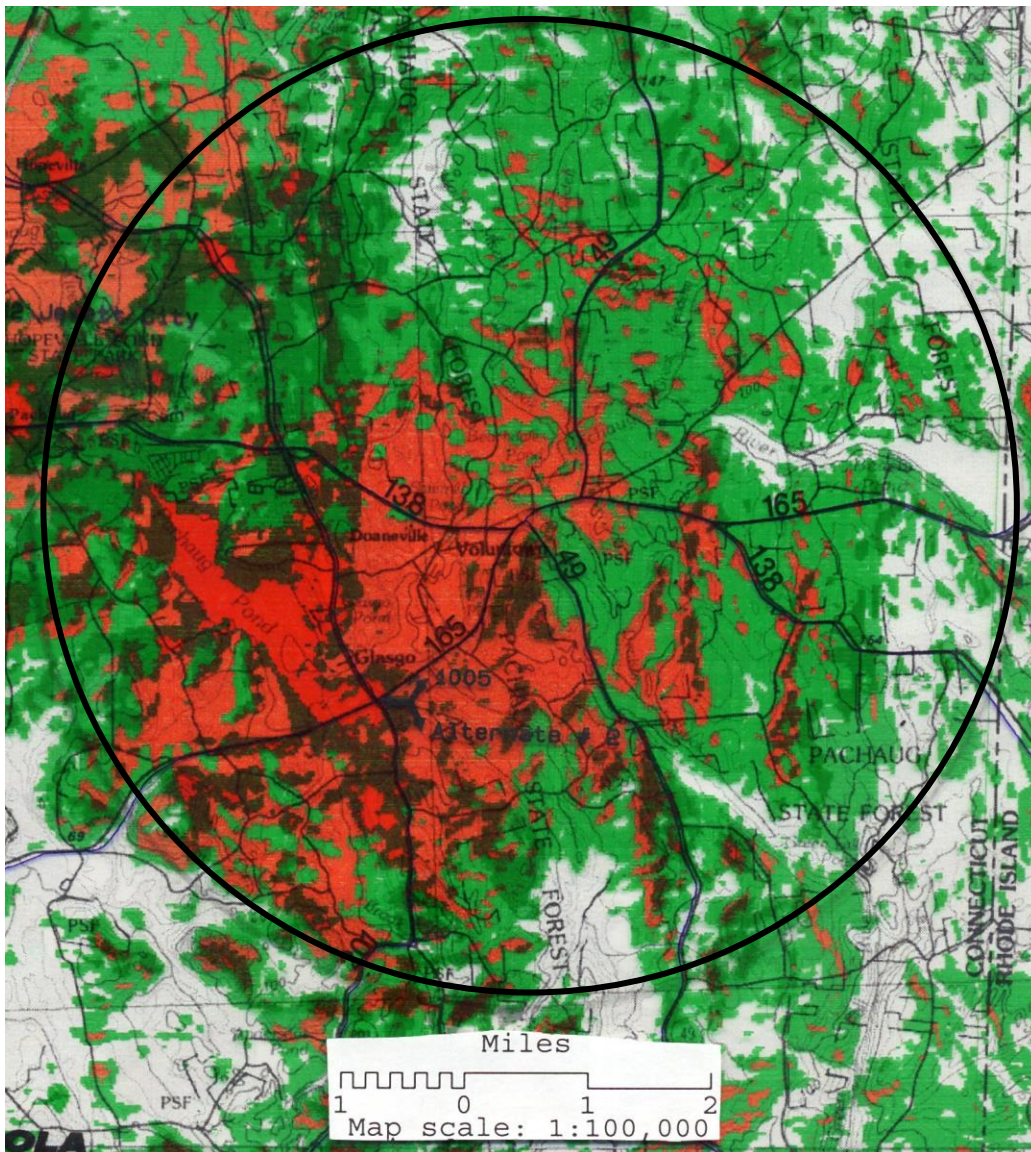


(Cellco 10, Q. 9, map; Cellco 23, Q. 21, Q. 22, maps)

71. Placing Cellco antennas on the proposed alternate two site tower at a point 197 feet AGL would leave the following coverage gaps within approximately a four mile radius of the intersection of Routes 49, 138, and 165.

**Proposed Alternate Two Site Tower**

<u>Route</u>	<u>Gaps ( approx. miles)</u> <u>&lt; -90 dbm</u>
49	0.6
138	0.4
165	0.3
201	<u>0.1</u>
	1.4 miles
	Total gaps

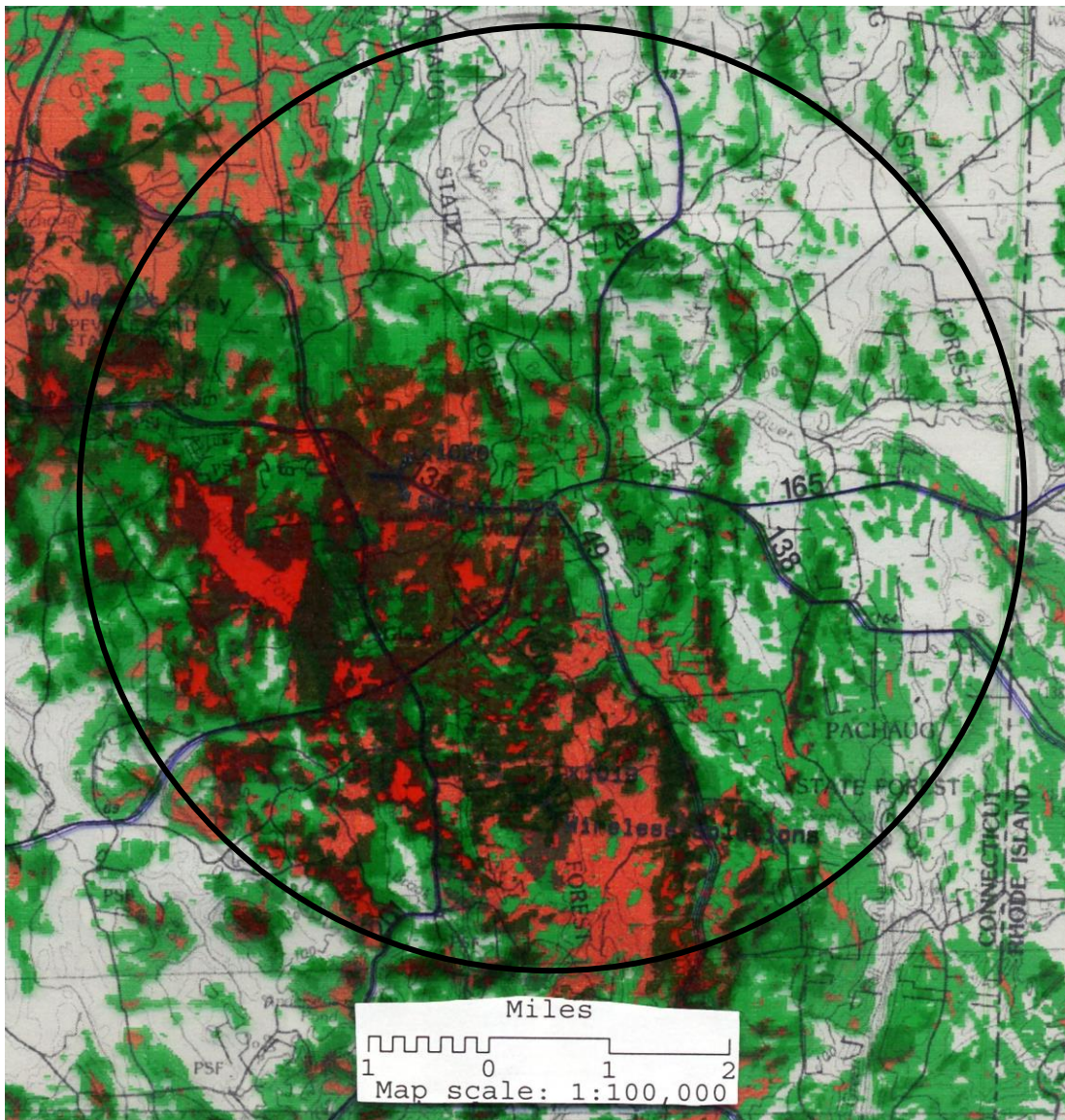


(Cellco 10, Q. 9, map; Cellco 23, Q. 21, Q. 22, maps)

72. Combining Cellco antennas placed on both the Wireless Solutions tower at a point 195-foot AGL and on the Sprint PCS tower at a point 150 feet AGL would leave the following coverage gaps within approximately a four mile radius of the intersection of Routes 49, 138, and 165.

**Combined Wireless Solutions and Sprint PCS Towers**

<u>Route</u>	<u>Gaps (approx. miles)</u> <u>&lt; -90 dbm</u>
49	1.8
138	1.2
165	1.6
201	<u>0.2</u>
	4.8 miles
	Total gaps



(Cellco 10, Q. 1, maps; Cellco 23, Q. 21, Q. 22, maps)

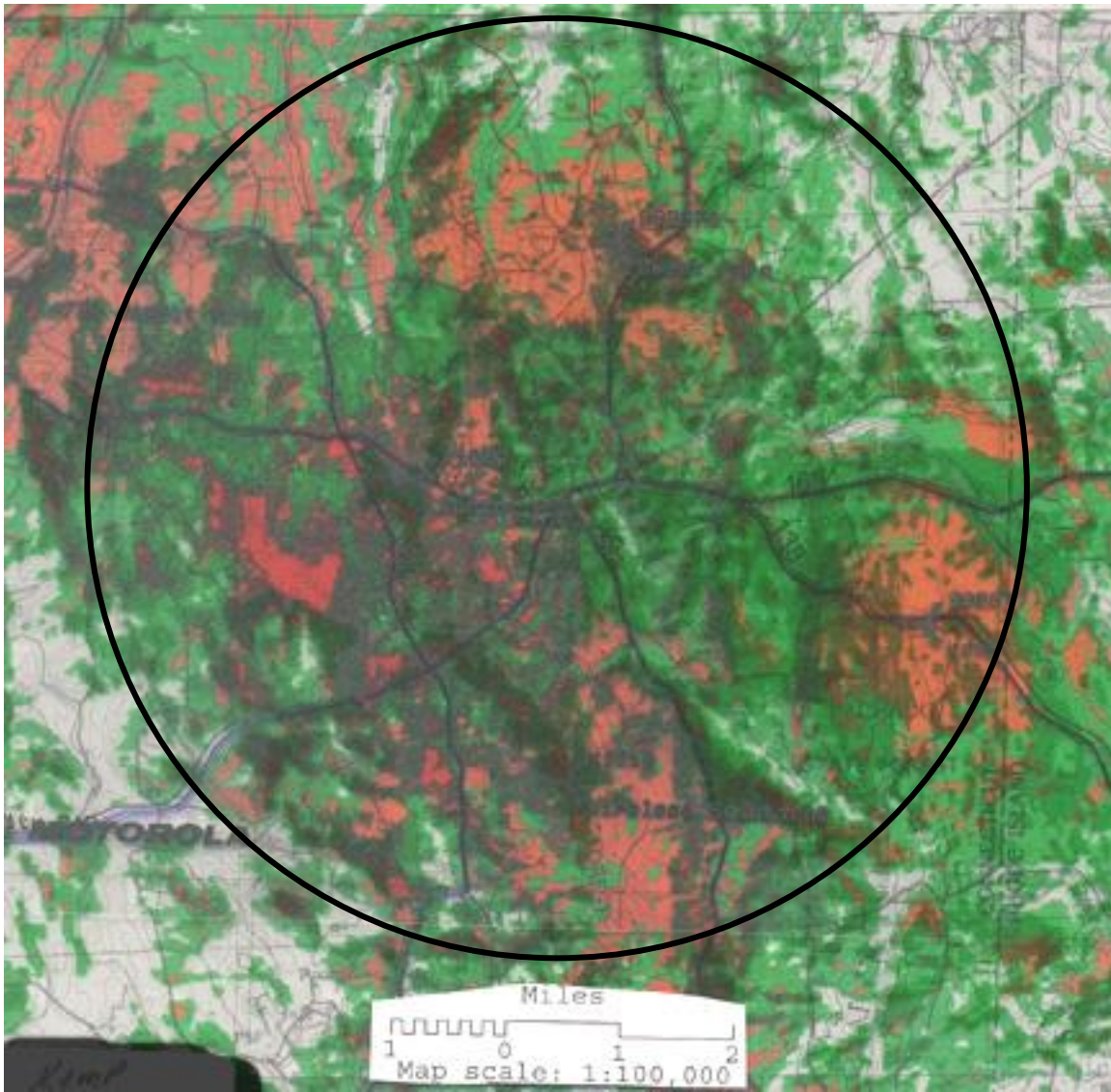
73. Using either the proposed prime, alternate one or alternate two towers would eliminate the need for Cellco to use either the Wireless Solutions or Sprint PCS towers. (Tr. 1/25/01, p. 36, p. 40)
74. The Council reopened this docket at the request of the applicant and scheduled a hearing held beginning at 3:00 p.m., April 26, 2001, at the Council's offices, 10 Franklin Square, New Britain, Connecticut. The hearing was held for the limited purpose of analyzing coverage and potential redundant coverage from the proposed alternate one and alternate two sites, existing towers owned by Wireless Solutions LLC and Sprint PCS in Griswold, Connecticut, an approved tower on Route 49 in Voluntown, Connecticut, and towers pending before the Voluntown Planning and Zoning Commission. (Tr. 4/26/01, p. 3, pp. 4-5)
75. On December 19, 2000, the Voluntown Planning and Zoning Commission approved a 180-foot self-supporting steel lattice tower on property owned by Thomas and Patricia Sweet off of RFD1 Route 49N, Voluntown, Connecticut. The approved Sweet Farm site has an elevation of 430 feet AMSL. The tower will be owned by Coastal Towers LLC (Coastal). (Council Ex 1., p. 1, Tab B, Tab C)
76. Cellco has not approached Coastal about the use of the Sweet Farm tower, which was unknown to Cellco at the time of its application to the Council in June 2000. The tower has not yet been constructed. Cellco maintains this tower would not provide the required coverage in the Voluntown-Griswold area either alone or in combination with other towers. (Tr. 4/26/01, pp. 38-39)
77. Cellco also evaluated coverage from a prospective 180-foot tower on Route 138 in Voluntown known as the Kemp tower site, which has not yet been approved by the Town of Voluntown. (Tr. 4/26/01, p. 7, p. 9, p. 77; Cellco Ex. 25d)



78. Combining Cellco antennas placed on the Wireless Solutions tower at a point 195 feet AGL, on the Sprint tower at a point 150 feet AGL, on the Sweet Farm tower at a point 180 feet AGL and on the Kemp tower at a point 180 feet AGL, with existing Cellco coverage, would leave the following coverage gaps within approximately a four mile radius of the intersection of Routes 49, 138, and 165.

Combined Wireless Solutions, Sprint PCS, Sweet Farm and Kemp Towers

<u>Route</u>	Gaps (approx. miles) <u>&lt; -90 dbm</u>
49	0.1
138	0
165	0
201	<u>0</u>
	0.1 miles Total gaps



(Tr. 4/26/01, pp. 19-22, 28-32, Cellco 10, Q. 1, map 7; Cellco 23, Q. 21, Q. 22, maps; Cellco 25, Q. 25a, Q. 25d maps)

79. Coverage from the combination of the existing Sprint PCS and Wireless Solutions towers in combination with coverage from the proposed Sweet Farm and Kemp site towers indicates Cellco cellular units would switch frequently between non-dominant server sites within vehicles traveling on roads in the Griswold-Voluntown areas. Use of either the alternate one or alternate two tower sites in the same area would provide dominant service in the area, eliminating frequent switching between tower sites. (Tr. 4/26/01, pp. 74-76; Cellco Ex. 20, Cellco Ex. 21, Cellco Ex. 26)
80. The use of multiple towers, such as two existing towers one approved tower and one proposed tower to provide coverage to the Voluntown-Griswold area could quadruple Cellco's expenses for radio equipment, rent and taxes. As a result, Cellco would be unlikely to make the investment required in a multiple-tower scenario. (Tr. 4/26/01, pp. 18-19, p. 40, pp. 43-45, p. 63)
81. Cellco's ideal coverage system in the Voluntown-Griswold area would include the combined use of the alternate one or two site; a site along Route 49 near the New London County line; and a future tower site to cover Route 138 and 165 in Rhode Island. (Tr. 4/26/01, p. 68)