



Daniel F. Caruso  
Chairman

# STATE OF CONNECTICUT

## CONNECTICUT SITING COUNCIL

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September 29, 2010

TO: Parties and Intervenors

FROM: Linda Roberts, Executive Director 

RE: **DOCKET NO. 396** – SBA Towers II, LLC application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and management of a telecommunications facility located at 49 Brainerd Road, Niantic (East Lyme), Connecticut.

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As previously stated, 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 October 5, 2010.

LR/MP/laf

Enclosure



**LIST OF PARTIES AND INTERVENORS  
SERVICE LIST**

<b>Status Granted</b>	<b>Document Service</b>	<b>Status Holder (name, address &amp; phone number)</b>	<b>Representative (name, address &amp; phone number)</b>
<b>Applicant</b>	<input checked="" type="checkbox"/> U.S. Mail	SBA Towers II LLC	Carrie L. Larson, Esq. Pullman & Comley, LLC 90 State House Square Hartford, CT 06103-3702 (860) 424-4312 (860) 424-4370 fax <a href="mailto:clarson@pullcom.com">clarson@pullcom.com</a>
<b>Intervenor (granted 01/07/2010)</b>	<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 <a href="mailto:kbaldwin@rc.com">kbaldwin@rc.com</a>
<b>Intervenor (granted 01/07/2010)</b>	<input checked="" type="checkbox"/> E-mail	Russell L. Brown 41 Brainerd Road Niantic, CT 06357 (860) 739-5984 (860) 691-1145 fax <a href="mailto:rds@businessbookpress.com">rds@businessbookpress.com</a>	
<b>Party (granted 01/07/2010)</b>	<input checked="" type="checkbox"/> U.S. Mail	Town of East Lyme	Edward B. O'Connell, Esq. Waller, Smith & Palmer, P.C. 52 Eugene O'Neill Drive P.O. Box 88 New London, CT 06320 (860) 442-0367 (860) 447-9915 fax <a href="mailto:eboconnell@wallersmithpalmer.com">eboconnell@wallersmithpalmer.com</a> <a href="mailto:tmcollins@wallersmithpalmer.com">tmcollins@wallersmithpalmer.com</a>
<b>Intervenor (granted 02/11/2010)</b>	<input checked="" type="checkbox"/> U.S. Mail	New Cingular Wireless PCS, LLC	Daniel M. Laub, Esq. Christopher B. Fisher, Esq. Cuddy & Feder LLP 445 Hamilton Avenue, 14 <sup>th</sup> floor White Plain, NY 10601 (914) 761-1300 (914) 761-5372 fax <a href="mailto:cfisher@cuddyfeder.com">cfisher@cuddyfeder.com</a> <a href="mailto:dlaub@cuddyfeder.com">dlaub@cuddyfeder.com</a>

**LIST OF PARTIES AND INTERVENORS  
SERVICE LIST**

Status Granted	Document Service	Status Holder (name, address & phone number)	Representative (name, address & phone number)
<b>Party (granted 02/11/2010)</b>	<input checked="" type="checkbox"/> E-mail	Friends of the Pattagansett Trust	Keith R. Ainsworth, Esq. Evans Feldman & Ainsworth, LLC 261 Bradley Street P.O. Box 1694 New Haven, CT 06507-1694 (203) 772-4900 (203) 782-1356 fax <a href="mailto:krainsworth@snet.net">krainsworth@snet.net</a>
<b>Intervenor (granted 02/11/2010)</b>	<input checked="" type="checkbox"/> U.S. Mail	Joseph Raia 97 West Main Street, Unit 9 Niantic, CT 06357 (860) 691-1005 (860) 739-0036 <a href="mailto:Raia.joseph@sbcglobal.net">Raia.joseph@sbcglobal.net</a>	

DOCKET NO. 396 – SBA Towers II, LLC application for a } Connecticut  
 Certificate of Environmental Compatibility and Public Need for }  
 the construction, maintenance and management of a } Siting  
 telecommunications facility located at 49 Brainerd Road, Niantic } Council  
 (East Lyme), Connecticut. }

September 28, 2010

**DRAFT Findings of Fact**

**Introduction**

1. SBA Towers II LLC (SBA), in accordance with provisions of Connecticut General Statutes (CGS) § 16-50g through 16-50aa, applied to the Connecticut Siting Council (Council) on December 7, 2009 for the construction, management, and maintenance of a 150-foot wireless telecommunications facility, which would include a 170-foot tall monopole tower, to be located at 49 Brainerd Road in the Town of East Lyme, Connecticut. (SBA 1, pp. 1-2)
2. SBA is a Delaware limited liability company and a subsidiary of SBA Communications Corporation, a publicly traded company that owns and operates wireless infrastructure facilities nationwide. Its offices are at One Research Drive, Suite 200C, Westborough, Massachusetts. (SBA 1, p. 3)
3. The parties in this proceeding are SBA, Town of East Lyme, and Friends of the Pattagansett Trust. The intervenors to this proceeding are Cellco Partnership d/b/a Verizon Wireless (Cellco), New Cingular Wireless PCS, LLC (AT&T), Russell Brown, and Joseph Raia. (Transcript, February 23, 2010, 3:10 p.m. [Tr. 1], pp. 6-7)
4. Intervenors Cellco and AT&T are licensed by the Federal Communications Commission to provide wireless telecommunications services in New London County, Connecticut. (AT&T 1; Cellco 1)
5. The purpose of the proposed facility would be to provide service along Route 156 and the Amtrak corridor in East Lyme, as well as adjacent areas. (AT&T 1, p. 1)
6. Pursuant to General Statutes § 16-50m, the Council, after giving due notice thereof, held a public hearing on February 23, 2010, beginning at 3:10 p.m. and continuing at 7:03 p.m. at Camp Rell, Nett Hall, Smith Street, East Lyme. (Council's Hearing Notice dated January 14, 2010; Tr. 1, p. 3; Transcript 2 – 7:03 p.m. [Tr. 2], p. 3)
7. The Council held continued public hearings in New Britain on March 23, 2010 and April 22, 2010. (Transcript 3 – March 23, 2010 at 1:30 p.m. [Tr. 3], p. 3; Transcript 4 – April 22, 2010 at 2:05 p.m. [Tr. 4], p. 4)
8. The Council and its staff conducted an inspection of the proposed site on February 23, 2010, beginning at 2:00 p.m. During the field inspection, the applicant flew a balloon at the proposed site to simulate the height of the proposed tower. Weather conditions during the field review were not conducive to a balloon flight and included a 10 mile-per-hour wind with rain and sleet. The balloon was tethered at 170 feet above ground level to simulate the height of the tower. It could not be maintained at the proposed height for any significant amount of time due to the weather conditions. The balloon was aloft from 7:00 a.m. to 9:00 a.m. and from 1:00 p.m. to approximately 5:00 p.m. for the convenience of the public. (Council's Hearing Notice dated January 14, 2010; Tr. 1, p. 16)

9. Pursuant to CGS § 16-50I (b), public notice of the application was published in The Day on November 18, 2009 and November 20, 2009. (SBA 1, p. 4)
10. Pursuant to General Statute § 16-50I(b), notice of the application was provided to all abutting property owners by certified mail. SBA received return receipts from all abutters. (SBA 1, p. 4; SBA 3, response 2)
11. Pursuant to CGS § 16-50I (b), SBA provided notice to all federal, state and local officials and agencies listed therein. (SBA 1, p. 3)

#### State Agency Comment

12. Pursuant to General Statutes § 16-50j (h), on January 14, 2010 and May 20, 2010, the following State agencies were solicited by the Council to submit written comments regarding the proposed facility: Department of Environmental Protection (DEP); Department of Public Health (DPH); Council on Environmental Quality (CEQ); Department of Public Utility Control (DPUC); Office of Policy and Management (OPM); Department of Economic and Community Development (DECD); Department of Agriculture (DOAg); Department of Transportation (DOT); and Department of Emergency Management and Homeland Security (DEMHS). (Record)
13. The DOT's Bureau of Engineering and Highway Operations responded to the Council's solicitation for comments on February 10, 2010, but had no comments. (DOT Comments dated February 10, 2010)
14. The DPH's Drinking Water Section responded to the Council's solicitation for comments on February 10, 2010. The DPH indicated that it had reviewed the application for potential impacts to any sources of public drinking water supply. The project does not appear to be in a public water supply source water area. DPH had no further comments. (DEP Comments dated February 17, 2010)
15. The DEP's Office of Long Island Sound Programs responded to the Council's solicitation for comments on February 17, 2010. The DEP indicated that The Connecticut Coastal Management Act (CCMA) contains a general statement that the coast is rich in aesthetic resources and defines an adverse impact on coastal resources as degrading visual quality through significant alteration of the natural features of vistas and view points. DEP concludes that it would be prudent to consider a less visible location or take steps to minimize visual impacts. (DEP Comments dated February 17, 2010 and May 12, 2010)
16. The CEQ is concerned about adverse impacts per the CCMA. CEQ also raised concerns about potential adverse impacts to resident and transient bird populations, given the proximity of the proposed tower to coastal marshes. (CEQ Comments dated March 12, 2010)
17. The following agencies did not respond with comments on the application: DPUC, OPM, DECD, DOAg, and DEMHS. (Record)

#### Municipal Consultation

18. SBA notified the Town of East Lyme (Town) of the proposal on September 10, 2009 by sending a technical report to First Selectman Paul Formica. SBA met with First Selectman Formica, Chris Taylor – Deputy Fire Marshal, and Brooks Gianakos – Town Emergency Services Consultant on September 24, 2009 to discuss the proposed facility. (SBA 1, p. 16)

19. SBA representatives also attended a public informational meeting with the East Lyme Board of Selectman on November 18, 2009. (SBA 1, pp. 16-17)
20. The Board of Selectman (Board) voted unanimously to become a party in the Council proceeding to express their opposition to the proposed site. The Board's various concerns included the site's proximity to the Pattagansett River, which is considered a sensitive estuary, and Raven's Woods, a 26-acre nature preserve owned by East Lyme Land Trust. (Town 1)
21. At public hearing held on February 23, 2010, First Selectman Formica provided a limited appearance statement. Mr. Formica noted that many East Lyme citizens and their legislative representatives are concerned that the tower would be located within a coastal boundary and is not consistent with the Town's Plan of Development and Conservation. Mr. Formica also expressed concerns about adverse effects to the coastal landscape. Mr. Formica encouraged the exploration of alternative sites to find one more suitable for all those involved. (Tr. 1, pp. 9-11)
22. The Town's Plan of Development and Conservation does not specifically refer to telecommunications facilities, but does adopt the CCMA. (Tr. 1, pp. 87-89)
23. SBA would provide space on the tower for the Town's emergency communication services for no compensation. The Town is interested in co-locating emergency services antennas on the proposed tower, but the details have not finalized. (SBA 1, p. 5; Tr. 1, p. 48)

#### **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)
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)
26. The Telecommunications Act of 1996 prohibits local and state entities from discriminating among providers of functionally equivalent services. (Council Administrative Notice Item No. 7)
27. The Telecommunications Act of 1996, a Federal law passed by the United States Congress, prohibits any state or local entity 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 Item No. 7)
28. The Wireless Communications and Public Safety Act of 1999 (E911 Act) was enacted by Congress to promote and enhance public safety by making 9-1-1 the universal emergency assistance number, by furthering deployment of wireless 9-1-1 capabilities, and by encouraging construction and operation of seamless ubiquitous and reliable networks for wireless services. (SBA 1, pp. 5-6)

29. In 1999, Congress passed the Wireless Communications and Public Safety Act (the 911 Act) to facilitate and encourage the prompt deployment of a nationwide, seamless communication infrastructure for emergency services. SBA's facility would be in compliance with the requirements of the 911 Act. (SBA 1, p. 6)

**Existing and Proposed Wireless Coverage – AT&T**

30. AT&T seeks to provide coverage to Route 156 to the north, the Amtrak corridor and shoreline areas to the south, Black Point to the east, Giant's Neck to the west, as well as adjacent areas. (SBA 1, Tab F)
31. AT&T operates in the 850 MHz (cellular) band and the 1900 MHz (PCS) band at a signal level service design of -74 dBm for this area, sufficient for in-building coverage. The signal level threshold for in-vehicle coverage is -82 dBm. (AT&T 3, responses 3, 4, 8)
32. AT&T would initially provide cellular service and would expand to PCS service as needed in the future. AT&T also plans to deploy 700 MHz (LTE) service on its network beginning in 2011. (AT&T 3, responses 7, 8)
33. AT&T currently experiences a coverage gap on Route 156 of 0.5 miles. (AT&T 3, response 1)
34. The minimum height at which AT&T could achieve its coverage objective from the proposed site is 167 feet. (AT&T 3, response 5; AT&T 9)
35. AT&T's antennas at the proposed site at 167 feet would provide cellular coverage on Route 156 for 1.6 miles. AT&T's antennas would also provide about 2.2 miles of cellular coverage on the Amtrak corridor. AT&T's cellular coverage area at this antenna height would be 3.29 square miles. (SBA 1, Tab F; AT&T 3, responses 10, 12 and 13; Tr. 3, p. 137)
36. AT&T's antennas at the proposed site at 157 feet would provide cellular coverage on Route 156 for 1.6 miles. AT&T's antennas would also provide about 2.2 miles of cellular coverage on the Amtrak corridor. AT&T's cellular coverage area at this antenna height would be 2.40 square miles. (SBA 1, Tab F; AT&T 3, responses 10, 12 and 13; Tr. 3, p. 137)
37. AT&T antennas at the proposed site at 147 feet would provide cellular coverage on Route 156 for 1.6 miles. AT&T's antennas would also provide about 2.2 miles of cellular coverage on the Amtrak corridor. AT&T's cellular coverage area at this antenna height would be 2.16 square miles. (SBA 1, Tab F; AT&T 3, responses 10, 12 and 13; Tr. 3, p. 137)



38. Adjacent AT&T facilities that would interact with the proposed facility are as follows:

Location	Antenna Height agl	Approximate Distance from Proposed Site
15 Liberty Way, East Lyme	62 feet – rooftop facility	1.25 miles northwest
93 Roxbury Road, East Lyme	79 feet – water tank	1.88 miles north
51 Daniels Avenue, Waterford	168 feet – lattice tower	3.33 miles east-northeast

(AT&T 3, response 6; SBA 1, Tab H)

39. Shifting the tower up to 500 feet south is not expected to materially affect coverage and would not change the antenna height required by AT&T. (Tr. 1, p. 66; Tr. 3, p. 139)

**Existing and Proposed Wireless Coverage – Verizon Wireless**

40. Cellco seeks to provide coverage to Route 156 to the north, the Amtrak corridor and shoreline areas to the south, Black Point to the east, Giant’s Neck to the west, as well as adjacent areas. (Cellco 2, response 7)

41. Cellco operates in the 850 MHz (cellular) band, the 1900 MHz (PCS) band, and the 700 MHz (LTE) band at a signal level service design of -85 dBm for this area, sufficient for in-vehicle coverage. The signal level threshold for in-building coverage is -75 dBm. (Cellco 2, responses 2, 3, and 6)

42. Cellco currently experiences a coverage gap on Route 156 of 0.25 miles for cellular service and 2.4 miles for PCS service. (Cellco 2, response 8)

43. The minimum height at which Cellco could achieve its coverage objective from the proposed site is 147 feet. (Cellco 2, response 4)

44. Cellco’s antennas at the proposed site at 147 feet would provide cellular coverage on Route 156 for 1.84 miles and PCS coverage for 1.79 miles. The LTE coverage on Route 156 would be 2.09 miles. Cellco’s antennas at this height would provide cellular coverage to the Amtrak Acela corridor for 2.58 miles and PCS coverage for 2.45 miles. LTE service would be provided to the Amtrak corridor in the future. Cellco’s antennas at this height would provide 16.29 square miles of cellular coverage, 8.19 square miles of PCS coverage, and 18.42 square miles of LTE coverage. (Cellco 2, responses 9 and 10; Tr. 3, p. 91)

45. Cellco’s antennas at the proposed site at 137 feet would provide cellular coverage on Route 156 for 1.65 miles and PCS coverage for 1.60 miles. The LTE coverage on Route 156 would be 1.89 miles. Cellco’s antennas at this height would provide cellular coverage to the Amtrak Acela corridor for 2.36 miles and PCS coverage for 2.10 miles. Cellco’s antennas at this height would provide 15.79 square miles of cellular coverage, 7.75 square miles of PCS coverage, and 17.12 square miles of LTE coverage. (Cellco 2, responses 9 and 10)

46. Cellco's antennas at the proposed site at 127 feet would provide cellular coverage on Route 156 for 1.59 miles and PCS coverage for 1.50 miles. The LTE coverage on Route 156 would be 1.77 miles. Cellco's antennas at this height would provide cellular coverage to the Amtrak Acela corridor for 2.30 miles and PCS coverage for 1.91 miles. Cellco's antennas at this height would provide 15.21 square miles of cellular coverage, 6.64 square miles of PCS coverage, and 16.34 square miles of LTE coverage. (Cellco 2, responses 9 and 10)
47. Adjacent Cellco facilities that would interact with the proposed facility are as follows:

<b>Location</b>	<b>Antenna Height agl</b>	<b>Approximate Distance from Proposed Site</b>
93 Roxbury Road, East Lyme	148 feet – lattice tower	1.88 miles north
36 Hatchedts Hill Road, Old Lyme	175 feet – monopole	2.52 miles west
51 Daniels Avenue, Waterford	140 feet – lattice tower	3.33 miles east

(Cellco 2, response 5; SBA 1, Tab H)

48. Shifting the tower up to 500 feet south is not expected to materially affect coverage and would not change the antenna height required by Cellco. (Tr. 1, p. 66; Tr. 3, pp. 91-92)

#### Site Selection

49. SBA established a search ring for the target service area in April 2009. (SBA 3, response 1)
50. The search ring is located in the Black Point area and also covers areas to the south, southwest, and southeast of Black Point. (SBA 3, response 1)

51. There are eight communications towers within a four-mile radius of the proposed site. None of these existing towers were found to be adequate for coverage purposes. The towers are listed below.

<b>Tower Location</b>	<b>Height of Tower</b>	<b>Tower Owner</b>	<b>Approx. Distance and Direction</b>
51 Daniels Avenue, Waterford	180 feet	Town of Waterford	3.33 miles to NE
Millstone Road, Waterford	450 feet	Dominion Nuclear CT, Inc.	3.10 miles to E
93 Roxbury Road, East Lyme	150 feet	Crown	1.88 miles to N
King Arthur Drive, East Lyme	90 feet	CL&P	3.81 miles to N
Flanders Road, East Lyme	97 feet	CL&P	3.73 miles to N
125 Mile Creek Road, Old Lyme	170 feet	Cellco	3.81 miles to NW
38 Hacketts Hill Road, Old Lyme	190 feet	VoiceStream	2.52 miles to W
30 Short Hills Road, Old Lyme	180 feet	Sprint	2.81 miles to W

(SBA 1, Tab H)

52. After determining there were no suitable structures within the search area, SBA and AT&T searched for properties suitable for tower development. AT&T Wireless investigated 12 parcels/areas, and one, the 49 Brainerd Road site, was selected for site development. The 10 rejected parcels/areas and reasons for their rejection are as follows:

Address	Assessor's Parcel Number	Reason for Rejection
100 Old Black Point Road	8.3-138	Rejected due to access issues. An access easement and negotiations with multiple landowners would be required.
120 Old Black Point Road	5.1-26 and 5.1-29	Rejected due to required wetlands crossings.
Old Black Point Road	5.1-31	Rejected due to site being landlocked with no access.
Old Black Point Road	8.3-133	Rejected due to the landowner not being responsive regarding potential leasing.
Attawan Road	8.3-39	Rejected due to the landowner not being responsive regarding potential leasing.
2 Central Avenue	8.1-112	Rejected by AT&T radio frequency engineers.
Brainerd Road	7.4-23	Rejected because site is currently utilized for conservation land and hiking trails.
Brainerd Road	7.4-22	Rejected because property is conservation land and not available for commercial development.
Giant's Neck Road	10-3-14-1	Rejected due to site being too far outside search area and is located on DEP land.
Fairhaven Road	8.1-106	Rejected due to the landowner not being responsive regarding potential leasing.

(SBA 1, Tab G; SBA 3, response 8)

53. T-Mobile is interested in pursuing an unrelated tower site at Indian Woods Road. This site would provide adequate cellular and LTE coverage for Cellco, but would reduce PCS coverage. Notwithstanding, Cellco would be willing to utilize this site as an alternative to the proposed site. However, this site would not meet AT&T's coverage objectives and it is too close to an existing AT&T site. (Tr. 2, p. 38; Cellco 3, response 6; AT&T 9; Tr. 3, p. 92)
54. The 14 Cross Lane, Old Lyme site would not meet AT&T's or Cellco's coverage objectives and is no longer being pursued by SBA because the location is no longer available. (AT&T 3, response 18; Cellco 2, response 12)
55. SBA investigated the possibility of locating the proposed facility at up to four locations on a property at Giant's Neck Road known as assessor's parcel 10.3, 14-1, and owned by the DEP. The site could work for both AT&T and Cellco from a coverage perspective. However, the DEP has indicated that the parcel is not available for leasing for a telecommunications facility. (SBA 7; Tr. 3, pp. 60-61; Tr. 4, pp. 50-52)
56. The Town sought to purchase the DEP parcel for a public safety building; alternatively, it sought a land swap to obtain the parcel, but was unable to secure any agreement with DEP. (Tr. 4, p. 26-52)
57. Intervenor Joseph Raia offered the Pondcliff Condominium property at 97 West Main Street, East Lyme as a possible tower site. However, this site would not meet Cellco's or AT&T's coverage objectives. (Joseph Raia 1 and 2; Cellco 2, response 13; AT&T 3, response 15)

58. The Nebelung Farms, LLC property at 138 North Bridebrook Road, East Lyme was also considered as a possible tower site. However, this site would not meet AT&T's or Cellco's coverage objectives. (AT&T 3, response 17; Cellco 2, response 14)
59. T-Mobile has proposed three new towers in the neighboring community of Old Lyme: Docket No. 391 – 232 Shore Road; Docket No. 392 – 387 Shore Road; and Docket No. 393 – 61-1 Buttonball Road. While Cellco and AT&T have intervened in the Docket No. 391 proceeding, none of these three sites would meet or assist in meeting Cellco's or AT&T's coverage objectives at the proposed 49 Brainerd Road, East Lyme site. (Cellco 2, response 15; AT&T 3, response 17)
60. Microcells and repeaters are not viable technological alternatives for providing coverage to the identified coverage gap. Microcells and repeaters are low-power sites that are limited in coverage and capacity. They are generally used for covering an area less than half a mile or for providing service in buildings. (SBA 1, p. 6)
61. Distributed Antenna Systems (DAS) would not be a viable alternative to the proposed tower. DAS coverage must be line-of-sight; thus, buildings, trees, etc. are significant obstacles to signal propagation. Covering the subject service area would require numerous DAS nodes (locations on utility poles for antennas and associated radio equipment), especially considering the several carriers and their different frequencies. In some portions of the service area, no utility poles exist. (Tr. 3, pp. 148-152, 172)

#### Facility Description

62. The proposed site is located on a 51-acre parcel at 49 Brainerd Road in East Lyme. The parcel, owned by Christopher Samuelson, contains a residence. This site is depicted on Figure 1. (SBA 1, p. 2)
63. The property is classified in the R-40 residential district. The Town's zoning regulations permit telecommunication towers in R-40 districts, subject to issuance of a Special Permit. (SBA 1, p. 14; SBA 1a – Town of East Lyme Zoning Regulations, Section 31)
64. The proposed tower site is located in the northern portion of the property. The site is mostly undeveloped and wooded with deciduous hardwood species with an average tree canopy height of 50 feet. (SBA 1, Attachment I)
65. The proposed facility would consist of a 170-foot above ground level (agl) monopole within a 100-foot by 100-foot leased area. The tower would be constructed in accordance with the American National Standards Institute TIA/EIA-222-G "Structural Standards for Steel Antenna Towers and Antenna Support Structures". (SBA 1, p. 2; Tr. 1, p. 17)
66. The proposed tower would be located at approximately 41° 18' 30.30 north latitude and 72° 13' 26.10 west longitude at an elevation of 21 feet above mean sea level (amsl). The would result in a tower height of 191 feet amsl. (SBA 1, Tabs B and O)
67. The tower would be designed for a total of four carriers. (SBA 1, Tab B; Tr. 1, p. 36)
68. AT&T would initially install six panel antennas on T-arms at a centerline height of 167 feet agl. Cellco would install 12 panel antennas on a low-profile platform at a centerline height of 147 feet agl. (Cellco 2, response 4; AT&T 3, response 5; SBA 1, p. 8)

69. Cellco prefers to use a low-profile platform, but could use T-arms if required. (Cellco 2, response 4)
70. T-Mobile expressed an interest in co-locating at the 157-foot level of the tower, but did not intervene in the proceeding. T-Mobile submitted a co-location application to SBA, but does not have a lease with SBA at this time. (SBA 1, p. 2; Tr. 1, pp. 20, 68)
71. SBA has reserved the 157-foot level of the tower for T-Mobile. (Tr. 4, p. 94)
72. If a flush-mounted configuration is required, Cellco would need three levels of three antennas each, due to its cellular, PCS, and LTE services. The required heights would be 147 feet, 157 feet, and 167 feet in order to provide comparable coverage to a low-profile platform mount or T-arm mount configuration at 147 feet. (Cellco 2, response 6; Tr. 3, p. 114)
73. If a flush-mounted configuration is required, AT&T would also need three levels of three antennas each, due to its cellular, and future PCS and LTE services. These levels would be 177 feet, 187 feet, and 197 feet. (Tr. 3, pp. 139-140)
74. A 75-foot by 75-foot equipment compound enclosed by a eight-foot high chain link fence would be established at the base of the tower. AT&T would install a 12-foot by 20-foot equipment shelter within the compound. Cellco would install a 12-foot by 30-foot equipment shelter within the fenced compound. (AT&T 1, Tab B)
75. For emergency backup power, Cellco would rely on a propane-fueled generator to be located inside its equipment shelter. A 1,000 gallon propane tank would be located within the fenced compound, adjacent to the equipment shelter. This would provide approximately 70 to 75 hours of run time. (Cellco 2, response 9; Tr. 3, p. 92)
76. AT&T would utilize a diesel backup generator that would be located on a 4-foot by 11-foot concrete pad within the fenced compound. The diesel fuel tank would hold about 200 gallons and would provide three to four and one-half days of run time. A battery backup system would be used to prevent a reboot condition during the generator start-up delay period. (AT&T 3, response 19; Tr. 3, p. 145-146)
77. Development of the site would require approximately 140 cubic yards of cutting. No fill would be required. (SBA 3, response 12)
78. Access to the proposed site would extend about 45 feet to the southeast from the end of Brainerd Road and then turn southeast and continue approximately 155 feet to the compound. The gravel drive would be approximately 10 to 12 feet wide with a parking/turnaround area on the northwest side of the compound. (SBA 1, Tab B; Tr. 1, p. 73)
79. SBA could put an entrance gate in front of the parking/turnaround area if requested. (Tr. 1, p. 75)
80. Utilities would be installed underground from pole number 2072 on Brainerd Road to the compound, generally following the path of the access drive. (SBA 1, Tab B)
81. The presence of ledge would be determined upon completion of the geotechnical investigation. If ledge is present, the preferred method of removal would be chipping instead of blasting. (SBA 3, response 5)

82. The tower setback radius would remain entirely within the subject property for all location options. (SBA 1, Tab B)
83. The nearest property boundary from the proposed tower is approximately 220 feet to the northwest (Raven property). The tower would be seasonally visible from this location. (SBA 1, Tabs B and I)
84. There are five residences within 1,000 feet of the proposed tower site. The nearest residence is the Abarca property, located approximately 376 feet to the north of the proposed tower site at 46 Brainerd Road, East Lyme. (SBA 1, Tab B and p. 15)
85. The proposed tower is approximately 500 feet to the south of Intervenor Russell Brown's property at 41 Brainerd Road. (SBA Late File Aerial Photograph; SBA 1, Tab B)
86. The area surrounding the proposed Brainerd Road site is residential in nature, with large wooded lots. The site area is at the very end of Brainerd Road on a large parcel that abuts the Amtrak rail line located approximately 1,100 feet to the east and also about 1,760 feet to the south. A 99-acre parcel owned by DEP and a 22-acre land trust parcel, both undeveloped, are to the west of the proposed site. (SBA 3, response 11; SBA 1, Tab B)
87. In addition, the Millstone power plant is located approximately 2.9 miles to the east of the proposed facility. (SBA 3, response 11; SBA 1, Tab B)

88. The estimated construction cost of the proposed facility not including the carrier's co-locations is:

Tower and foundation costs (inc. installation)	\$97,000
Site development costs	\$73,000.
Utility installation costs	\$25,000.
Total	<u>\$ 195,000.</u>

(SBA 1, p. 18)

89. The estimated construction cost of Cellco's co-location at the proposed facility is:

Cell site radio equipment	\$450,000.
Platform, antennas and coax	\$70,000.
Power systems (inc. generator and fuel tank)	\$50,000.
Equipment shelter	\$50,000.
Misc. site costs (i.e. site prep. and restoration)	\$7,500.
Total	<u>\$627,500.</u>

(Cellco 2, response 18)

90. The estimated construction costs of AT&T's co-location at the proposed facility is:

Antennas	\$7,400.
<u>Radio Equipment</u>	<u>\$140,000.</u>
Total	<u>\$147,400.</u>

(Tr. 3, p. 143)

Alternate Sites on the Subject Property

91. Three alternative locations on the 49 Brainerd Road property were identified during the proceeding. Two of these locations were suggested by Intervenor Russell Brown and one by SBA. These alternative locations are listed as follows:

Alternative Site	Approx. Distance and Direction from Proposed Site	Ground Elevation (amsl)	Tower Height (amsl)
Russell Brown Option No. 1	500 feet to South	11 feet	181 feet
Russell Brown Option No. 2	150 feet to South	20 feet	191 feet
SBA Hybrid Site	310 feet to South	15 feet	185 feet

(SBA Late File Aerial Photograph; Russell Brown 1 and 2; Tr. 4, p. 127-128)

92. The property owner prefers Russell Brown Option No. 2 because the Russell Brown Option No. 1 may impact a well on his property. (Tr. 3, p. 45)
93. The property owner also prefers to have access for the site leave his driveway in the vicinity of the Russell Brown Option No. 2 location, whether that location or the SBA Hybrid Site is chosen. This would prevent vehicular traffic from tripping an alarm that detects vehicles entering his driveway. (Tr. 1, pp. 54-56)
94. If the tower is approved at the subject property, Mr. Brown's preference is his Option No. 1 location, second preference is his Option No. 2, and the proposed site is third. (Tr. 4, pp. 18-20)
95. If the tower is approved at the subject property, the First Selectman of East Lyme generally supports Russell Brown Option No. 2. (Tr. 4, p. 28)

Environmental Considerations

96. The proposed facilities would have no effect upon historic, architectural, or archaeological resources listed on or eligible for the National Register of Historic Places or upon properties of traditional cultural importance to Connecticut's Native American community. (SBA 1, Tab K)
97. No Federally threatened or endangered species or State endangered, threatened or special concern species are present at the proposed site, even if the tower were shifted 500 feet to the south. (SBA 1, Tab K; Tr. 3, p. 28)
98. The entire East Coast, including the subject property, is located in a migratory bird flyway. (Tr. 4, p. 92)
99. The proposed project would be consistent with the U.S. Fish and Wildlife Service Guidelines for Communications Towers. (Tr. 4, p. 92)



100. Approximately 17 trees with diameters of six inches or more at breast height (dbh) would be removed to develop the proposed site or the Russell Brown Option No. 2. (SBA 1, p. 9; Tr. 4, p. 91)
101. The Russell Brown Option No. 1 location would require the removal of 23 trees with diameters of six inches or more dbh. (Tr. 4, p. 91)
102. There is one wetland system approximately 50 feet east of the northeast corner of the proposed equipment compound. Thus, some construction would occur within the Town's 100-foot Upland Review Area. (SBA 1, p. 16; Tr. 1, p. 39)
103. The facility has a relatively small footprint (a compound area of 5,625 square feet); it is buffered from the wetland by 50 feet or more; and its stormwater runoff would not drain towards the wetland. Thus, no adverse impact to the wetland is expected. (SBA 1, Tab J; Tr. 1, p. 39)
104. The Russell Brown Option No. 2 location has a wetland buffer of approximately 50 feet, similar to the proposed location. (Tr. 3, p. 34)
105. The Russell Brown Option No. 1 location would not have a wetland buffer. The wetland boundary would extend approximately 8 to 10 feet into the eastern side of the equipment compound. (SBA Post-Hearing Interrogatories, Exhibit A)
106. Developing a facility at the Russell Brown Option No. 1 location would require approximately 500 to 1,000 square feet of wetlands to be filled. (SBA Post-Hearing Interrogatories, Exhibit A)
107. The SBA Hybrid Site would have a wetland buffer of approximately 36 feet. Development at this site would result in no likely adverse impacts to wetlands. (SBA Post-Hearing Interrogatories, Exhibit A)
108. Even with a shift of 500 feet to the south, the project is expected to comply with the CCMA. (Tr. 3, pp. 28-29)
109. Obstruction marking and lighting of the tower would not be required. (SBA 1, p. 17)
110. Cellco's backup generator is expected to meet state noise standards at the property boundary. Under normal conditions, the generator would only run about 20 to 30 minutes per week during daylight hours for testing purposes. (Cellco 2, response 17)
111. AT&T's backup generator is also expected to meet state noise standards at the property boundary. Typically, the generator would run about 20 minutes per week for testing purposes. (AT&T 3, response 20)
112. The noise levels from both generators are not additive. (Tr. 3, p. 107)

113. The cumulative worst-case maximum power density from the radio frequency emissions from the operation of AT&T's and Verizon's proposed antennas is 23.3 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. (Council Administrative Notice 1 and 2; AT&T 3, response 14; Cellco 2, response 11)

#### Visibility

114. The tower would be visible year-round on land from approximately 63 acres within a two-mile radius of the site. The tower would be seasonally visible from approximately 45 acres on land within a two-mile radius of the site. (SBA 1, Tab I)
115. The majority of the year-round visibility of the tower is over open water. Approximately 2,219 acres, or 97 percent of the 2,282 acres of year-round visibility, is over Long Island Sound and the Pattagansett River. (SBA 1, Tab I)
116. Areas of year-round visibility of the tower extend to the immediate shoreline and include select portions of Old Black Point Road, Barone Road, Indian Rock Road, Fairhaven Road, Marshfield Road, and Gada Street. A total of 31 residences on these roads would have a year-round view of the tower. (SBA 1, Tab I)
117. The majority of the year-round views of the tower also feature existing overhead electrical infrastructure associated with the Amtrak rail corridor. (SBA 1, Tab I)
118. A total of approximately 20 additional homes located on select portions of Old Black Point Road, Barone Road, Sunnyside Drive, Gada Street, Marshfield Road, and Birch Street would have seasonal views of the tower. (SBA 1, Tab I)

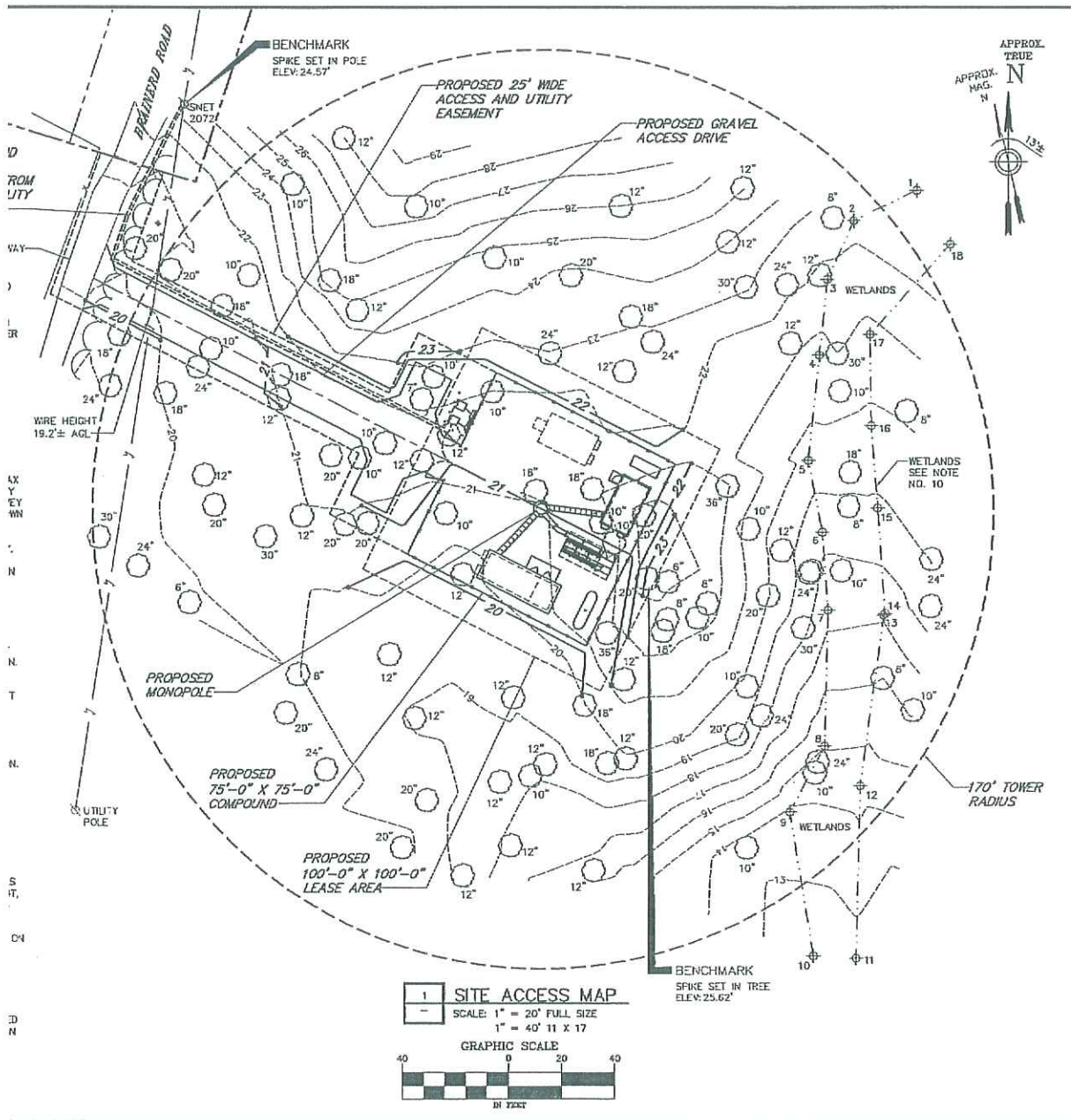
119. Visibility of the proposed tower from specific locations within a two-mile radius of the site is presented in the table below:

Location	Visible	Approx. Portion of Tower Visible	Approx. Distance to Tower
1. Old Black Point Road adjacent to house #188.	Yes	80 feet – above trees	1.09 miles northwest
2. Old Black Point Road adjacent to house #158.	Yes	80 feet - above trees	0.82 miles northwest
3. Old Black Point Road adjacent to house #140.	Yes	85 feet – above trees	0.67 miles northwest
4. Old Black Point Road adjacent to house #108.	Yes	85 feet – above trees	0.49 miles northwest
5. Old Black Point Road adjacent to house #74	Yes	55 feet - above trees	0.32 miles northwest
6. Old Black Point Road adjacent to house #44.	Yes	70 feet – above trees	0.37 miles southwest
7. Intersection of Barone Road and Indian Rock Road.	Yes	60 feet – above trees	0.39 miles west
8. Sunnyside Drive adjacent to house #18.	Yes	10 feet – above trees	0.84 miles southwest
9. Fairhaven Road at Gada Street	Yes	20 feet – above trees	0.51 miles southwest
10. East Lyme Land Conservancy hiking trail	Yes	10 feet – above trees	0.15 miles northeast
11. Brainerd Road adjacent to house #23.	No	None	0.25 miles southeast
12. Old Black Point Road.	No	None	1.18 miles northwest
13. Sunrise Avenue at Indianola Road.	No	None	1.04 miles northwest
14. Crescent Avenue at Prospect Street Avenue.	No	None	1.08 miles southwest
15. Fairhaven Road at Black Point Road.	No	None	0.98 miles southwest
16. Old Black Point Road at Pleasant Drive.	No	None	0.49 miles southwest
17. Fairhaven Road over Pattagansett River.	No	None	0.48 miles southwest
18. Giant's Neck Road.	No	None	0.75 miles northeast
19. Route 156 west of Park Place	No	None	0.84 miles southwest

(SBA 1, Tab I)

120. No views of the tower are expected from Rocky Neck State Park. (Tr. 1, p. 77)
121. The proposed tower is expected to be visible from Intervenor Russell Brown's residence. (Tr. 4, p. 16)
122. The tower would be visible year-round from select portions of the hiking trail located on the East Lyme Land Conservancy property to the southwest of the proposed facility. The views would not be continuous, but up to several hundred feet of the trail would have seasonal views of the tower through the trees. (SBA 1, Tab I, p. 5; Tr. 1, p. 18)

123. There are no state or locally-designated scenic roads within a two-mile radius of the proposed tower. (SBA 1, Tab I)
124. The tower is within the Coastal Management Zone. (Tr. 1, p. 24)
125. The panoramic view shows the coastline from Rocky Neck to Giant's Neck is relatively unsettled and unobstructed. (SBA 8)
126. Areas within 0.5 miles of the proposed tower with year-round views of the tower include Town open space on Old Black Point Road and southeast of Brainerd Road, The Nature Conservancy Pattagansett Marshes and the outflow of the Pattagansett River. (SBA 1, Tab I)
127. SBA considered alternative or stealth tower designs such as a tree tower (monopine), but is concerned that a monopine would extend too far above the tree line to blend in effectively. (Tr. 1, pp. 27-28)
128. A steel monopole, as proposed, tends to dull in a short period of time and blend in better against the sky as a background. (Tr. 1, p. 28)
129. SBA also considered a configuration with two shorter towers, roughly 100 to 110 feet tall, but determined the two visual footprints might extend farther into residential areas. (Tr. 1, p. 29)
130. Shifting the tower 500 to the south (i.e. utilizing the Russell Brown Option No. 1) would reduce the visual impact of the tower from the hiking trail at the East Lyme Land Conservancy. However, it would move the views of the tower closer to the shoreline and homes to the south. Approximately one or two additional homes would have views of the tower. Visibility from open water on Long Island Sound would increase by 200 acres. (Tr. 1, pp. 19, 37; Tr. 3, p. 1)
131. Russell Brown Option No. 1 tower location would have less visual impact on the Brainerd Road residents than the Russell Brown Option No. 2 location. (Tr. 4, p. 10)
132. No landscaping is proposed in the application. However, to reduce the visual impact of the compound, SBA is willing to consider native plantings around the compound as part of the Development and Management Plan. (SBA 1, Tab B; Tr. 1, pp. 75-77; Tr. 2, pp. 77)



**Figure 1:** Location of Proposed Site at 49 Brainerd Road, East Lyme (SBA 1, Tab B)



Figure 2: Location of Proposed Site at 49 Brainerd Road, East Lyme (SBA 1, Tab B)

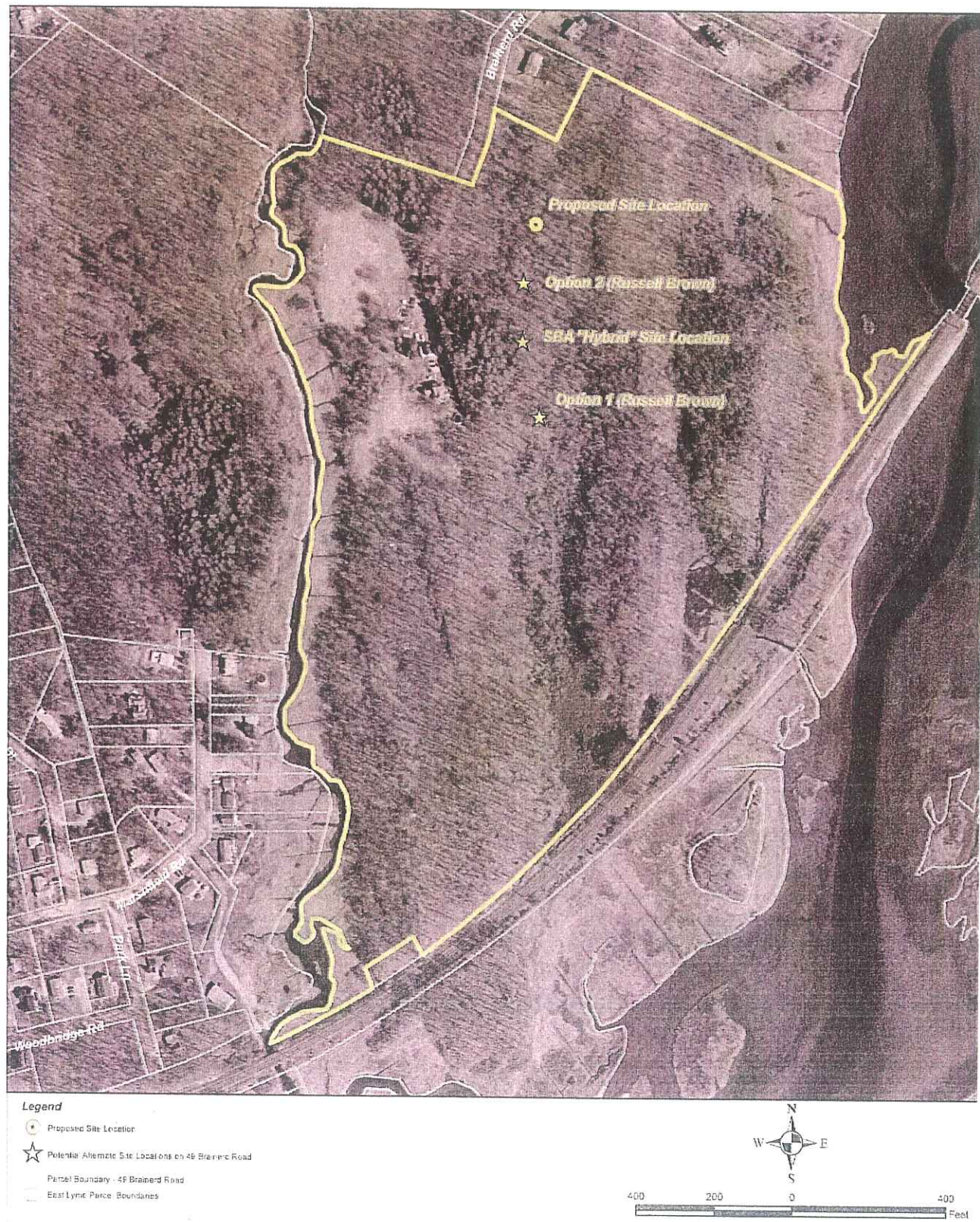


Figure 3: Location of Proposed and Alternate Sites on Subject Property. (SBA Late File Aerial Photograph)

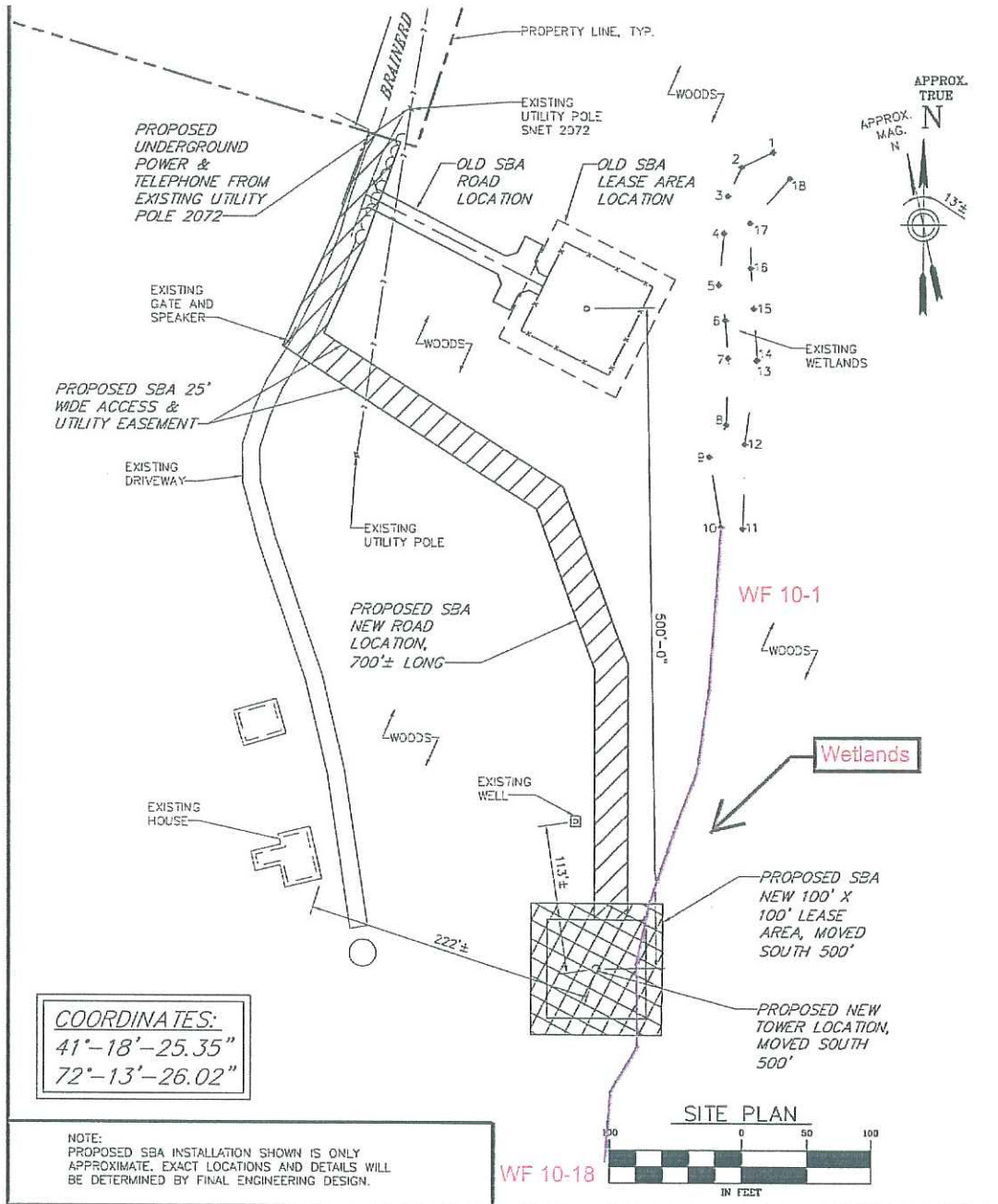


Figure 4: Location of proposed site and Russell Brown Option No. 2 site with wetlands (SBA Post-Hearing Interrogatories)



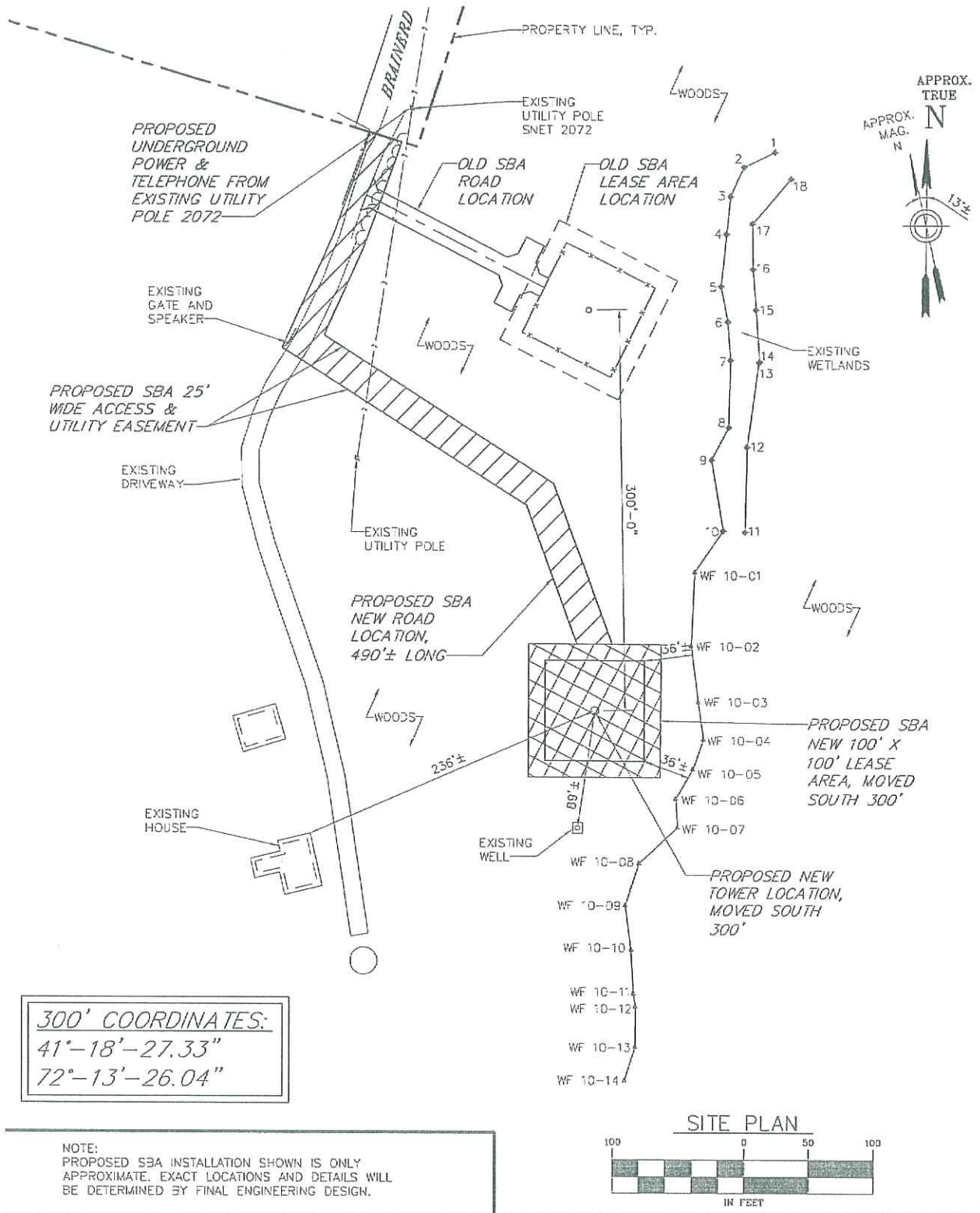


Figure 5: Location of Proposed Site and SBA Hybrid Site with wetlands (SBA Post-Hearing Interrogatories)

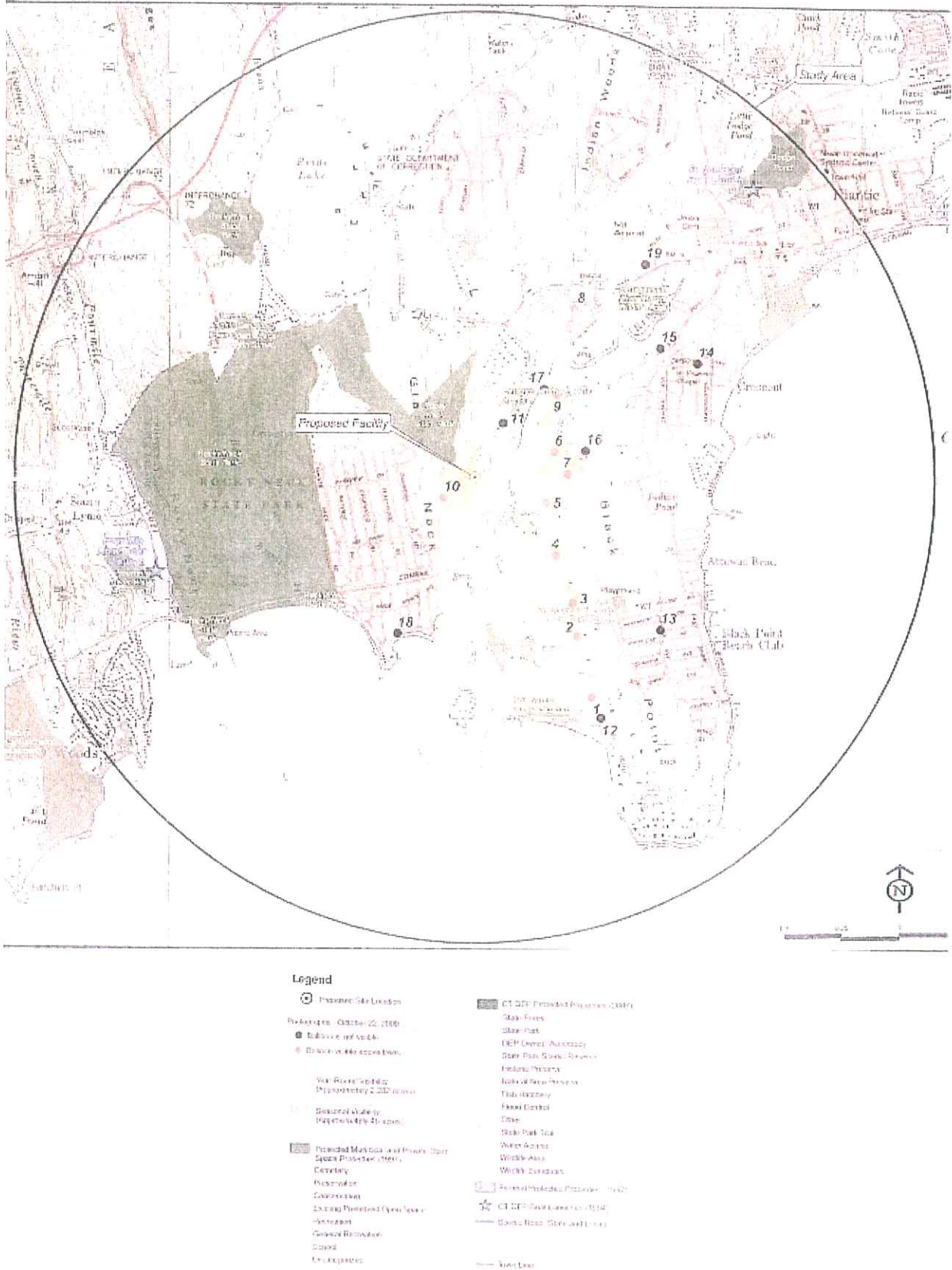


Figure 6: Projected visibility of proposed site. (AT&T 1, Tab 4)

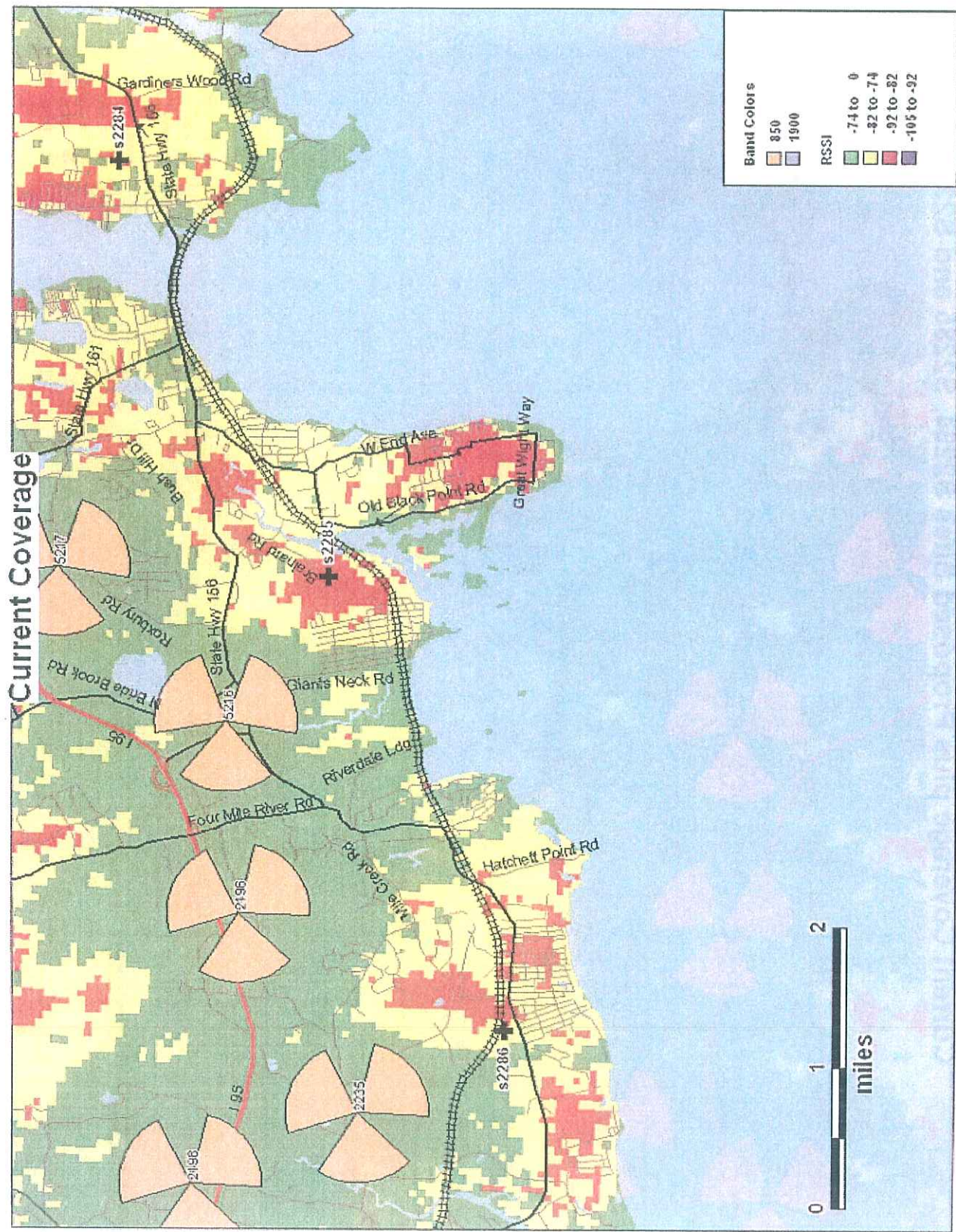


Figure 7: AT&T existing cellular coverage. (SBA 1, Tab F)

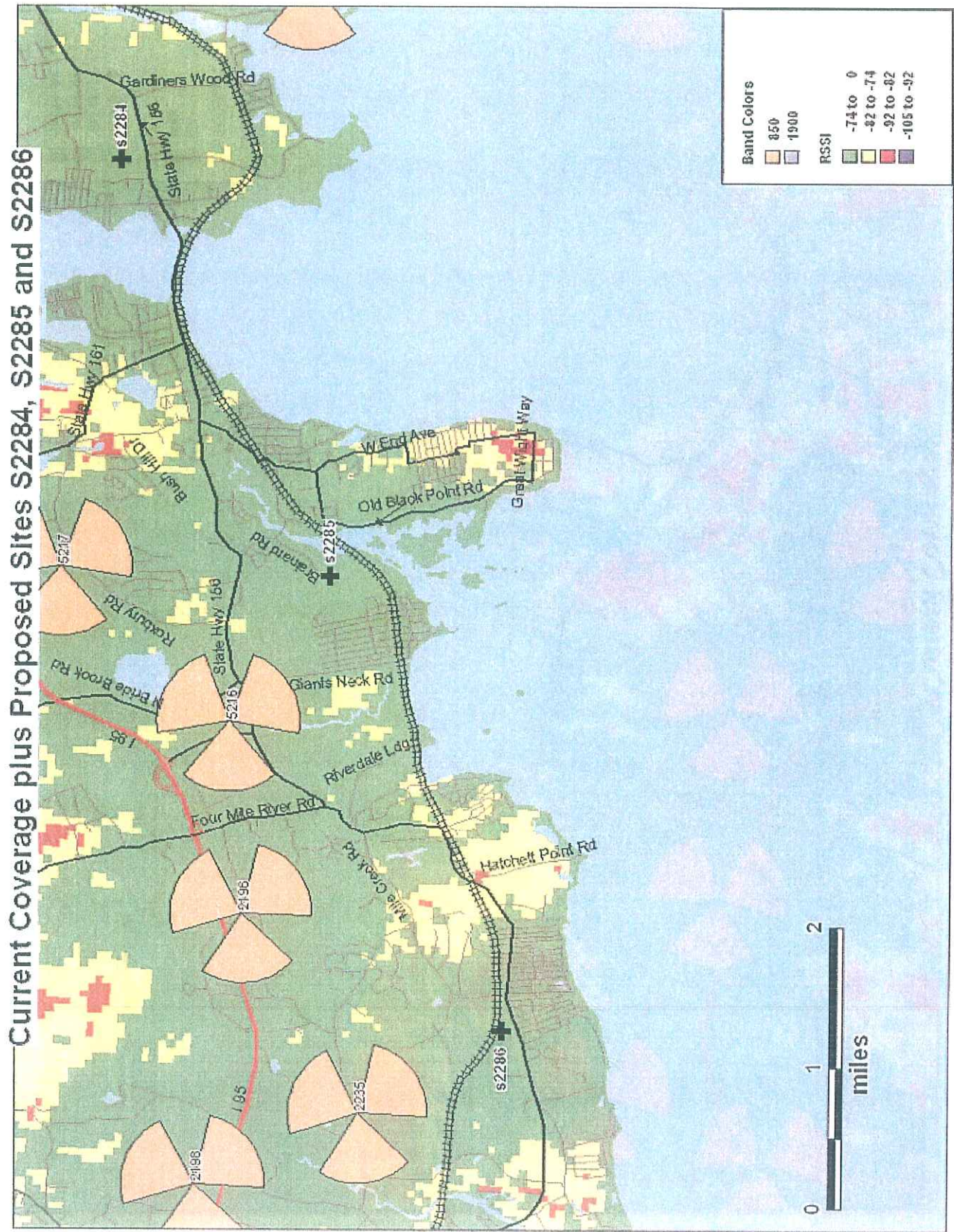


Figure 8: AT&T existing and proposed cellular coverage. (SBA 1, Tab F)

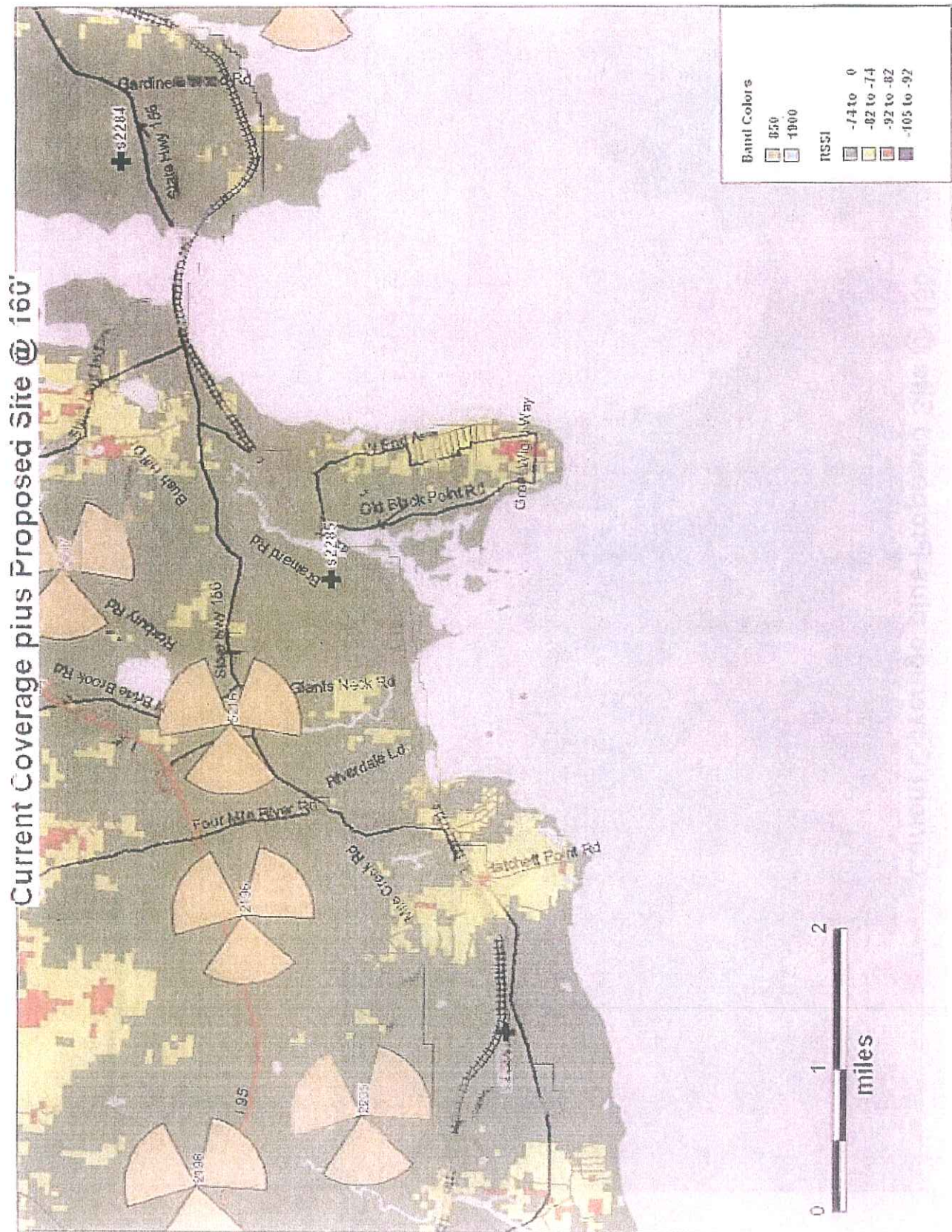


Figure 9: AT&T proposed cellular coverage with antennas mounted at 160 feet agl. (AT&T 3, response 10)

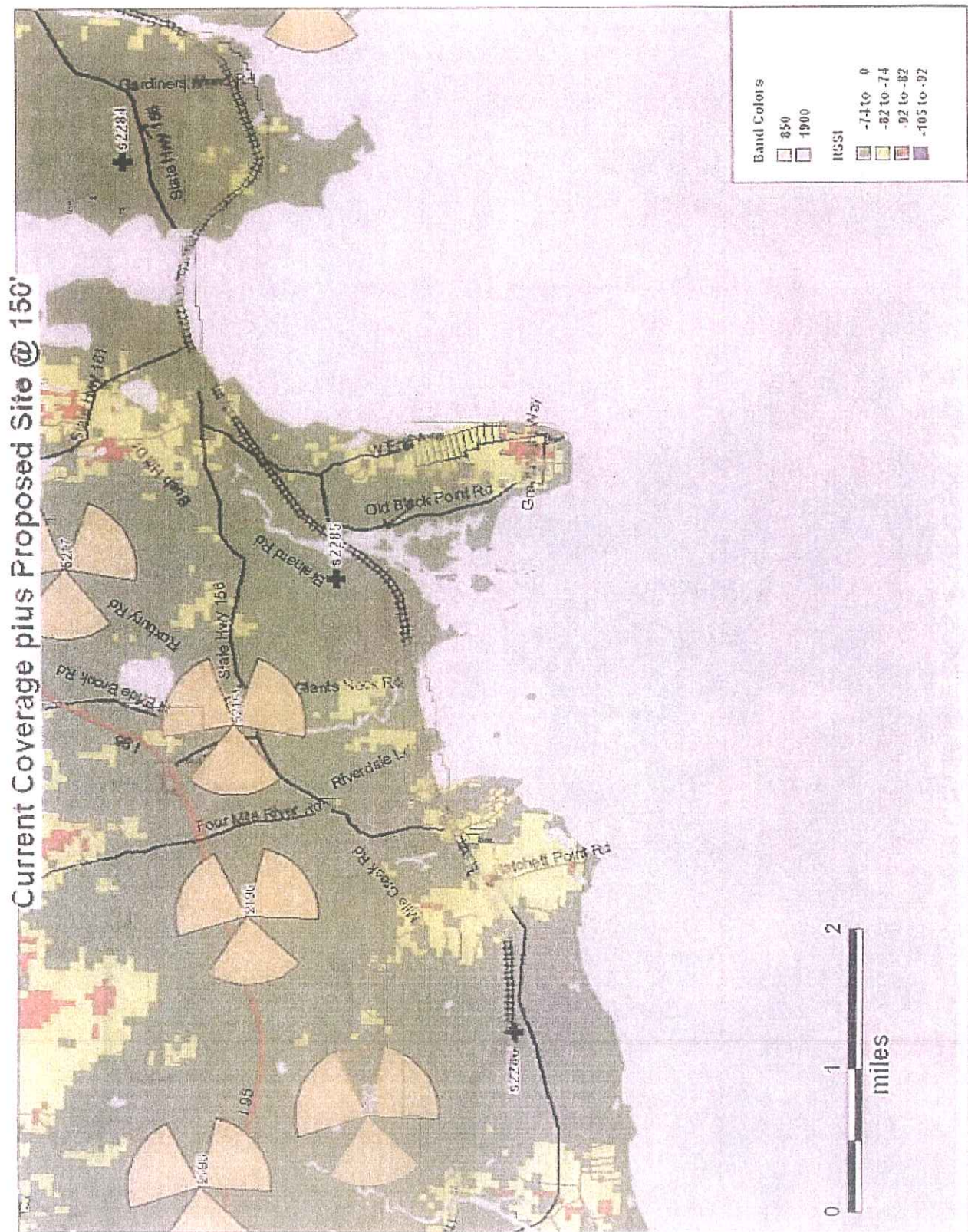


Figure 10: AT&T proposed cellular coverage with antennas mounted at 150 feet agl. (AT&T 3, response 10)

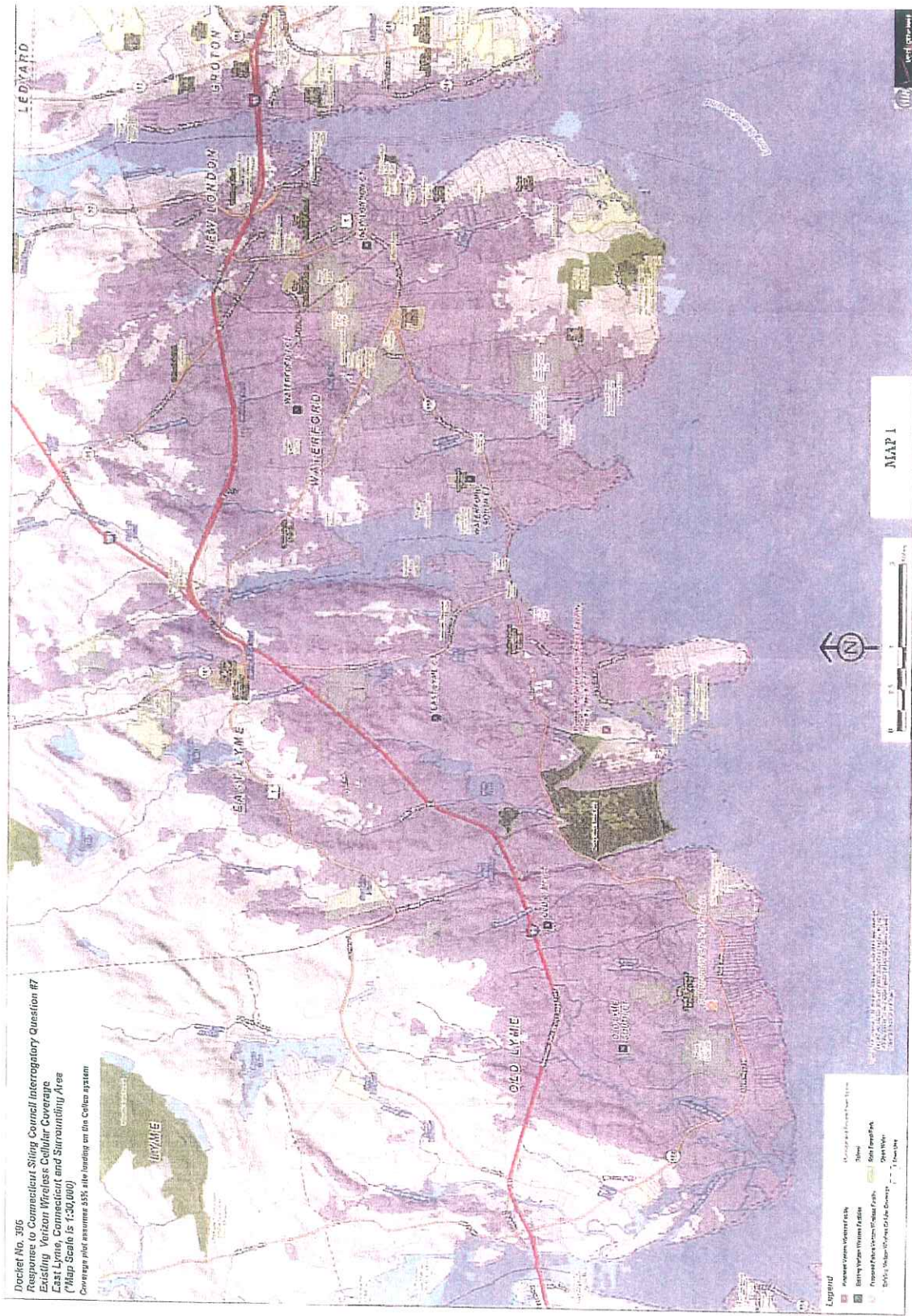


Figure 11: Cellco's Existing Cellular Coverage. (Cellco 2, response 7)

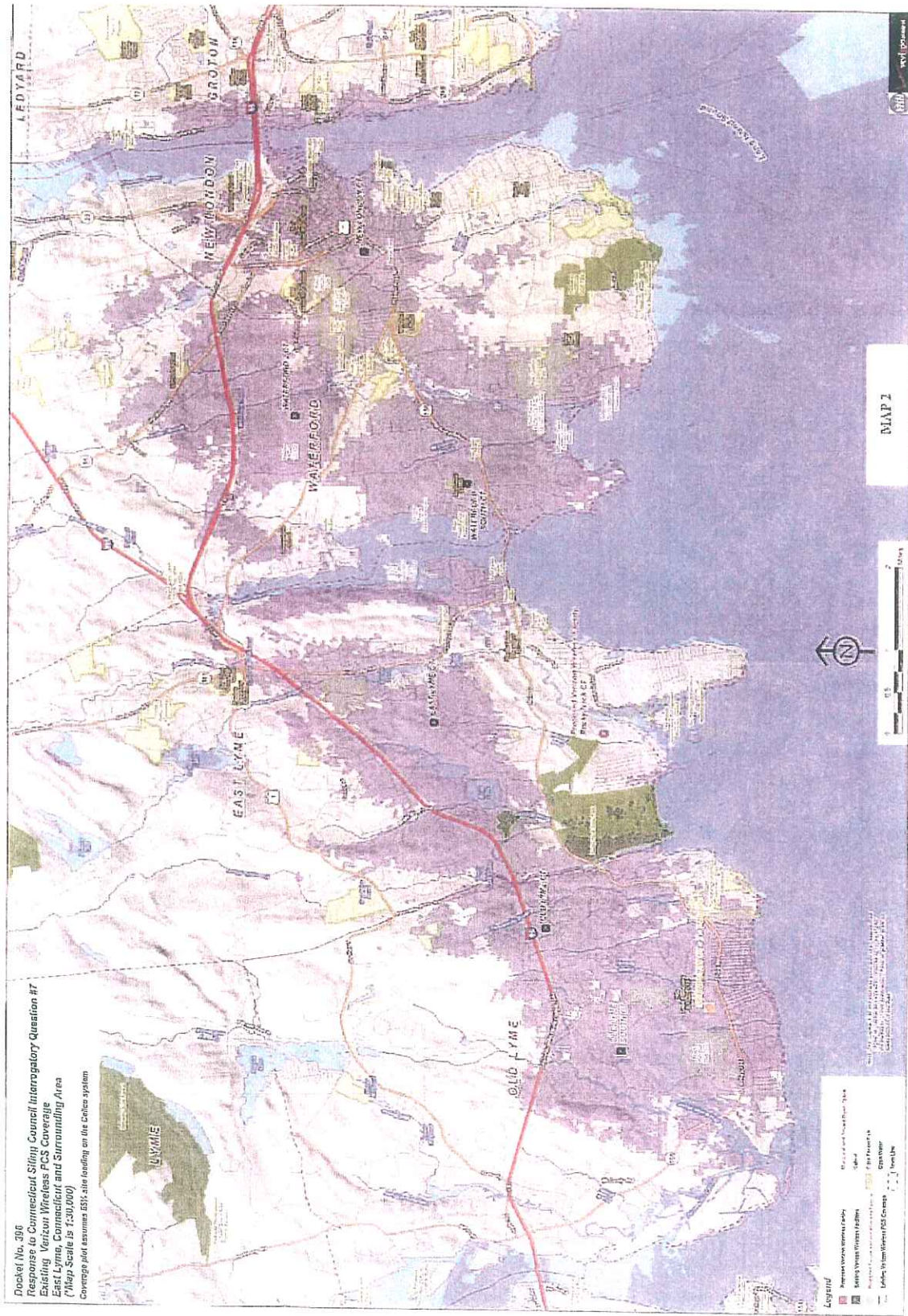


Figure 12: Cellco's Existing PCS Coverage. (Cellco 2, response 7)



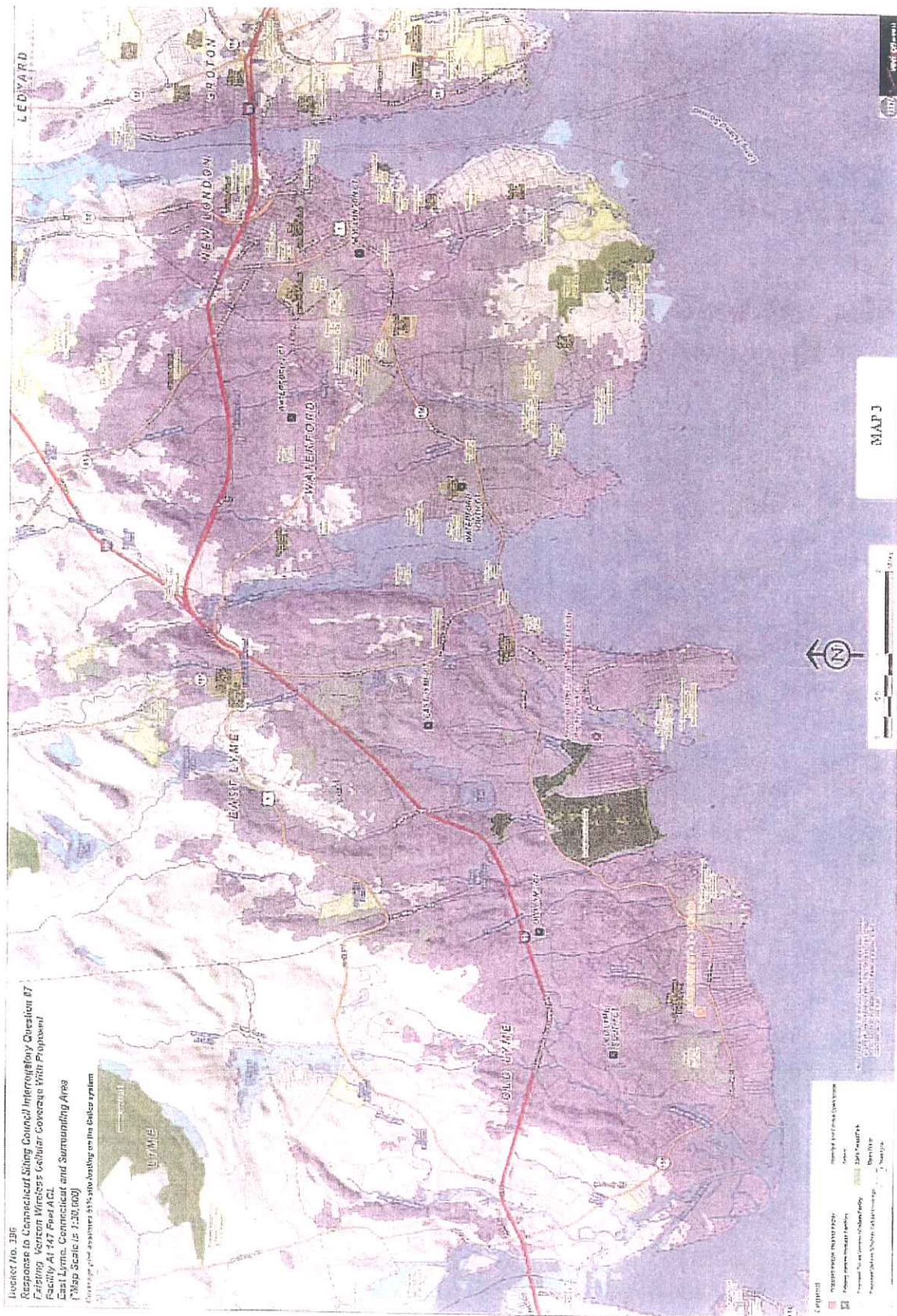


Figure 13: Cellco's Existing and Proposed Cellular Coverage at 147 feet. (Cellco 2, response 7)

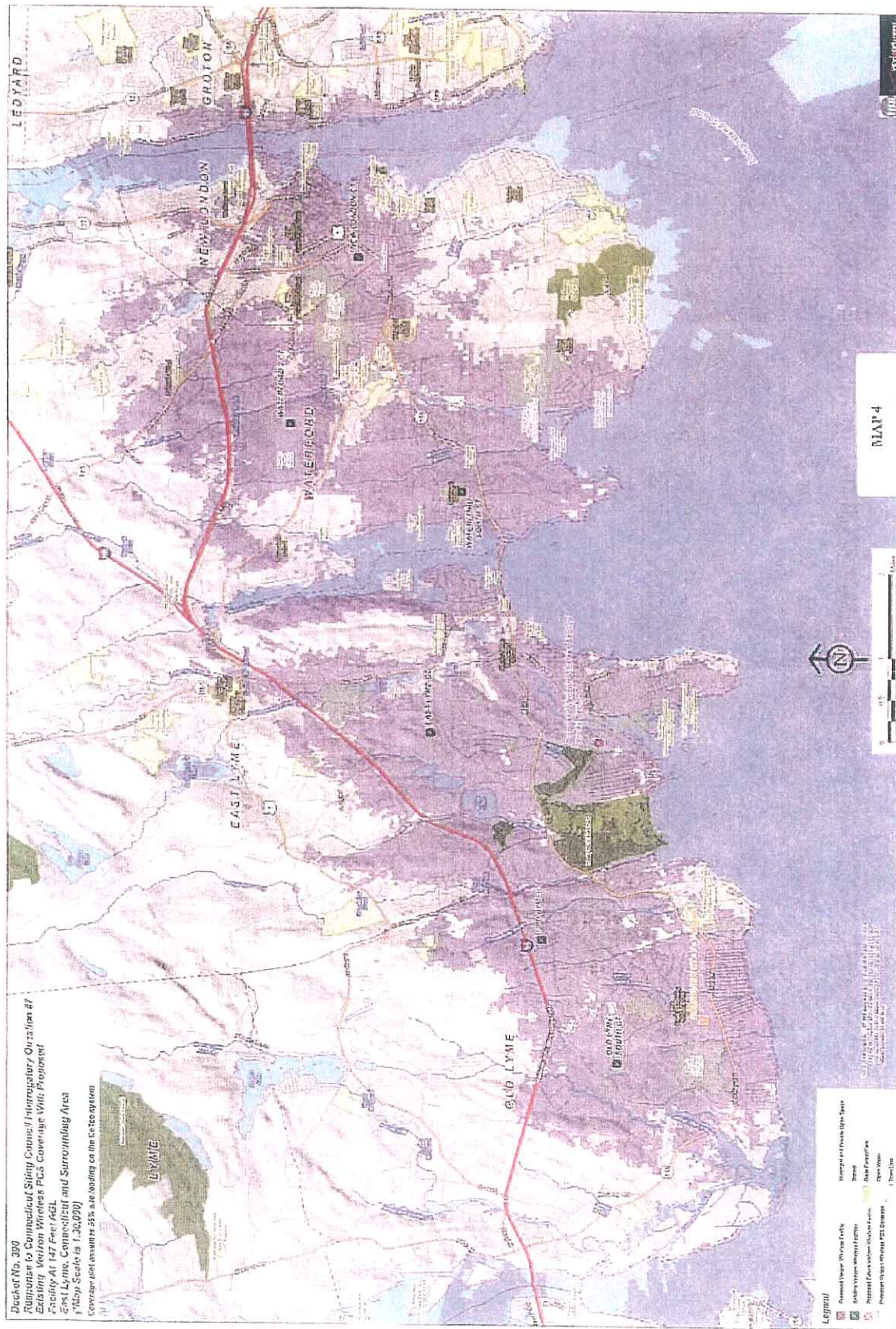


Figure 14: Cellco's Proposed PCS Coverage at 147 feet. (Cellco 2, response 7)

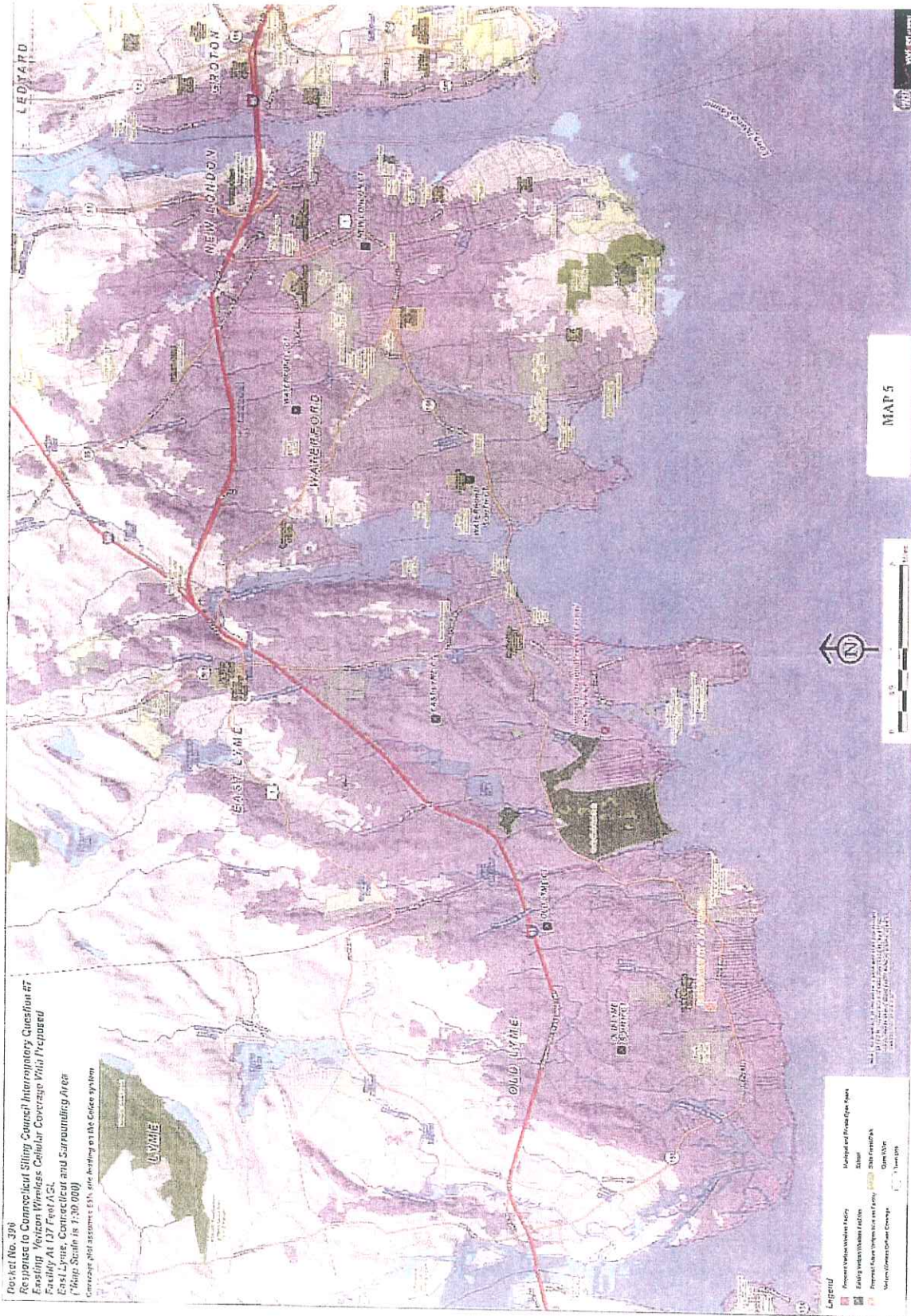


Figure 15: Cellco's Existing and Cellular Coverage at 137 feet. (Cellco 2, response 7)

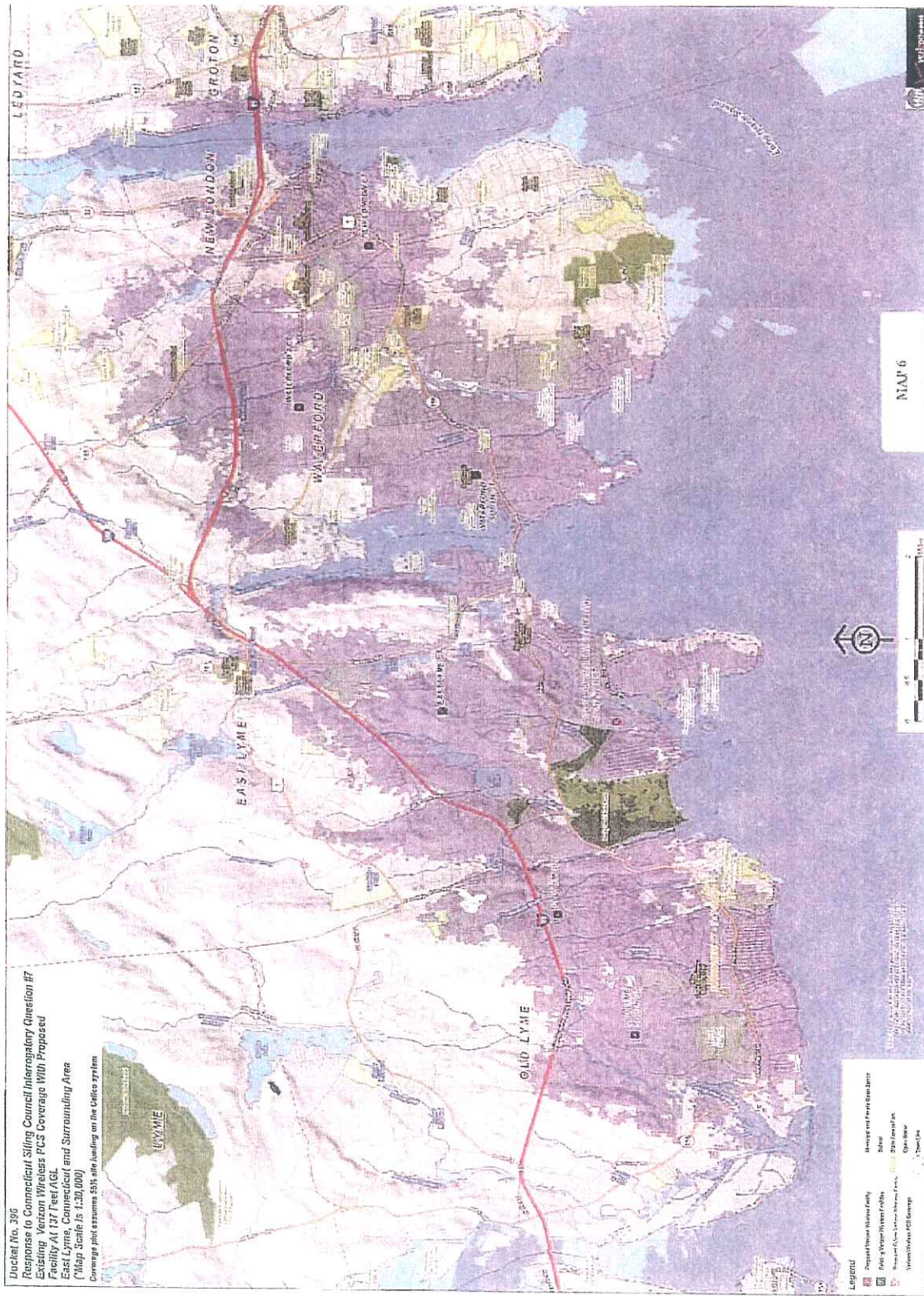


Figure 16: Cellco's Existing and PCS Coverage at 137 feet. (Cellco 2, response 7)

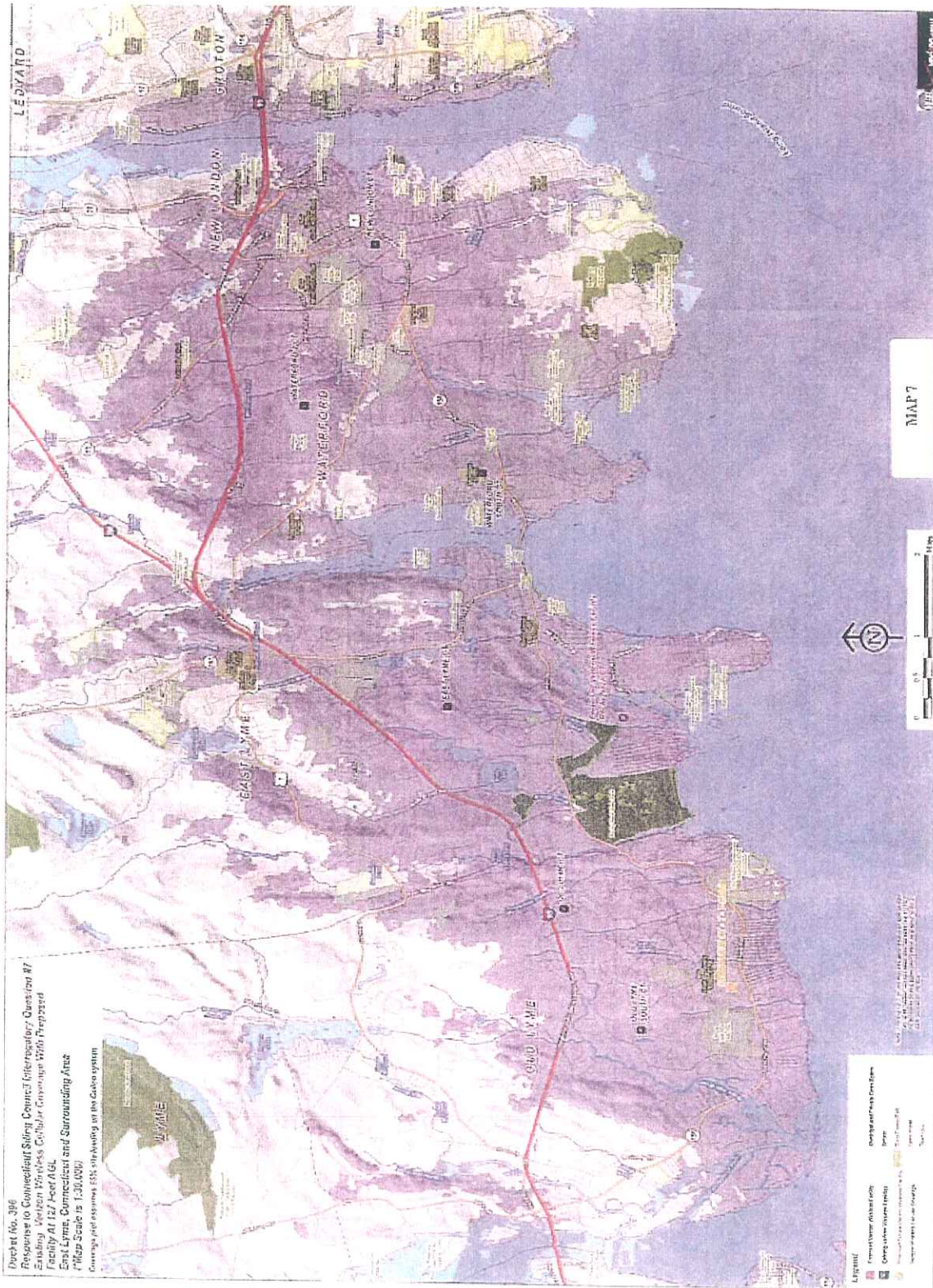


Figure 17: Cellco's Existing and Cellular Coverage at 127 feet. (Cellco 2, response 7)

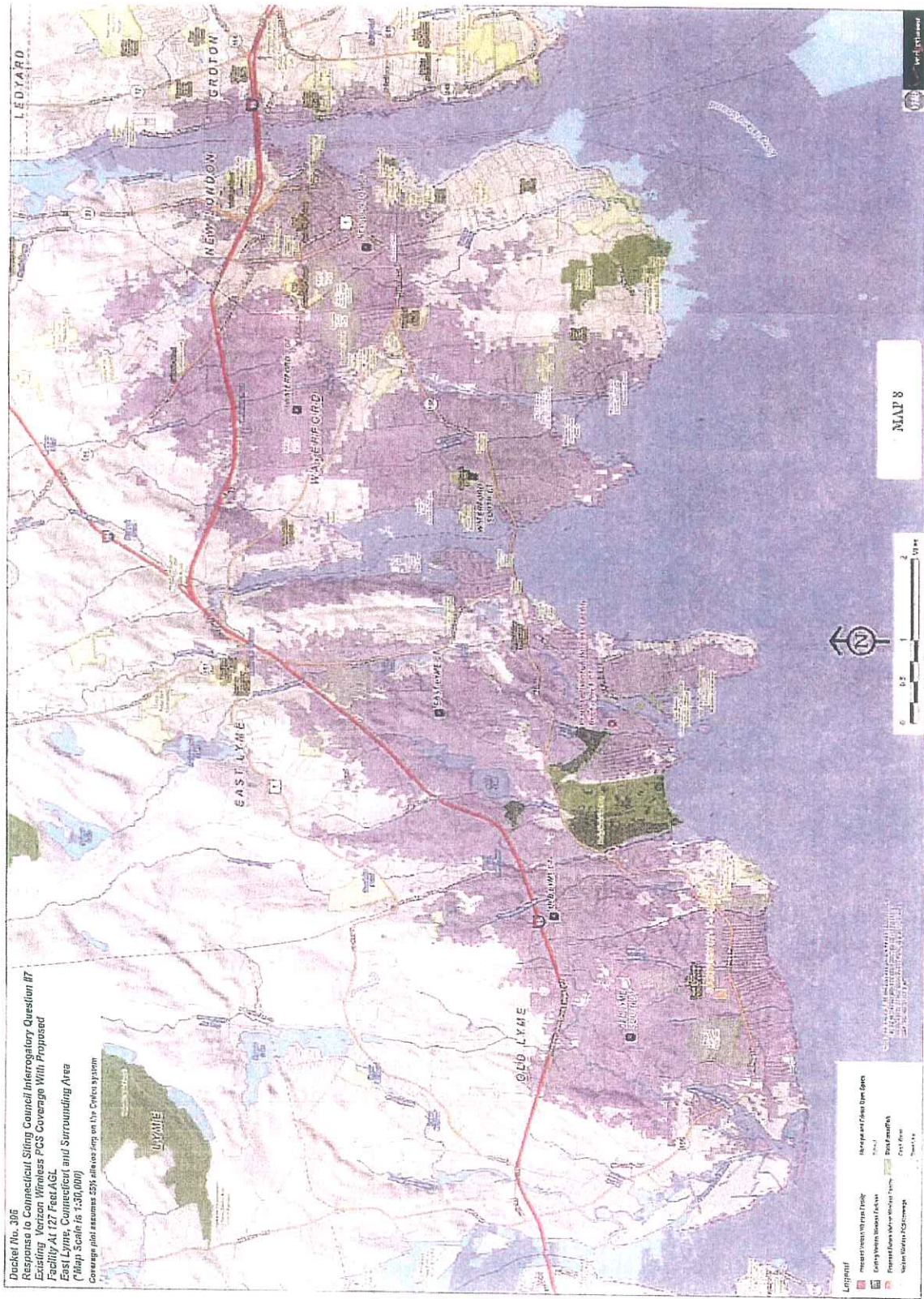


Figure 18: Cellco's Existing and PCS Coverage at 127 feet. (Cellco 2, response 7)