

<p>DOCKET NO. 319 - Optasite, Inc. and New Cingular Wireless PCS, LLC application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility on one of two sites at 1662 Gold Star Memorial Highway (Route 184), Groton, Connecticut.</p>	<p>} Connecticut } Siting } Council } February 27, 2007</p>
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Findings of Fact

Introduction

1. On August 1, 2006, Optasite Incorporated (Optasite) and New Cingular Wireless PCS, LLC (Cingular), collectively referred to as the “Applicants”, in accordance with provisions of Connecticut General Statutes (CGS) § 16-50g through 16-50aa, applied to the Connecticut Siting Council (Council) for the construction, operation, and maintenance of a wireless telecommunications facility at one of two locations at 1662 Gold Star Memorial Highway (Route 184) in Groton, Connecticut. (Applicants 1, p. 1)
2. Optasite, a Delaware corporation, would construct and maintain the proposed facility. Cingular, a Delaware limited liability company, licensed to construct and operate a personal wireless service system in the State of Connecticut. (Applicants 1, p. 4)
3. The parties in this proceeding are the Applicants. (Transcript 1 [Tr. 1], 4:00 p.m., pp. 4, 5)
4. The purpose of the proposed facility is to provide service to coverage gaps in the Center Groton area, primarily near the Gold Star Memorial Highway and North Road (Route 117). (Applicants 1, p. 1)
5. Pursuant to CGS § 16-50m, the Council, after giving due notice thereof, held a public hearing on December 14, 2006, beginning at 4:00 p.m. and continuing at 7:00 p.m. in the Community Room of the Groton Senior Center, 102 Newtown Road, Groton, Connecticut. (Tr. 1, p. 2; Transcript 2 [Tr. 2], 7:00 p.m., p. 2)
6. The Council and its staff conducted an inspection of the proposed sites on December 14, 2006, beginning at 3:00 p.m. On the day of the field inspection, the Applicants flew balloons at the proposed sites to simulate the heights of the proposed towers from 7:50 a.m. to 4:30 p.m. The Applicants flew a red balloon at proposed Site A and a black balloon at proposed Site B. Weather conditions during the field review were sunny with light winds and occasional gusts up to 20 miles per hour. (Tr. 1, pp. 13, 14)
7. The Applicants placed a sign along Gold Star Highway, on the left side of the access driveway, providing notice of the Council’s public hearing. The four-foot by six-foot sign was installed on November 29, 2006. (Tr. 1, p. 14; Tr. 2, p. 3)
8. Pursuant to CGS § 16-50l (b), public notice of the application was published in the New London Day on July 20 and July 21, 2006 and the Groton Times on July 20 and July 27, 2006. (Applicants 1, p. 5; Applicants 3, Affidavit of Publication)

9. Pursuant to CGS § 16-50l(b), notice of the application was provided to all abutting property owners by certified mail. Notice was unclaimed by Lambtown Development LLC. A return receipt was not received for two abutters: Chester Crouch (the property owner of the host parcel) and Steven D. and Michele M. Magowan. Optasite provided an additional notice letter to these abutters via first class mail. (Applicants 1, p. 6; Applicants 2, Q. 1, 2)
10. Pursuant to CGS § 16-50l (b), the Applicants provided notice to all federal, state and local officials and agencies listed therein. (Applicants 1, Tab 10)

State Agency Comments

11. Pursuant to CGS § 16-50j (h), on November 1, 2006 and December 15, 2006, 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), and the Department of Transportation (DOT). (Record)
12. The Council received responses from the DOT's Bureau of Engineering and Highway Operations on December 11, 2006 and the DPH on January 4, 2007. (Record)
13. The DOT comments requested that if any access to Route 184 was necessary or construction were to occur within the Route 184 right-of-way, an encroachment permit would be required. (DOT comments, dated December 11, 2006)
14. The proposed sites are located within the Watershed Area of the Poheganut Reservoir of Groton Utilities; therefore, the DPH requested that no cleaning of equipment, storage of fuels or refueling take place at the proposed sites and that Groton Utilities review detailed site plans for the proposed facility. (DPH comments, dated December 29, 2006)
15. The following agencies did not respond with comment on the application: CEQ, DPUC, OPM, DEP, and the DECD. (Record)

Municipal Consultation

16. AT&T Wireless submitted a technical report for the proposed sites to the Town of Groton in 2003, and the Town Planner provided comments. Shortly after submitting the technical report, AT&T Wireless and Cingular Wireless announced the merger of the two companies. Accordingly, a moratorium was placed on the deployment of new infrastructure and an application was not submitted to the Council. Following the moratorium, Cingular determined that a need for wireless service in the Center Groton area still exists. (Applicants 1, p. 2)
17. On May 10, 2006, the Applicants submitted an updated technical report to the Town Planner and the Town Manager of Groton. The Applicants also submitted a letter to the Town Planner, describing the history of the facility and invited the Town to discuss the proposed project with Optasite. (Applicants 1, p. 20)

18. In April of 2003, the Town Planner submitted comments to AT&T Wireless regarding the technical report. Subsequently, in a letter dated June 22, 2006, the Town Planner provided similar comments on the updated technical report. Comments from the Town Planner included:
- a) The tower should have a non-reflective color that would blend in with the surroundings;
 - b) A 25-foot landscape buffer should be planted in the area adjacent to residential properties to the east and around the perimeter of all structures. Landscaping should consist of evergreen trees of sufficient size and distance to provide visual screening;
 - c) Vegetative clearing limits and erosion control methods should be shown on the plans;
 - d) A note should be placed on the plans stating, “Signal lights are not allowed unless required by FCC or FAA, and if required, the lights should minimize impacts to affected residences with the use of red night lighting. Any proposed lighting should be compatible with the requirements that the tower be a subdued – non-reflective color (i.e., not painted orange and white)”;
 - e) Plans should state, “There shall be no advertising or signs, other than warning signs, permitted on any tower”;
 - f) Plans should state that the tower shall be removed within 12 months of the cessation of use. If the tower is not removed within 12 months, the Town may remove the tower and associated facilities and assess the cost against the property;
 - g) Optasite should exercise good faith in allowing other carriers to co-locate on the proposed structure, provided it does not impair the technical level or quality of service;
 - h) The Town requires documentation from a professional telecommunications engineer specifying the minimum tower height necessary to meet the technical requirements of the facility;
 - i) The proposed facility shall not interfere with public safety telecommunications or existing radio signals. The Applicants shall provide a technical evaluation of existing and proposed transmissions and potential interference problems;
 - j) Adequate fire access should be provided to the proposed site. This usually includes a paved road that meets the width, clearance, weight and turn-around requirements of the Fire Department;
 - k) The tower design must meet State Building Code requirements;
 - l) Site A is farther away from the road, which makes emergency access more difficult. In addition, Site A would disturb more wetland area than proposed Site B;
 - m) The Visual Resource Evaluation Report needs clarification.
(Applicants 1, p. 20, 21, Tab 9)

19. The Applicants have incorporated most of the Town Planner's comments into the proposed facility design. To address the comments of the Town Planner, the Applicant:
 - a) would install a monopole with a galvanized non-reflexive finish;
 - b) (1) does not intend to plant an additional 25-foot landscaped buffer at proposed Site A because it is surrounded by heavy stands of trees and undergrowth that would shield the site from view;
(2) would plant a landscaped buffer along the south side of the compound fence to shield the compound from view along Route 184, which is approximately 400 feet away;
 - c) would submit plans for erosion and sedimentation control to the Council in a Development and Management (D&M) Plan;
 - d) would not mark or light the proposed tower unless specifically ordered to do so by the FAA or the Council. If marking or lighting of the tower is ordered, Optasite intends to negotiate a plan that uses low intensity red lights and a tower marking scheme that would have minimal impact;
 - e) does not intend to have advertising signs at the proposed site. Optasite included a note in the application that states "no signs (other than the appropriate warning/safety/security signs) or advertising will be placed on any portion of the facility";
 - f) would comply with the Council's Decision and Order (D&O) regarding when the tower must be removed following cessation of use;
 - g) would design the proposed facility to accommodate a minimum of four wireless carriers;
 - h) provided documentation of Cingular's need for the proposed tower's minimum height;
 - i) have addressed the concern of interference with public safety telecommunications or existing radio signals
 - j) have contacted the Groton Fire District on June 28, 2006 regarding emergency access to the proposed facility and provided a complete copy of the technical report for review and comment. To date, no comments have been received;
 - k) would design the tower and tower foundation to meet or exceed all applicable codes for wind loading;
 - l) have provided a comparison table of proposed Site A and proposed Site B;
 - m) have provided a clarification of the Visual Resource Evaluation report.
(Applicants 1, p. 21, Tab 1)
20. On January 4, 2007, the Town of Groton provided comments to the Council, regarding the proposed project. The town reiterated recommendations made in April of 2003 and June of 2006, stating that, at a minimum, the tower should be constructed with a non-reflective exterior finish, no lighting, and a landscaped buffer if Site B is approved. (Town of Groton comments, dated January 2, 2007)
21. Optasite would provide space on the proposed tower for the Town's public safety antennas for no compensation. (Applicants 2, Q. 3)

Public Need for Service

22. 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)

23. 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. Cingular is licensed by the Federal Communications Commission (FCC) to provide personal wireless communication service in Connecticut. (Council Administrative Notice Item No. 7; Applicants 1, p. 4)
24. The Telecommunications Act of 1996 prohibits local and state entities from discriminating among providers of functionally equivalent services. (Council Administrative Notice Item No. 7)
25. 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 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)
26. In an effort to ensure the benefits of wireless technologies to all Americans, Congress enacted the Wireless Communications and Public Safety Act of 1999 (the 911 Act). The purpose of this legislation was to promote public safety through the deployment of a seamless, nationwide emergency communications infrastructure that includes wireless communications services. (Applicants 1, pp. 7, 8)
27. Following the 911 Act, the FCC mandated wireless carriers to provide enhanced 911 services (E911), to allow 911 public safety dispatchers to determine a wireless caller's geographical location within several hundred feet. The proposed facility would become a component of Cingular's E911 network in this area of the state. (Applicants 1, p. 8)

Site Selection

28. AT&T Wireless (which later merged with Cingular) established a search area in Center Groton in 2002. (Applicants 1, p. 2)
29. AT&T Wireless had established a site search area with an approximately 0.5 mile radius along Route 184 to the east of Route 117. (Applicants 1, Tab 4; Applicants 2, Q. 4)
30. Existing structures within the search area consisted of one to three story buildings, which were not adequate to meet the coverage requirements of the wireless carriers. (Applicants 1, p. 9, Tab 4)
31. There are five existing towers within approximately three miles of the search area. Cingular has antennas located on four of the five existing towers within the area. The fifth tower is located on Welles Road in Groton. This structure is too far east to provide coverage to the Center Groton area. The four towers on which Cingular is located include:
 - a. 75 Roberts Road, Groton – Cingular is located at 145 feet above ground level (agl);
 - b. 725 Flanders Road, Groton – Cingular is located at 145 feet agl;
 - c. 68 Groton Long Point Road, Groton – Cingular is located at 133 feet agl;
 - d. 86 Voluntown Road, Stonington – Cingular is located at 150 feet agl;(Applicants 1, p. 9; Applicants 2, Q. 5)

32. After determining there were no suitable structures within the search area, AT&T Wireless searched for properties suitable for tower development. AT&T Wireless investigated nine parcels/areas, two of which were selected for site development. The seven rejected parcels/areas and reasons for their rejection are:
 - a. Tilcon Minerals, Inc., Gold Star Memorial Highway, Groton – Senior Tilcon officials had decided against having a long-term encumbrance placed on this property;
 - b. 325 Rogers Road, Groton – rejected because of potential environmental issues, tower setback radius and visibility concerns;
 - c. Center Groton (in the vicinity of Routes 117 and 184) – rejected because there are no existing structures of significant height to accommodate the antenna heights required nor are there parcels of land large enough to support installation of a tower;
 - d. Route 117/Gales Ferry Road area – rejected because of proximity to nearby visually sensitive areas such as Farquhar Park and the Ledyard Reservoir area;
 - e. Noank-Ledyard Road – (two parcels investigated) rejected because they are located too far southeast to provide coverage to the area;
 - f. Yetter Road properties –rejected because they are too far east to provide coverage to the area;
 - g. Lambtown Road area – rejected due to the concentration of single-family homes in the area. (Applicants 1, Tab 4)
33. Microcells and repeaters are not viable technological alternatives for providing coverage to the identified coverage gap. (Applicants 1, p. 8)

Site Description – Site A

34. Proposed Site A is located in the center portion of a 32.2-acre parcel at 1662 Gold Star Memorial Highway (Route 184) in Groton. The parcel, owned by Chester B. Crouch, contains a residence and several greenhouses associated with the adjacent Groton Garden Center. The parcel is in a rural zoning district (RU-40). The proposed Site A location is depicted in Figure 1 of this document. (Applicants 1, pp. 3, 10, 11, Tab 5)
35. The Town zoning regulations permit new telecommunication towers in RU-40 zoning districts, subject to issuance of a Special Permit. The proposed facility complies with requirements set forth in the zoning regulations. (Applicants 1, pp. 17, 18)
36. The proposed tower site is located on a wooded portion in the center of the property at an elevation of 280 feet above mean sea level (amsl). (Applicants 1, p. 10; Tab 5, Tab 7; Tr. 1, p. 11)
37. The proposed Site A facility consists of a 150-foot monopole within a 100 foot by 100 foot leased area. The total height of the proposed structure, including antennas, would be 153 feet. The tower would be designed to accommodate a minimum of four antenna racks with a 10-foot center-to-center vertical separation. The proposed tower would have a galvanized non-reflective exterior finish. (Applicants 1, p. 10; Applicants 2, Q. 20)
38. The structure would be constructed in accordance with the American National Standards Institute TIA/EIA-222-F “Structural Standards for Steel Antenna Towers and Antenna Support Structures,” and would have the ability to withstand pressures equivalent to 85 mile per hour (MPH) or 74 MPH with one-half inch solid ice accumulation. (Applicants 1, Tab 5)
39. Cingular would install up to 12 panel antennas at a centerline height of 120 feet agl. Cingular’s antennas would contain both PCS (1900 MHz) and cellular (800 MHz) frequencies. Other carriers

- have expressed an interest in locating antennas on the proposed tower; however, the Applicants could not confirm that a height above 120 feet agl would be needed. (Applicants 1, Tab 5; Tr. 1, p. 15)
40. Optasite would be willing to construct a tower at 120 feet at proposed Site A, with the possibility of an extension in the future. If an extendable tower were constructed at proposed Site A, the top of the tower would have to be 123 feet agl to allow an additional piece to slide onto the structure. (Tr. 1, pp. 16, 17, 31)
 41. The equipment compound would consist of a 75-foot by 75-foot area enclosed by an eight-foot tall security fence. The compound would accommodate Cingular's 12-foot by 20-foot equipment compound, as well as the equipment of at least three additional carriers. Cingular's equipment would be equipped with a battery back-up system to provide power for up to eight hours in the event of a power failure. In the event of a prolonged power failure, Cingular would bring in a portable diesel generator. (Applicants 1, p. 10; Applicants 2, Q. 6)
 42. The Applicants could rearrange equipment and reduce the size of the Site A equipment compound by 20 to 25 feet, leaving it large enough to allow a technician to drive a vehicle in and close the gate. (Tr. 1, pp. 27, 28)
 43. The construction of proposed Site A would require minimal amounts of grading. Tree clearing would be required to construct the site and widen the existing driveway. (Applicants 1, Tab 5)
 44. Access to proposed Site A would be along an existing 12-foot wide driveway extending from Gold Star Memorial Highway for approximately 440 feet and continuing along an existing but unimproved driveway for a distance of approximately 450 feet to the compound entrance. Utilities would be installed underground from Gold Star Memorial Highway along the access road to the compound. (Applicants 1, pp. 10, 11; Applicants 2, Q. 9)
 45. Construction of proposed Site A would not require blasting. (Applicants 2, Q. 10; Tr. 1, p. 22)
 46. The tower setback radius would not extend onto an adjacent property. The nearest property line is approximately 342 feet to the east, which is property owned by Lambtown Development, LLC. (Applicants 1, Tab 5)
 47. The closest building to the proposed Site A structure is a greenhouse on the host property, which is located approximately 450 feet from the compound. The nearest residence to the proposed structure is the property owner's residence, which is 575 feet to the south. The nearest off-site residence is located on property owned by Benny and Phyllis Wimes at 1720 Gold Star Highway, which is approximately 770 feet to the southeast. There are five off-site homes within 1,000 feet of the proposed site. (Applicants 1, p. 14, Tab 7; Applicants 2, Q. 11)
 48. Land use within a quarter mile of proposed Site A includes single-family residences, open space, commercial properties and undeveloped land. (Applicants 1, p. 18, Tab 5, p. 3)

49. The estimated construction cost of the proposed Site A facility is:

Electronic equipment	\$ 70,000
Tower & antennas	138,900
<u>Site development & Utilities</u>	<u>83,800</u>
Total	\$292,700

(Applicants 1, p. 22)

Site Description - Site B

50. Proposed Site B is located in the southern central portion of a 32.2-acre parcel at 1662 Gold Star Memorial Highway (Route 184) in Groton. The parcel, owned by Chester B. Crouch, contains a residence and several greenhouses associated with the adjacent Groton Garden Center. The parcel is in a rural zoning district (RU-40). The proposed Site B location is depicted in Figure 1 of this document. (Applicants 1, pp. 3, 12, Tab 6)
51. The Town zoning regulations permit new telecommunication towers in RU-40 zoning districts, subject to issuance of a Special Permit. The proposed facility complies with requirements set forth in the zoning regulations. (Applicants 1, pp. 17, 18)
52. The proposed tower site is located on a partially cleared area in the southern portion of the property near the existing greenhouses at 246 feet amsl. (Applicants 1, p. 12; Tab 6, Tab 7; Tr. 1, p. 12)
53. The proposed Site B facility would consist of a 160-foot monopole within a 100-foot by 100-foot leased area. The total height of the proposed structure, including antennas, would be 163 feet. The tower would be designed to accommodate a minimum of four antenna racks with a 10-foot center-to-center vertical separation. The proposed tower would have a galvanized non-reflective exterior finish. (Applicants 1, p. 12; Applicants 2, Q. 20)
54. The structure would be constructed in accordance with the American National Standards Institute TIA/EIA-222-F "Structural Standards for Steel Antenna Towers and Antenna Support Structures," and would have the ability to withstand pressures equivalent to 85 mile per hour (MPH) or 74 MPH with one-half inch solid ice accumulation. (Applicants 1, Tab 6)
55. Cingular would install up to 12 panel antennas at a centerline height of 130 feet agl. Cingular's antennas would contain both PCS (1900 MHz) and cellular (800 MHz) frequencies. Other carriers have expressed an interest in locating antennas on the proposed tower; however, the Applicants could not confirm that a height above 130 feet agl would be required. (Applicants 1, Tab 6; Tr. 1, p. 15)
56. Optasite would be willing to construct a 130-foot tower at proposed Site B, with the possibility of an extension in the future. If an extendable tower were constructed at proposed Site B, the top of the tower would have to be 133 feet agl to allow an additional piece to slide onto the structure. (Tr. 1, pp. 16, 17, 31)
57. The equipment compound would consist of a 50-foot by 100-foot area enclosed by an eight-foot tall security fence. The compound would accommodate Cingular's 12-foot by 20-foot equipment compound, as well as the equipment of at least three additional carriers. Cingular's equipment would be equipped with a battery back-up system to provide power for up to eight hours in the event of a power failure. In the event of a prolonged power failure, Cingular would bring in a portable diesel generator. (Applicants 1, p. 12; Applicants 2, Q. 6)

58. The Applicants could reduce the size of the Site B equipment compound by 20 to 25 feet, leaving large enough to allow a technician to drive a vehicle in and close the gate. (Tr. 1, pp. 27, 28)
59. The construction of proposed Site B would require minimal amounts of grading and vegetative clearing. (Applicants 1, p. 13)
60. Access to proposed Site B would be along an existing 12-foot wide driveway extending from Gold Star Memorial Highway for a distance of 440 feet and continuing along an existing but unimproved driveway for a distance of approximately 100 feet to the compound. Utilities would be installed underground from Gold Star Memorial Highway along the access road to the compound. (Applicants 1, p. 12; Applicants 2, Q. 9)
61. The construction of proposed Site B would not require blasting. (Applicants 2, Q. 10; Tr. 1, p. 22)
62. The tower setback radius would not extend onto an adjacent property. The nearest property line is approximately 352 feet to the east, which is property owned by Lambtown Development, LLC. (Applicants 1, Tab 6)
63. The closest building to the proposed Site B structure is a greenhouse on the host property, which is located approximately 75 feet from the compound. The nearest residence to the proposed structure is the property owner's residence, which is 200 feet to the south. The nearest off-site residence is located on property owned by Benny and Phyllis Wimes at 1720 Gold Star Highway, which is approximately 600 feet to the southeast. There are six off-site homes within 1,000 feet of the proposed site. (Applicants 1, p. 14, Tab 7; Applicants 2, Q. 11)
64. Land use within a quarter mile of proposed Site B includes single-family residences, open space and commercial/retail properties. (Applicants 1, p. 18, Tab 6, p. 3)
65. The estimated construction cost of the proposed Site B facility is, not including landscaping:

Electronic equipment	\$ 70,000
Tower & antennas	140,500
<u>Site development & Utilities</u>	<u>76,200</u>
Total	\$286,700

(Applicants 1, p. 22; Applicants 2, Q. 12)

Environmental Considerations

66. The Applicants conducted an archaeological survey at the proposed Site A and Site B to determine if any archaeological resources existed. The Applicants did not find archaeological resources at either proposed site. The proposed Site A and Site B towers would have no effect on historic, architectural or archaeological resources. (Applicants 1, pp. 11, 13-15)

67. A state Species of Special Concern, the whip-poor-will (*Caprimulgus vociferous*), may occur near the proposed sites. The Applicants conducted an ornithological survey to determine the potential existence of the whip-poor-will within the project area. The survey indicated no sightings of whip-poor-wills at either proposed site or any whip-poor-will vocalizations. To minimize potential impact to the whip-poor-wills, the Applicants would conduct non-routine maintenance activities at either proposed Site A or Site B during the fall, winter and early spring, and plant Connecticut-native evergreens around the perimeter of the compound. (Applicants 1, p. 15; Applicants 2, Q. 19)
68. The leased area of both proposed sites is located within Groton's 100-foot wetlands buffer. Additionally, the existing dirt road that would be used for access to the Site A compound crosses a 20 to 25 foot long section of wetlands. Optasite would design, engineer and construct the wetlands crossing to improve water flow, mitigate sedimentation and eliminate potential for soil erosion. (Applicants 1, p. 11, 19)
69. While the leased area of proposed Site B is within the 100-foot wetlands buffer, no construction activities would take place within the buffer. (Applicants 1, p. 12, 19)
70. Vegetation at the proposed sites and surrounding area consists of mixed deciduous hardwood species. Trees in the surrounding area have an average height of 60 feet. Approximately 26 trees that are six inches or greater in diameter at breast height (dbh) would be removed for the construction of proposed Site A. Approximately one tree that is six inches or greater dbh would be removed for the construction of proposed Site B. (Applicants 1, Tab 7; Applicants 2, Q. 7)
71. The nearest airport is the Groton-New London Airport, which is approximately 3.75 miles to the south-southwest of the proposed sites. Obstruction marking and lighting of the tower would not be required. (Applicants 1, Tab 5, Tab 6; Applicants 2, Q. 14)
72. The maximum power density from the radio frequency emissions of Cingular's proposed antennas at proposed Site A would be 0.0763 mW/cm² or 10.76% of the standard for Maximum Permissible Exposure (MPE), as adopted by the FCC, at the base of the proposed tower. The maximum power density from the radio frequency emissions of Cingular's proposed antennas at proposed Site B would be 0.0651 mW/cm³ or 9.17% of the MPE standard 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. (Applicants 1, Tab 5, Tab 6)

Visibility

73. The proposed Site A tower would be visible year-round from approximately 60 acres within a two-mile radius of the site (refer to Figure 1). The tower would be seasonally visible from an additional approximately 17 acres within a two-mile radius of proposed Site A. (Applicants 1, Tab 7)
74. The proposed Site B tower would be visible year-round from approximately 56 acres within a two-mile radius of the site (refer to Figure 1). The tower would be seasonally visible from an additional approximately 17 acres within a two-mile radius of proposed Site B. (Applicants 1, Tab 7)
75. Visibility of the proposed Site A tower from specific locations within a two-mile radius of the site is:

Location	Visible	Approx. Portion of Tower Visible	Approx. Distance from Tower
Route 184 west of Route 117	Yes	60 feet	0.89 miles southwest
Gales Ferry Road north of Farquahar Park	Yes	30 feet	0.79 miles west
Lambtown Road north of Lambtown Extension	Yes	75 feet	1.41 miles north
Route 117 west of host property	Yes	50 feet	0.31 miles southwest
Rogers Road	Yes	50 feet	0.46 miles southeast
Route 117 at Orchard Drive	No	-	0.62 miles southwest
Rogers Road at Maple Ridge Kennels	No	-	0.24 miles south
Gales Ferry Road west of Route 117	No	-	0.76 miles west
Route 117 at Ledyard Reservoir	No	-	1.5 miles northwest
Lambtown Road at Quaker Farm Road	No	-	0.68 miles northeast
Yetter Road at Flanders Road and Rogers Road	No	-	0.62 miles southeast

(Applicants 1, Tab 7; Applicants 2, Q. 21)

76. Visibility of the proposed Site B tower from specific locations within a two-mile radius of the site is:

Location	Visible	Approx. Portion of Tower Visible	Approx. Distance from Tower
Route 184 west of Route 117	Yes	75 feet	0.89 miles southwest
Gales Ferry Road north of Farquahar Park	Yes	10 feet	0.81 miles west
Lambtown Road north of Lambtown Extension	Yes	60 feet	1.48 miles north
Route 117 west of host property	Yes	50 feet	0.28 miles southwest
Rogers Road	No	-	0.40 miles southeast
Route 117 at Orchard Drive	Yes	10 feet	0.58 southwest
Rogers Road at Maple Ridge Kennels	Yes	80 feet	0.16 miles south
Gales Ferry Road west of Route 117	No	-	0.82 miles west
Route 117 at Ledyard Reservoir	No	-	1.54 miles northwest
Lambtown Road at Quaker Farm Road	No	-	0.74 miles northeast
Yetter Road at Flanders Road and Rogers Road	No	-	0.62 miles southeast

(Applicants 1, Tab 7; Applicants 2, Q. 21)

77. Land use with year-round visibility of the proposed Site A and Site B towers consists of a mix of commercial and residential parcels. Existing vegetation screening in residential areas helps to minimize visual impact of the proposed towers. Commercial land uses are generally along Route 184, where less existing vegetation would allow visibility of either proposed tower. (Applicants 2, Q. 16, 17)

78. Both the proposed Site A and Site B structures would be visible from approximately eight residences, including three properties along Route 184, one residence along Route 117 near Route 184, two residences along Rogers Road, and two residences along Gales Ferry Road. The proposed Site B structure would also be visible from two residences along Orchard Drive south of Route 184. (Applicants 1, Tab 7)
79. Approximately seven additional residences would have seasonal views of the proposed Site A or Site B towers from their properties: four along Route 184 (within the immediate vicinity of the host parcel); one along Rogers Road (south of Route 184); and two along Lambtown Road (north of Route 184). (Applicants 2, Q. 18)
80. The proposed Site A tower is located farther from Gold Star Memorial Highway than proposed Site B. The proposed Site B structure would be higher and more visible above the tree line than the proposed Site A structure. (Tr. 1, p. 29)
81. Construction of the proposed Site A tower at a height of 120 feet agl rather than the proposed 150 feet agl would not result in a significant reduction in the overall visual impact. (Tr. 1, pp. 33, 34)

Existing and Proposed Wireless Coverage – Applicant

82. The FCC has licensed Cingular to operate a personal wireless services and cellular system in Connecticut. Cingular’s minimum signal level threshold in this area is -80 dBm. Cingular designs for a minimum signal level threshold of -74 dBm for in-building coverage and -82 dBm for in-vehicle coverage. (Applicants 2, Q. 22; Tr. 1, p. 25)
83. Cingular currently has a 1.5-mile gap in coverage along Route 184 and a 3-mile gap in coverage along Route 117. Coverage from surrounding sites is depicted in Figure 2. (Applicants 2, Q. 23)
84. Adjacent Cingular facilities that would interact with the proposed facility are:

Location	Antenna Height agl	Approximate Distance from Sites
Nantucket Drive, Groton	72 feet	1.75 miles
75 Roberts Road, Groton	147 feet	2.6 miles
25-39 Broad Street Ext., Groton	59 feet	3.5 miles
741 Flanders Road, Groton	137 feet	1.25 miles
29 Skyview Terrace, Groton	80 feet	3.5 miles

(Applicants 1, Tab 3)

85. Installation of antennas at the 120-foot level of the proposed Site A structure would provide adequate coverage to the existing coverage gaps along Route 184 and Route 117. At -82 dBm or greater, no coverage gaps would remain along Route 184 within a two-mile radius of proposed Site A. An approximately 0.8-mile coverage gap would remain along Route 117 to the north of the proposed site. Figure 3 of this document shows existing and proposed coverage from proposed Site A. (Applicants 1, Tab 3)

86. Installation of antennas at the 130-foot level of the proposed Site B structure would provide adequate coverage to the existing coverage gaps along Route 184 and Route 117. At -82 dBm or greater, no coverage gaps would remain along Route 184 within a two-mile radius of proposed Site B. An approximately 0.8 mile coverage gap would remain along Route 117 to the north of the proposed site. Figure 4 of this document shows existing and proposed coverage from proposed Site B. (Applicants 1, Tab 3)
87. Installation of antennas at 110 feet at proposed Site A would result in an approximately 0.9 mile coverage gap along Route 117 and no coverage gaps along Route 184 at a signal level of -82 dBm or greater (refer to Figure 5 of this document). (Applicants 4, Coverage plots)
88. Installation of antennas at 120 feet on the proposed Site B tower would result in a coverage gap of approximately 0.9 miles along Route 117 and no coverage gaps along Route 184 at a signal level of -82 dBm or greater (refer to Figure 6 of this document). (Applicants 4, Coverage plots)
89. Decreasing the height of the proposed Cingular antennas at proposed Site A and Site B by an additional 10 feet (110 feet agl at Site A and 120 feet agl at Site B) would weaken call handoffs from site to site. A reduction in height may cause a reduction of in-building coverage in the surrounding area. (Tr. 1, p. 25)

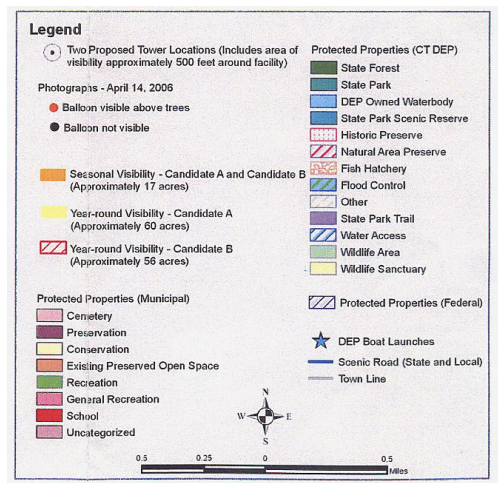


Figure 1. Viewshed Analysis of the proposed Site A and Site B structure. (Applicants 1, Tab 7)

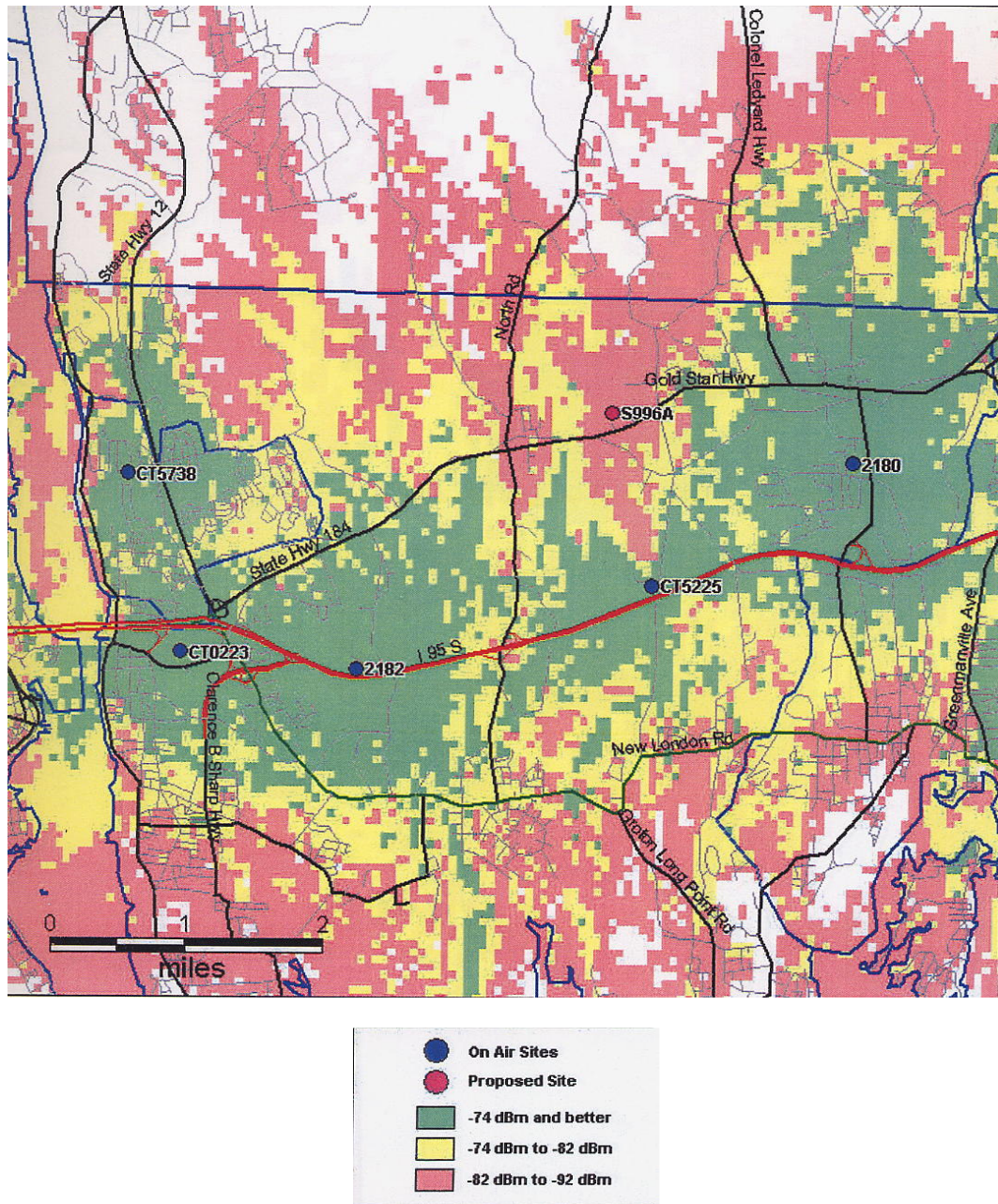


Figure 2. Cingular coverage from existing sites within the surrounding area. (Applicants 1, Tab 3)

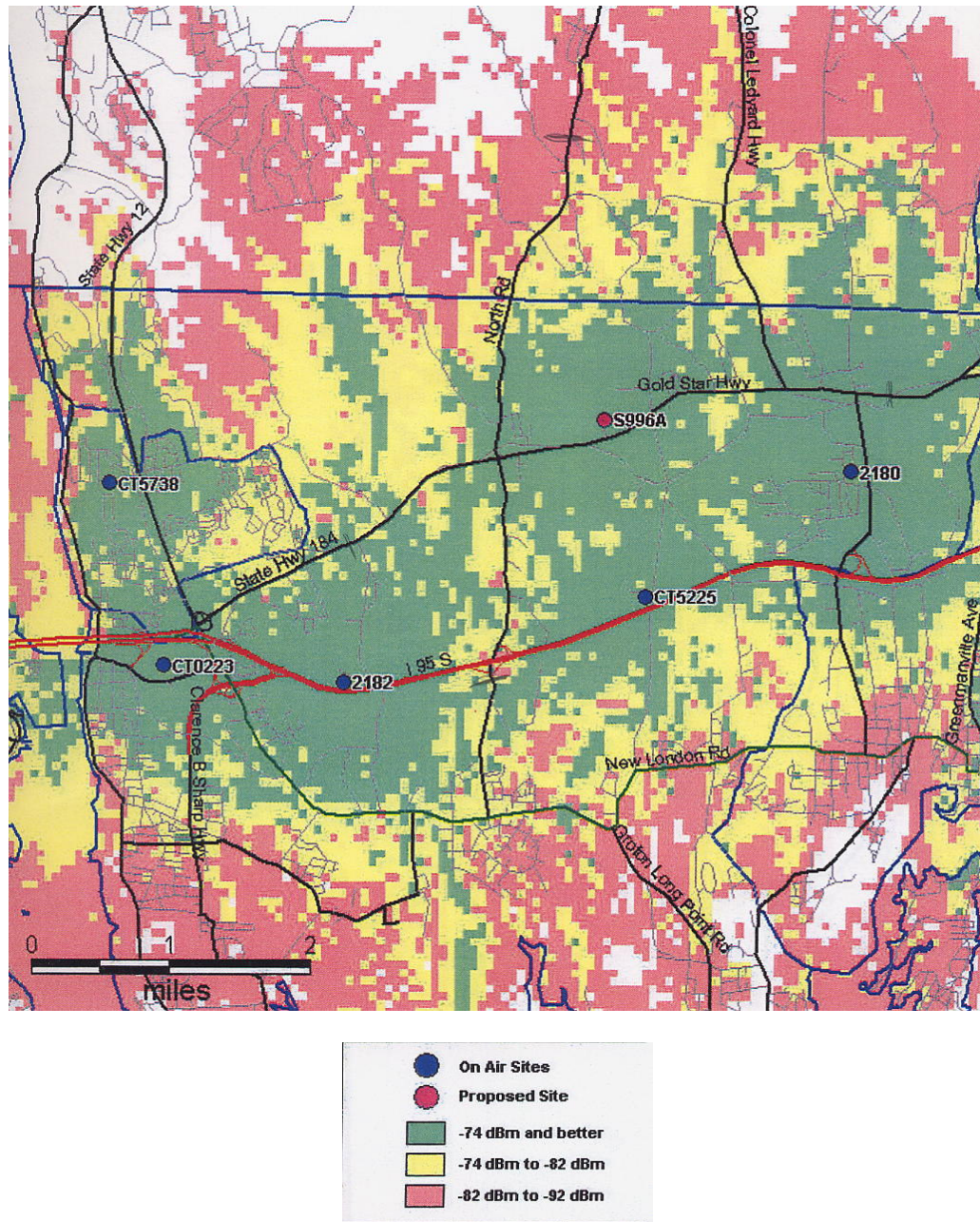


Figure 3. Coverage from existing Cingular sites and the proposed Site A at 120 feet agl. (Applicants 1, Tab 3)

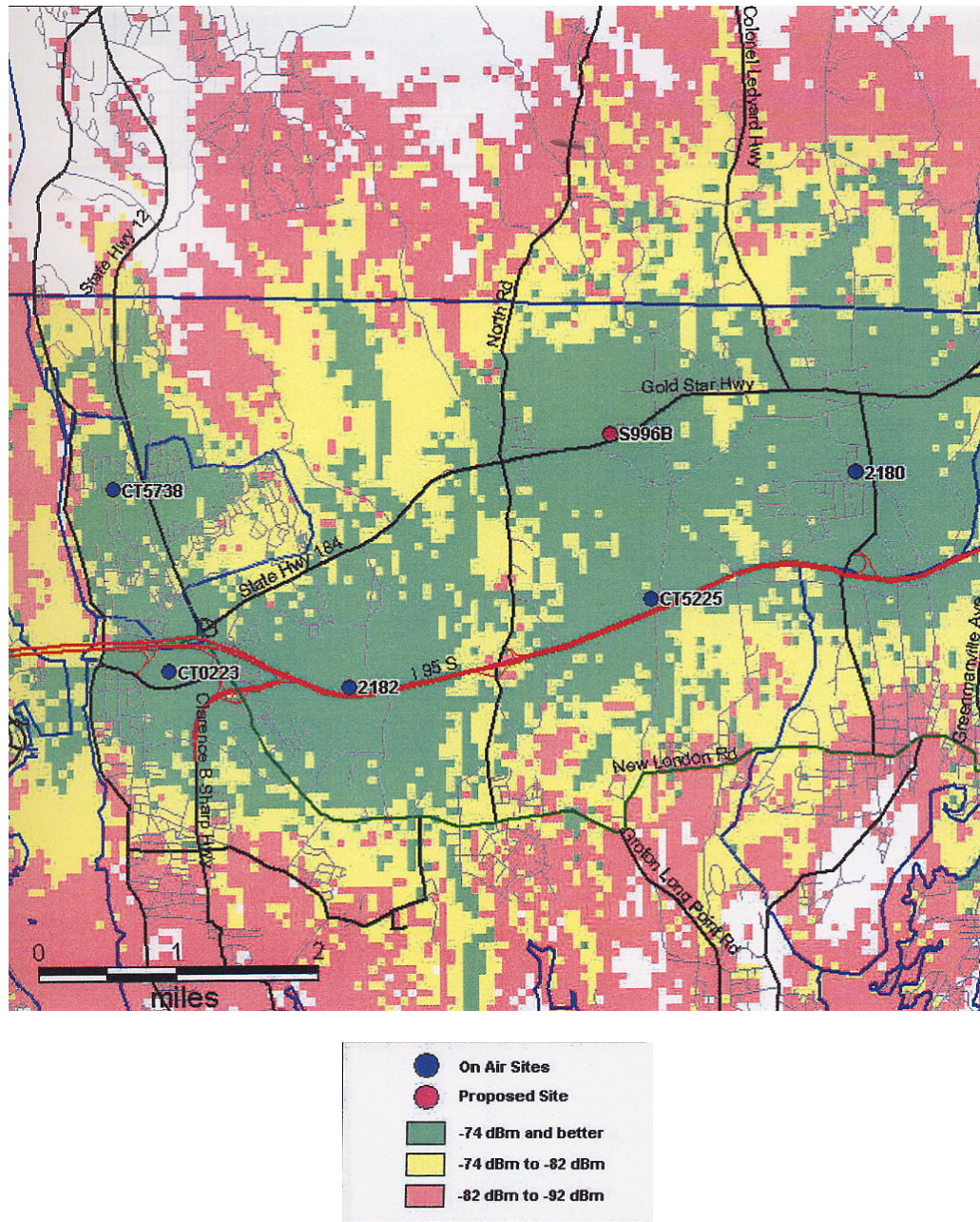


Figure 4. Coverage from existing Cingular sites and the proposed Site B at 130 feet agl. (Applicants 1, Tab 3)

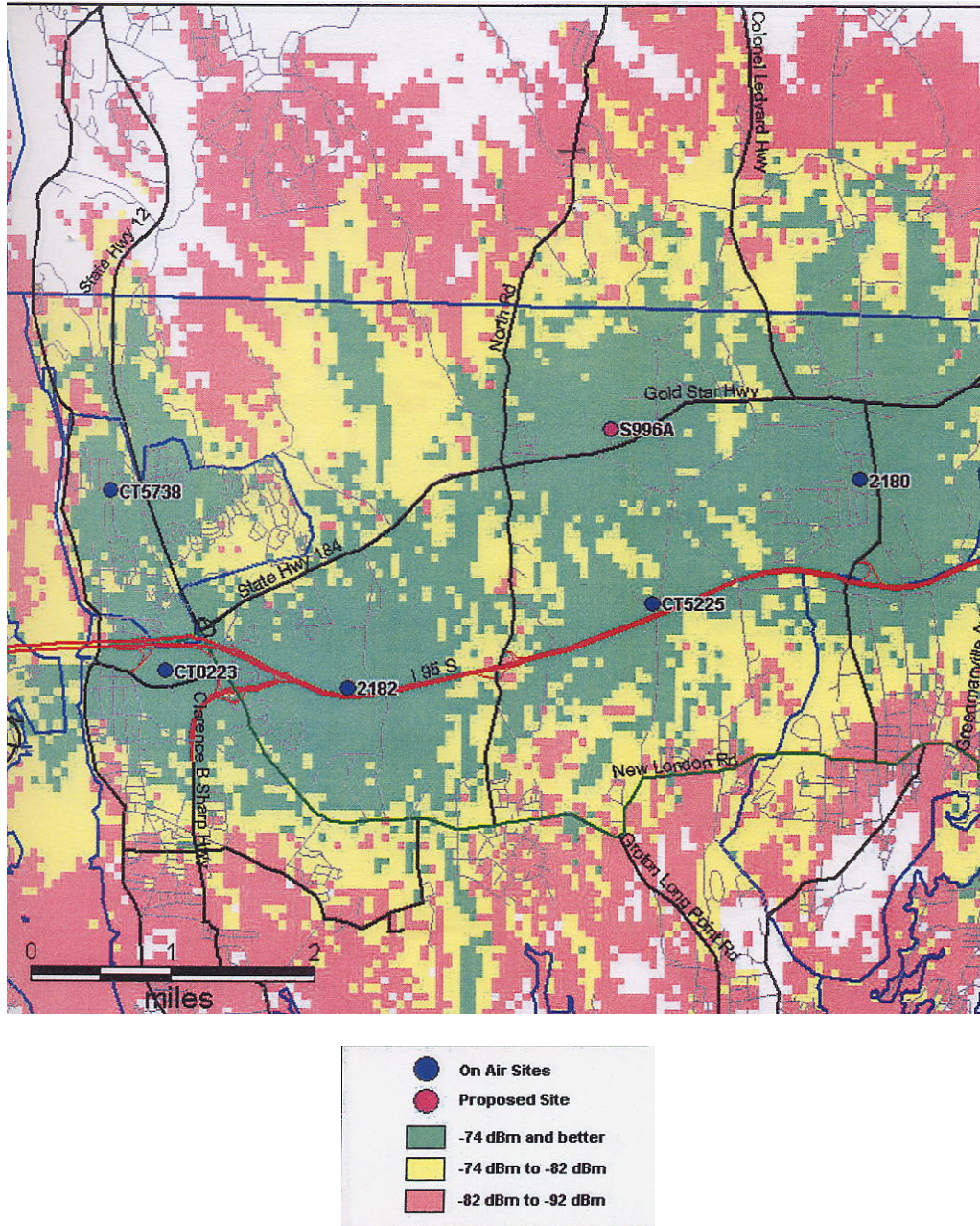


Figure 5. Coverage from existing Cingular sites and the proposed Site A at 110 feet agl. (Applicants 4, Coverage plots)

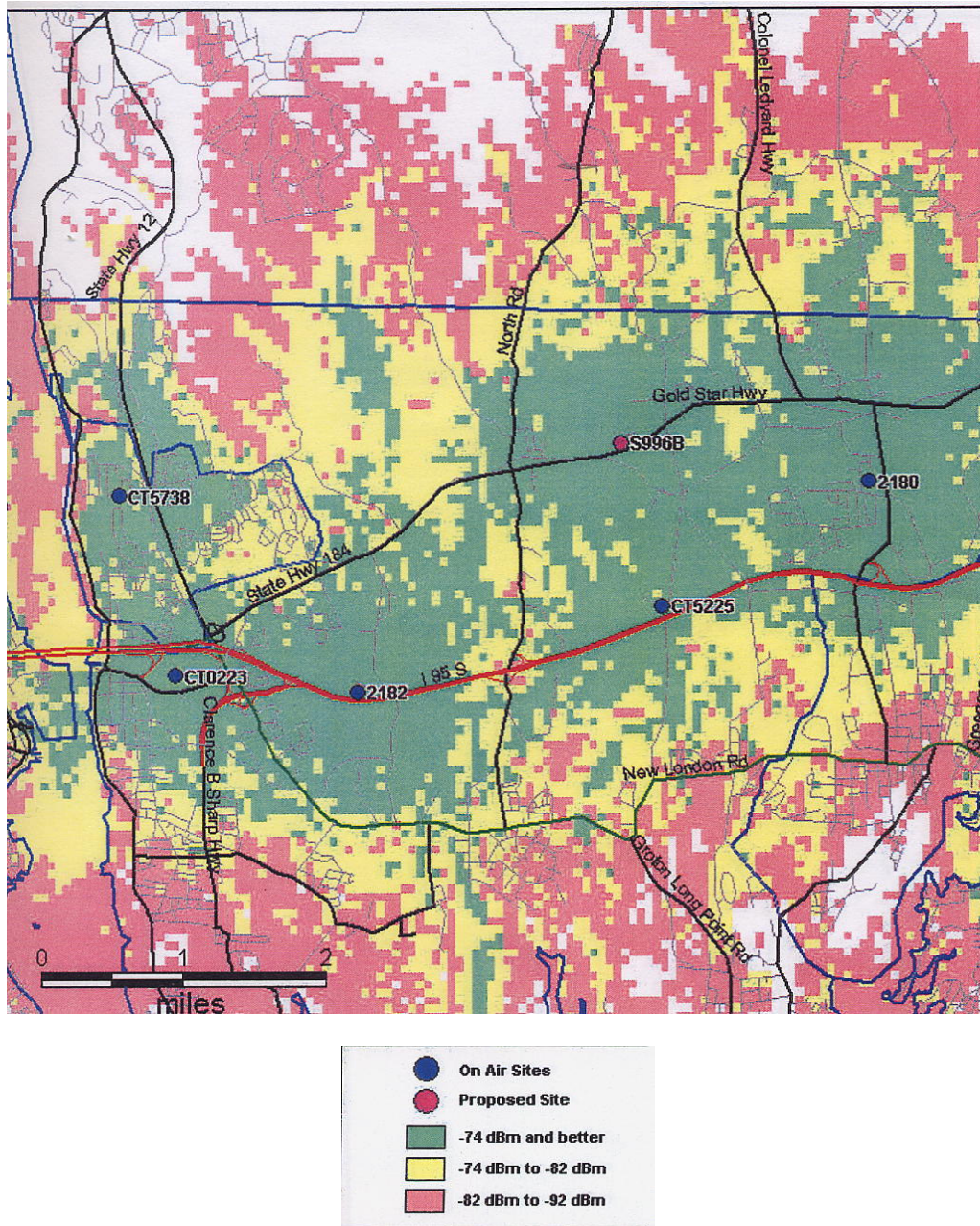


Figure 6. Coverage from existing Cingular sites and the proposed Site B at 120 feet agl.