



OPTASITE TOWERS LLC

TECHNICAL REPORT

PROPOSED NORWICH  
TOWER FACILITY

NORWICH, CONNECTICUT

Optasite Towers LLC  
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Suite 200C  
Westborough, MA 01581

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## **Introduction**

Optasite Towers LLC (“Optasite”) hereby submits this Technical Report to the City of Norwich pursuant to Section 16-50/ of the Connecticut General Statutes. Optasite proposes to install a wireless telecommunications facility (the “Facility”) on an approximately 7.01 acre parcel owned by the Maennerchor Club, located at 39 Maennerchor Avenue. The Facility is being proposed to allow Omnipoint Communications, Inc. (“T-Mobile”) as well as other federally licensed wireless carriers to provide enhanced service in this area of the City. The purpose of this Technical Report is to provide the City of Norwich with information concerning the need for the proposed Facility (Section 1), the site selection process (Section 2), the Facility design and any environmental effects associated with the proposed Facility (Section 3).

## **SECTION 1**

### **Site Justification**

This Section provides information regarding the identification of the specific need for the proposed Facility.

The Norwich site is necessary to increase wireless service availability in Norwich and particularly along State Highway 12, State Highway 169 and within the Taftville section of the City.

Included herein are propagation plots prepared by T-Mobile that depict (1) coverage from existing and approved surrounding sites; (2) predicted coverage from the proposed site with antennas mounted at 117' above grade level ("AGL"); and (3) coverage from the proposed site with existing and approved sites.

Together, these propagation plots clearly demonstrate the need for a site in the area and the effectiveness of the proposed site in meeting the need for enhanced service in Norwich.

### Coverage Thresholds

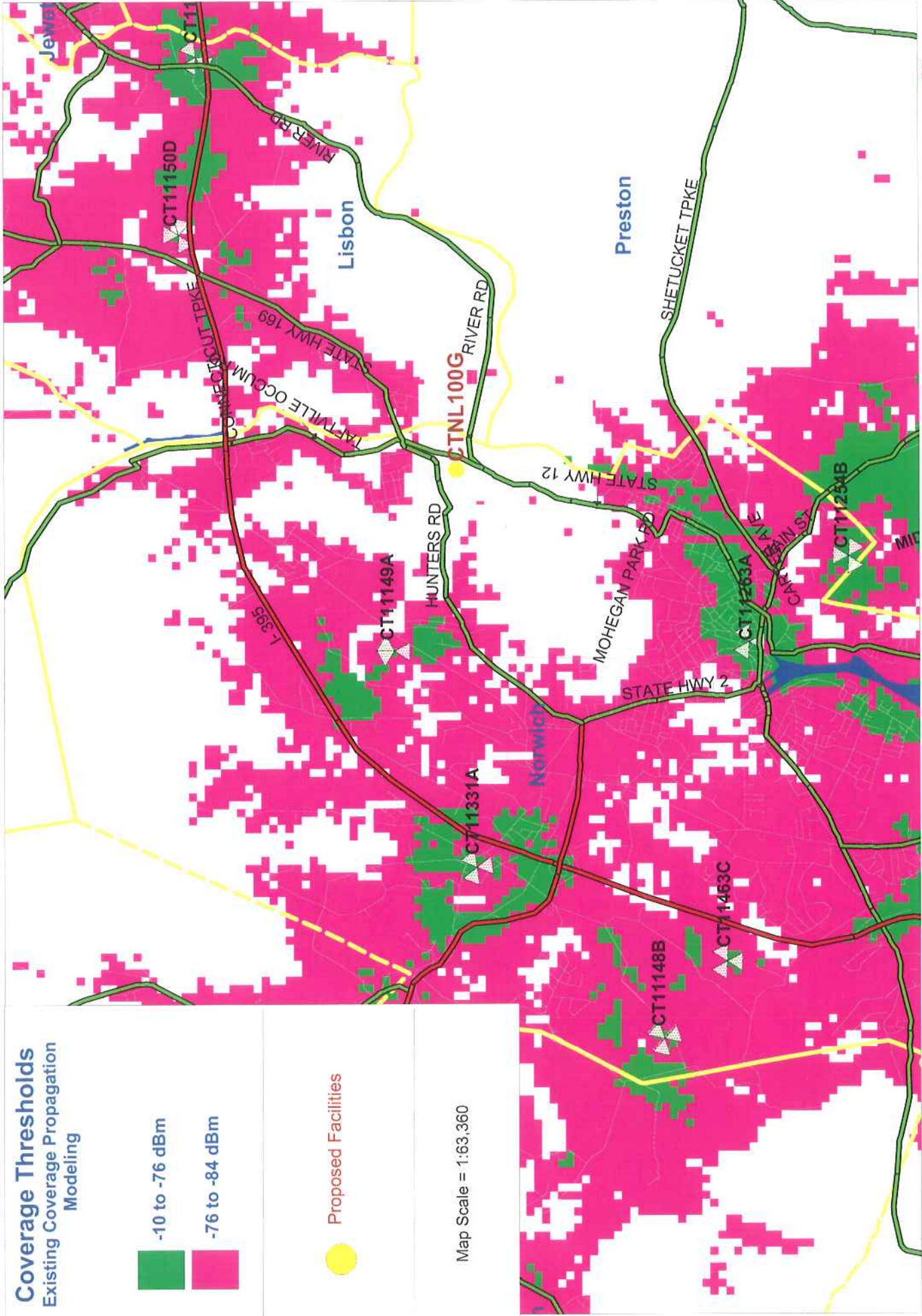
Existing Coverage Propagation Modeling



Proposed Facilities



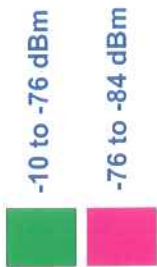
Map Scale = 1:63,360



Existing T-Mobile Coverage

### Coverage Thresholds

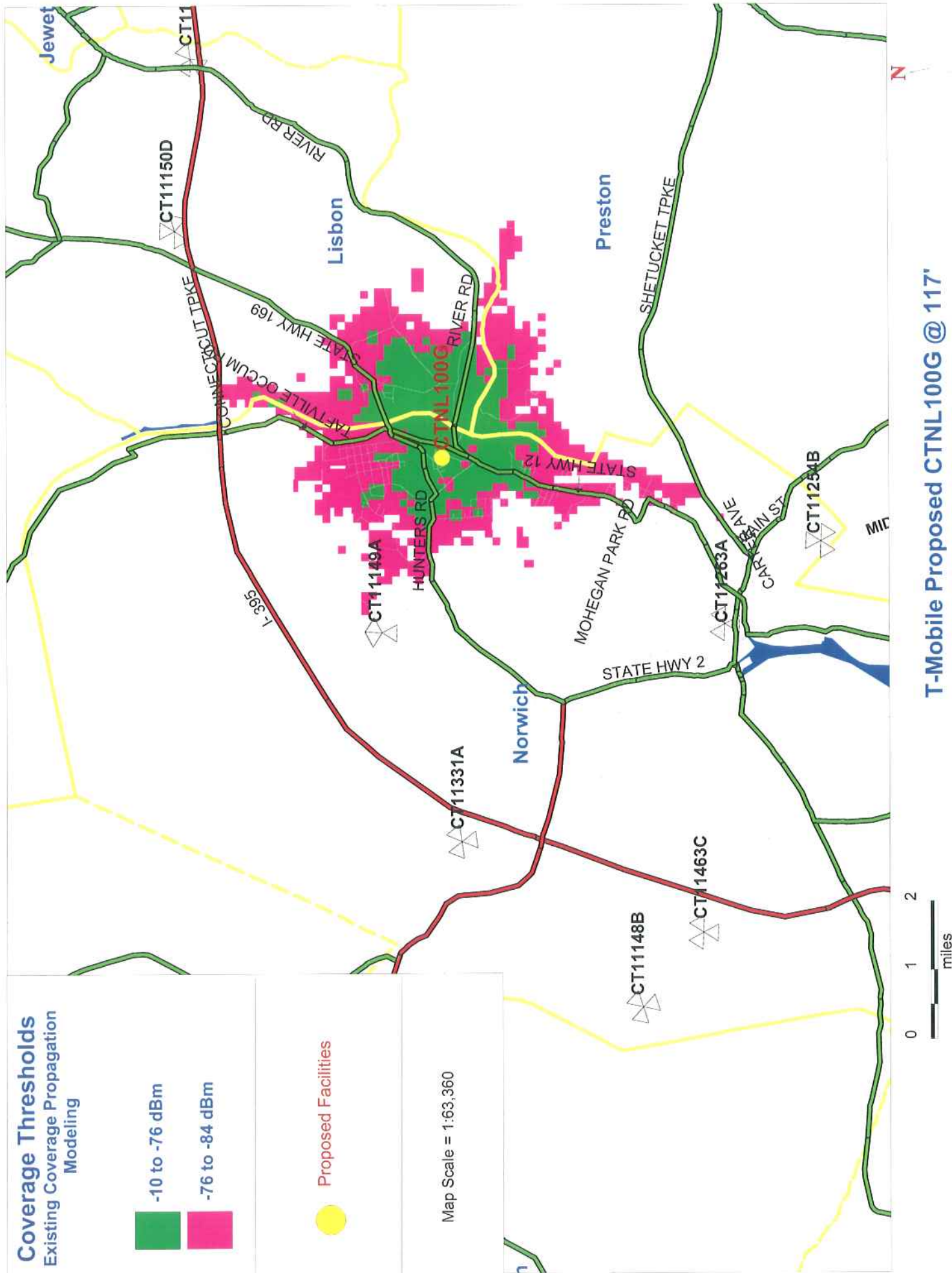
Existing Coverage Propagation Modeling



Proposed Facilities



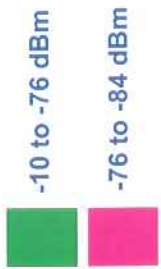
Map Scale = 1:63,360



T-Mobile Proposed CTNL100G @ 117'

### Coverage Thresholds

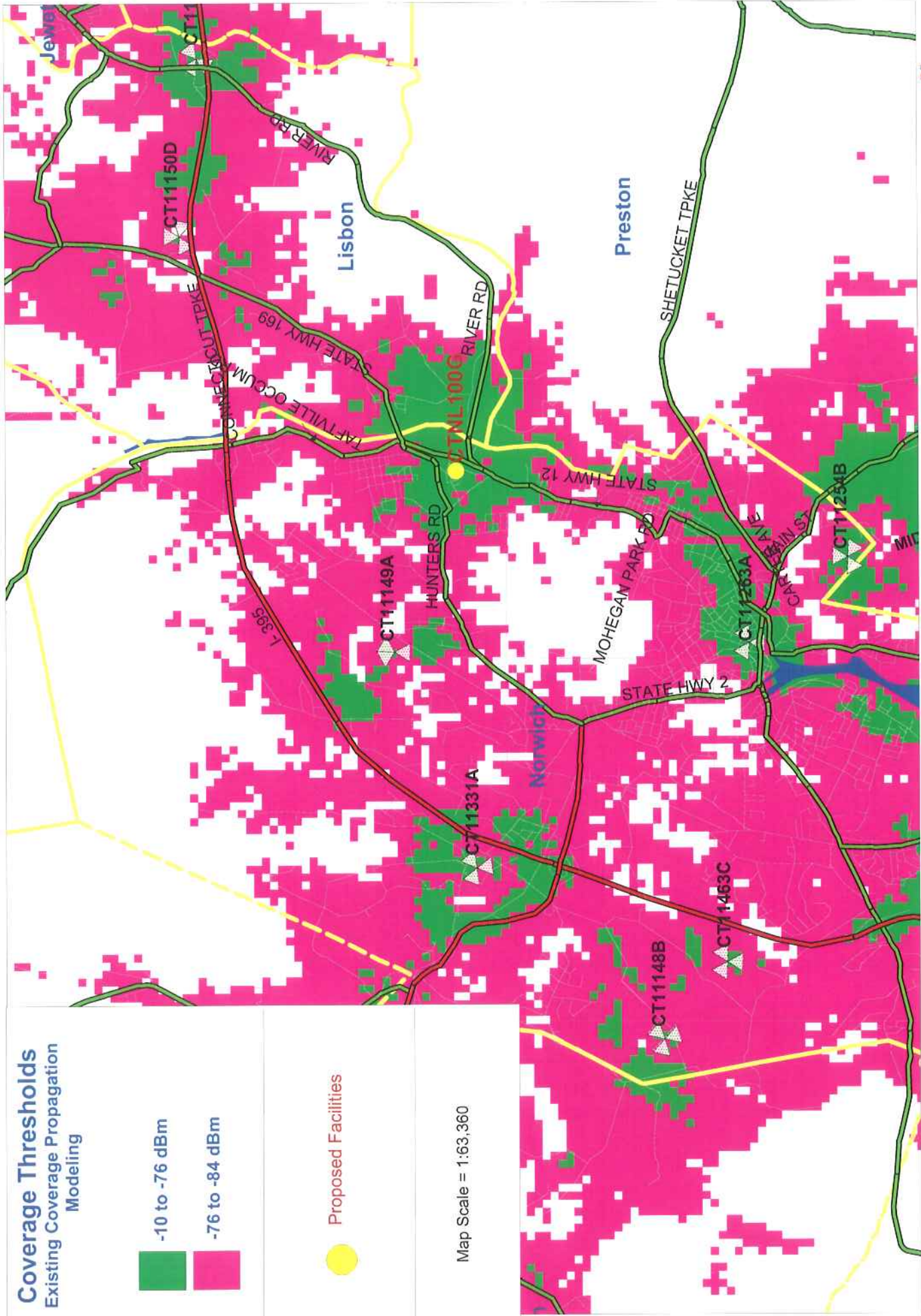
Existing Coverage Propagation Modeling



Proposed Facilities



Map Scale = 1:63,360



Existing T-Mobile Coverage with CTNL100G @ 117'

## SECTION 2

### Site Search Process and Selection

Section 16-50j-74(j) of the Regulations of Connecticut State Agencies requires the applicant to submit a statement that describes “the narrowing process by which other possible sites were considered and eliminated.” In accordance with this requirement, the description of the general site search process, the identification of the target search area and the alternative locations considered for development of the proposed Norwich telecommunications facility are provided below.

As a tower developer, Optasite bases its decision to seek out a site in an area on its knowledge and understanding of existing weaknesses in the systems of the several wireless carriers operating in the area and/or consultation with individual carriers. A target area is chosen central to the area in which the coverage and/or capacity needs have been identified. The area targeted is the geographical location where the installation of a site would, based on general radio frequency engineering and system design standards, be likely to address the identified problem. Optasite’s goal is to locate sites that will provide for orderly integration into the existing wireless systems of multiple carriers. In this case, T-Mobile had previously initiated a search for a site in this area and identified the proposed location. Subsequently, T-Mobile agreed to pursue development of a site through Optasite.

Optasite is sensitive to State and local desires to minimize the construction of new towers, and does not initiate searches in areas with known acceptable structures. In the area of Norwich that is the subject of this site search, there are no existing towers, transmission line structures or other suitable structures. Moreover, any existing towers are too far from the target area to provide coverage specifically to the target area.

In general, Optasite first studies the area to determine whether industrial or commercial areas or areas which have appropriate environmental and land use characteristics are present. Potential locations are studied by radio frequency engineers to determine whether the locations will meet the technical requirements for a site in the area. The list of potential locations is further refined based on the willingness of property owners to make their property available. Analysis of potential environmental effects and benefits may further narrow the alternatives. In each site search, the weight afforded to relevant factors may vary depending on the nature of the area and the availability of potential sites.

There are no large areas of commercial or industrial use in or next to the target area. The surrounding area is generally residential. In addition, there is a poultry farm nearby.



Optasite investigated numerous properties in the area of the property owned by the Maennerchor Club at 39 Maennerchor Avenue. Optasite investigated property located at 72 Jewett City Road, owned by Bob's Discount Furniture. However, due to a planned one million square foot expansion on the property the owner is unable to enter into a tower deal. Optasite also investigated two parcels located at 768 Boswell Avenue, owned by Saint Mary's and Saint Joseph's Cemetery Corporation. These parcels are cemeteries and the owner declined to pursue a tower deal on either of the parcels. Further, Optasite investigated property located at 15 Bolduc Lane, owned by the Taftville Associates. This property is little more than a ¼ acre in size and borders Jewett City Road with no natural vegetation or screening. Optasite also investigated properties located at 139 Norwich Avenue and 20 Norwich Avenue. Neither of the owners of these properties, however, could provide enough ground space for a tower. Property investigated at 30 Hunters Road is owned by Nicholas and Irene Saltojanes, who decided not to pursue a tower deal. Optasite also investigated property located at 44 Norwich Avenue, owned by High Point Investment & Development Company, Inc. However, this property is a mobile home park and a tower would likely impact a large number of residences on the property. Lastly, Optasite investigated properties located at 68 Roosevelt Avenue and 72 Roosevelt Avenue in Preston, Connecticut, owned by John Good and Northeast Generation Company respectively. Both of these properties, however, are too far from the target area to provide adequate coverage.

Ultimately, the property owned by the Maennerchor Club at 39 Maennerchor Avenue (the "Property") is superior to other properties in the area. The Property is an approximately 7.01 acre parcel, significantly larger than others in the area. Large portions of the property remain undeveloped and wooded. Topographical features and vegetation afford significant screening of the proposed site.

**SECTION 3**

**PROPOSED SITE**

**39 Maennerchor Avenue  
Taftville, Connecticut**

Land of  
The Maennerchor Club

Assessor's Map 55, Block 2, Lot 43

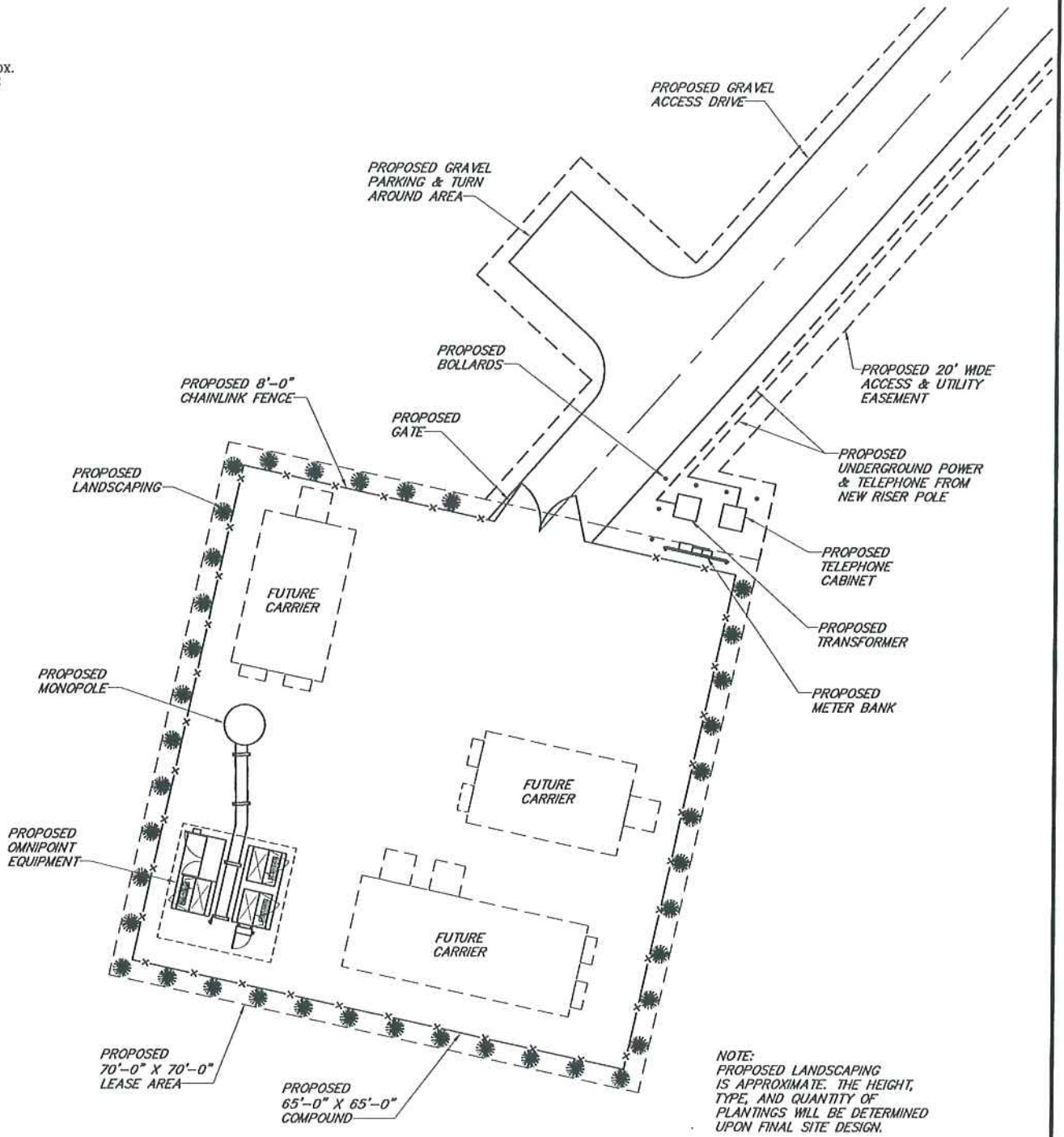
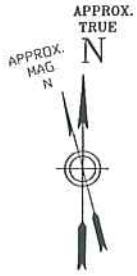
7.01 Acres

## **GENERAL FACILITY DESCRIPTION**

The proposed Norwich site is a 70' x 70' leased area located in the south western portion of an approximately 7.01 acre parcel at 39 Maennerchor Avenue in the Taftville section of Norwich (the "Site"). The Site would consist of a 120-foot self-supporting monopole tower and a 65' x 65' site compound designed to accommodate the related equipment either in single-story equipment buildings or on concrete pads. The tower would accommodate four sets of antennas. Initially, antennas and related equipment for T-Mobile's use would be installed. The tower and equipment buildings would be enclosed by an 8-foot high security fence and gate. Vehicle access to the Site would extend from Beaugard Street along a proposed, new gravel driveway a distance of approximately 363 feet. Proposed underground utility connections would extend from existing service on Beaugard Street.







NOTE:  
 PROPOSED LANDSCAPING IS APPROXIMATE. THE HEIGHT, TYPE, AND QUANTITY OF PLANTINGS WILL BE DETERMINED UPON FINAL SITE DESIGN.

**1** COMPOUND PLAN  
 SCALE: 1" = 20'  
 0 10 20  
 SCALE IN FEET

**BASEMAP NOTES:**

- BASEMAP INFORMATION OBTAINED FROM A SURVEY PERFORMED BY CLOUGH HARBOUR & ASSOCIATES LLP IN MAY 2007.

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CHA PROJ. NO. - 15363-1021



OPTASITE TOWERS LLC  
 1 RESEARCH DRIVE, SUITE 200C  
 WESTBOROUGH, MA 01581

SITE ID:  
 CT-999-0093

SITE NAME:  
 NORWICH

SITE ADDRESS:  
 39 MAENNERCHOR AVE  
 TAFTVILLE, CT 06380  
 NEW LONDON COUNTY

SHEET TITLE:  
 COMPOUND PLAN

DATE:  
 05/14/07

REVISION:  
 0

## SITE EVALUATION REPORT

### I. LOCATION

- A. COORDINATES: Lat. 41°-33'-30.5" N, Long. 72°-03'-04.6" W
- B. GROUND ELEVATION: 154' AMSL
- C. USGS TOPO MAP: Norwich, CT
- D. SITE ADDRESS: 39 Maennerchor Avenue, Taftville, CT
- E. ZONING WITHIN ¼ MILE OF SITE: Residential and Commercial.

### II. DESCRIPTION

- A. SITE SIZE: 70' x 70' Leased Area, 65' x 65' Compound  
LESSOR'S PARCEL: 7.01± acres
- B. TOWER TYPE/HEIGHT: Monopole/120' AGL
- C. SITE TOPOGRAPHY AND SURFACE: The site topography is slightly graded with an elevation approximately 25 feet above street level. The proposed site is located in the southwestern portion of the parcel.
- D. SURROUNDING TERRAIN, VEGETATION, WETLANDS, OR WATER: The parcel is mostly undeveloped with the exception of a club house owned by the Maennerchor Club. There are no wetlands on the Property.
- E. LAND USE WITHIN ¼ MILE OF SITE: Residential with scattered areas of commercial development.

### III. FACILITIES

- A. POWER COMPANY: Connecticut Light and Power.
- B. POWER PROXIMITY TO SITE: Power is available from a distribution line that runs along Beaugard Street to a point near the proposed site.
- C. TELEPHONE COMPANY: AT&T
- D. PHONE SERVICE PROXIMITY: Same as power.

- E. VEHICLE ACCESS TO SITE: Vehicular access to the Site would utilize a new gravel access drive a distance of approximately 363 feet.
- F. OBSTRUCTION: None
- G. CLEARING AND FILL REQUIRED: Minimal clearing and grading would be required for development of the access drive and the site compound. Approximately fifteen (15) trees larger than 6" in diameter would need to be removed. Detailed plans would be provided to the Connecticut Siting Council in a Development and Management Plan after Council approval of the proposed Facility.

IV. LEGAL

- A. PURCHASE [ ] LEASE [ X ]
- B. OWNER: The Maennerchor Club
- C. ADDRESS: 39 Maennerchor Avenue, Taftville, Connecticut 06380



**FACILITIES AND EQUIPMENT SPECIFICATION**  
(NEW TOWER & EQUIPMENT)

I. TOWER SPECIFICATIONS:

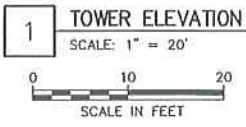
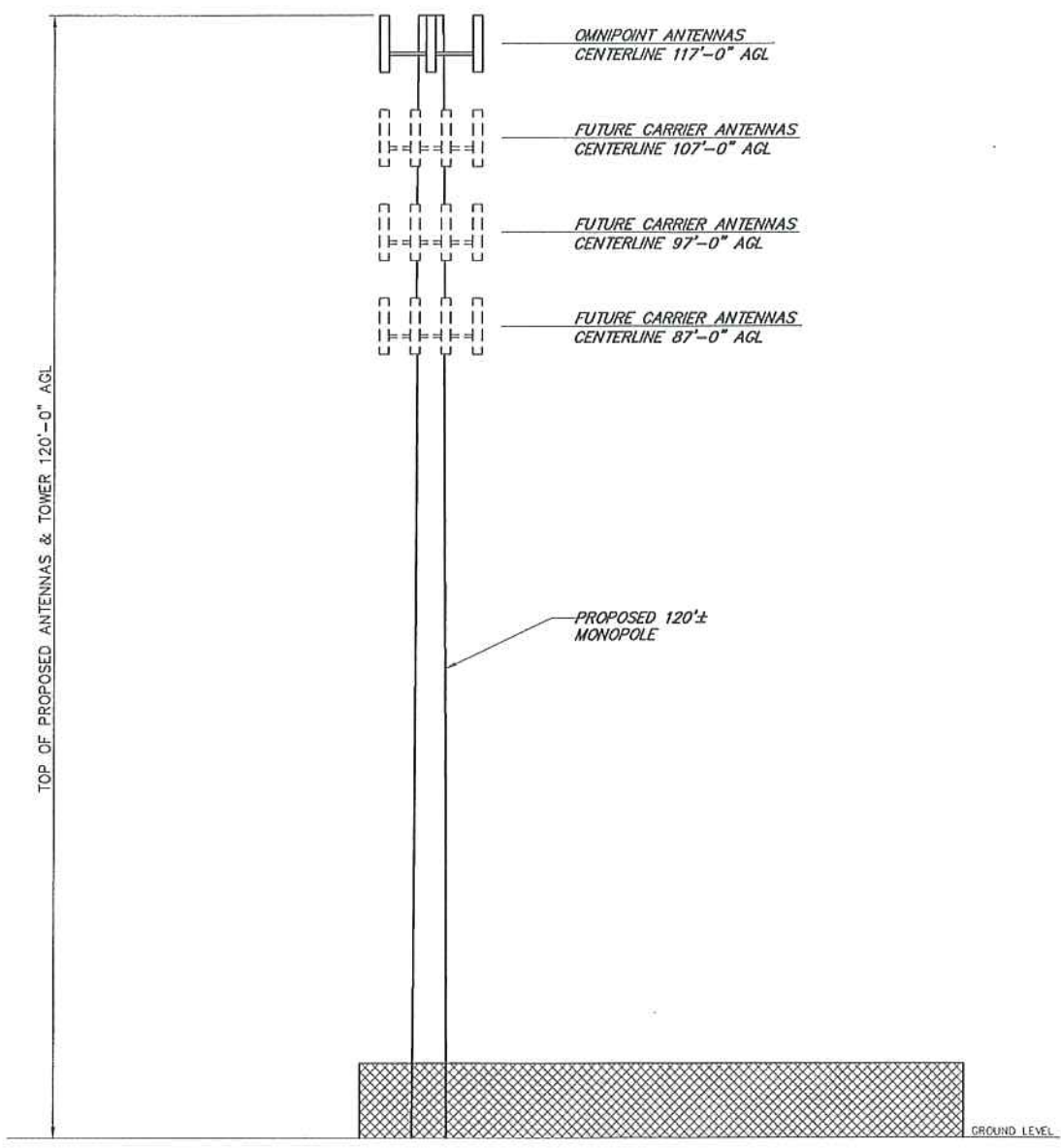
- A. MANUFACTURER: TBD
- B. TYPE: Monopole
- C. HEIGHT: 120'
- D. DIMENSIONS:       Approx. 5' diameter at base  
                          Approx. 1 ½' diameter at top

II. TOWER LOADING:

- A. T-Mobile
  1. MODEL: up to 9 panel antennas, model APXV18-209014-C
  2. DIMENSIONS: Approximately 6' in length
  3. POSITION ON TOWER: Antenna centerline of 117' AGL on monopole.
  4. TRANSMISSION LINES: up to 18 internal to the monopole
- B. Future Carriers - TBD

III. ENGINEERING ANALYSIS AND CERTIFICATION:

In accordance with the 2005 Connecticut State Building Code and the Electronic Industries Association Standard EIA/TIA-222-F "Structural Standards for Steel Antenna Towers and Antenna Support Structures" for Norwich (New London County), the tower would be designed to withstand pressures equivalent to a 120 MPH wind. The foundation design would be based on soil conditions at the site.



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**Optasite** ((••))

OPTASITE TOWERS LLC  
 1 RESEARCH DRIVE, SUITE 200C  
 WESTBOROUGH, MA 01581

SITE ID:  
 CT-999-0093

SITE NAME:  
 NORWICH

SITE ADDRESS:  
 39 MAENNERCHOR AVE  
 TAFTVILLE, CT 06380  
 NEW LONDON COUNTY

SHEET TITLE:  
 TOWER ELEVATION

DATE:  
 06/21/07

REVISION:  
 1

## ENVIRONMENTAL ASSESSMENT STATEMENT

### I. PHYSICAL IMPACT

#### A. WATER FLOW AND QUALITY

No water flow and/or water quality changes are anticipated as a result of the construction or operation of the cell site. The equipment used will discharge no pollutants to wetland and watercourse areas or to area groundwater. Best management practices will be used during construction to control storm water and erosion.

#### B. AIR QUALITY

Under ordinary operating conditions, the equipment that would be used at this proposed cell site would emit no air pollutants of any kind. For limited periods during power outages, T-Mobile may bring to the site and utilize a back-up generator.

#### C. LAND

Minimal clearing and grading would be required for development of the access drive and the site compound. The remaining land of the lessor would remain unchanged by the construction and operation of the cell site.

#### D. NOISE

The equipment to be in operation at the proposed site after construction would emit no noise other than the installed heating, air conditioning and ventilation systems. A generator would be employed during power outages and would run for a brief period once a week. Some noise is anticipated during cell site construction, which is expected to take approximately four to six weeks.

#### E. POWER DENSITY

The worst-case calculation of power density for operation of T-Mobile's operations at the facility would be approximately 3.7810 % of the applicable FCC/ANSI standards.

F. VISIBILITY

The potential visibility of the proposed monopole was assessed within an approximate two-mile radius using a computer-based, predictive viewshed model (attached). As shown, scattered areas of visibility of approximately 172 acres would be experienced, primarily in the area within a ½ mile radius of the site and, more particularly, to the east and south of the site. A large percentage of the anticipated visibility, however, will occur over open water and over large, open fields that exist to the southeast of the Site.

II. SCENIC, NATURAL, HISTORIC & RECREATIONAL VALUES

The parcel on which the site is located appears to exhibit no scenic, natural or recreational characteristics that would be affected by the proposed site. Review under the National Environmental Policy Act, including the Connecticut Department of Environmental Protection Natural Diversity Data Base and the State Historic Preservation Officer, is pending.

# Preliminary View

City of  
Norwich  
Connecticut

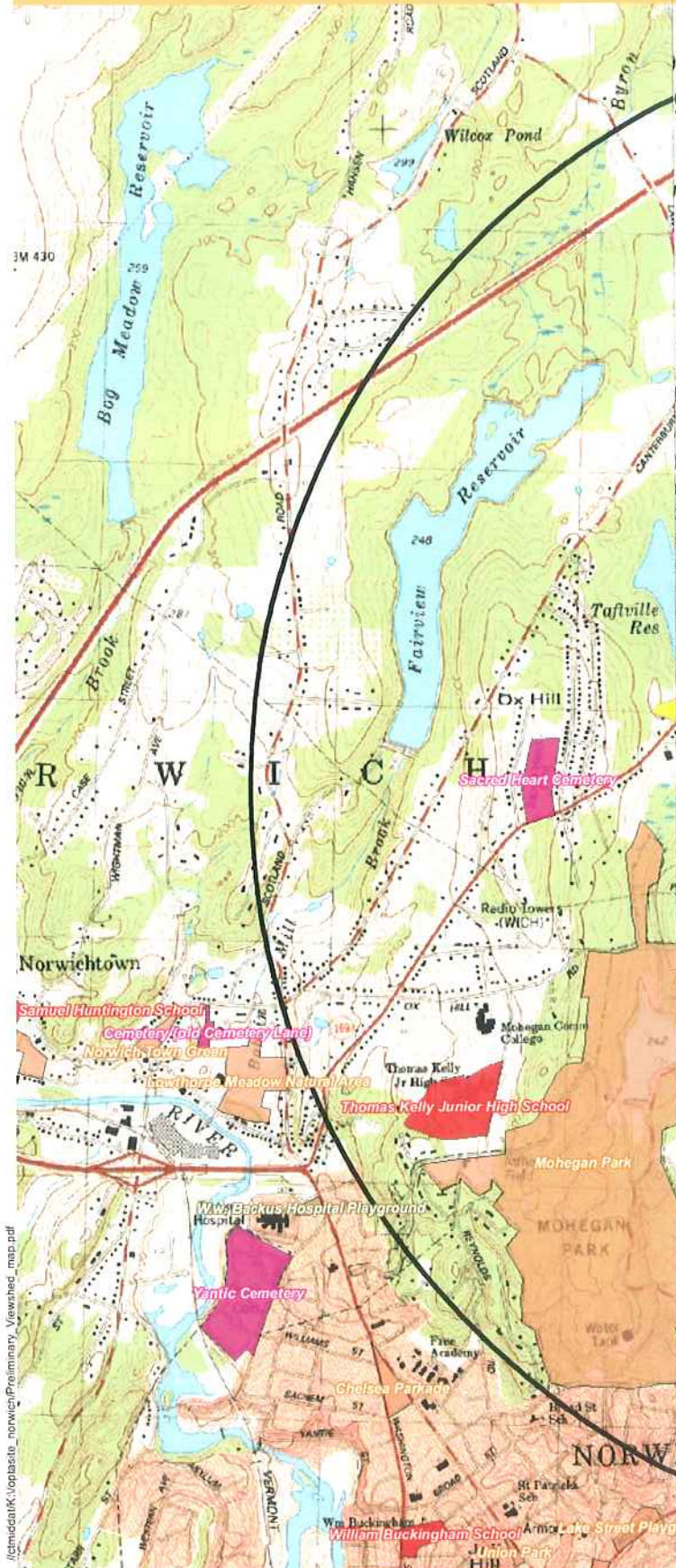
## Proposed Optasite Facility 99-0093 Sawyer Avenue Norwich, Connecticut

Analysis conducted using ESRI's Spatial Analyst.  
Proposed Facility height is 120 feet.  
Average tree canopy height estimated at 50 feet.

### SOURCES:

Digital Elevation Dataset (NED) with a resolution of one arc-second (approximately 30 meters) produced by the USGS, 1925 - 1999  
Aerial photos derived from 2005 digital orthophotos with 2-meter resolution; digitized by VHB, 2007  
Map comprised of Norwich USGS Topographic Map  
Proposed properties data layer provided CTDEP; May, 2007  
Roads layer derived from available State and Local listings.

Compiled June, 2007



Proposed Monopole Location (Includes selected areas of visibility approximately 500 feet around facility)

Anticipated Year-Round Visibility approximately 172 Acres)

Properties (Municipal)

Cemetery  
Preservation  
Preservation  
Existing Preserved Open Space  
Recreation  
Recreation  
Pool  
Categorized

Protected Properties (CT DEP)

- 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

DEP Boat Launches

Scenic Road (State and Local)

Town Line

Protected Properties (Federal)