# SPRINT NEXTEL CORPORATION & THE CONNECTICUT LIGHT AND POWER COMPANY'S

JOINT APPLICATION FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR A TELECOMMUNICATIONS FACILITY

OFF OF

# **COVE ROAD**

IN

# HADDAM, CONNECTICUT

October 22, 2007

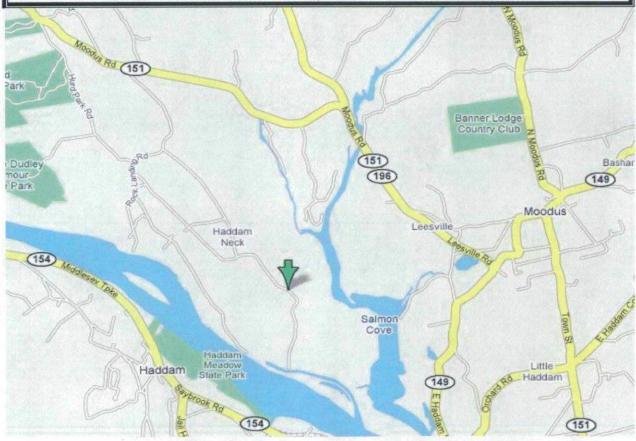




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# **OVERVIEW**

Applicants	Sprint and CL&P
Location	Cove Road, Haddam
Property Owner CL&P	
History	This tower will replace a fallen CL&P lattice tower that stood in the same location.
CDMA or iDEN Site for Sprint	CDMA
Sprint's CDMA Coverage Objective	Route 154
Lattice Steel Tower Height	180 feet
Sprint's Antenna Centerline	150 feet
Compound Size	85 feet x 85 feet



#### INTRODUCTION

Sprint Nextel Corporation ("Sprint") and The Connecticut Light and Power Company ("CL&P") (collectively, the "Applicants") hereby apply to the Connecticut Siting Council ("Council") for the issuance of a certificate of environmental compatibility and public need for the construction, maintenance and operation of a telecommunications facility (the "Facility") off of Cove Road in Haddam, Connecticut (the "Site") (collectively, the "Application"). A U.S.G.S. topographic map and aerial photograph identifying the location of the Site are included under Tab 1. The Applicants propose to construct a 180-foot tall lattice steel tower (the "Tower") to replace a similar tower owned by CL&P that previously stood in the same location. The prior tower was decommissioned years ago after a logging accident severed one of its guy wires, irreparably damaging the tower.

#### SECTION 1. PRELIMINARY INFORMATION

# A. STATUTORY AUTHORITY

The Application and accompanying attachments are submitted pursuant to Conn. Gen. Stat. § 16-50g et seq., and Conn. Agencies Regs. § 16-50j-1 et seq. The Application follows the format prescribed in the Council's "Application Guide for Community Antenna Television and Telecommunications Facilities," dated June 23, 2004 (the "Application Guide"). A copy of the Application Guide, with page number references to the Application, is included under Tab 2.

#### **B.** LEGAL NAME OF THE APPLICANTS

Sprint Nextel Corporation is a Delaware corporation with its principal business offices at One International Boulevard, Suite 800, Mahwah, New Jersey 07495, telephone number (201) 684-4000. Sprint is licensed by the Federal Communications Commission ("FCC") in many major United States trading areas, including Connecticut.

The Connecticut Light and Power Company is a Connecticut company with its principal business offices at 107 Selden Street, Berlin, Connecticut 06037, telephone number (800) 286-5000.

#### C. CORRESPONDENCE AND SERVICE

All communications and correspondence with regard to this Application should be addressed to:

Thomas J. Regan
Brown Rudnick Berlack Israels LLP
CityPlace I, 38th Floor
185 Asylum Street
Hartford, CT 06103-3402
Telephone: 860-509-6522

Telephone: 860-509-6522 Facsimile: 860-509-6501

Email: tregan@brownrudnick.com

and

Robert A. Bersak Assistant General Counsel Northeast Utilities Service Company 107 Selden Street Berlin, CT 06037

Telephone: 860-665-3395 Facsimile: 860-665-5504 Email: bersara@nu.com

#### D. NOTICE

Pursuant to Conn. Gen. Stat. § 16-50l(b), public notice of Sprint's intention to file this Application was published in <u>The Hartford Courant</u> on March 14, 2007 and March 16, 2007 and in the <u>Middletown Press</u> on March 13, 2007 and March 15, 2007. Affidavits of Publication from both newspapers are included under Tab 3.

On March 7, 2007 all abutting landowners, save one, were given notice of the filing of the Application via certified mail. The one abutter not included in that mailing, the Connecticut Yankee Atomic Power Company, was given notice on March 21, 2007. The list of abutters, the letters to the abutters, and the return receipts are included under Tab 4. All of the return receipts were received, with one exception: Andrew J. Egri at 95 Cove Road - the closest residential abutter. After confirming Mr. Egri's mailing address with the Haddam Tax Assessor's Office as well as on the internet, on March 26, 2007 Mr. Egri was sent another copy of the notice via first class mail, no return receipt requested. A copy of the resent letter is also included under Tab 4.

#### E. APPLICATION FEE

Pursuant to Conn. Agencies Regs. §16-50v-1a, the filing fee for this Application (\$1,000.00) was paid to the Council at the time of filing.

#### F. PROOF OF SERVICE

Included under Tab 5 is a list of the individuals and agencies that received a complete copy of this Application via first class mail, pursuant to Conn. Gen. Stat. § 16-501(b).

# SECTION 2. PURPOSE & GOALS OF THE FACILITY

#### A. SPRINT'S NEED

The United States Congress, in the Telecommunications Act of 1996, determined that there exists a national need for high quality wireless telecommunication services such as those provided by Sprint. In making such a determination, the federal government preempted the states' need to make that determination. The Telecommunications Act of 1996 also sought to foster competition in the marketplace and prohibit states from discriminating against functionally equivalent wireless carriers. Therefore, although a particular area may already have wireless

coverage provided by a different carrier, Sprint has the right to also offer its services in that same area.

Today, many of Sprint's customers rely on their wireless service to be functional in their homes as well as on the road. As a result, Sprint aims to cover not only all of the major roads, but the surrounding residential areas as well. In this case, Sprint's Radio-Frequency Engineering Department has identified a significant gap in CDMA (code division multiple access) wireless service along Route 154 and in the surrounding areas of Haddam and East Haddam. The location and extent of the gap in Sprint's coverage was determined by analyzing the drive test data from surrounding facilities and analyzing call statistics and propagation models. Collectively, this data demonstrates that Sprint's customers are experiencing difficulty originating new calls in this area and are also experiencing a high number of dropped calls (greater than 2%) in this area. Overall, these factors result in substandard service along Route 154 and in the surrounding areas of Haddam and East Haddam.

#### B. CL&P's NEED

The proposed Tower will provide critical radio communications for CL&P's crews working in the towns of East Haddam, Haddam, Haddam Neck and Moodus. Currently, CL&P's radio communication capabilities in those towns are intermittent and unreliable. After the previous tower was decommissioned, CL&P stationed its transmitters at the Connecticut Yankee facility, which have since been removed. For the past three years CL&P has been pursuing the reconstruction of this tower. Because CL&P operates a large 345- to 115- to 23-kV substation in Haddam, a 345-kV switching station in Haddam Neck, and the Connecticut Yankee Dry Cask storage facility is nearby, CL&P considers it imperative that it have consistent, reliable communication capabilities for its work crews in this area of Connecticut.

## C. THE CONNECTICUT STATE POLICE'S NEED

The Connecticut State Police ("State Police") have expressed their interest in locating on the Tower with an antenna centerline at 175 feet. According to Michael A. Stemmler, Public Safety Director of Telecommunications for the Connecticut State Police, the State Police have been identified as a "first responder to incidents at the Connecticut Yankee Nuclear facility in Haddam, and as such has the need to improve its' communications capability in and around this location." Attached under Tab 6 is the Statement of Purpose and Need from Mr. Stemmler. Mr. Stemmler goes on to say that "Northeast Utilities and the Connecticut State Police have a long history of cooperation and shared telecommunications sites to improve their respective systems without excessive proliferation of towers under the guidelines of the Connecticut Siting Council."

#### D. STATEMENT OF BENEFITS

As a regulated electric power distribution company, CL&P is responsible for providing electricity to approximately 1.2 million residential, municipal, commercial and industrial customers in Connecticut. CL&P is also responsible for restoring power if there is an outage and handling emergencies such as downed wires. The ability of CL&P's crews to communicate effectively in handling such emergency situations, as well as daily maintenance, means that CL&P is able to serve its customers in the most timely and efficient manner possible.

The addition of this wireless telecommunications facility to Sprint's network will have both economic and public welfare benefits. The addition of this Facility will allow business people who are frequently on the road to maintain contact with their customers. Furthermore, customers of other carriers who do not currently have coverage in the area may also benefit from this Facility because Sprint is actively marketing space on this Facility to competing wireless

providers in order to minimize the proliferation of towers in Haddam. To date, no other carriers have expressed an interest in using the Facility.

Sprint's improved wireless service will also offer a great benefit to the public in that safety and emergency situations can be quickly reported and, in turn, responded to by state or municipal officials. To that end, CL&P will allow the Town of Haddam (the "Town") and any emergency response system to use the Facility without charge, provided it is consistent with the structural integrity of the Tower. At this time, the Town of Haddam has not expressed an interest in locating its antennas on the Tower. As stated in the previous section, the State Police will be using this Tower in order to enhance their communication capabilities in this area, allowing public emergencies to be responded to in the most timely manner possible. In addition, Valley Shore Dispatch has expressed an interest in using the Facility, although no lease has been signed at this time.

This Facility will also be in compliance with the requirements set forth in the Wireless Communications and Safety Act passed by Congress in 1999 (otherwise known as the "Enhance 911" or "E911" requirements). Enhanced 911 service gives emergency dispatchers the ability to answer wireless calls promptly, obtain the caller's mobile number and pinpoint the calling location. Sprint is currently in the final phase of implementing the E911 requirements.

# SECTION 3. SITE SEARCH

#### A. SPRINT'S TECHNICAL ALTERNATIVES

Sprint is a telecommunications company operating two technologies (CDMA and iDEN) at significantly different frequency bands. Sprint's CDMA (code division multiple access) network operates at 1900 megahertz ("MHz") and Sprint's iDEN network operates in the 800/900 MHz band. CDMA technology is an all-digital system that allows for increased

capacity over analog cellular, allowing the system to handle more calls. This higher frequency signal however, limits the geographic area in which a tower is able to transmit to and from because the higher frequency signal degrades quickly in hilly areas and in areas of dense foliage.

Consequently, in order to provide adequate service, significant height must be used for the tower and the mobile to communicate with each other. In some cases, communication from the tower to the mobile can be improved by using higher power at the tower. However, this approach will not improve communication from the mobile to the tower.

The CDMA network does utilize technologies such as repeaters and microcells. A repeater is a low power system which receives (borrows) a signal from an existing site and then amplifies that signal for rebroadcasting in the target area. A microcell is a low power system resembling a smaller version of a cell site. These technologies are useful for filling small gaps in coverage or providing service in buildings, but are severely limited by the amount of coverage they can provide and by their capacity. The current gap in CDMA service in the Haddam area is significant; for that reason, technologies such as repeaters and microcells are not viable options to cover the portions of Route 154 and the surrounding area of Haddam that Sprint is looking to cover with this full CDMA cell site.

#### **B.** CANDIDATE SEARCH

After analyzing its significant gap in CDMA coverage in Haddam, Sprint used computer modeling to identify an area where a telecommunications facility must be located to provide the requisite coverage. Once the area was defined, Sprint's Real Estate Department searched for existing buildings, structures and towers in that area suitable for Sprint's purposes.

In this low density rural area, there were few existing structures with significant height to investigate. The structures that Sprint did investigate are listed below. They consist mainly of CL&P structures and are shown on a U.S.G.S. topographic map under Tab 7.

Candidate	Location	Evaluation
CL&P Substation	Beckwith Lane, Haddam	Does not provide adequate coverage along Route 154 to the north.
First Congregational Church of Haddam	905 Saybrook Road (Route 154), Haddam	Does not provide adequate coverage along Route 154 to the south.
Haddam Fire Department	Route 154, Haddam	Does not provide adequate coverage along Route 154 to the north and south.
CL&P Wood Pole	Plains Road, Haddam	Does not provide coverage along Route 154.
CL&P H-Frame 01	Boardman Road, East Haddam	Does not provide coverage along Route 154.
CL&P H-Frame 02	Main Street, East Haddam	Does not provide coverage along Route 154.
CL&P H-Frame 03	Orchard Road, East Haddam	Does not provide coverage along Route 154.
First Church of Christ	Orchard Road, East Haddam	Does not provide coverage along Route 154.
CL&P Pole 1	Haddam Neck Road, Haddam	Does not provide adequate coverage along Route 154.
CL&P Pole 2	Main Street, East Haddam	Does not provide adequate coverage along Route 154 to the north.
Nextel Fire Tower	Ager Spring Road, Haddam	Does not provide coverage to Route 149 and it does not provide any area coverage to the north.

While unsuccessfully searching for existing structures, it came to Sprint's attention that CL&P had approached Cingular regarding a joint effort to replace an old lattice tower off of Cove Road in Haddam. As Cingular was not in a position at the time to proceed with such a venture, Sprint decided to investigate the feasibility of using the replacement tower. After confirming that the Cove Road location would provide adequate coverage to its targeted areas, Sprint agreed to partner with CL&P in a joint effort to obtain a Certificate from the Council to replace the old lattice tower. Going forward, CL&P will own the Tower and Sprint will be a lessee on the Tower. CL&P and Sprint will jointly hold the Certificate.

# C. CONSULTATION WITH THE TOWN OF HADDAM

In November 2006, Sprint contacted Anthony J. Bondi, First Selectman for the Town of Haddam, and explained the proposal for a telecommunications facility on Cove Road. Sprint also explained the Siting Council process and the requirement for a 60-day notice. In response, on December 7, 2006, First Selectman Bondi indicated in correspondence to Sprint that "given the prior existence of a 180' tower in the same general location as the proposed replacement tower and [that] the tower will be built to accommodate local emergency communications antennas and equipment as necessary, the Town of Haddam has no objection to [Sprint] proceeding with filing an application with the Connecticut Siting Council at this time." The letter waiving the 60-day notice is attached under Tab 8.

# SECTION 4. THE SITE

#### A. LOCATION & LAND USE

The Facility is located on a 33.76-acre parcel located off of Cove Road in Haddam (Map 27, Lot 12A). The parcel, owned by CL&P, is heavily wooded and undeveloped. Until the early 1990's, a 180-foot tall lattice steel tower was the only development at the Site. The original

tower was decommissioned after a logging accident severed one of its guyed wires, irreparably damaging the tower. The area immediately surrounding the Site is comprised of large tracts of wooded, undeveloped land with a 345-kV electric power switching station approximately 750 feet to the southeast. Topography in the area is generally characterized by the Connecticut River and its associated River Valley as the ground elevation ranges from approximately 8 feet above mean sea level ("AMSL") along the banks of the Connecticut River to over 400 feet AMSL to the north and south of the river. The lattice tower will be located at 317 feet AMSL. A Site Plan is included under Tab 9<sup>1</sup>.

The Town Zoning Regulations address wireless communication facilities in Section 25<sup>2</sup>. Although this Facility is not subject to the Town's local zoning regulations, this Application fulfills many of the goals of the Town's zoning regulations as they pertain to wireless communication facilities. Listed below are excerpts from the purposes given in the Zoning Regulations for regulating wireless communication facilities. The majority of the goals of Section 25 of the Zoning Regulations are met in this Application.

- 1) Preservation of the character and appearance of the Town of Haddam. (See pp. 23, 27.)
- 2) Protection of the scenic, historic, environmental and natural or man-made resources of the Town of Haddam. (See pp. 18, 23, 26.)
- 3) Protection of resident's property values, health and safety. (See p. 25.)
- 4) Minimization of the total number and height of towers throughout the Town. (See p. 8.)
- 5) Minimization of adverse visual effects. (See p. 23.)
- 6) Provision for the orderly removal of abandoned facilities. (Included in the Council's Decision & Order.)

<sup>&</sup>lt;sup>1</sup> Four full-sized site plans have been bulk filed.

<sup>&</sup>lt;sup>2</sup> Four copies of the Town of Haddam's Zoning Regulations and Inland Wetlands and Watercourses Regulations have been bulk filed.

Therefore, although the Applicants are not required to comply with the Town of Haddam's Zoning requirements, Sprint and CL&P are, for all practical purposes, achieving the majority of the goals the Town has set forth for siting towers.

#### B. ACCESS ROAD

As can be seen on page SC-1 of the Site Plan (attached under Tab 9), access to the Site emanates from Cove Road (also known as Jenks Hill Road). The majority of the 980-foot gravel access road lies on CL&P's adjacent parcel to the east (Map 27, Lot 10). The access road partly follows the old access road to the original tower, however, the majority of the proposed access road follows a new alignment that is less steep.

#### C. LATTICE STEEL TOWER

Until the early 1990's a 180-foot tall CL&P lattice steel tower stood at this Site in the same location as the one proposed herein. The original tower was decommissioned after a logging accident severed one of its guy wires, damaging the tower and rendering it unsafe. The remnants of the original tower are still located at the Site and will be removed prior to the construction of the new Tower.

The new 180-foot tall lattice steel Tower has space for multiple carriers. Currently, the Connecticut State Police and CL&P both intend to locate on the upper 30 feet of the tower. CL&P will utilize microwave dish antennas operating at 6 gigahertz ("GHz") and omnidirectional whip antennas operating at frequencies between 40 MHz and 450 MHz. The Connecticut State Police will utilize whip antennas operating at 900 MHz at the 175-foot level. Sprint will be at the bottom with its antenna centerline at 150 feet. Sprint will have twelve panel antennas mounted on t-arm brackets to create a three sector site.

The Tower will be designed and constructed in accordance with the standards of the 2005 Connecticut State Building Code, American National Standards Institutes (ANSI),

Telecommunications Industry Association/Electronic Industries Association's (TIA/EIA)

Manual #222 -- Revision F, "Structural Standards for Steel Antenna Towers and Antenna

Support Structures." The exact foundation design of the structure will be determined by the manufacturer based on specified loading and soil analyses for the Site. Ice bridges will connect the Tower to the equipment sheds.

#### D. COMPOUND

The compound will be 85 feet by 85 feet surrounded by a 6-foot high chain link fence with three strands of barbed wire at the top. Inside the compound, both Sprint and CL&P will construct 12-foot by 20-foot equipment pads. On Sprint's equipment pad will be the power, battery, radio and growth cabinets. The cabinets will also house wireless switching, processing and monitoring equipment, as well as equipment for power conversions and grounding for surge protection. CL&P's equipment shelter will house microwave radio equipment and two-way radio equipment. A DC battery system and battery chargers will be present to power the radio equipment. The Connecticut State Police will utilize the same shelter as CL&P for their base station equipment.

The base station equipment for Sprint, CL&P and the State Police will be of a solid-state nature and will emit negligible amounts of noise. The noise emitted by the equipment, in accordance with Connecticut Department of Environmental Protection ("DEP") standards, will not increase the noise levels at the property boundaries beyond acceptable levels. A construction schedule and cost estimate for the Facility are included under Tab 10.

#### E. POWER SUPPLY

Utilities will emanate from CL&P distribution pole #975 to a new pole at the beginning of the access road. From there, the utilities will be routed underground, parallel to the access road, to the compound.

For Sprint to maintain operations during emergencies involving power outages, the Facility will be equipped with an extensive battery back-up system. According to the manufacturers, the battery has the capacity to power the system for 18 to 24 hours. More realistically, Sprint expects that at a 50 percent load, the battery will last approximately six to eight hours. Typically, Sprint plans for a six-hour power outage. If the power outage exceeds 24 hours, Sprint may locate a diesel-powered electrical generator at the Facility on a temporary basis. Emergency power is provided to the switching system via a plug placed in the equipment cabinet.

CL&P's radio equipment will be powered via a 48-V DC battery. Consequently, CL&P will maintain its own set of batteries and battery chargers to power its radio equipment. An emergency generator will also be on Site to power the radio equipment during times of extended commercial power outages.

#### SECTION 5. COVERAGE

#### A. CL&P's HEIGHT JUSTIFICATION

The Tower will provide critical radio communication abilities for CL&P crews working in the towns of East Haddam, Haddam, Haddam Neck and Moodus. Within these towns are the large Haddam Substation, the Haddam Neck Switching Station and the Connecticut Yankee Dry Cask storage facility where existing radio communications are intermittent and unreliable.

In order to establish communications between this Facility on Cove Road and CL&P's existing radio system, a microwave link between the Facility and CL&P's existing site at Goose Hill in Haddam will be established. Included under Tab 11 is a microwave path profile that displays the ground elevation between the Facility and the Goose Hill site. While reviewing the microwave path profile, consideration must be given to the height of trees located near the towers. To maintain a high quality microwave link, the path must be clear of all terrain and vegetation obstructions.

For the purpose of designing this microwave link, CL&P has considered a maximum tree height of 80 feet near the radio sites. The existing tower at Goose Hill is heavily loaded with antennas for CL&P, the Town of Haddam, Valley Shore Dispatch and the State Police, among others. Therefore, space for CL&P's new microwave dish antenna is only available at the 100-foot level on the Goose Hill tower. With this restriction, a dish height of 175 feet above ground level is required at the proposed Facility in order for CL&P to have a viable microwave path to Goose Hill.

#### **B.** Sprint's Height Justification

Sprint's Radio-Frequency Engineering Department has identified a critical coverage gap along Route 154 as well as in the immediately surrounding areas of Haddam and East Haddam. Sprint's existing signal strength is below -92 dBm in the majority of the area that Sprint is seeking to cover with this Facility. Sprint considers the minimum acceptable signal level for invehicle coverage to be -92 dBm and -87 dBm for in-building coverage. This gap was confirmed using computer software that measures the signal strength from the facilities in surrounding communities and was confirmed by drive test data.

For Sprint to fill this deficiency in coverage and allow the Facility to work in conjunction with its other surrounding sites, Sprint has determined, after extensive analysis, that the minimum antenna centerline needed is 150 feet. That height ensures adequate signal strength at the periphery of the coverage area. At a lesser height, the coverage provided at the periphery would severely limit Sprint's capability to hand-off calls to adjacent sites. As the traffic at this Facility and the surrounding sites increases, the quality of the signal at the periphery will deteriorate and result in dropped calls. Clearly, a network cannot be built effectively relying on the minimum signal strength. Therefore, it is crucial to maintain more than the absolute minimum signal level at this Facility.

Two coverage plots have been included under Tab 12. The first plot demonstrates Sprint's current coverage in the area. The second plot demonstrates the coverage provided by the Facility in conjunction with the surrounding sites. Also included under Tab 12 is a table of site information used to generate the coverage plots. Some of the sites listed on that table are outside of the plot view but were included to ensure the coverage plots provide an accurate representation of the coverage in the area.

#### C. SPRINT'S FORECAST OF MAXIMUM CAPABILITY

The digital technology that drives Sprint's PCS network is called code division multiple access technology. CDMA is a "spread spectrum" technology that enables multiple signals to share a single transmission channel, maximizing the use of available bandwidth. Therefore, Sprint's data transmission will not degrade with network usage. Overall, CDMA technology provides for clearer calling, fewer dropped calls, improved security and greater capacity.

By using CDMA technology, Sprint is able to provide a P.02 grade of service. A P.02 grade of service means that a subscriber of the system will be able to place calls ninety-eight

percent of the time during the busiest (peak) hours of the day. During non-peak times, the grade of service will be better than P.02.

Sprint's network is made up of individual cells designed and equipped for a given capacity. During the growth of the system, some of the cells are over utilized. Once all of the cells in the network are in place, Sprint will provide a better grade of service because the traffic in each cell meets the design loading conditions and is no longer over burdened.

As Sprint's digital network evolves, Sprint monitors the actual grade of service on a cellby-cell basis. Factors affecting the grade of service are:

- call attempts,
- call holding time,
- call distribution over time (average and peak), and
- call distribution over geography (users in weaker coverage areas negatively affect the capacity of the cell).

If the grade of service for any single cell site falls below the desired grade of service, Sprint will take steps to expand its facilities which serve that cell. These steps can include:

- antenna changes,
- cell balancing through call processing parameters and power adjustments, and
- adding channels.

These steps all serve to delay the process of cell splitting. Based on the current and projected number of subscribers as well as current and projected usage patterns, it is anticipated that cell splitting at this location will not be required for at least five years.

# SECTION 6. ENVIRONMENTAL IMPACT

#### A. MITIGATION MEASURES

The selection and design of the Facility and access road have taken into account potential impacts to: wetlands and water resources; air quality; noise; traffic patterns; vegetation; wildlife; visibility as well as historic, architectural, archaeological, cultural and recreational resources.

The following review demonstrates that the activities proposed by the Applicants will not cause a significant change or alteration in the physical and environmental characteristics of the Site.

#### (1) Water Resources

No adverse impact on water resources is anticipated as a result of the operation of the Facility. The Facility will not require any water usage nor is any wastewater discharge associated with the Facility. Furthermore, there are no water supply or sanitary facilities at the Facility.

The greatest potential for impacts on water resources exist from soil erosion and sedimentation during Site development. Absent control measures, exposed soil surfaces could be vulnerable to erosion from direct precipitation and storm water runoff. Eroded soils could be carried to downstream water courses and/or wetlands and deposition of soil sediments within wetlands or water courses could, in turn, have an adverse impact on wetlands, in-stream flora and fauna as well as water quality. Therefore, the plan of development for the Facility will include erosion and sediment control measures designed in accordance with the Connecticut Guidelines for Soil Erosion and Sediment Control. These erosion and sediment control measures will perform one or more of the following functions: minimization of soil exposure, control of runoff, shielding of the soils, binding of the soils and trapping of sediments. Prior to any land disturbance activities, sediment barriers will be installed downslope of all areas where soil will be exposed. Upon completion of site work, all disturbed areas will be permanently stabilized with seed and mulch.

In addition, the physical structures will be made of common building materials and will not produce any environmentally damaging leachates. No transformers containing polychlorinated biphenyls (PCBs) will be used at the Site.

## (2) Wetlands

No wetlands or watercourses were identified or delineated within the proposed development area at the Site. The closest wetland to the Site is located approximately 600 feet to the south of the lease area. Therefore, the Applicants do not anticipate that their activities will significantly affect that wetland. As no direct impacts to federal wetlands are associated with the Applicants' construction activities, no significant change in surface features (e.g., wetland fill, deforestation or water diversion) will result at the Site, according to the National Environmental Policy Act ("NEPA") categorical exclusion list. Documentation on Sprint's on-site investigation to determine if there are wetlands on the Site is attached under Tab 13.

# (3) Air Quality

No air pollutants will be generated during the normal operation of the Facility. If a power outage occurs which exceeds 24 hours, Sprint may bring a diesel-powered electrical generator to the Site. Sprint's emergency power is provided to the switching system via a plug placed in the equipment building wall. Since its use will be infrequent, only minimal discharges of the by-products of combustion (exhaust gases) will occur. These infrequent discharges are not expected to have an adverse impact on air quality. CL&P will keep an emergency generator on Site to power the radio equipment during times of extended commercial power outages. Again, the minimal discharges from CL&P's emergency generator are not expected to have an adverse impact on air quality.

The only vehicular access to the Site will be for regularly scheduled equipment maintenance and emergency repairs. On average, one trip per month to the Facility is expected. Thus, impacts on air quality from automobile exhaust emissions are expected to be negligible.

#### (4) Noise

The only noise associated with the Facility will be during the construction of the foundation for the tower base and during the erection of the Tower and antennas. The noise from the construction is anticipated to last approximately six weeks. Noise associated with the use of the emergency generators will be infrequent and diminished by the remote location of the Facility and the surrounding vegetation.

# (5) Traffic Pattern

During construction, the project will generate a small amount of traffic as workers arrive and depart and materials are delivered. Traffic generation will be comparable to that generated by the construction of a single family house. Upon completion, traffic will be limited to an average of one monthly maintenance and inspection visit per carrier. Therefore, no traffic problems are anticipated.

# (6) Vegetation & Soil

The Site consists of 33.76-acres of primarily forested land with some areas utilized as an electrical transmission right-of-way by Northeast Utilities. The proposed development area generally starts and ends by following an existing woods road that provided access to the original tower. The middle section of the access road follows a new, less steep route. This forested area is characterized as second growth forest dominated by black, white and red oaks ranging in size from 8- to 24-inches in diameter at breast height. Canopy closure has resulted in sparse development of the shrub understory.

According to the Bedrock Geological Map of Connecticut compiled by John Rogers in 1985, the bedrock geology underlying the Site is identified as part of the Hebron Gneiss and Brimfield Schist formations. The Hebron Gneiss formation is characterized as interlayered dark-

gray schist and greenish-gray, fine- to medium-grained calc-silicate gneiss. Brimfield Schist formation consists of gray, rusty-weathering, medium- to coarse-grained, interlayered schist and gneiss.

The surficial geology of the Site is classified as glacial till (also called ground moraine deposits). These deposits are predominantly nonsorted, nonstratified sediment consisting of boulders, gravel, sand, silt, and clay mixed in various proportions laid directly by glaciers. Soils derived from this parent material were generally field confirmed by a professional soil scientist at the Site. Soils identified in the lease area and access/utility easement are classified as Paxton and Montauk fine sandy loams (soil symbol – 84). These are deep to bedrock, well drained, moderately coarse textured, dense glacial till soils. This field classification is generally consistent with published information for the area (Natural Resources Conservation Service digital soil data).

No wetland soils were identified within the compound area or the access road at the Site. Wetland soils were identified approximately 600 feet south of the compound, in association with a wetland located on either side of Cove Road. These wetland soils are classified as Ridgebury, Leicester, and Whitman soils, extremely stony (soil symbol - 3). These are very poorly and poorly drained, medium textured, glacial till soils typically developed over compact till.

#### (7) Wildlife

Although this forested habitat could provide some cover for wildlife, the proposed development is not anticipated to have a significant impact on wildlife due to the relatively small area of disturbance and amount of previous disturbance (i.e. the existing woods road and the former tower site). Potential impacts during construction of the Facility include the displacement of wildlife from the construction zone around the compound. However, suitable habitat is

located in close enough proximity to allow for the natural relocation from the construction zone.

As a result, no long-term impacts on wildlife are anticipated from the Applicants' proposed activities at the Site. Furthermore, since the Site will be unattended, no disturbance of wildlife during operation of the Facility is expected.

According to the DEP's Natural Diversity Data Base ("NDDB"), two species of special concern, the Eastern Box Turtle (*Terrapene c. caronina*) and the Wood Turtle (*Glyptemys insculpta*), have been recorded by the DEP in the vicinity of the project. Eastern Box Turtles are known as habitat generalists and prefer old field and deciduous forest habitats, which can include power lines and logged woodlands. These habitat requirements are located within and proximate to the project area. Wood Turtles require riparian (stream) habitats bordered by flood plains, woodlands or meadows. The nearest Wood Turtle habitat would be associated with either the Connecticut River (to the west) or the Salmon River (to the east). Both are located approximately one half mile away from the Facility. Therefore, the proposed development is not anticipated to adversely effect Wood Turtle habitat. The Applicants are currently coordinating with the DEP to incorporate construction means and methods (e.g., install silt fence barriers, daily monitoring, etc.) to avoid inadvertent impacts to Eastern Box Turtle.

#### **B.** VISUAL RESOURCE EVALUATION

In September 2006, Vanasse Hangen Brustlin, Inc. ("VHB") prepared a Visual Resource Evaluation Report for the Facility (Tab 14). The Visual Resource Evaluation Report contains a narrative, photolog documentation map, balloon float photographs, photographic simulations and a viewshed map. The evaluation was conducted to identify specific areas where the Facility is likely to be visible in the surrounding community. For the purposes of the evaluation, a 2-mile radius surrounding the Site was chosen as the study area ("Study Area"). Portions of Route 149,

Route 151 and Route 154 are contained within the Study Area. In total, the Study Area contains roughly 64 linear miles of vehicular roadways.

The Study Area is generally characterized by the Connecticut River and its associated river valley as ground elevations range from approximately 8 feet AMSL along the banks of the river to over 400 feet AMSL to the north and south of the river. The tree canopy in the area, consisting mainly of mixed deciduous hardwood species, covers approximately 72% of the Study Area with an average height of 65 feet. The Study Area also includes approximately 1,063 acres of surface water, including the Connecticut River, the Salmon River and Salmon Cove.

Overall, the potential visual effects associated with the Facility will be minimized due to three main factors: 1) the topography of the Study Area, which is characterized by the steep river valley that acts to limit most of the visibility to open water; 2) the abundance of vegetative screening surrounding both the Facility and the adjacent residential areas; and 3) the generally sparse residential development within the Study Area, which diminishes the number of potential visual receptors.

Specifically, VHB anticipates that the Facility will be visible year-round from approximately 573 acres within the Study Area. However, the majority (92%) of the visibility occurs over open water on the Connecticut River. Land-based visibility generally occurs on private or otherwise inaccessible properties to the southeast and northeast and along the southern riverbank of the Connecticut River, spanning the entire length of the Study Area. VHB anticipates that 9 residences will have year round views of at least part of the Tower.

VHB expects limited areas of visibility from within Haddam Meadows State Park. VHB also expects visibility along a 500-foot (approximate) stretch of Route 154, which is a state designated scenic roadway. Views from both the Haddam Meadows State Park and the scenic

road will be minimized by adjacent vegetative screening both within the Park and along Route 154.

VHB anticipates an additional 271 acres of seasonal visibility. Seasonal visibility is mostly located adjacent to the southern banks of the Connecticut River and along select portions of Route 154. Limited seasonal views are also anticipated from Haddam Meadows State Park where a row of mature deciduous trees just south of the Connecticut River will provide adequate screening while the leaves are on, but may yield views during the fall and winter months. VHB anticipates that 12 additional residences will have seasonal views of the Facility.

#### C. BALLOON FLOAT & SIGN DISPLAY

To enable the public to ascertain the visibility of the Facility, the Applicants will raise a balloon at the Site with a diameter of at least three feet on the day of the Council's first hearing session on the Application (weather permitting) or at a time otherwise specified by the Council. In addition, the Applicants will post a sign on the subject property at least ten business days prior to the public hearing. The sign will be at least 6 feet by 4 feet and will have the Applicants' name, type of facility, height, public hearing date and contact information.

#### D. SAFETY ANALYSIS

The Facility will not pose a health threat to the community-at-large or the employees who visit the Site. To verify the Facility will not pose a health threat, the Applicants analyzed the amount of radio-frequency energy emitted by all of the antennas (see Tab 15 for the power density analyses). These analyses were performed using a worst case scenario with the antennas on the Tower pointing straight down. Under this worse case scenario, the highest calculated levels of radio-frequency energy are measured at the base of the Tower.

The Applicants' analyses determined that the total amount of radio-frequency energy emitted by all of the antennas (known as the power density), as calculated at the base of the Tower, will never be greater than 15.93 % of the maximum permissible exposure, which is 1.0 mW/cm² as specified by the FCC. Therefore, the Applicants' analyses clearly demonstrate that the maximum level of radio-frequency energy emitted at the Facility will be well below all applicable health and safety limits.

#### E. NATIONAL ENVIRONMENTAL POLICY ACT REVIEW

As a licensing agency, the FCC complies with the National Environmental Policy Act by requiring its licensees (including Sprint) to review their proposed actions for environmental consequences. If a licensee's proposed action falls within one of the "listed" categories within NEPA (specifically, 47 CFR §1.1307), the licensee is required to perform an environmental assessment and disclose the results to the FCC. The "listed" categories address issues such as the presence of wilderness areas, wilderness preserves, endangered or threatened species, critical habitats, historic districts, sites, buildings structures or objects, Indian religious sites, flood plains and wetlands.

VHB conducted a NEPA review to investigate any environmental consequences that may arise from the Applicants' plans for the Facility in Haddam. Thus far, VHB has determined that the Facility is not located in an environmentally sensitive area nor does it fall under any of the NEPA "listed" categories in 47 CFR §1.1307, however, VHB is awaiting resolution from the DEP on one issue (protecting the habitat of the Eastern Box Turtle) before its review is officially complete. The NEPA screening map is attached under Tab 16.

## (1) Cultural Impact

As part of the NEPA process, VHB contracted Heritage Consultants, LLC ("Heritage") to perform a Phase I Cultural Resources Reconnaissance Survey at the Site of the proposed Facility (attached under Tab 17). Heritage found that "no impacts to cultural resources are anticipated, and no additional field work is recommended" (Tab 17, p. 12). The Phase I Cultural Resources Reconnaissance Survey was then forwarded to the Connecticut Commission on Culture and Tourism ("CCT") for their review. After careful examination, on February 6, 2007 the CCT determined the project will have "no effect on [the State's] historic, architectural, or archaeological resources listed on or eligible for the National Register of Historic Places." The letter from the CCT is attached under Tab 18.

To ensure the public had the opportunity to comment on the Application in accordance with the National Historic Preservation Act and the Connecticut Environmental Policy Act, VHB published public notice of Sprint's proposal requesting comments (included under Tab 19).

VHB also solicited comments from the Town, the Haddam Historical Society and applicable Indian tribal organizations (also included under Tab 19).

# (2) Impact on Endangered Species

As previously mentioned, as part of the NEPA process VHB reviewed the DEP's Natural Diversity Database ("NDDB"). The locations of species and natural communities within this database are based upon data collected over the years by the Natural Resources Center's Geological and Natural History Survey, other units of the DEP, private conversation groups and the scientific community. The locations have been mapped on U.S.G.S. 7.5 minute quadrangle maps for the entire State of Connecticut by the Natural Diversity Database Unit. The locations were generalized for the purposes of distributing data to the general public while maintaining the

by up to 500 feet in any direction and then buffered by a ¼ mile. Therefore, the general locations are presented as polygons and the exact location of the species or community falls somewhere within the polygon, and not necessarily in the center of the polygon.

As part of the NEPA compliance process for this Facility, Sprint screened the project area for State and Federally listed endangered, threatened, and special concern species and significant communities through the use of the NDDB. According to the DEP, if the project is not found within a hatched area, or overlapping a lake, pond or wetland that has any hatching, or upstream or downstream (by less than ½ mile) from a hatched area, the project is unlikely to affect any known occurrence of listed species or significant natural community. In addition, according to the DEP, if any part of the project is within one of those areas the project may have a conflict with a species or natural community. In cases of potential conflict (i.e., when one or more of the criteria above are met), VHB submits all applicable information to the DEP for review and comment.

In this case, the DEP found two species of special concern, the Eastern Box Turtle and the Wood Turtle. The DEP recommended that if suitable habitat for the Eastern Box Turtle or the Wood Turtle exists at the Site, a herpetologist should conduct surveys between April and September to see if any turtles are present. VHB determined that there is no suitable habitat for the Wood Turtle present at the Site but there is suitable habitat for the Eastern Box Turtle. VHB is currently in the process of developing construction management techniques with the DEP that will protect their habitat. Such measures may include placement of a exclusion zone with a silt fence where construction is not permitted as well as education of the construction workers on the

Eastern Box Turtle. Once arrangements have been finalized with the DEP, VHB will have				
resolution on the final NEPA issue.	The documentation from the DEP is included under Tab 20.			

# CONCLUSION

For the reasons described herein, the Applicants respectfully requests that the Council issue a certificate of environmental compatibility and public need for the construction, maintenance and operation of a 180-foot telecommunication facility off of Cove Road in Haddam, Connecticut.

Respectfully submitted by:

SPRINT NEXTEL CORPORATION

Thomas J/Regan

THE CONNECTICUT LIGHT AND POWER COMPANY

Robert A. Bersak

# 40237289 v1 - MERCIECM - 080563/3233

#### **ATTACHMENTS**

- 1. Topographic Map & Aerial Photograph
- 2. Application Guide
- 3. Affidavits of Publication
- 4. Abutters List

Letters to Abutters

Return Receipts

Resent Letter to Andrew Egri

- 5. Proof of Service List
- 6. Statement of Purpose and Need from the CT State Police
- 7. Map of Towers in the Area
- 8. Letter from Town of Haddam
- 9. Site Plan
- 10. Construction Schedule

Cost Estimate

- 11. Microwave Path Profile
- 12. Coverage Plots
- 13. Wetlands Inspection Report
- 14. Visual Resource Evaluation Report
- 15. Power Density Analysis Charts
- 16. NEPA Screening Map
- 17. Phase I Cultural Resources Reconnaissance Survey
- 18. Letter from the CT Commission on Culture & Tourism
- 19. NEPA Notices
- 20. Letters from DEP & U.S. Department of the Interior