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Via FedEx

December 13, 2006

Natalie T. Ketcham, First Selectman
Town Office Building
100 Hill Road, Route 107
Redding, CT 06875

RE: Pre-Application Filing Sprint ("Sprint") Proposed Cellular
Communications Facility For Property on 186 Black Rock Turnpike,
Redding, Connecticut, Redding Fire District #1, Owner

Dear First Selectman Ketcham:

In satisfaction of Connecticut General Statutes Section 16-50l(e), enclosed please find four (4) copies of the documents prepared for Sprint in anticipation of the filing of an "Application for Certificate of Environmental Compatibility and Public Need" for the construction, maintenance and operation of a facility at the above-referenced location to provide digital service in the Redding area.

The information contained herein has been prepared in concert with the requirements of the revised Connecticut Siting Council Application Guide for Community Antenna Television and Telecommunications Facilities. Included in this filing are technical reports concerning the public need, the site selection process, and the environmental effects of the proposed facility.

Please recognize that after an extensive search, we have identified this property, outlined in the attached documents as the potential candidate for the location of a wireless telecommunications facility. We are seeking your input in determining the best location for this facility.



Natalie T. Ketcham, First Selectman

December 13, 2006

RE: Pre-Application Filing Sprint ("Sprint") Proposed Cellular Communications Facility For
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As you are aware, the municipality may conduct public hearings and meetings as it deems necessary for it to advise Sprint of its recommendations concerning the proposed facility. We are available, at your discretion, to meet with you and other parties to review the proposed location and application. Please note that the municipality must issue its recommendations to us within sixty (60) days of the consultation and receipt of this filing.

If you have any questions, please do not hesitate to contact the undersigned directly.

Very truly yours,

BROWN RUDNICK BERLACK ISRAELS LLP

By:



Thomas J. Regan

TJR/bh
Enclosures

cc/encls: Tom Gormley, Zoning Enforcement Officer

40237827 v1 - REGANTJ - 080563/3232



Connecticut Commission on Culture & Tourism

November 9, 2006

Historic Preservation
& Museum Division

59 South Prospect Street
Hartford, Connecticut
06106

(v) 860 566.3005
(f) 860 566.5078

Ms. Nicole Dentamaro
Vanasse Hangen Brustlin Inc.
54 Tuttle Place
Middletown, CT 06457-1847

Subject: Telecommunications Facilities
186 Black Rock Turnpike
Redding, CT
Sprint PCS #CT54XC768

Dear Ms. Dentamaro:

The State Historic Preservation Office has reviewed the above-named project. This office expects that the proposed undertaking will have no effect on historic, architectural, or archaeological resources listed on or eligible for the National Register of Historic Places.

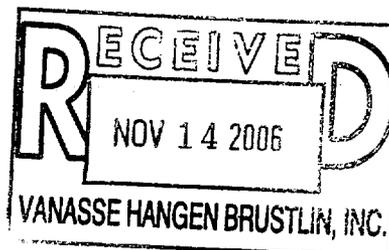
This office appreciates the opportunity to have reviewed and commented upon the proposed undertaking.

This comment is provided in accordance with the National Historic Preservation Act and the Connecticut Environmental Policy Act.

For further information please contact Dr. David A. Poirier, Staff Archaeologist.

Sincerely,

J. Paul Loether
Division Director and Deputy
State Historic Preservation Officer





STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION



August 17, 2006

Nicole Dentamaro
VHB, Inc.
54 Tuttle Place
Middletown, CT 06457

Re: Proposed Wireless
Telecommunications, Facility
Replacement, Redding Fire Department,
186 Black Rock Tpke, Redding

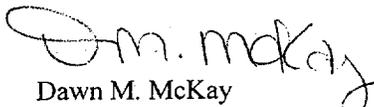
Dear Ms. Dentamaro:

I have reviewed Natural Diversity Data Base maps and files regarding the area delineated on the map you provided for the proposed wireless telecommunications facility replacement at 186 Black Rock Turnpike, Redding, Connecticut. According to our information there are no known extant populations of Federal or State Endangered, Threatened or Special Concern Species that occur at the site in question.

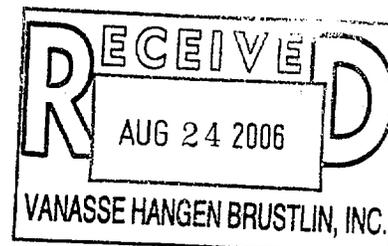
Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Natural Resources Center's Geological and Natural History Survey and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substitutes for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

Please contact me if you have further questions at 424-3592. Thank you for consulting the Natural Diversity Data Base. Also be advised that this is a preliminary review and not a final determination. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEP for the proposed site.

Sincerely,


Dawn M. McKay
Biologist/Environmental Analyst

DMM/blm



RF Engineering Information for the Proposed Black Rock Turnpike Site

Introduction – Sprint PCS provides a digital communications service using PCS technology in the 1900 MHz frequency band as allocated by the FCC. This frequency is over twice the operating frequency of traditional cellular service that is in the 800 MHz band. The higher 1900 MHz signals degrade quickly in hilly areas and areas of dense foliage. Sprint PCS currently lacks coverage in critical areas of Redding, particularly along Rt. 58. To fill these coverage gaps Sprint PCS is proposing replacing the existing lattice tower with a monopole. The height required by Sprint is 118.5 feet on the proposed 120 foot tower. The following table details the site specifications:

Site Name:	Site Address:	Latitude:	Longitude:	Elevation:	Antenna Centerline:
Black Rock Turnpike	186 Black Rock Turnpike, Redding, CT, 06896	41° 18' 35.67"	-73° 20' 51.33"	643 Feet AMSL	118.5 Feet

Site Need – The purpose of the proposed location is to provide acceptable service to the Redding area. Primarily due to the terrain characteristics in the surrounding region, Sprint PCS is currently unable to provide acceptable service in this area. Attachment A shows coverage obtained from Sprint PCS's existing and planned sites. As can be seen from this attachment, a significant gap in service exists on and around Rt. 58 in Redding.

Attachment B shows the coverage obtained with the addition of the proposed candidate. As can be seen from this attachment, the proposed site significantly improves coverage in Redding.

The coverage plots show coverage for the 1900 MHz frequency range and were produced using computer modeling based on drive tests of the area. The table below details site specific information used to generate the coverage plots. Some sites listed in the table below are outside the plot view but are included for completeness of information.

Site Information Used in Coverage Plots

Site	Sector	Latitude	Longitude	Antenna Height	Antenna Type	Antenna Azimuth
CT03XC340	A	-73.2636	41.3556	150	DB980H90E-M	330
CT03XC340	B	-73.2636	41.3556	150	DB980H90E-M	90
CT03XC340	C	-73.2636	41.3556	150	DB980H90E-M	190
CT03XC358	A	-73.4386	41.287	157	DB980F90E-M	300
CT03XC358	B	-73.4386	41.287	157	DB980F90E-M	90
CT03XC358	C	-73.4386	41.287	157	DB980F90E-M	210
CT03XC361	A	-73.3144	41.3161	177	DB980H90E-M	300
CT03XC361	B	-73.3144	41.3161	177	DB980H90E-M	90
CT03XC361	C	-73.3144	41.3161	177	DB980H90E-M	210
CT03XC362	A	-73.2828	41.2906	158	DB980F90E-M	340
CT03XC362	B	-73.2828	41.2906	158	DB980F90E-M	100
CT03XC362	C	-73.2828	41.2906	158	DB980F90E-M	220
CT03XC365	A	-73.2658	41.3256	190	DB980H90E-M	0
CT03XC365	B	-73.2658	41.3256	190	DB980H90E-M	160
CT03XC365	C	-73.2658	41.3256	190	DB980H65E-M	260
CT03XC369	A	-73.4241	41.2384	145	DB980H90E-M	330
CT03XC369	B	-73.4241	41.2384	145	DB980H90E-M	90
CT03XC369	C	-73.4241	41.2384	145	DB980H90E-M	210
CT23XC384	A	-73.4731	41.3139	79.5	FR65-17-00DP	0
CT23XC384	B	-73.4731	41.3139	79.5	FR65-17-00DP	120
CT23XC384	C	-73.4731	41.3139	79.5	FR65-17-00DP	240
CT33XC521	A	-73.4245	41.3606	157	DB980H65T2E-M	350
CT33XC521	B	-73.4245	41.3606	157	DB980H90E-M	80
CT33XC521	C	-73.4245	41.3606	157	DB980H65E-M	170
CT33XC522	A	-73.3634	41.2444	174	DB950F85E-M	340
CT33XC522	B	-73.3634	41.2444	174	DB950F85E-M	100
CT33XC522	C	-73.3634	41.2444	174	DB950F85E-M	220
CT33XC523	A	-73.47	41.3361	90	DB980F65E-M	350
CT33XC523	B	-73.47	41.3361	90	DB980F65E-M	110
CT33XC523	C	-73.47	41.3361	90	DB980F65E-M	230
CT54XC749	A	-73.3953	41.3619	115	DB950F85T4E-M	355
CT54XC749	B	-73.3953	41.3619	115	DB950F85T4E-M	110
CT54XC749	C	-73.3953	41.3619	115	DB950F85T4E-M	230
CT54XC768	A	-73.3476	41.3099	118.5	DB950F65E-M	310
CT54XC768	B	-73.3476	41.3099	118.5	DB950F65E-M	70
CT54XC768	C	-73.3476	41.3099	118.5	DB950F65T2E-M	190

Site Search and Selection Process - Sprint PCS was unable to locate an existing structure capable of providing the required coverage. As a result a new tower is needed to provide the required coverage. The locations submitted are shown in Attachment C. Not all sites submitted had the potential to achieve the coverage objectives. Below is a table of the candidate sites shown in Attachment C with an explanation of why the candidate can or cannot be used.

Alternative's Investigated

Candidate Name (See attachment C for Locations)	Location	Evaluation
Fire Department	186 Black Rock Turnpike, Redding, CT 06896	Primary Candidate
First Church of Christ	Cross Hwy, Redding, CT, 06896	Does not provide adequate coverage along Rt. 58.
Flagpole	Black Rock Turnpike, Redding, CT 06896	Does not provide adequate coverage south of the site along Rt. 58.
Church Steeple	Black Rock Turnpike, Redding, CT 06896	Provides very little additional coverage to Rt. 58:

Transmitters, Antennas and Power Density - The base station equipment will be a Lucent PCS mini-cell or mod-cell. The primary RF components related to power density consist of RF amplifiers and antennas. The transmit frequency range will be 1950-1965 MHz. The maximum power generated by the RF amplifiers is 16 watts per carrier with a maximum of 11 carriers per sector. The final maximum power density is determined primarily by the height and type of antenna used. Calculations for maximum power density are shown below.

Power Density Analysis - The Personal Communications Services (PCS) transmitting systems to be used at the site operate in the range of frequencies subject to FCC Regulation. This is the PCS B-Band, and transmits at 1950-1965 MHz.

The Sprint PCS transmitting antennas will be located at an antenna centerline of 118.5 feet AGL. This site will consist of 3 sectors oriented approximately 120 degrees apart, with a maximum of 11 channels transmitting per sector. Therefore, as many as 33 Sprint PCS channels can be transmitted at this site.

Pursuant to Section 24.52(a) of the former FCC rules, PCS licensees were required to comply with the human exposure levels established by the American National Standards Institute (ANSI). The FCC radio frequency exposure guidelines require PCS operators to comply with the exposure criteria established by the National Council on Radiation Protection and Measurements (NCRP). The NCRP criteria are more restrictive than the ANSI/IEEE standard. Therefore, the following calculations are made relative to the NCRP criteria. Calculations have been made using conservative methods consistent with the FCC's OET Bulletin 65, and use 1.0 mW/cm^2 , which is the maximum permissible exposure as specified by NCRP for PCS carriers.

The following table shows the calculated power density and the percent of the Maximum Permissible Exposure (MPE) assuming the ERP is equal in all directions. In other words, no power-level adjustments were made due to the vertical pattern of the antennas, and the full 277.98 watts per channel was used for each location (which is a worst-case assumption). The highest power density is at the base of the tower, which is the closest accessible point to the antennas. For the proposed 120 ft. monopole located at 186 Black Rock Turnpike in Redding, CT the power density for the Sprint PCS antennas is $.0784 \text{ mW/cm}^2$ and the MPE is 7.84%, which is low compared to the NCRP standard.

These calculations show that we are well below the FCC-mandated limits in all locations around the monopole even with extremely conservative assumptions

CT54XC768 Redding CT

Worst Case Power Density Analysis of Sprint PCS Antennas @ Base of Tower. Assumes Max ERP & No Antenna Pattern Adjustment

Operating Frequency (MHz)	Number of Trans.	Effective Radiated Power (ERP) Per Transmitter (Watts)	Total ERP (Watts)	Antenna Height (Feet)	Distance From Base of Tower (Feet)	Calculated Power Density (mW/cm ²)	Maximum Permissible Exposure*	%MPE
1962.5	11	277.98	3057.78	118.5	0	0.0784	1	7.84%
1962.5	11	277.98	3057.78	118.5	50	0.0665	1	6.65%
1962.5	11	277.98	3057.78	118.5	100	0.0458	1	4.58%
1962.5	11	277.98	3057.78	118.5	150	0.0301	1	3.01%
1962.5	11	277.98	3057.78	118.5	200	0.0204	1	2.04%
1962.5	11	277.98	3057.78	118.5	250	0.0144	1	1.44%
1962.5	11	277.98	3057.78	118.5	300	0.0106	1	1.06%
1962.5	11	277.98	3057.78	118.5	350	0.0081	1	0.81%
1962.5	11	277.98	3057.78	118.5	400	0.0063	1	0.63%
1962.5	11	277.98	3057.78	118.5	450	0.0051	1	0.51%
1962.5	11	277.98	3057.78	118.5	500	0.0042	1	0.42%
1962.5	11	277.98	3057.78	118.5	550	0.0035	1	0.35%
1962.5	11	277.98	3057.78	118.5	600	0.0029	1	0.29%
1962.5	11	277.98	3057.78	118.5	650	0.0025	1	0.25%
1962.5	11	277.98	3057.78	118.5	700	0.0022	1	0.22%
1962.5	11	277.98	3057.78	118.5	750	0.0019	1	0.19%
1962.5	11	277.98	3057.78	118.5	800	0.0017	1	0.17%
1962.5	11	277.98	3057.78	118.5	850	0.0015	1	0.15%
1962.5	11	277.98	3057.78	118.5	900	0.0013	1	0.13%
1962.5	11	277.98	3057.78	118.5	950	0.0012	1	0.12%
1962.5	11	277.98	3057.78	118.5	1000	0.0011	1	0.11%

*Requirements set forth in OET Bulletin 65. Based on NCRP Report No. 86 and ANSI/IEEE C95.1-1992

Forecast of Maximum Capability – Sprint PCS has implemented a digital CDMA network 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 98 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.

Cells, which are designed and equipped for a given capacity, will normally operate at much less than capacity during the growth of the system. Accordingly, Sprint PCS actually provides a much better grade of service while traffic in each cell increases to design loading conditions.

As Sprint PCS digital network evolves Sprint monitors the actual grade of service on a cell-by-cell basis. Factors affecting the grade of service are:

- Call attempts
- Call holding time
- Call distribution over time (average and peak)
- Call distribution over geography (Users in weaker coverage areas negatively affect capacity of the cell)

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

- Antenna changes
- Cell balancing through call processing parameters and power adjustments
- 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.

Alternatives – Sprint PCS provides a digital communications service using PCS technology in the 1900 MHz frequency band as allocated by the FCC. This frequency is over twice the operating frequency of traditional cellular service that is in the 800 MHz band. The higher 1900 MHz signals degrade quickly in hilly areas and areas of dense foliage.

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

Common alternatives to monopole technology relevant to CDMA technology include repeaters and microcells. A repeater is a low power system, which receives a signal from an existing site and then amplifies this signal for rebroadcasting in the target area. A microcell is a low power system resembling a small version of a cell site.

These alternative technologies are useful for filling small gaps in coverage or providing service in buildings, but are severely limited by coverage and capacity. The current gap in service is significant; therefore these alternatives are not realistic.

Should Sprint PCS require additional or improved service in smaller target areas following install of the proposed monopole, Sprint PCS would consider these alternatives.

Due to the propagation characteristics of the 1900 MHz signals and the limitations of the alternative technologies there are no technical alternatives to the proposed tower.

Proposed Facility – Sprint proposes to install three panel antennas with a centerline of the antennas at a height of 105 feet. These panel antennas are 56 inches in the vertical direction and 8 inches wide. The maximum ERP is 277.98 watts per channel or 3057.78 watts per sector assuming eleven channels per sector.

Summary – The terrain in Redding limits both the coverage from existing sites and locations that will work to fill the coverage gaps in Redding. The proposed 120 foot monopole is needed to provide coverage where required. Without a site in this area a significant gap in service will exist. As usage on the Sprint PCS network increases this gap in our network will also increase.

Attachment C - Two Mile Scrub

