

OPTASITE TOWERS LLC

TECHNICAL REPORT

PROPOSED MANCHESTER  
TOWER FACILITY

MANCHESTER, 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 Town of Manchester pursuant to Section 16-507 of the Connecticut General Statutes. Optasite proposes to install a wireless telecommunications facility (the “Facility”) on the approximately 1.23 acre parcel located at 640 Hilliard Street in the western section of Manchester. This Facility is being proposed to allow Omnipoint Communications, Inc. (“T-Mobile”) and other federally licensed wireless carriers to provide service in this area of Town. The purpose of this Technical Report is to provide the Town 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**

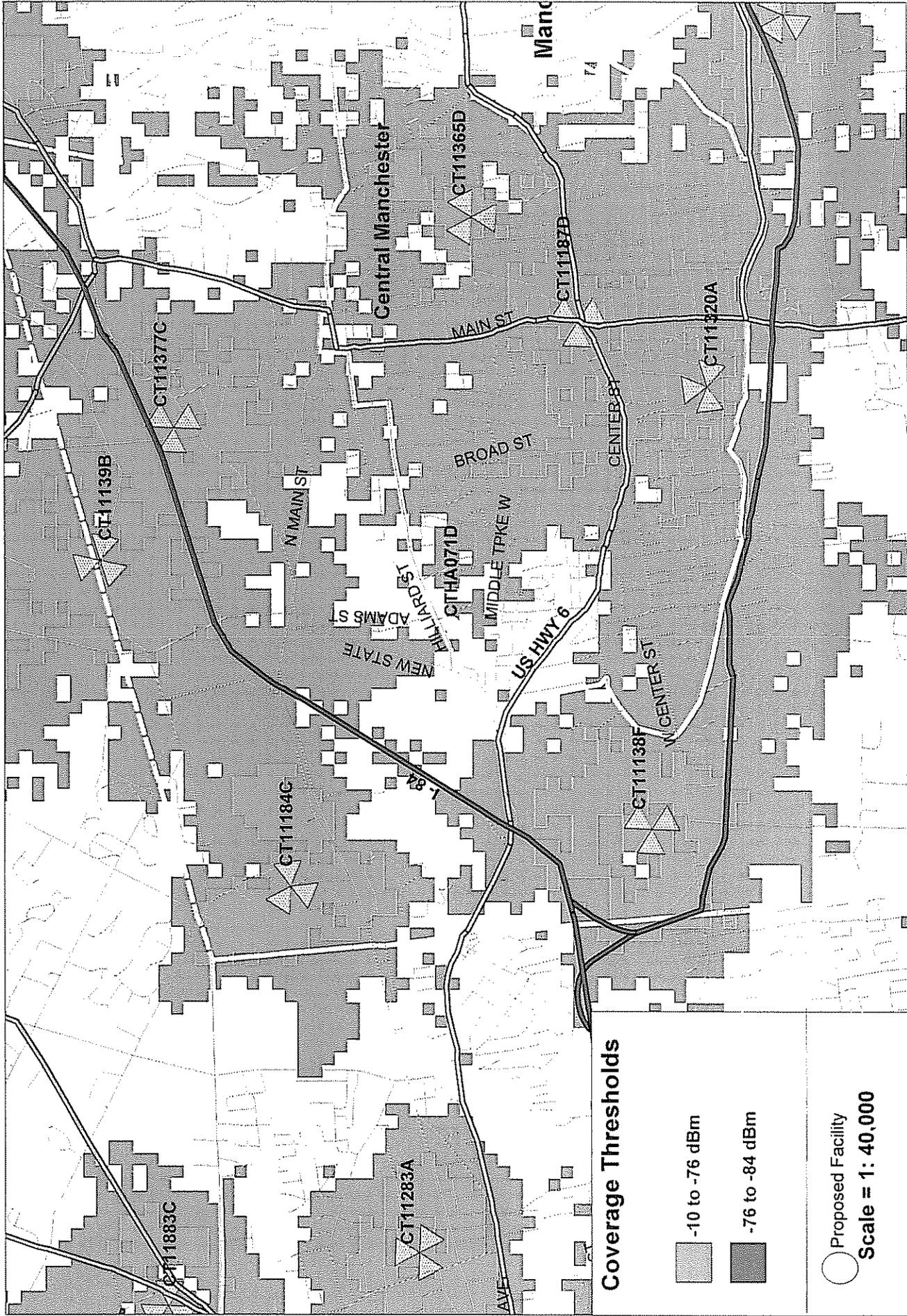
### **Site Justification**

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

The Manchester site is necessary to provide wireless coverage in the western section of Manchester, specifically for the neighborhoods east of Interstate I-84 and north of US Highway 6.

Included herein are coverage propagation plots prepared by T-Mobile which depict (1) existing coverage from surrounding sites; (2) predicted coverage from the proposed site with antennas flush-mounted at a minimum centerline height of 147' above grade level ("AGL"); and (3) coverage from the proposed site with existing and approved sites.

Together, these propagation maps confirm the need for a site in the area and the effectiveness the proposed site in meeting the coverage needs for the area. These propagation plots clearly demonstrate a need for the proposed Facility in this area of Town.

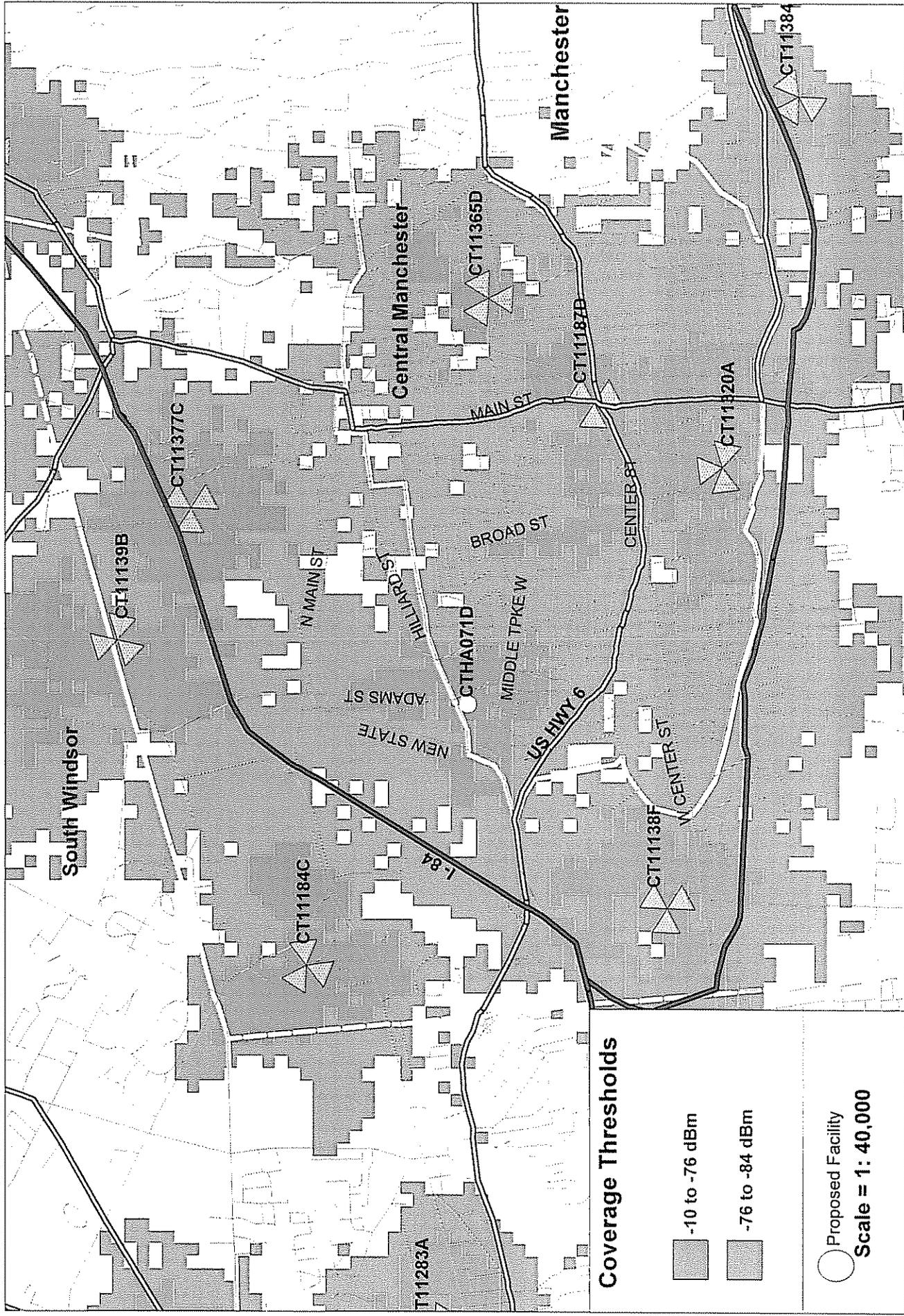


**Coverage Thresholds**

- 10 to -76 dBm
- 76 to -84 dBm

○ Proposed Facility  
 Scale = 1: 40,000

**Existing T-Mobile On Air Coverage**



Existing T-Mobile On Air Coverage With CTHA071D @ 147'

## SECTION 2

### Site Search Process

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 descriptions of the general site search process, the identification of the target search area and the alternative locations considered for development of the proposed Manchester Facility are provided below.

As a tower developer, Optasite bases its decision to seek out a site in an area based 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.

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 Middle Turnpike West area, there are no existing towers or transmission line structures. Any existing towers are too far from the target area to provide adequate coverage.

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.

Optasite investigated numerous properties in the area of the 640 Hilliard Street parcel. Several locations in the area that would have provided adequate coverage were rejected because they did not have adequate ground space required for a compound, those sites include: 160 New State Road; 642 Hilliard Street; 515 Middle Turnpike West; 346 Middle Turnpike West; 106 New State Road; and 226 New State Road. The owners of 579 Middle Turnpike West initially expressed interest in locating the facility there, however, they eventually rejected all offers. Also, a school that leases space in the building uses the area immediately next to the proposed compound as a playground. While the property located at 708 Hilliard Street may have been a suitable location, the owner rejected all offers as he intends to build apartments or other development on the land. Offers made to the owners of 331 Adams Street were rejected. The property investigated at 249 Adams Street was found to be too far north of the target area and the land was also in a flood way and flood plain. The owner of 381 Adams Street rejected all offers; this property would also have been topographically difficult to build on since the property

consists of a ravine with a stream traversing it. Other investigated properties that were found to be too far from the target area included: 41 Center Street and 105 New State Road.

The property on which the proposed site is located is superior to all others reviewed. Owned by 640 Hilliard Street, LLC, it is approximately a 1.23 acre parcel that is located in an industrial zone. Based on its elevation and location, a tower within the property would provide adequate coverage east of I-84 and north of US Highway 6 as well as the neighborhoods in between. In addition, this property has been chosen to minimize additional clearing and development.

**SECTION 3**

**PROPOSED SITE**

**640 HILLIARD STREET  
Manchester, Connecticut**

Land of  
640 Hilliard Street, LLC

Assessor's Map 45, Block 2920, Lot 640

1.23 Acres

## GENERAL FACILITY DESCRIPTION

The proposed Manchester facility is a 30' x 70' leased area located in the eastern portion of an approximately 1.23 acre parcel at 640 Hilliard Street, Manchester ("Facility"). The parcel is an old industrial mill site with various commercial use tenants. The Facility would consist of a 150-foot self-supporting monopole tower designed to accommodate four sets of flush-mounted antennas and a 30' x 70' site compound designed to accommodate the related equipment either in single-story equipment buildings or on concrete pads. 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 Hilliard Street along an existing gravel driveway and would require no additional construction or clearing. Underground utility connections would extend from a new utility pole along Hilliard Street.







## SITE EVALUATION REPORT

### I. LOCATION

- A. COORDINATES: 41° 47' 04.2" N, 72° 33' 02.9" W
- B. GROUND ELEVATION: 94' AMSL
- C. USGS MAP: Manchester, CT
- D. SITE ADDRESS: 640 Hilliard Street, Manchester, CT
- E. ZONING WITHIN ¼ MILE OF SITE: Land within ¼ mile of the proposed site is zoned industrial.

### II. DESCRIPTION

- A. SITE SIZE: 30' x 70'  
LESSOR'S PARCEL: 1.23 acres
- B. TOWER TYPE/HEIGHT: Monopole/150' AGL
- C. SITE TOPOGRAPHY AND SURFACE: The site topography is flat. The proposed site is located in the eastern portion of the parcel.
- D. SURROUNDING TERRAIN, VEGETATION, WETLANDS, OR WATER: The lessor's parcel is level. No wetlands are found within 114' of the proposed site and no water bodies run through the site.
- E. LAND USE WITHIN ¼ MILE OF SITE: Much of the ¼ mile radius surrounding the site is industrial. That property is utilized as an old mill site with tenants. Residential development exists to the south and east.

### III. FACILITIES

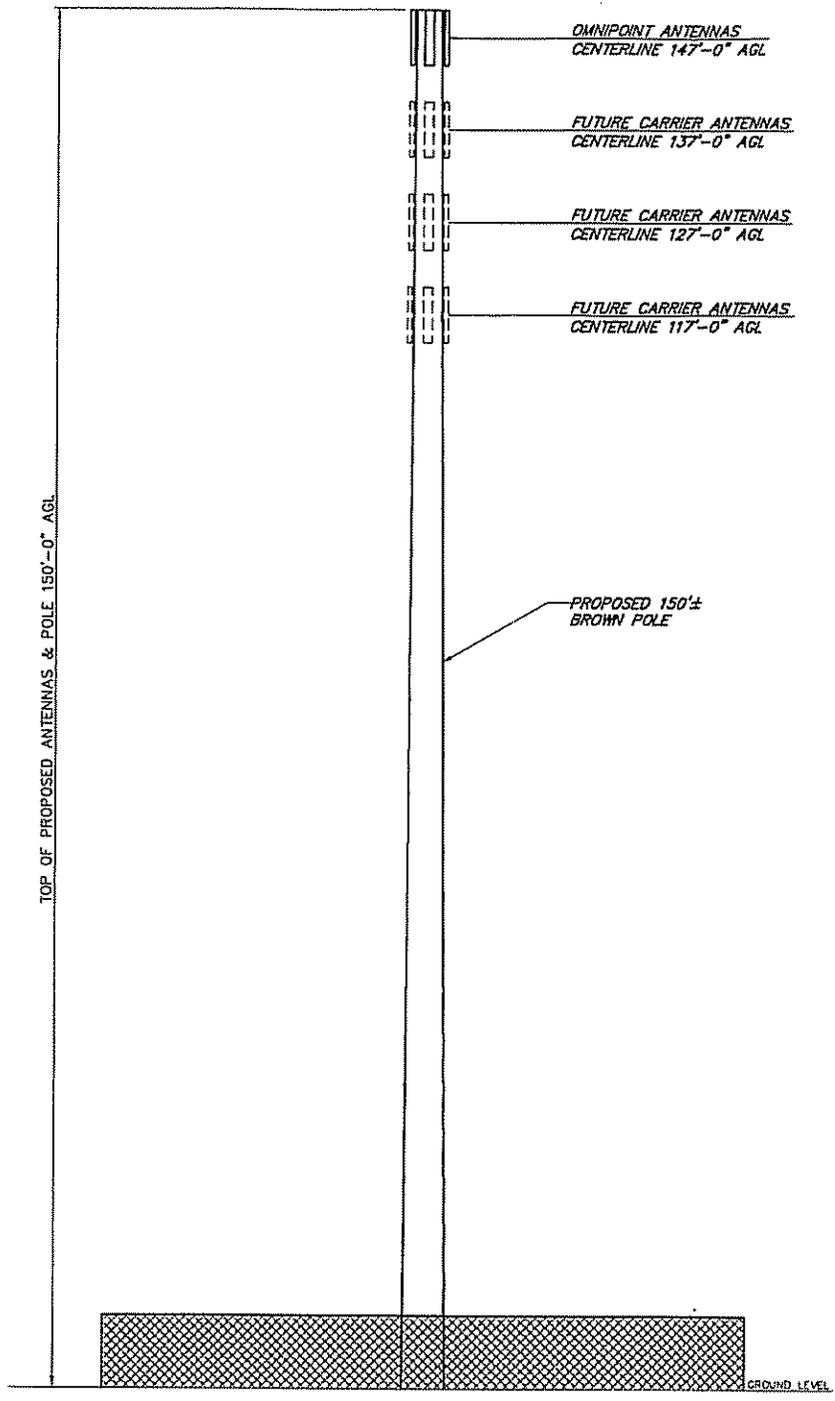
- A. POWER COMPANY: Connecticut Light and Power
- B. POWER PROXIMITY TO SITE: Power is available from existing service located on Hilliard Street.
- C. TELEPHONE COMPANY: AT&T.
- D. PHONE SERVICE PROXIMITY: Same as power.
- E. VEHICLE ACCESS TO SITE: Vehicular access to the Site would utilize existing access from an existing gravel road.

- F. OBSTRUCTION: None.
- G. CLEARING AND FILL REQUIRED: No clearing or grading would be required for development of the access drive. Development of the site compound will not require clearing or grading. 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: 640 Hilliard Street, LLC
- C. ADDRESS: 640 Hilliard Street, Manchester, CT 06040
- D. DEED ON FILE AT: Town of Manchester  
Vol. 3358, page 001





1 TOWER ELEVATION  
SCALE: 1" = 20'

SCALE IN FEET

Drawing Copyright © 2008 Cough Harbour & Associates LLP

**CHA**  
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**Optasite** ((••))

OPTASITE, INC.  
1 RESEARCH DRIVE, SUITE 200C  
WESTBOROUGH, MA 01581

SITE ID:  
CT-999-0075

SITE NAME:  
MIDDLE TURNPIKE

SITE ADDRESS:  
640 HILLIARD STREET  
MANCHESTER, CT 06042  
HARTFORD COUNTY

SHEET TITLE:  
TOWER ELEVATION

DATE:  
01/05/07

REVISION:  
0

## 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 Facility. There are no lakes, ponds, rivers, streams, wetlands or other regulated bodies of water located on the property in the vicinity of the tower. The Hockanum River runs near the property, however, it will not be affected by the Facility or the construction of the Facility and no wetlands are located on the property. 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 Facility would emit no air pollutants of any kind. For limited periods during power outages, a portable generator might be utilized.

#### C. LAND

No clearing or grading would be required for development of the access drive. Development of the site compound will not require clearing or grading. 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 antennas at the facility would be approximately 3.5148% of the applicable FCC/ANSI standards.

F. VISIBILITY

The potential visibility of the proposed monopole was assessed using a viewshed map (attached) with an approximate two-mile radius. As shown, the primary areas of visibility would be immediately to the north and south. Most of the areas of year-round visibility would be over commercial and industrial areas.

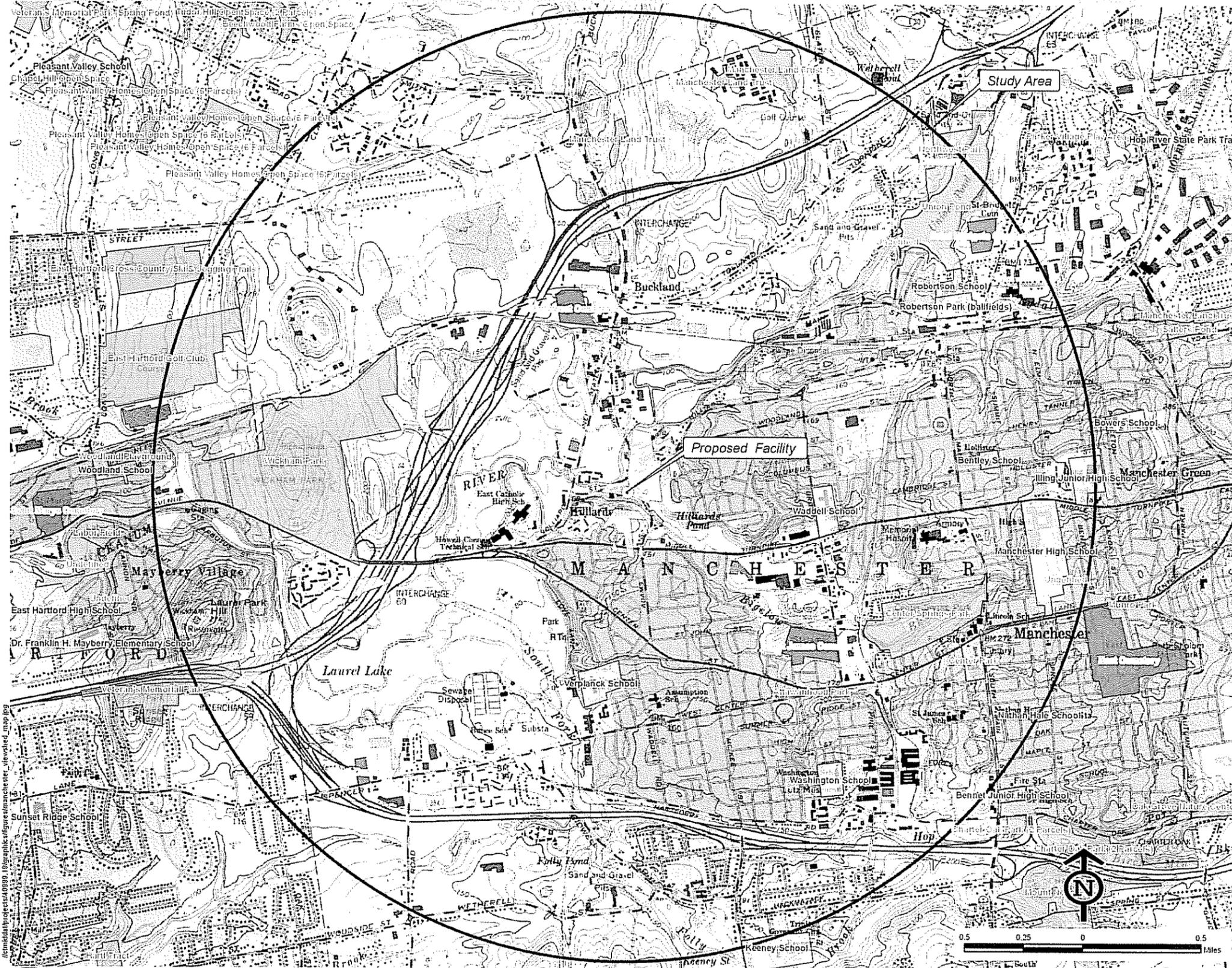
II. SCENIC, NATURAL, HISTORIC & RECREATIONAL VALUES

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.

# Viewshed Map

## Topography and Forest Cover as Constraints

Town of  
Manchester  
Connecticut



**Proposed Optasite Facility**  
**999-0075**  
**640 Hilliard Street**  
**Manchester, Connecticut**

**NOTE:**  
 - Viewshed analysis conducted using ESRI's Spatial Analyst.  
 - Proposed Facility height is 150 feet.  
 - Existing tree canopy height estimated at 65 feet.

**DATA SOURCES:**  
 - 7.5 minute digital elevation model (DEM) with 30 meter resolution produced by the USGS, 1982  
 - Forest areas derived from 2004 digital orthophotos with 0.5-foot pixel resolution, respectively; digitized by VHB November, 2006  
 - Base map comprised of Manchester USGS Quadrangle Map  
 - Protected properties data layer provided CTDEP, 2003  
 - Scenic Roads layer derived from available State and Local listings.

Map Compiled January 2007

**Legend**

- Proposed Monopole Location (Includes area of visibility approximately 500 feet around facility)
- Photographic Locations (Color coded to correspond to areas of visibility)
- Anticipated Seasonal Visibility (To be determined pending balloon float and in-field reconnaissance)
- Protected Properties (Municipal)
  - Cemetery
  - Preservation
  - Conservation
  - Existing Preserved Open Space
  - Recreation
  - General Recreation
  - School
  - Uncategorized
- 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 Boal Launches
- Scenic Road (State and Local)
- Town Line
- ▨ Protected Properties (Federal)