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STATE OF CONNECTICUT

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September 8, 2010

TO: Parties and Intervenors

FROM: S. Derek Phelps, Executive Director 

RE: **DOCKET NO. 391** - T-Mobile Northeast, LLC application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility located 232 Shore Drive, Old Lyme, Connecticut.

As stated at the hearing in New Britain on June 23, 2010, after the Council issues its draft findings of fact, parties and intervenors may identify errors or inconsistencies between the Council's draft findings of fact and the record; however, no new information, evidence, argument, or reply briefs will be considered by the Council.

Parties and Intervenors may file written comments with the Connecticut Siting Council on the Draft Findings of Fact issued on this docket by September 17, 2010.

LR/MP/jbw

Enclosure

LIST OF PARTIES AND INTERVENORS
SERVICE LIST

Status Granted	Document Service	Status Holder (name, address & phone number)	Representative (name, address & phone number)
Applicant	<input checked="" type="checkbox"/> U.S. Mail	T-Mobile Northeast, LLC	Julie D. Kohler, Esq. Monte E. Frank, Esq. Jesse A. Langer, Esq. Cohen and Wolf, P.C. 1115 Broad Street Bridgeport, CT 06604 (203) 368-0211 (203) 394-9901 fax jkohler@cohenandwolf.com mfrank@cohenandwolf.com jlanger@cohenandwolf.com
Intervenor <i>(granted on December 18, 2009)</i>	<input checked="" type="checkbox"/> E-mail	Cellco Partnership d/b/a Verizon Wireless	Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103-3597 (860) 275-8200 (860) 275-8299 fax kbaldwin@rc.com
Intervenor <i>(granted on December 18, 2009)</i>	<input checked="" type="checkbox"/> E-mail	New Cingular Wireless PCS, LLC (AT&T)	Christopher B Fisher, Esq. Daniel M. Laub, Esq. Cuddy & Feder LLP 445 Hamilton Avenue, 14 th Floor White Plains, NY 10601 (914) 761-1300 (914) 761-5372 fax cfisher@cuddyfeder.com dlaub@cuddyfeder.com
Party <i>(granted on December 18, 2009)</i>	<input checked="" type="checkbox"/> U.S. Mail	Town of Old Lyme	The Honorable Timothy C. Griswold Office of the Selectmen Town of Old Lyme 52 Lyme Street Old Lyme, CT 06371 firstselectman@oldlyme-ct.gov

DOCKET NO. 391 - T-Mobile Northeast, LLC application for a } Connecticut
 Certificate of Environmental Compatibility and Public Need for }
 the construction, maintenance and operation of a } Siting
 telecommunications facility located 232 Shore Drive, Old Lyme, }
 Connecticut. } Council

September 7, 2010

DRAFT Findings of Fact

Introduction

1. Pursuant to Chapter 277a, Sections 16-50g et seq. of the Connecticut General Statutes (CGS), as amended, and Section 16-50j-1 et. Seq. of the Regulations of Connecticut State Agencies (RCSA), T-Mobile Northeast, LLC (T-Mobile) applied to the Connecticut Siting Council (Council) on October 15, 2009 for the construction, maintenance, and operation of a telecommunications facility, which would include a 100-foot monopole tower, located at 232 Shore Road in the Town of Old Lyme, Connecticut. (See Figures 1, 2, and 3) (T-Mobile 1, p. 1)
2. T-Mobile is a limited liability company, organized under the laws of Delaware, with a Connecticut office at 35 Griffin Road South, Bloomfield, Connecticut. The company and its affiliated entities are licensed by the Federal Communications Commission (FCC) to construct and operate a personal wireless services system in Connecticut. (T-Mobile 1, p. 2)
3. The parties in this proceeding are T-Mobile and the Town of Old Lyme (Town). Celco Partnership d/b/a Verizon Wireless (Cellco) and New Cingular Wireless PCS, LLC (AT&T) are intervenors. (Transcript 1 – February 4, 2010, 3:05 p.m. [Tr. 1], p. 7)
4. T-Mobile’s proposed facility would provide coverage to Route 156, Mill Creek Road, Hawks Nest Road, and Cross Lane just south of Interstate 95, residential areas in the vicinity, and the Amtrak rail line that passes through the area. (T-Mobile 1, p. 1)
5. Pursuant to CGS § 16-50l(b), notice of the applicant’s intent to submit this application was published on July 23 and 25, 2009 in the New London Day. (T-Mobile 1, pp. 3-4 and Tab F)
6. Pursuant to CGS § 16-50l(b), T-Mobile sent notice of its intent to file an application with the Council to each person appearing of record as owner of property abutting the property on which the site is located. Notices were sent on July 21, 2009. T-Mobile received return receipts from all of the property owners to whom it sent notices except for Capital Holding of CT, Inc. of 230 Shore Road and Michele M. Johnson of 1 Hawks Nest Road. On October 29, 2009, T-Mobile issued a second notice to these abutters and both were returned unable to forward. (T-Mobile 1, p. 4 and Tab G; T-Mobile 2, response 5)
7. Pursuant to CGS § 16-50l (b), T-Mobile provided a copy of its application to all federal, state, regional, and local officials and agencies listed therein. (T-Mobile 1, p. 3 and Tab E)

8. On or about January 20, 2010, T-Mobile posted a sign giving public notice of T-Mobile's pending application for the proposed tower at 232 Shore Drive and the public hearing scheduled for it. The sign was posted along Shore Road, at the host property at the request of the Council, in order to provide better visibility. (T-Mobile 5, Pre-Filed Testimony of Raymond Vergati, response 11 and Attachment A)
9. Pursuant to CGS § 16-50m, the Council, after giving due notice thereof, held a public hearing on February 4, 2010, beginning at 3:00 p.m. and continuing at 7:00 p.m. in the Old Lyme Meeting Hall, Town Hall, 52 Lyme Street, Old Lyme, Connecticut. This was a consolidated hearing for three T-Mobile tower applications in Old Lyme: Docket No. 391 – 232 Shore Road (Self-storage Site); Docket No. 392 – 387 Shore Road (Laundromat Site); and 61-1 Buttonball Road (Commercial Complex Site). The 3:00 p.m. hearing session began with Docket No. 391. The 7:00 p.m. public comment hearing session included all three dockets. (Council's Hearing Notice dated December 23, 2009; Tr. 1, pp. 3-4, 8; Transcript 2 – 7:00 p.m. [Tr. 2], pp. 3, 13)
10. The Council and its staff conducted an inspection of three proposed sites on February 4, 2010, beginning at 1:00 p.m. at the Laundromat Site and continuing to the Self-storage Site, and then the Commercial Complex Site. On the day of the field inspection, T-Mobile flew a red balloon with a diameter of four feet to simulate the height of the proposed tower at the Self-storage Site beginning at approximately 7:00 a.m. and continuing to 10:00 a.m. The balloon was flown again beginning at 12:30 p.m. At approximately 2:20 p.m. T-Mobile was approached by Amtrak personnel requiring that the balloon float be abandoned because the balloon may cross Amtrak's right of way. By approximately 2:30 p.m., the balloon was taken down. During the balloon float, the weather conditions were not favorable due to a fairly sustained 10 miles per hour wind. Overall, the balloon did not reach its proposed height of 100 feet above ground level (agl). (Council Field Review Notice dated January 27, 2010; Tr. 1, p. 4, 24-28; Tr. 4, p. 32)
11. The Council held continued hearings in New Britain on March 2, April 20, and June 23, 2010. (Transcript 3 – 11:15 a.m. [Tr. 3], p. 3; Transcript 4 – 1:15 p.m. [Tr. 4], p. 3; Transcript 5 – 1:10 p.m. [Tr. 5], p. 4)

State Agency Comments

12. Pursuant to CGS § 16-50l, the Council solicited comments on this application on December 23, 2009 from the following state departments and agencies: Department of Agriculture, Department of Environmental Protection (DEP), Department of Public Health, Council on Environmental Quality (CEQ), Department of Public Utility Control, Office of Policy and Management, Department of Economic and Community Development, and the Department of Transportation (ConnDOT). (CSC Hearing Package dated December 23, 2009)
13. Pursuant to CGS § 16-50l, the Council solicited additional comments on this application on July 24, 2010 from the following state departments and agencies: Department of Agriculture, DEP, Department of Public Health, CEQ, Department of Public Utility Control, Office of Policy and Management, Department of Economic and Community Development, Department of Transportation, and the Department of Emergency Management and Homeland Security. (Letter to State Department Heads dated June 24, 2010)

14. The Council on Environmental Quality (CEQ) responded to the Council's solicitation with for comments. The CEQ notes that the visual impact of towers that are very close to the Long Island Sound shoreline cannot be fully assessed without a virtual simulation of their appearance from the waters of this major recreational resource. CEQ is also concerned that the proximity of multiple tall structures to preserved lands, refuges and coastal marshes raises the issues of possible impacts on resident and transient bird populations. (CEQ Comments dated January 27, 2009)
15. Except for CEQ, no state agencies submitted comments in response to the Council's solicitation. (Record)

Municipal Consultation

16. On May 28, 2009, T-Mobile submitted a technical report on its proposed facility to Old Lyme's First Selectman, Timothy Griswold. (T-Mobile 1, p. 17; T-Mobile 1, Exhibit R)
17. On June 25, 2009, T-Mobile met with the First Selectman Griswold and the Zoning and Inlands Wetlands Enforcement Officer to discuss the proposed facility. (T-Mobile 1, p. 17)
18. By letter dated October 21, 2009, First Selectman Griswold indicated that the Town had executed a lease with SBA Towers II, LLC for the development of a telecommunications facility at 14 Cross Lane, Old Lyme. The tower would be 170 feet tall, and the Town believes that it may supplant the need for any number of T-Mobile sites while avoiding the proliferation of towers in Connecticut. Accordingly, the Town believes that a one site solution would be beneficial to the Town and the wireless customers who reside in or visit Old Lyme. (Town Comment Letter dated October 21, 2009)
19. First Selectman Griswold made a statement at both February 4, 2010 hearing sessions indicating an interest in improving cell reception on behalf of the Board of Selectman and residents in Old Lyme, particularly the beach area. Mr. Griswold also indicated that Town emergency services communications could be improved. Also, the proposition to lease the Cross Lane site to SBA for a tower was defeated at a Town meeting due to concerns including the proximity of the tower to a school. The Cross Lane site is no longer available for consideration. (Tr. 1, pp. 9-11; Tr. 2, pp. 12-13)
20. First Selectman Griswold also stated that the Town requested tower space for its emergency services communications. The equipment would require approximately a height of 160 feet on one of the proposed towers. However, the Town has only expressed an interest in the proposed tower at Self-Storage Site. (Tr. 1, p. 11; Tr. 2, pp. 12-13)
21. T-Mobile would make space on its proposed tower available for the Town's public safety communications free of charge. (T-Mobile 5, Pre-Filed Testimony of Raymond Vergati, response 10)
22. T-Mobile provided additional notice for up to a 170-foot tower to take into account the Town's request. (Tr. 4, p. 31)
23. The Town has not yet allocated the funds necessary to procure its equipment for the proposed facility. However, T-Mobile is willing to initially construct a 110-foot facility that is capable of being expanded to 160-feet in the future. (Tr. 4, pp. 85-86; Tr. 5, p. 107)

Federal Designation for Public Need

24. 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. (Council Administrative Notice Item No. 7 – Telecommunications Act of 1996; T-Mobile 1, p. 4)
25. 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. (Council Administrative Notice Item No. 7 – Telecommunications Act of 1996)
26. The Telecommunications Act of 1996 prohibits local and state bodies from discriminating among providers of functionally equivalent services. (Council Administrative Notice No. 7 – Telecommunications Act of 1996)
27. The Telecommunications Act of 1996 prohibits any state or local agency from regulating telecommunications towers on the basis of the environmental effects, which include human health effects, of radio frequency emissions to the extent that such towers and equipment comply with FCC's regulations concerning such emissions. This Act also blocks the Council from prohibiting or acting with the effect of prohibiting the provision of personal wireless service. (Council Administrative Notice No. 7 – Telecommunications Act of 1996; T-Mobile 1, p. 4)
28. Congress enacted the Wireless Communications and Public Safety Act of 1999 (the 911 Act) in order to promote public safety through the deployment of a seamless, nationwide emergency communications infrastructure that includes wireless communications services. (T-Mobile 1, pp. 5-6)
29. As an outgrowth of the 911 Act, the FCC has mandated that wireless carriers provide enhanced 911 services (E911) as part of their communications networks. (T-Mobile 1, p. 6)
30. The proposed facility would be an integral component of T-Mobile's E911 network in southeastern Connecticut and would comply with FCC's E911 requirements. (T-Mobile 1, p. 6)

Existing and Proposed Wireless Coverage

T-Mobile

31. T-Mobile experiences a coverage gap in the area around the proposed facility, specifically along the shore line and the Amtrak rail line, as well as on Route 156, Mill Creek Road, Hawks Nest Road, and Cross Lane just south of Interstate 95. (T-Mobile 1, pp. 4-5)
32. T-Mobile does not have a specific agreement with Amtrak to provide coverage to its corridor, but seeks to provide coverage to the shoreline which includes Amtrak's corridor. However, T-Mobile would still seek to construct the tower even without the presence of Amtrak's corridor. (Tr. 1, pp. 34-35)

33. The proposed facility would provide service in the area of T-Mobile's coverage gap. (T-Mobile 1, p. 5)
34. T-Mobile utilizes Personal Communications Services (PCS) in this area of the state through the deployment of wireless transmitting sites. (T-Mobile 1, p. 6)
35. T-Mobile's licensed operating frequencies in the New London Basic Trading Area include 1935 to 1944.8 MHz, 1983 to 1984 MHz, and 2140 to 2145 MHz. (T-Mobile 1, p. 6 and Tab P)
36. T-Mobile's minimum design signal strength for in-vehicle coverage is -84 dBm. For in-building coverage, it is -76 dBm. (T-Mobile 2, responses 2 and 3)
37. T-Mobile's existing signal strengths in the area that would be covered by the proposed facility range from -84 dBm to below -110 dBm. (T-Mobile 2, response 1)
38. T-Mobile also investigated the ratio of dropped calls to successful calls from cell sites surrounding the proposed coverage area. The average of all of the sites is 3.81 percent which exceeds the target maximum of two percent. The maximum is about 10 percent. (Tr. 1, p. 88)
39. T-Mobile could best achieve its coverage objectives with its antennas located at the proposed minimum centerline height of 100 feet agl. (T-Mobile 1, p. 9 and Tab H; Tr. 1, p. 33)
40. The lengths of the coverage gaps T-Mobile experiences on the major arteries within the proposed coverage area are listed in the following table.

Transportation Artery	Coverage Gap	Distance Covered at Proposed Antenna Height of 100 feet
Route 156	3.36 miles	1.58 miles
Mile Creek Road	1.15 miles	0.39 miles
Cross Lane	0.35 miles	0.37 miles
Amtrak Rail Line	4.62 miles	1.22 miles

(T-Mobile 2, responses 15 and 16)

41. The total area T-Mobile could cover from the proposed site at antenna height of 100 feet would be approximately 1.50 square miles. (T-Mobile 2, response 17)

42. The lengths T-Mobile's coverage areas on the major arteries at lower antenna heights are listed below.

Transportation Artery	Distance Covered at Antenna Height of 90 feet	Distance Covered at Antenna Height of 80 feet
Route 156	1.45 miles	1.38 miles
Mile Creek Road	0.22 miles	0.12 miles
Cross Lane	0.37 miles	0.37 miles
Amtrak Rail Line	1.22 miles	1.02 miles

(T-Mobile 2, response 16)

43. The total area T-Mobile could cover from the proposed site at the lower antenna heights of 90 feet and 80 feet would be 1.29 square miles and 1.10 square miles, respectively. (T-Mobile 2, response 17)

44. T-Mobile's antennas at the proposed facility would hand off signals to the existing sites identified in the following table.

Site Address	Facility Type	Structure Height	T-Mobile's Antenna Height	Distance & Direction to proposed facility
125 Mile Creek Road, Old Lyme	Monopole	160 feet	160 feet	1.18 miles SE
72 Boggy Hole Road, Old Lyme	Monopole	175 feet	175 feet	2.41 miles SE
38 Hatchetts Hill Road, Old Lyme	Monopole	190 feet	187 feet	2.01 miles SW
93 Roxbury Road, Old Lyme	Self-supporting Tower	160 feet	103 feet	4.51 miles SW
8 Old Bridge Road, Old Lyme	Utility Pole	175 feet	181 feet	3.63 miles SE
44 Ford Drive, Old Saybrook	Monopole	150 feet	150 feet	4.62 miles SE

(T-Mobile 2, response 9)

45. An antenna height up to 160 feet on a taller tower would not be problem from a purely radio frequency perspective and would likely increase coverage to secondary roads to the north of the proposed site location as well as to the east. (Tr. 1, pp. 33, 39-40)

AT&T

46. AT&T experiences a coverage gap in the area around the proposed facility, specifically along Route 156. (AT&T 2, response 9)
47. The proposed facility would provide service in the area of AT&T's coverage gap. (AT&T 2, response 10)
48. AT&T's licensed operating frequencies in this part of the state include the 850 MHz (cellular) band, specifically 880 to 894 MHz, as well as the 1900 MHz (PCS) band. Initially, AT&T would provide cellular service and expand to PCS service to provide additional capacity as needed. (AT&T 2, response 7)
49. AT&T's minimum design signal strength for in-vehicle coverage is -82 dBm. For in-building coverage, it is -74 dBm. (AT&T 2, response 3)
50. AT&T's existing signal strengths in the area that would be covered by the proposed facility varies from -82 dBm to the mid -90 dBm range. (AT&T 2, response 1)
51. AT&T could best achieve its coverage objectives with a minimum antenna centerline height of 90 feet, but the 90-foot level of the tower is reserved for Cellco and 100 feet is reserved for T-Mobile. Thus, AT&T would require a minimum centerline height of 110 feet necessitating a tower ten feet taller than originally proposed. (AT&T 2, response 4; Tr. 2, pp. 88, 91)

52. The length of the coverage gap AT&T experiences on the major artery within the proposed coverage area is listed in the following table.

Transportation Artery	Coverage Gap	Distance Covered at Proposed Antenna Height of 110 feet
Route 156	2.5 miles	2.3 miles

(AT&T 2, responses 9 and 10)

53. The total area AT&T could cover from the proposed site at antenna height of 110 feet would be approximately 8.4 square miles based on a target signal level of -74 dBm. (AT&T 2, response 11)
54. The lengths of AT&T's coverage areas on the major arteries at lower antenna heights are listed below.

Transportation Artery	Distance Covered at Antenna Height of 90 feet	Distance Covered at Antenna Height of 80 feet
Route 156	1.45 miles	1.38 miles

(AT&T 2, response 11)

55. The total area AT&T could cover from the proposed site based on a target signal level of -74 dBm and at the lower antenna heights of 90 feet and 80 feet would be 4.1 square miles and 2.8 square miles, respectively. (AT&T 2, response 11)
56. AT&T's antennas at the proposed facility would hand off signals to the existing sites identified in the following table.

Site Address	Facility Type	Structure Height	AT&T's Antenna Height	Distance & Direction to proposed facility
125 Mile Creek Road, Old Lyme	monopole	170 feet	136 feet	1.2 miles SE
38 Hatchetts Hill Road, Old Lyme	monopole	190 feet	165 feet	1.8 miles SE
15 Liberty Way, East Lyme	rooftop		62 feet	2.6 miles SW
49 Brainerd Road, East Lyme	monopole	170 feet	170 feet	3.2 miles WSW

(AT&T 2, response 5; Tr. 1, p. 90)

57. A antenna height up to 140 feet on a taller tower would not be problem from a purely radio frequency perspective and would likely increase coverage outlying areas. (Tr. 2, p. 93)
58. A 170-foot tower is proposed by SBA in East Lyme. Whether the East Lyme facility is approved or denied would not significantly affect AT&T's tower co-location at the Self-Storage Site because both towers are very isolated in terms of distance. (Tr. 2, p. 93-94)

59. Increasing the height of any of the proposed facilities (i.e. Docket Nos. 391 through 393) would not obviate the need for any of the facilities or allow T-Mobile to reduce the height of any of the facilities. (Tr. 3, pp. 246-247)

Cellco

60. Cellco experiences a coverage gap in the area around the proposed facility, specifically along Route 156, the southerly portion of Old Lyme, and the Amtrak rail line. (Cellco 2, response 9)
61. The proposed facility would provide service in the area of Cellco's coverage gap. (Cellco 2, response 10)
62. Cellco maintains FCC licenses to operate its wireless system in the cellular (850 MHz), PCS (1900 MHz), and 700 MHz Long Term Evolution (LTE) frequency ranges. (Cellco 2, Response 6)
63. At both PCS and cellular frequencies, Cellco's coverage thresholds are -85 dBm for in-vehicle service and -75 dBm for in-building service. (Cellco 2, Responses 2 and 3)
64. Cellco's existing signal strength within the area that would be served from the proposed facility ranges from -87 dBm to -98 dBm. (Cellco 2, Response 1)
65. Cellco could best achieve its coverage objectives with its antennas located at the proposed minimum centerline height of 90 feet above grade level. (Cellco 2, response 10; Tr. 2, p. 85)
66. The lengths of the coverage gaps Cellco experiences on the major arteries are listed in the following table.

Transportation Artery	Cellular Coverage Gap	PCS Coverage Gap
Route 156	1.0 miles	2.4 miles
Amtrak Rail Line	0.7 miles	1.7 miles

(Cellco 2, response 9)

67. The lengths of Cellco's coverage on the major arteries at the proposed antenna height are listed below:

Transportation Artery	Cellular Distance Covered at Antenna Height of 90 feet	PCS Distance Covered at Antenna Height of 90 feet
Route 156	2.41 miles	2.34 miles
Amtrak Rail Line	2.94 miles	2.10 miles

(Cellco 2, response 10)

68. The lengths of Cellco's coverage areas on the major arteries at an 80-foot antenna height are listed below:

Transportation Artery	Cellular Distance Covered at Antenna Height of 80 feet	PCS Distance Covered at Antenna Height of 80 feet
Route 156	2.33 miles	2.17 miles
Amtrak Rail Line	2.78 miles	1.85 miles

(Cellco 2, response 10)

69. The lengths of Cellco's coverage areas on the major arteries at a 70-foot antenna height are listed below:

Transportation Artery	Cellular Distance Covered at Antenna Height of 70 feet	PCS Distance Covered at Antenna Height of 70 feet
Route 156	2.20 miles	1.86 miles
Amtrak Rail Line	2.61 miles	1.59 miles

(Cellco 2, response 10)

70. The total area Cellco could cover from the proposed site at antenna height of 90 feet would be approximately 17.45 square miles for cellular service and 8.80 square miles for PCS service. (Cellco 2, response 11)
71. The total area Cellco could cover from the proposed site at the lower antenna heights of 80 feet would be 14.45 square miles for cellular service and 7.49 square miles for PCS service. At 70 feet, these coverage areas would be 12.24 square miles for cellular service and 6.72 square miles for PCS service. (Cellco 2, response 11)
72. From the proposed facility, Cellco's antennas would hand off signals with the adjacent facilities identified in the following table.

Site Address	Facility Type	Structure Height	Distance & Direction to proposed facility
125 Mile Creek Road, Old Lyme	monopole	160 feet	1.1 miles NW
36 Hatchetts Hill Road, Old Lyme	monopole	143 feet	2.0 miles NE

(Cellco 2, Response 5; T-Mobile 1, Tab I)

73. A antenna height up to 140 feet on a taller tower would not be problem from a purely radio frequency perspective and would likely increase coverage outlying areas. (Tr. 2, p. 86)

Site Selection

74. T-Mobile initiated its search for a site in this vicinity on or about July 17, 2008. (T-Mobile 2, response 4)
75. T-Mobile's site search was centered at the intersection of Cross Lane and the Amtrak rail line. The radius of the search area was approximately 0.2 miles. (T-Mobile 2, response 4)
76. T-Mobile identified five telecommunications towers within approximately four miles of its proposed site. The towers are listed in the table below.

Tower Location	Height and Type Of Tower	Tower Owner	Approx. Distance and Direction from Proposed Tower Location
2 Ferry Place, Old Saybrook	110-foot smokestack	Geoffry Etherington	3.74 miles NW
132 Whippoorwill Road, Old Lyme	100-foot guyed lattice tower	Mr. and Mrs. Andrew Pfeiffer	2.55 miles N
62-1 Boggy Hill Road, Old Lyme	175-foot monopole	Wireless Solutions	2.29 miles NW
38 Hatchetts Hill Road, Old Lyme	190-foot monopole	T-Mobile	2.04 miles NE
30 Short Hills Road, Old Lyme	180-foot monopole	Sprint	1.86 miles NE
125 Mile Creek Road, Old Lyme	160-foot monopole	Cellco	1.10 miles NW

(T-Mobile 1, Exhibits I; T-Mobile 3, response 4)

77. Three of the existing telecommunications towers with a four-mile radius are too far away to meet T-Mobile's coverage objectives. These towers are located at 2 Ferry Place, Old Saybrook; 132 Whippoorwill Road, Old Lyme; and 30 Short Hills Road, Old Lyme. (T-Mobile 3, response 4)
78. The remaining three existing telecommunications towers within a four-mile radius already have T-Mobile co-located on those towers. These towers are 62-1 Boggy Hill Road, Old Lyme; 38 Hatchetts Hill Road, Old Lyme; and 125 Mile Creek Road, Old Lyme. (T-Mobile 3, response 4)

79. T-Mobile investigated several different properties in the area of its proposed site. Properties that were investigated include:
- a. Vacant church, 287 Shore Road at the corner of Shore Road and Swan Avenue: This property hosts a vacant church, with a flat roof steeple that is approximately 35 feet tall. T-Mobile's radio frequency engineers determined that the rooftop is too low to meet the coverage objectives.
 - b. Existing water tank, Cross Lane: This site hosts a water tank with a height of approximately 25 feet. T-Mobile's radio frequency engineers determined that the water tank is too low to meet the coverage objectives. Also, the property owner was not amenable to having a new stand-alone tower installed on the property.
 - c. Old Lyme Self Storage, 240-1 Shore Road: This is another self-storage site. However, this site is closer to residential homes than the proposed site. Also, the property owner was not interested in having a tower installed on the property.
 - d. 234 Shore Road: This site hosts an approximately 30-foot tall office building. T-Mobile's radio frequency engineers determined that the building is too low to meet the coverage objectives.

(T-Mobile 1, Exhibit J; Tr. 1, p. 52)

80. Amtrak will not allow telecommunications co-locations on their catenary structures. (Tr. 4, p. 32)
81. During this proceeding, another alternative site at 14 Cross Lane, Old Lyme was explored. This is the site of a proposed SBA tower on Town property. This tower could provide adequate coverage to T-Mobile, AT&T, and Cellco. However, the site is no longer available. (AT&T 2, response 13; Cellco 2, response 13; T-Mobile 2, response 18)
82. An outdoor Distributed Antenna System (DAS) would not be a feasible alternative to a tower because of several reasons listed below:
- a) A sufficient number of existing utility poles on which to string fiber-optic cable and install DAS nodes are not available in the coverage area;
 - b) The existing utility poles are generally low in height;
 - c) The existing uneven terrain and mature vegetation would prevent DAS nodes from providing reliable coverage throughout the target area;
 - d) Unused fiber-optic cables are not available to serve as the backbone of the DAS network in the area; and
 - e) There would be a need to enter into access easements, pole attachment agreements, etc. which would be compounded by the large amount (roughly 45) of DAS nodes required to cover the total area to be served by the three towers proposed in Docket Nos. 391, 392, and 393. (T-Mobile 24)
83. Repeaters, microcell transmitters, and other types of transmitting technologies are not practicable or feasible means to provide service within the coverage area that T-Mobile is seeking to serve due to significant terrain variations and tree cover in the area, as well as other practical considerations. (T-Mobile 1, p. 7)

Facility Description

84. The proposed facility would be located at 232 Shore Road on a 5.00 acre parcel owned by South Shore Landing Self Storage (the South Shore property) and used as a self-storage business. The Amtrak rail line right-of-way abuts the South Shore property to the north. (See Figures 1 and 2) (T-Mobile 1, pp. 1, 10 and Exhibit B)
85. The South Shore property is zoned Light Industry (LI-80). Telecommunications towers are allowed in the LI-80 zoning district with a special permit. (T-Mobile 1, p. 9; T-Mobile 1b – Town of Old Lyme Zoning Regulations)
86. The proposed facility would be located near the northwest corner of the host property. (T-Mobile 1, Exhibit B)
87. For its proposed facility, T-Mobile would lease a 2,100 square foot area (30 feet by 70 feet). The facility would include a 120-foot tall steel monopole tower within a 30-foot by 60-foot (1,800 square feet) compound. The compound would be enclosed by an eight-foot high chain link fence. (See Figure 3) (T-Mobile 1, p. 9; Exhibit B)
88. T-Mobile would install anti-climbing weave mesh on the compound fence. T-Mobile could also install a standard chain-link fence with barbed wire if required by the Council. (T-Mobile 2, response 20)
89. A 12-foot sliding gate on the fenced storage area would access to the tower compound area. (Tr. 1, p. 31)
90. The proposed tower would be located at 41° 17' 30.18" north latitude and 72° 17' 13.18" west longitude. Its ground elevation would be 30 feet above mean sea level (amsl). (T-Mobile 1, Tab B)
91. The proposed tower would be designed as a monopole in accordance with the 2005 Connecticut State Building Code and the Electronic Industries Association Standard ANSI/TIA-222-F "Structural Standards for Steel Antenna Towers and Antenna Support Structures" for New London County. The tower would be designed to accommodate the antennas of four wireless carriers. (T-Mobile 1, Tab B)
92. T-Mobile would initially install nine panel antennas (three per sector) at a centerline height of 100 feet agl on T-arm mounts. (T-Mobile 1, p. 9 and Tab B; T-Mobile 2, response 10)
93. The top of T-Mobile's antennas would reach 102-feet 3-inches agl. (Tr. 1, p. 35)
94. T-Mobile could utilize a flush-mounted antenna configuration, but it would be required that a second antenna array would have to be mounted 10 feet higher. (T-Mobile 2, response 11; Tr. 1, p. 49)
95. T-Mobile did not consider alternative or stealth tower designs. (Tr. 1, p. 33)
96. T-Mobile would install two radio equipment cabinets on a concrete pad within the fenced compound. (Tr. 1, p. 32)

97. T-Mobile would use battery backup power for its proposed facility. The battery power system could operate for four to 12 hours. (T-Mobile 2, response 21)
98. Cellco would install 12 antennas at a centerline height of 90 feet AGL. Cellco would prefer to attach its antennas to a low-profile platform for ease of maintenance, but could use T-arms if required by the Council. (Cellco 2, response 4)
99. Cellco could utilize a flush-mounted antenna configuration, but it would require three antenna array locations spaced 10 feet apart center to center. Such locations would be the 100-foot, 90-foot, and 80-foot levels of the tower. (Cellco 2, response 6)
100. Cellco would install a 12-foot by 30-foot equipment shelter to house its antenna-related ground equipment. (Cellco 2, response 15)
101. Cellco would install a 60-kilowatt propane-fueled generator for backup power. The generator would be located inside the proposed 12-foot by 30-foot equipment shelter. (Cellco 2, response 15; Tr. 2, p. 82)
102. Cellco would also install a 1,000-gallon propane tank within the fenced compound to provide up to 75 hours of run time. (Tr. 2, p. 82)
103. The generator would also run approximately 20 minutes per week as an exercise to maintain it proper working condition. The time could be scheduled to accommodate the neighbors. (Tr. 1, p. 83)
104. AT&T would initially install six panel antennas on a low-profile platform at the 110-foot level of the tower, necessitating that the tower be 10 feet higher than originally proposed. In the near future, AT&T would need to increase to nine antennas. (AT&T 2, response 4; Tr. 2, p. 96)
105. AT&T could utilize T-arms or a flush-mounted antenna configuration if required. However, the flush-mounted antenna configuration would require one additional level of antennas on the tower. (AT&T 2, response 6)
106. AT&T would install a 12-foot by 20-foot equipment shelter to house its antenna-related ground equipment. (AT&T 2, response 14)
107. AT&T would utilize battery backup and a mobile diesel generator to provide backup power. (AT&T 2, response 15)
108. The diesel fuel tank would be double-walled to protect against spillage. (Tr. 2, p. 92)
109. AT&T's battery backup would provide about eight hours of run time. The mobile generator would provide about five days worth backup power. (Tr. 2, pp. 91-92)
110. Other than AT&T and Cellco, no other wireless carriers have expressed an interest in co-locating on the proposed tower. (Tr. 1, p. 34)
111. Construction of the proposed facility would require 230 cubic yards of cut and 264 cubic yards of fill. (T-Mobile 2, response 19)

112. Vehicular access to the proposed facility would extend from Shore Road over an existing paved driveway for a distance of approximately 420 feet and then continue over an existing gravel parking lot for approximately 600 feet to the proposed compound. (T-Mobile 1, p. 9; T-Mobile 1, Tab B)
113. Utility service would be extended underground approximately 770 feet to the proposed facility from an existing transformer on the host property. (T-Mobile 1, p. 9 and Tab B)
114. The tower's setback radius would extend approximately 48 feet onto the Amtrak rail line right-of-way. (T-Mobile 1, Exhibit B)
115. To reduce the tower's setback radius, T-Mobile would incorporate a yield point, or hinge point, into the design of the tower at approximately 100 feet agl. (Tr. 1, p. 30)
116. The nearest adjacent properties are the Amtrak right-of-way, which is located approximately 52 feet to the north of the proposed tower, and another parcel owned by Garvin Family Corp., Inc., which is located approximately 110 to the west of the proposed tower location. (T-Mobile 1, Exhibit B)
117. There are 14 residences within 1,000 feet of the proposed facility. (T-Mobile 1, Exhibit L)
118. The nearest single family residence not on the host property is located 567 feet away at 226 Shore Road and is owned by Garvin Family Corp., Inc. (T-Mobile 1, Tabs L and B)
119. Land use in the vicinity of the proposed facility consists of Amtrak right of way to the north, commercial office uses to the south, residential and commercial/warehouse uses to the east, and vacant land to the west. (T-Mobile 2, response 6)
120. The estimated cost of the proposed facility is the following:

Tower and foundation costs	\$ 81,000
Site development costs	77,000
Utility installation costs	55,000
T-Mobile equipment cabinets	30,000
<u>T-Mobile RF components e.g. antennas and cable</u>	<u>15,000</u>
Total estimated costs	\$258,000

(T-Mobile 1, pp. 19; T-Mobile 3, response 1)

Environmental Considerations

121. The proposed facility would have no effect on historic, architectural, or archaeological resources listed on or eligible for the National Register of Historic Places. (T-Mobile 1, Exhibit O, Letter from SHPO dated December 23, 2008)
122. The proposed facility would not affect any threatened or endangered species or designated critical habitats. (T-Mobile 1, p. 13)

123. The proposed facility would not affect any of the “listed” categories of the National Environmental Policy Act (NEPA): wilderness preserves; endangered or threatened species; critical habitats; National Register historic districts, sites, buildings, structures or objects; Indian religious sites; flood plains; or federal wetlands. (T-Mobile 1, p. 16; Tab Q)
124. Development of the proposed facility would not require the removal of approximately eight trees with a diameter of breast height of at least six inches. (T-Mobile 1, Tab B)
125. T-Mobile’s proposed 100-foot tower would not require notification to the Federal Aviation Administration or marking or lighting. (T-Mobile 1, Tab S)
126. Although the proposed facility is located within the Connecticut Coastal Management Act’s (CCMA) coastal boundary, there are no coastal resources on the subject property. No federal or state regulated tidal wetlands or watercourses are on the host property. The nearest coastal resources are tidal wetlands associated with Mile Creek, which is located approximately 800 feet west of the proposed tower. No coastal resources, as defined in the CCMA, would be adversely affected by the proposed facility. (T-Mobile 1, p. 14 and Tab O)
127. The nearest wetlands are located 24 feet west of the proposed compound and 5 feet east of the proposed underground utilities. The entire facility would be located within the 100-foot Upland Review Area. However, no direct wetland impacts are expected to occur. Silt fence will be installed and maintained to protect the wetlands during construction. Thus, adverse impacts to the wetlands are not expected. (T-Mobile 1, Exhibit J; Tr. 1, pp. 57-58)
128. If the tower location were shifted 20 feet to the north, the wetland buffer would increase to 38 feet, resulting in even less wetland impacts. (Tr. 1 p. 61; T-Mobile 23)
129. Shifting the tower 20 feet to the north would require the removal of two large black oaks that have diameters of 33 and 22 inches at breast height. These two trees were examined by a certified forester and found to be in declining health with recommendations for removal. (T-Mobile 23)
130. Shifting the tower 300 feet to the east would result in a wetland boundary of 40 to 50 feet and no likely adverse impacts to wetlands. (T-Mobile 23)
131. T-Mobile would establish and maintain appropriate soil erosion and sedimentation control measures, in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control established by the Connecticut Council for Soil and Water Conservation, in cooperation with the Connecticut Department of Environmental Protection, throughout the construction period of the proposed facility. (T-Mobile 1, p. 17)
132. The entire Atlantic seaboard is a migratory bird flyway. However, towers less than 200 feet agl generally do not have a significant adverse effect on birds or result in increased bird strikes. (Tr. 1, p. 62)
133. There are no important bird areas which are designated by the Audubon Society in Old Lyme as important bird concentration areas for bird breeding, stopovers, etc. (Tr. 1, p. 63)

134. Cellco's and AT&T's backup generators would meet all applicable noise standards. (AT&T 2, response 16; Cellco 2, response 16)
135. The total cumulative worst-case maximum power density from the radio frequency emissions of the proposed T-Mobile, AT&T, and Cellco antennas is calculated to be 63.84 percent of the standard for Maximum Permissible Exposure, as adopted by the FCC, at the base of the proposed tower. This calculation was based on methodology prescribed by the FCC Office of Engineering and Technology Bulletin No. 65E, Edition 97-01 (August 1997) that assumes all antennas would be pointed at the base of the tower and all channels would be operating simultaneously, which creates the highest possible power density levels. Under normal operation, the antennas would be oriented outward, directing radio frequency emissions away from the tower, thus resulting in significantly lower power density levels in areas around the tower. (T-Mobile 1, p. 13)

Visibility

Originally Proposed Height of 100 feet

136. The tower would be visible year-round on land from approximately 44 acres within a two-mile radius of the site. The tower would be seasonally visible from approximately 55 acres on land within a two-mile radius of the site. (T-Mobile 1, Tab N)
137. The majority of the year-round visibility of the tower is over open water. Approximately 1,773 acres, or 97 percent of the 1,817 acres of year-round visibility, is over open water on Long Island Sound to the south. (T-Mobile 1, Tab N)
138. Areas of year-round visibility of the tower on land include areas within a 0.25 mile radius of the tower, including select portions of Shore Road, Otter Rock Road, Hawks Nest Road, and Washington Avenue. Areas of limited year-round visibility also include portions of Pond Road and Corsino Avenue located further to the southeast. (T-Mobile 1, Tab N)
139. Approximately 21 residences would have year-round visibility of the proposed tower including three residences on Otter Rock Road; three residences along Hawks Nest Road; six residences along Washington Avenue; four residences along Shore Road (Route 156); two residences along Corsino Avenue; and three residences along Pond Road. (T-Mobile 1, Tab N)
140. A total of approximately 14 additional homes located on select portions of Center Beach Road, Hawks Nest Road, Washington Avenue, and Columbus Avenue would have seasonal views of the proposed tower. (T-Mobile 1, Tab N)
141. The ground elevation increases to the north of the proposed tower, from 28 feet AMSL to as high as 180 feet. Thus, the view from Long Island Sound will include rising topography in the background, not simply a tower with blue skies behind it. (Tr. 1, p. 65)

142. Visibility of the tower at the originally proposed height of 100 feet from specific locations in the surrounding area is summarized in the table below.

Location	Visible	Approx. Portion of 100' Tower Visible (ft.)	Approx. Distance and Direction to Tower
1 – Otter Rock Road adjacent to house #14, looking east	Yes	9 feet – above tree line	0.28 miles E
2 – Route 156 (Shore Road) at Dogwood Drive, looking northeast	Yes	25 feet – above tree line	0.29 miles NE
3 – Route 156 (Shore Road) at Hawks Nest Road, looking northwest	Yes	28 feet – partially obstructed by trees	0.17 miles NW
4 – Hawks Nest Road adjacent to house #10, looking northwest	Yes	20 feet – above tree line	0.17 miles NW
5 – Center Beach Avenue adjacent to house #14, looking north	Yes	8 feet – above tree line	0.26 miles N
6 – Liberty Street at Corsino Avenue, looking northwest	Yes	10 feet – above tree line	0.51 miles NW
7 – Pond Road adjacent to house #18A, looking northwest	Yes	10 feet – through trees	0.65 miles NW
8 – Washington Avenue adjacent to house #14, looking northwest	No	n/a	0.27 miles NW
9 – Hawks Nest Road north of Avenue A, looking northwest	No	n/a	0.59 miles NW
10 – West End Drive adjacent to house #82, looking northeast	No	n/a	0.76 miles NE
11 – Center Beach Avenue adjacent to house #40, looking northwest	No	n/a	0.40 miles NW
12 – Hartford Avenue north of Pond Road, looking northwest	No	n/a	0.67 miles NW

(T-Mobile 1, Exhibit N)

Revised Height of 110 feet to accommodate AT&T

143. The views of the proposed facility would not change significantly if the height of the facility were increased from 100 feet to 110 feet. (T-Mobile 21)

144. The total acreage of year-round visibility for a 110-foot tower would increase about three percent from 1,817 acres (for a 100-foot tower) to 1,876 acres. The increase in visibility area would be mostly over open water.

145. The number of homes with visibility of the tower is not expected to change if the tower height was increased from 100 feet to 110 feet. (Tr. 5, p. 34)

Alternative Location to the 20 feet to the north with a tower height of 110 feet

146. There would be no material difference in visibility from this location versus the proposed site. (Tr. 4, p. 37)

Alternative Location approximately 300 feet to the east with a tower height of 110 feet

147. This location would shift the visibility to the east and increase visibility of the tower at a nearby elementary school and its ball field. There would be a direct line of sight to the tower from the ball field, especially during leaf-off conditions. (Tr. 4, p. 36)

Figure 1: Location Map of Proposed Site



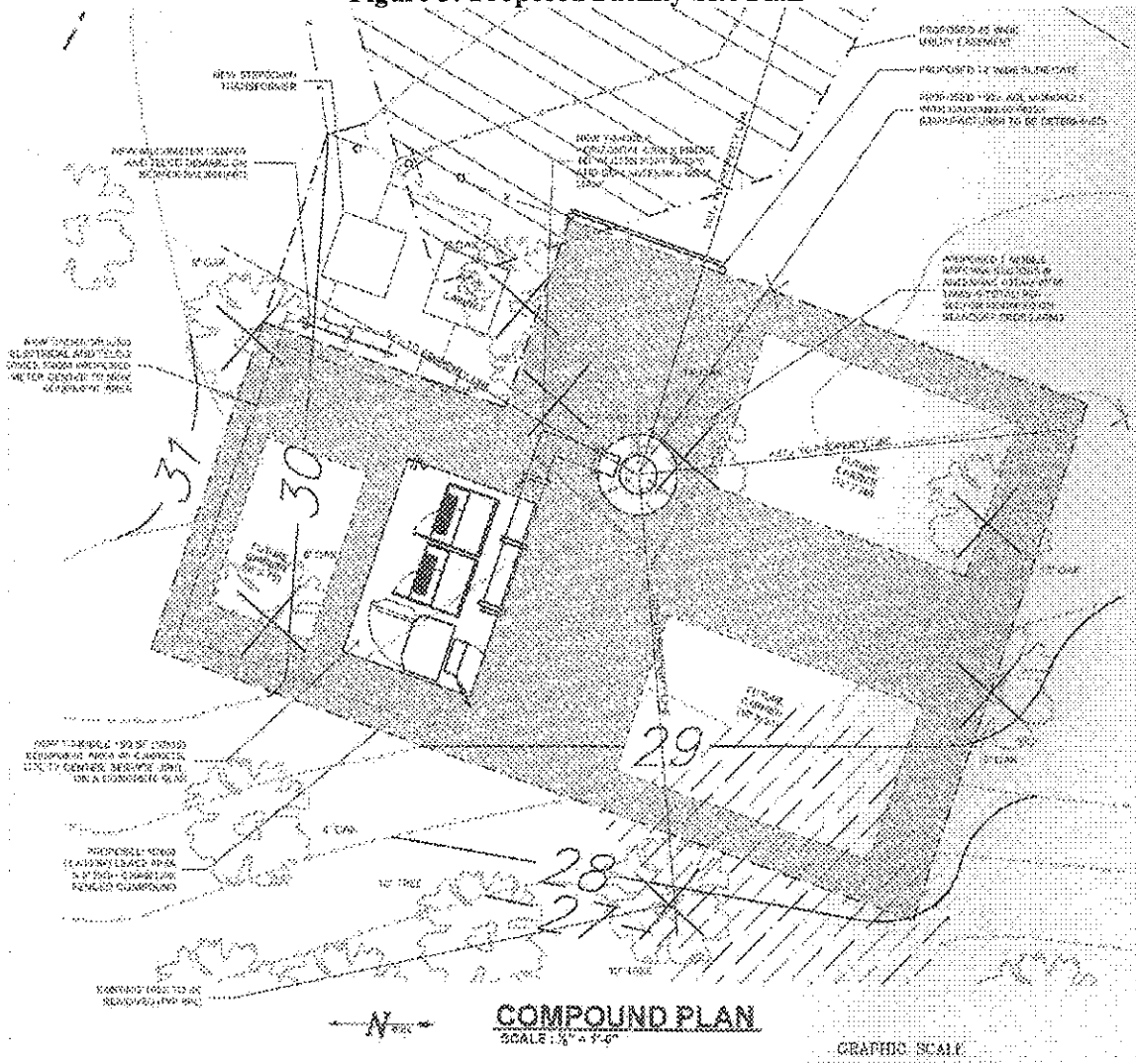
(T-Mobile 1, Tab C)

Figure 2: Aerial Photograph of Proposed Site Location



(T-Mobile 1, Tab B)

Figure 3: Proposed Facility Site Plan



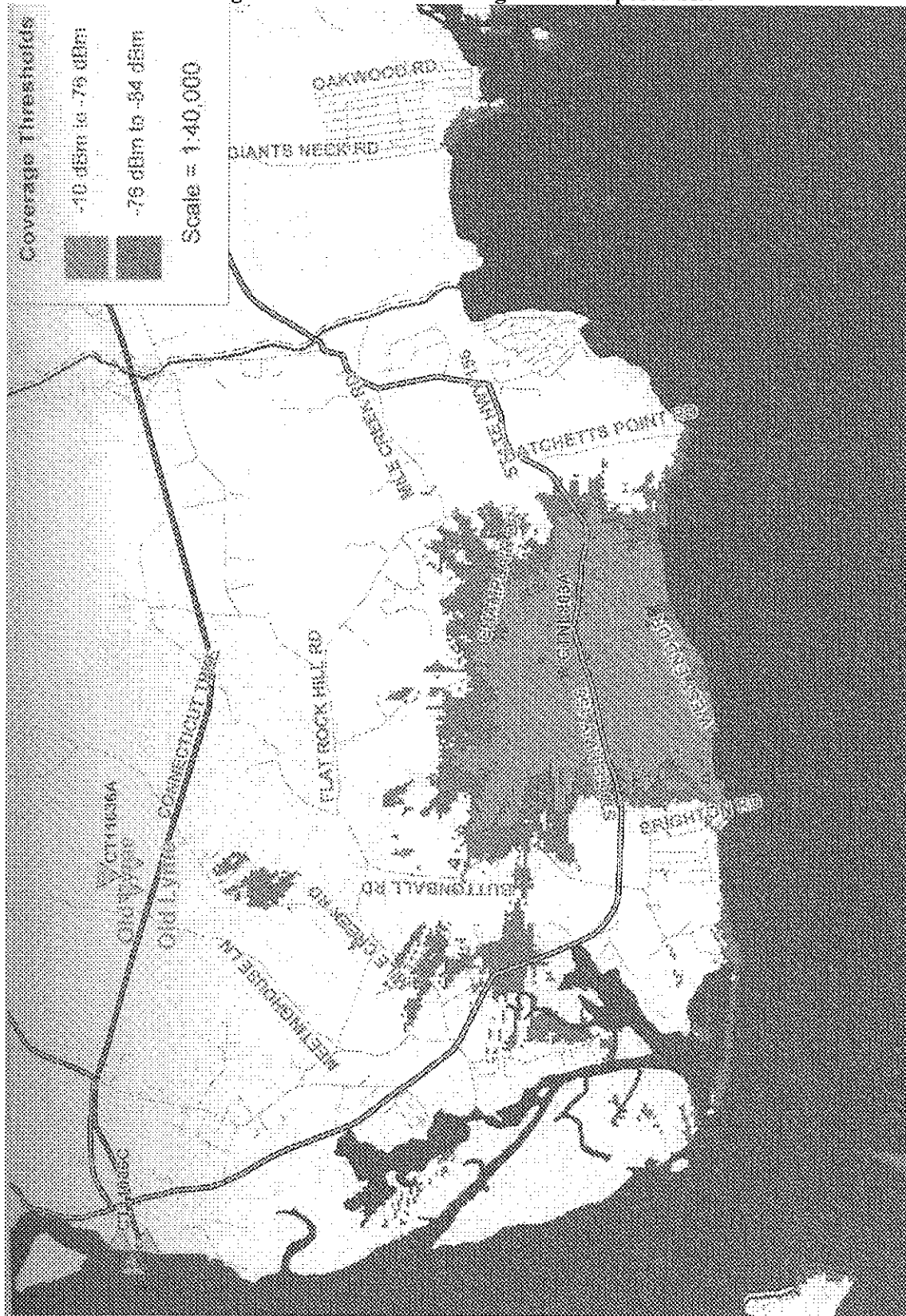
(T-Mobile 1, Exhibit B)

Figure 5: T-Mobile's Existing Coverage



(T-Mobile 1, Exhibit H)

Figure 6: T-Mobile's Coverage from Proposed Site



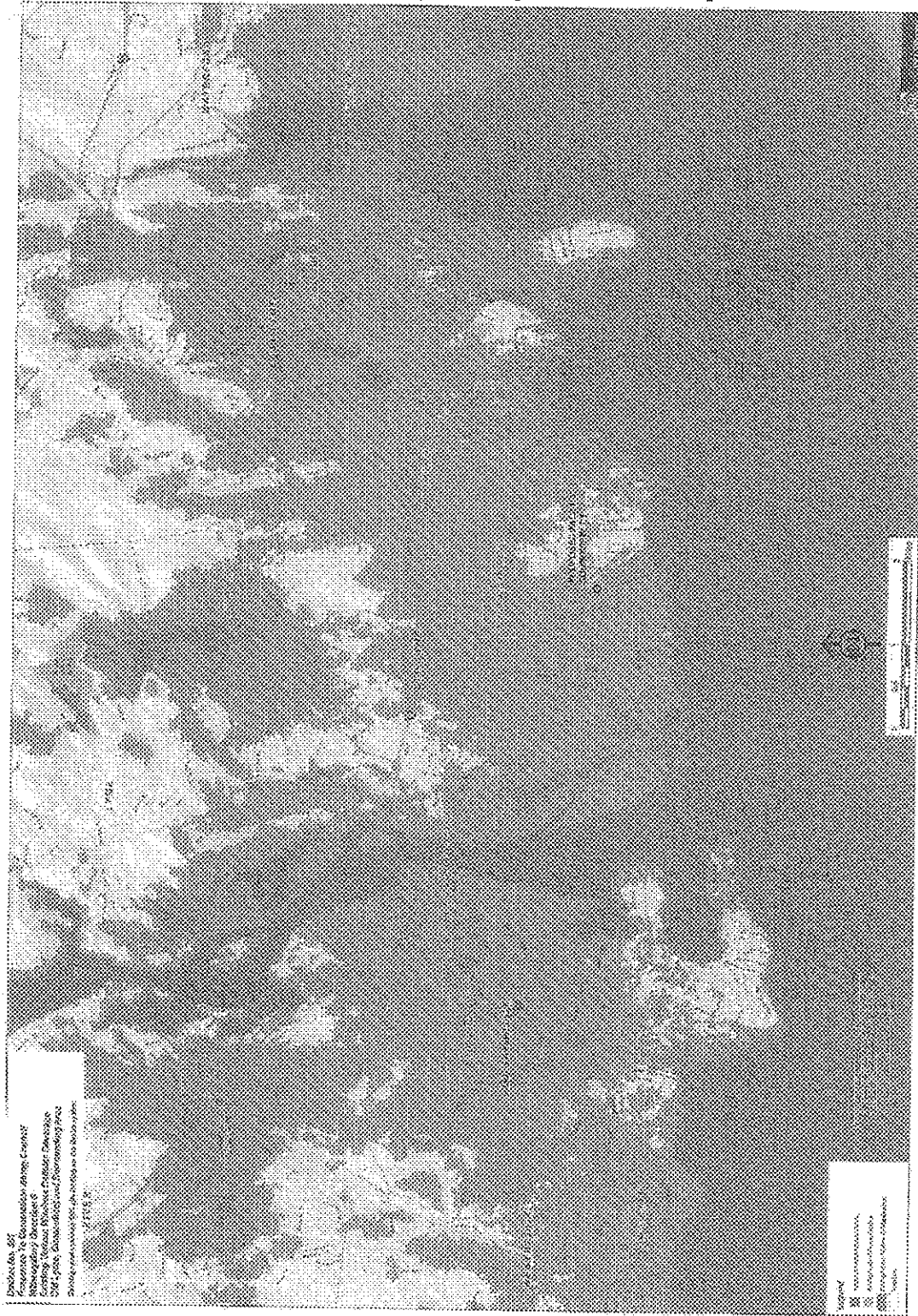
(T-Mobile 1, Exhibit H)

Figure 7: T-Mobile's Existing Coverage with Proposed Site



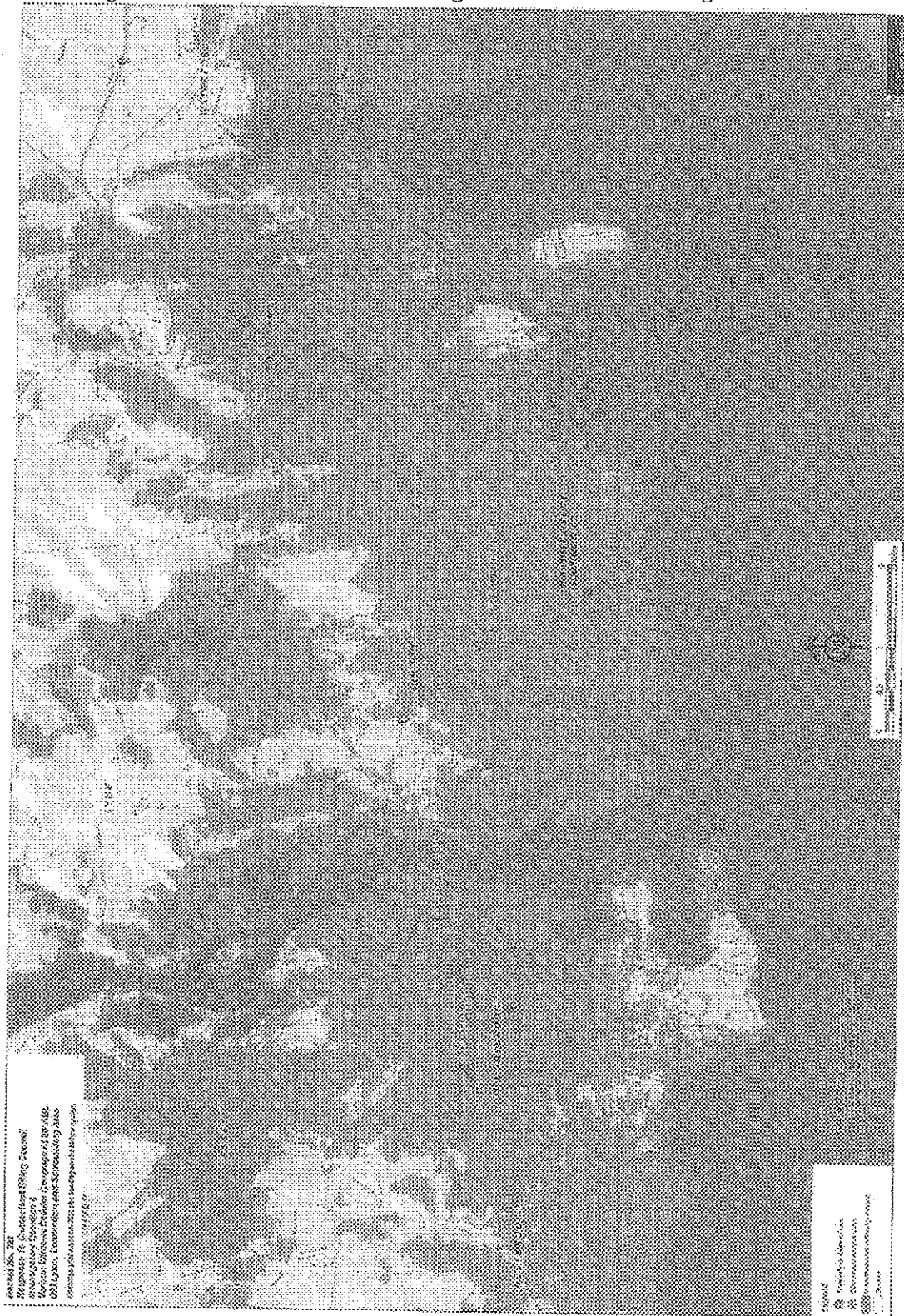
(T-Mobile 1, Exhibit H)

Figure 8: Cellco's Existing Coverage at Cellular Frequencies



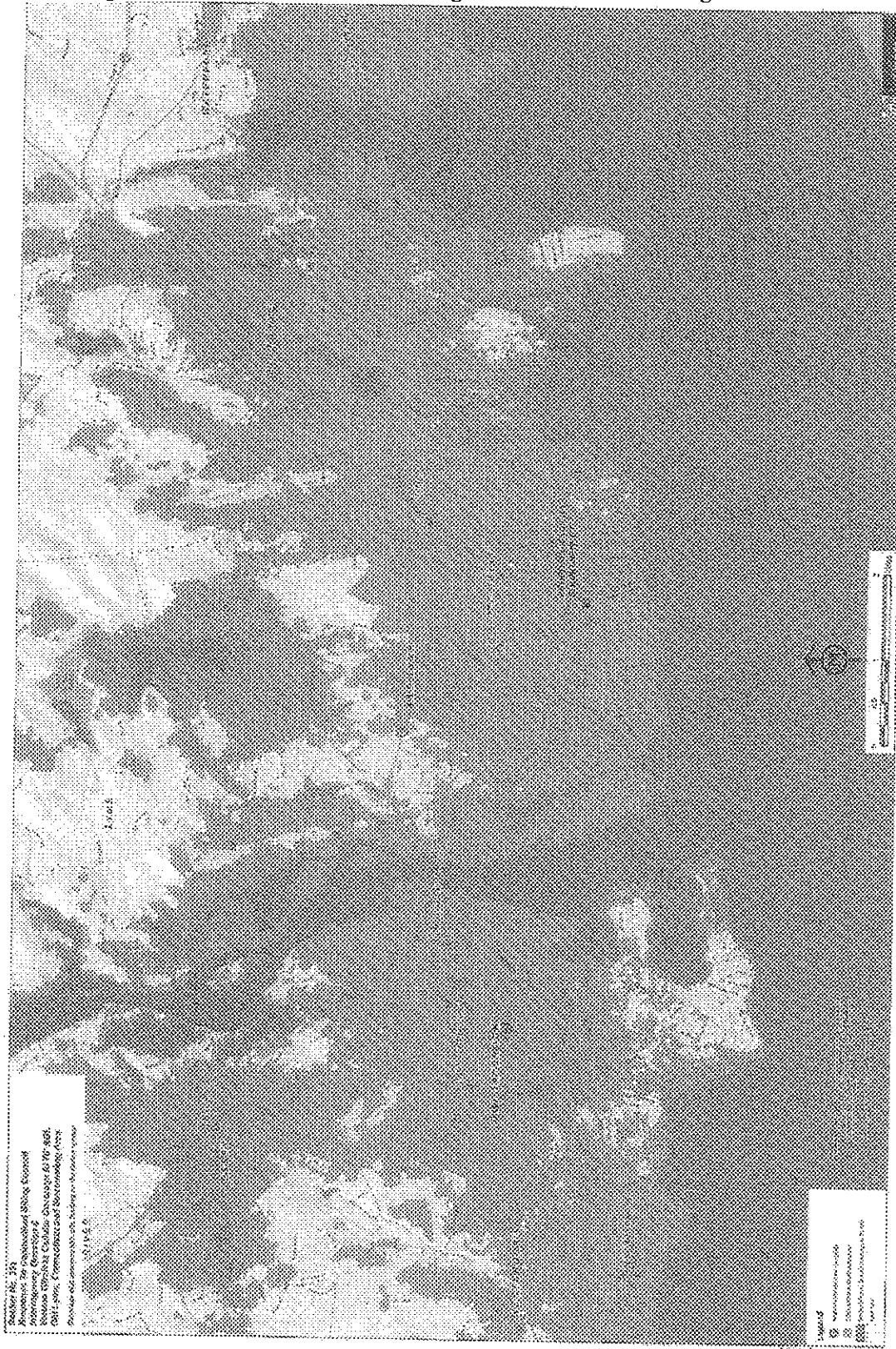
(Cellco 2, response 8)

Figure 10: Cellco's Cellular Coverage with Antennas at Height of 80 feet



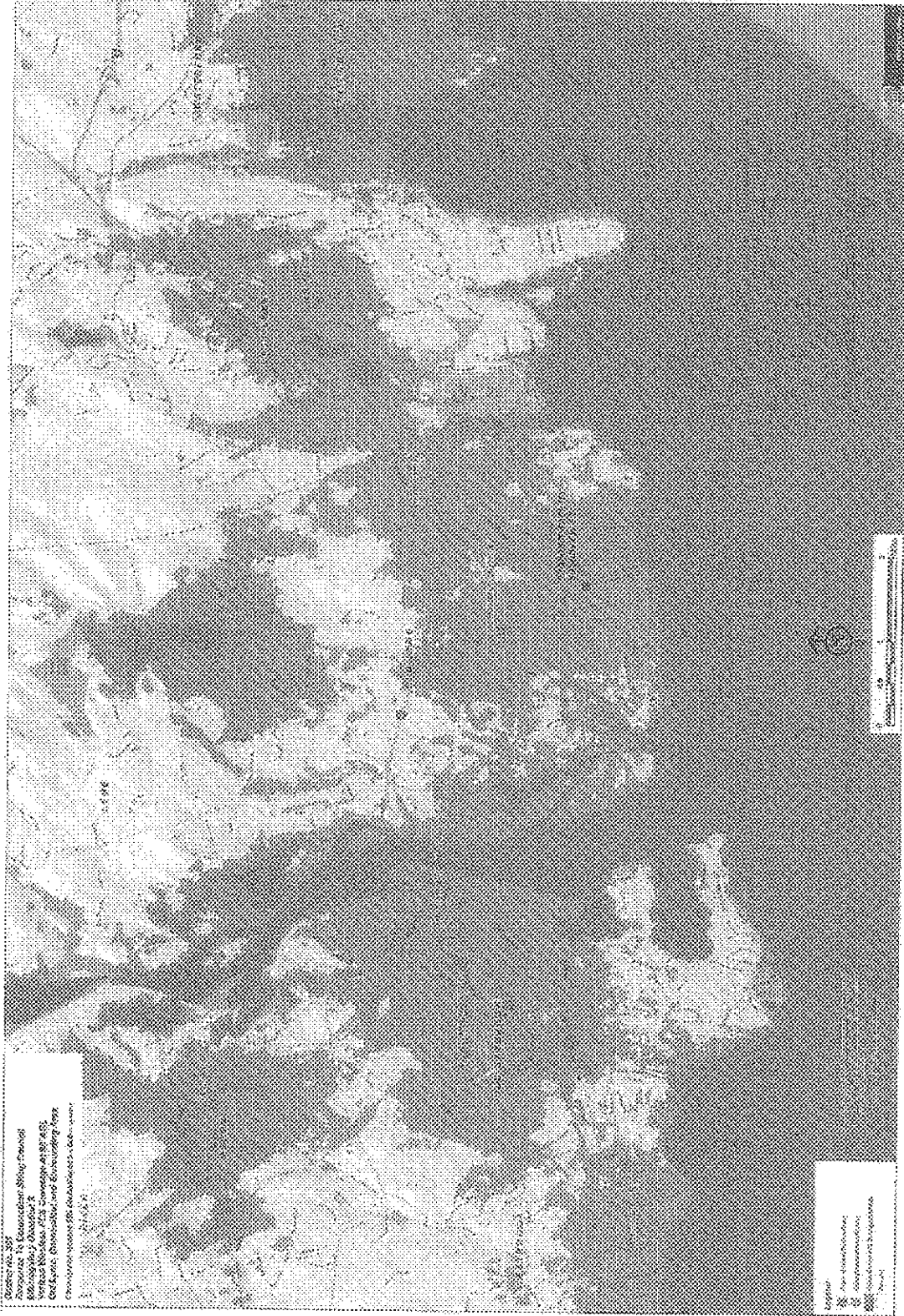
(Cellco 2, response 8)

Figure 11: Cellco's Cellular Coverage with Antennas at Height of 70 feet



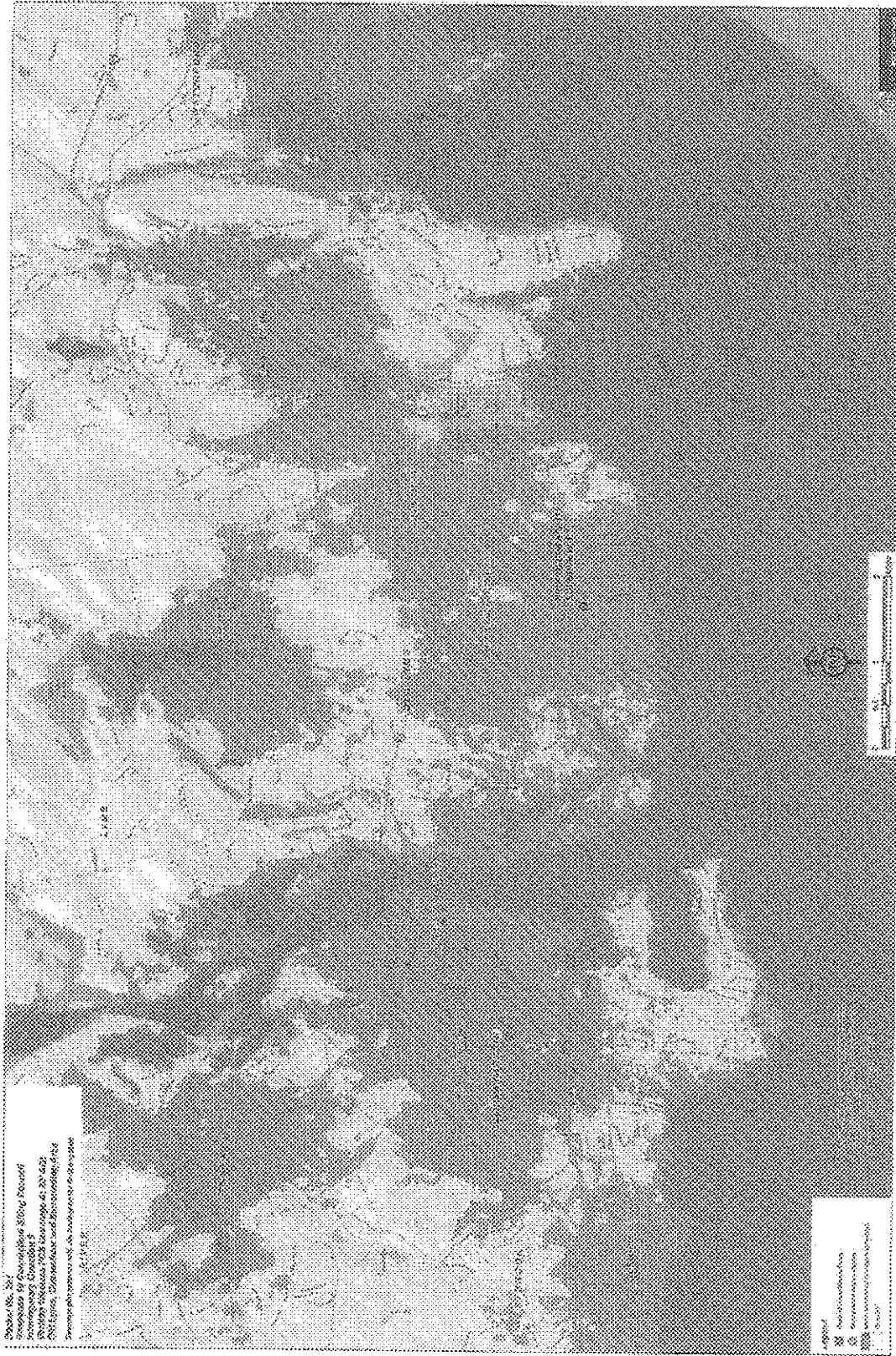
(Cellco 2, response 8)

Figure 13: Cellco's PCS Coverage with Antennas at Proposed Height of 90 feet



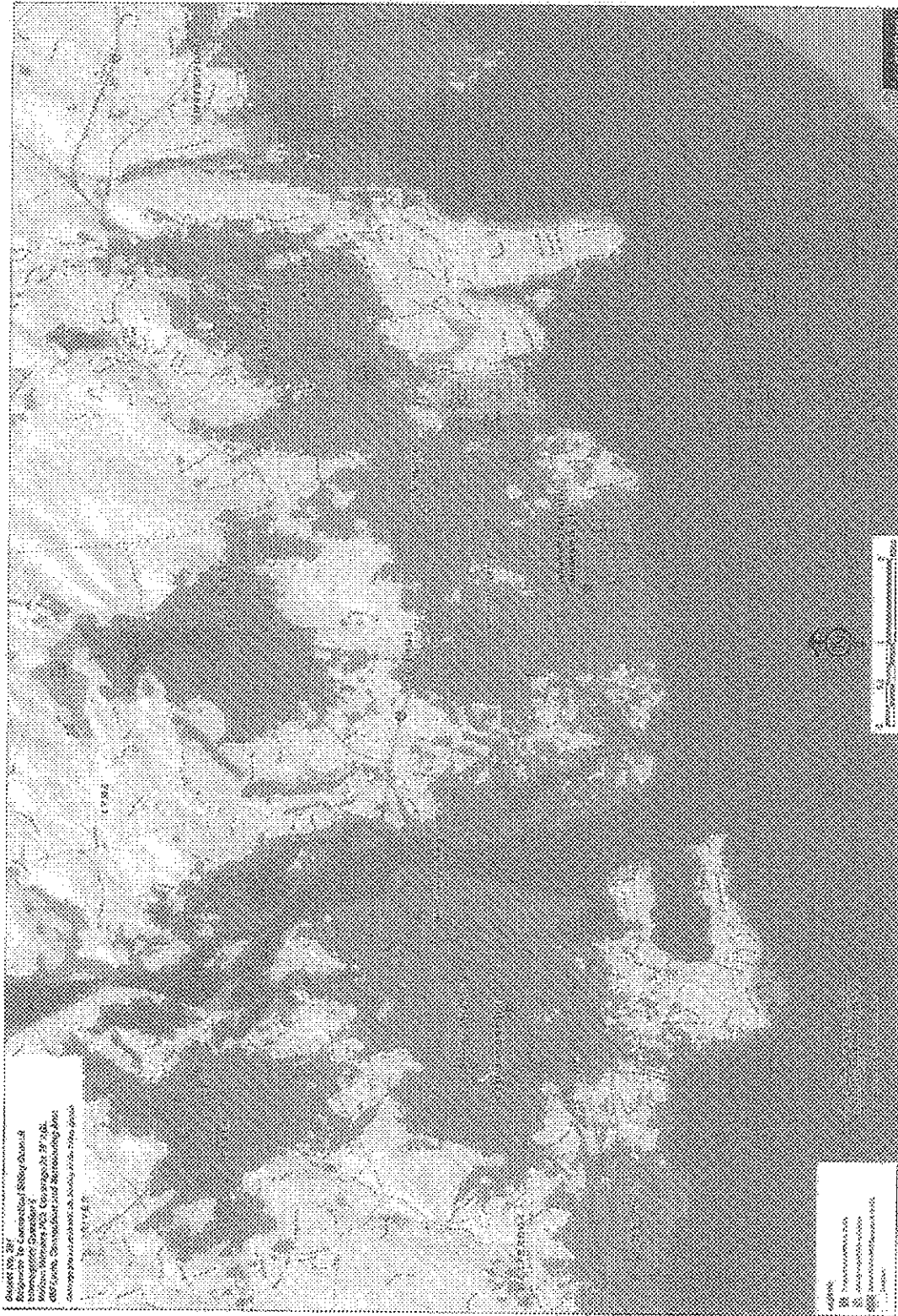
(Cellco 2, response 8)

Figure 14: Cellco's PCS Coverage with Antennas at Height of 80 feet



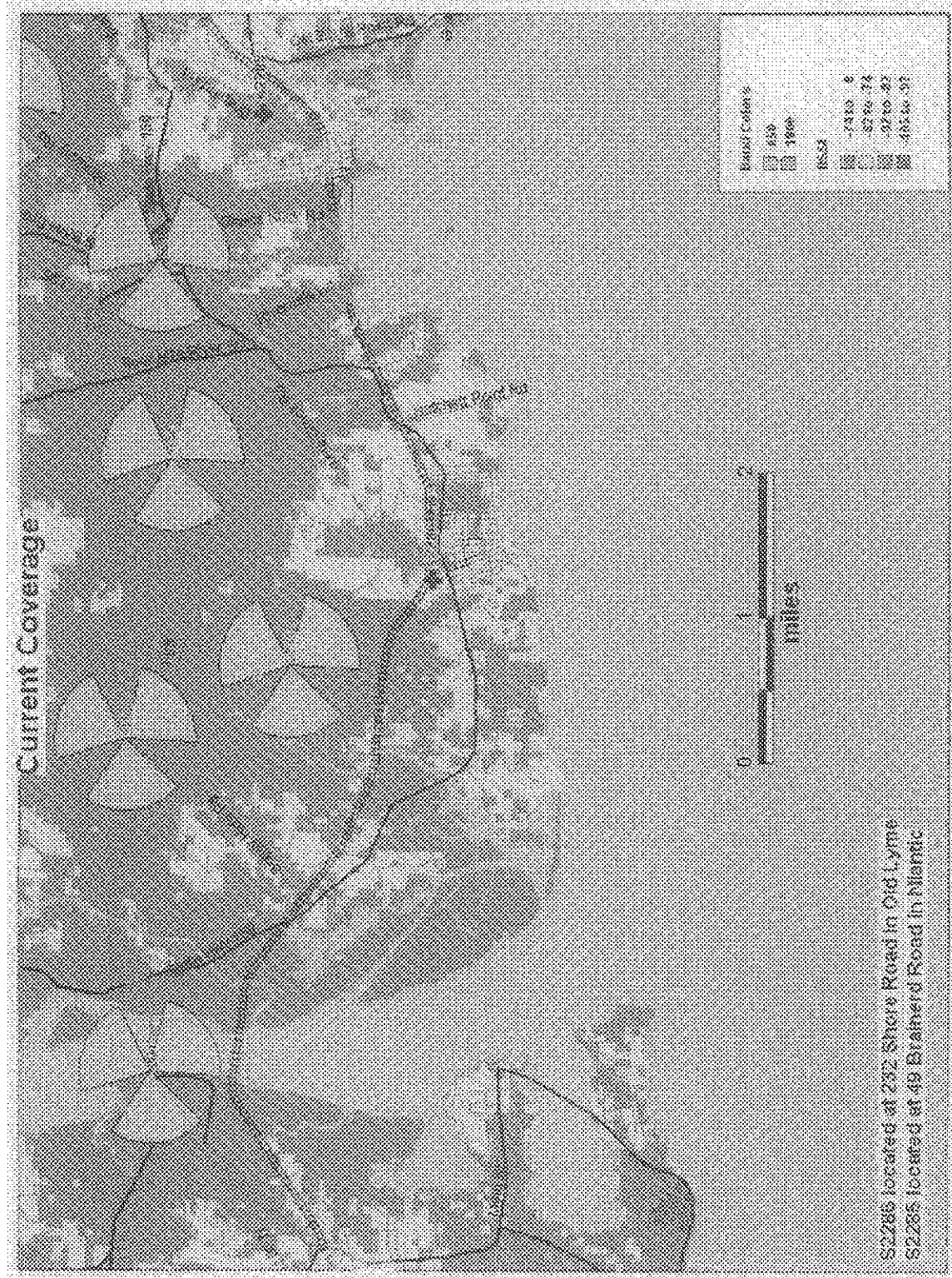
(Cellco 2, response 8)

Figure 15: Cellco's PCS Coverage with Antennas at Height of 70 feet



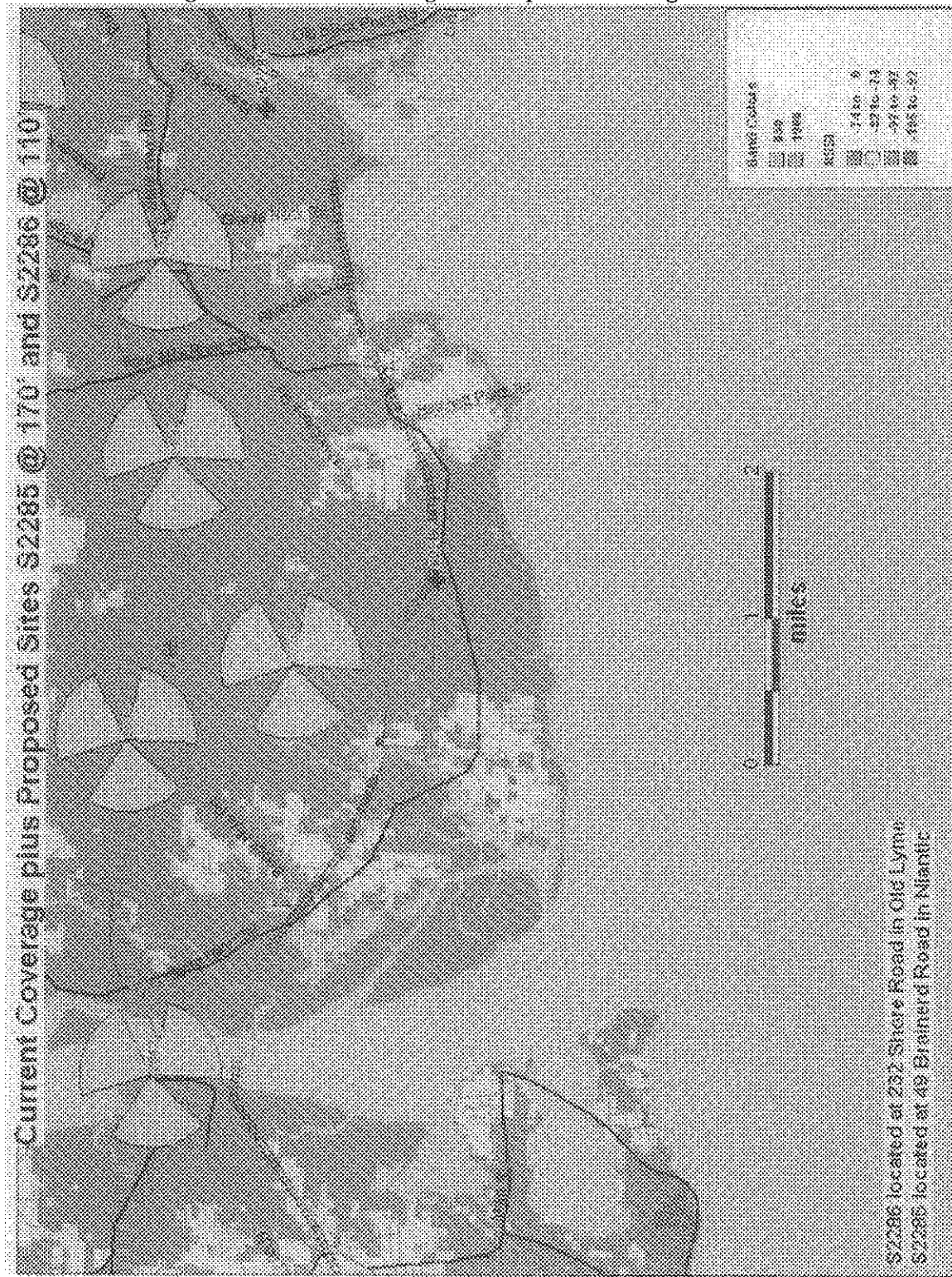
(Cellco 2, response 8)

Figure 16: AT&T Existing Coverage



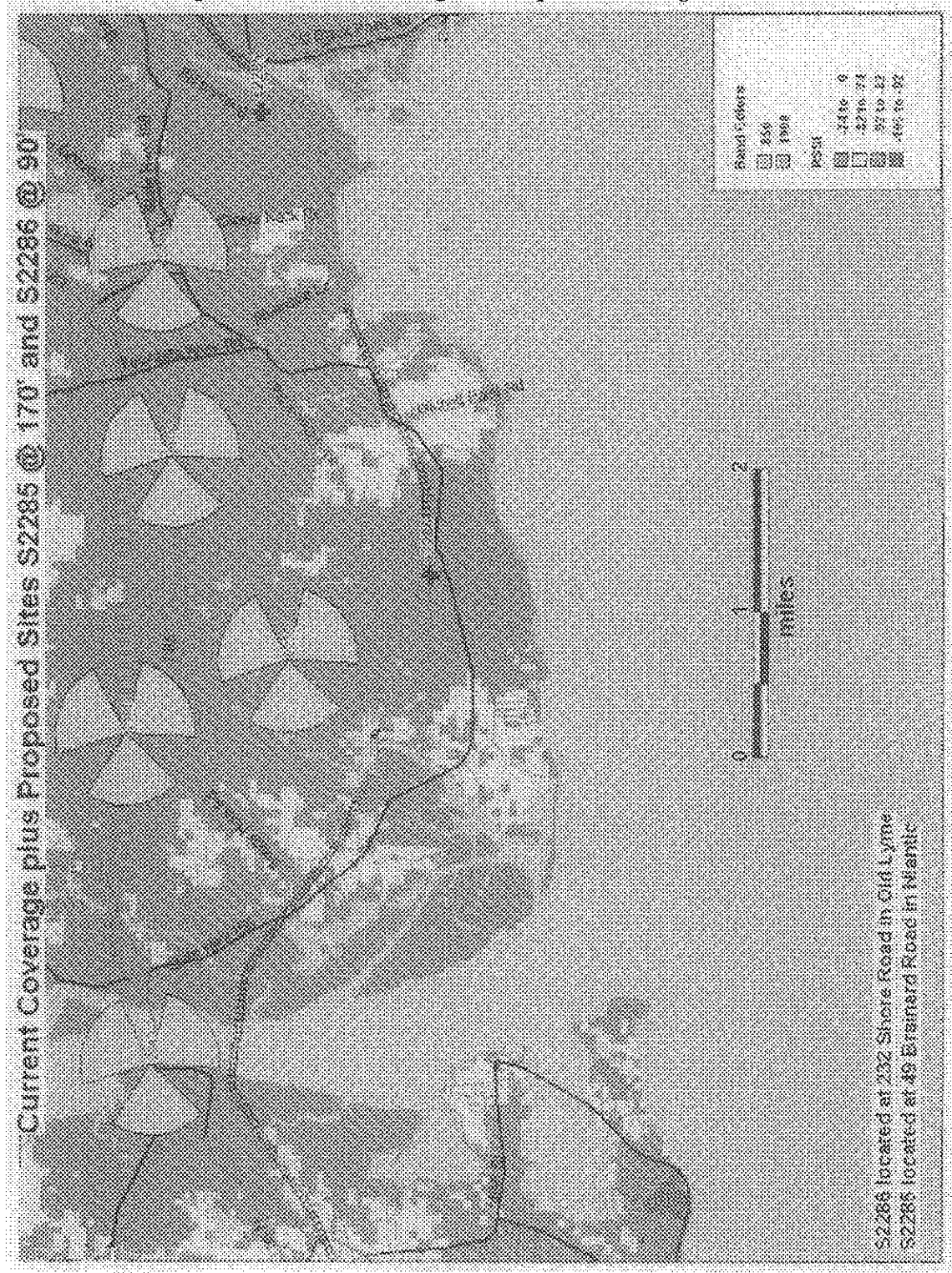
(AT&T 2, response 8)

Figure 17: AT&T Existing and Proposed Coverage at 110 feet



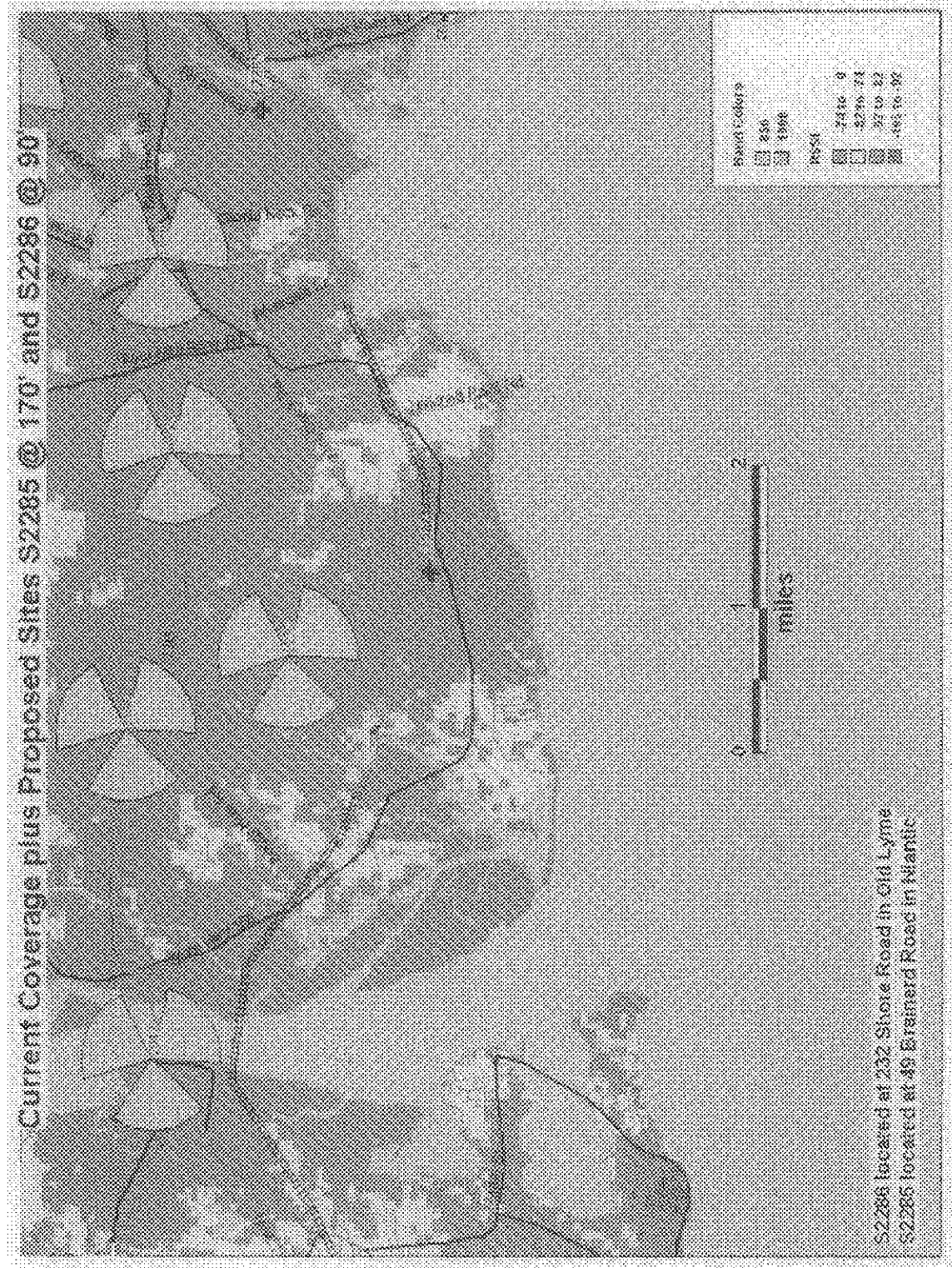
(AT&T 2, response 8)

Figure 18: AT&T Existing and Proposed Coverage at 90 feet



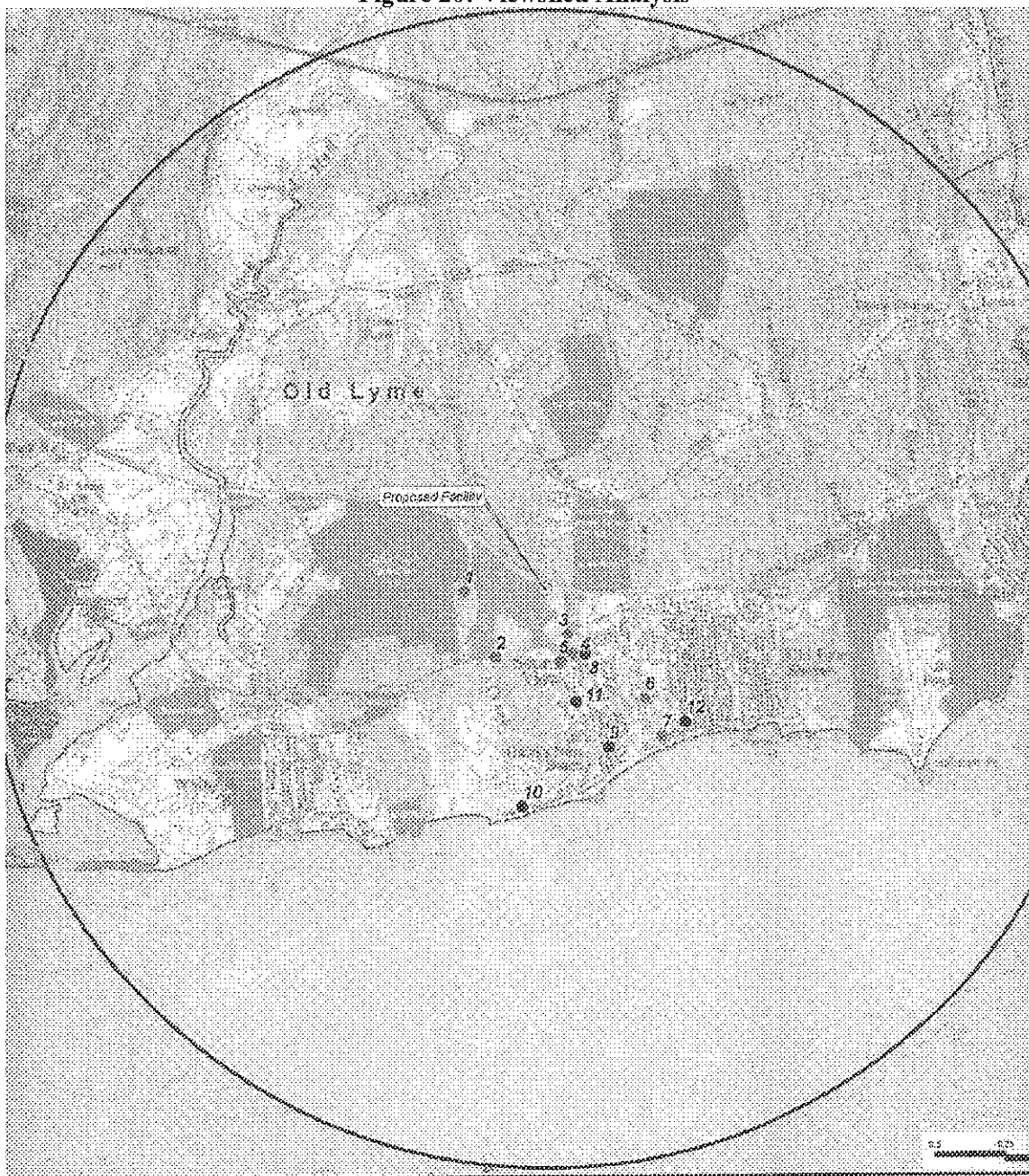
(AT&T 2, response 8)

Figure 19: AT&T Existing and Proposed Coverage at 80 feet



(AT&T 2, response 8)

Figure 20: Viewshed Analysis














(T-Mobile 1, Tab N)

Figure 21: Viewshed Analysis Key

Map Compiled July, 2009

Legend

-  Tower Location
- Photographs - May 8, 2009**
-  Balloon is not visible
-  Balloon visible above trees
-  Year-Round Visibility (Approximately 1577 acres)
-  Seasonal Visibility (Approximately 65 acres)
-  Protected Municipal and Private Open Space Properties (1867)
 - Demetery
 - Preservation:
 - Conservation:
 - Existing Preserved Open Space
 - Recreation
 - General Recreation:
 - School:
 - Uncategorized
-  CT DEP Protected Properties (2007)
 - State Forest
 - State Park
 - DEP Owned Waterbody
 - State Park Scenic Reserve
 - Historic Preserve
 - Natural Area Preserve
 - Fish Hatchery
 - Flood Control
 - Other
 - State Park Trail
 - Water Access
 - Wildlife Area
 - Wildlife Sanctuary
-  Federal Protected Properties (1997)
 -  CT DEP Boat Launches (1994)
 -  Boating Road (State and Local)
 -  Town Line

(T-Mobile 1, Tab N)