

September 14, 2012  
File: 147.190655

Mr. John Ewasutyn  
Chairman, Town of Newburgh Planning Board  
Old Town Hall  
308 Gardnertown Road  
Newburgh, New York 12550

Re: Sprint Nextel Corp. Permit Application for Upgrade – Case No. 2012-17  
39 North Plank Road (Mid Valley Mall Water Tower)  
Town of Newburgh, New York  
Technical Review Report

Dear Mr. Ewasutyn:

This letter report was prepared to summarize HDR's technical review of an application prepared by Snyder & Snyder LLP, an agent of Sprint Nextel Corp. (Sprint), to modify its existing wireless telecommunication facility at the above-referenced location (the site) in the Town of Newburgh, New York. The existing Sprint facility is located atop an existing 132 ft out-of-service water tower in a B (Business) zoning district. The existing water tower is located on the east side of the Mid Valley Mall parking lot, between Routes 32 and 84.

This review includes a general assessment of Sprint's application by HDR and consists of an analysis of the application materials submitted on August 15, 2012 and September 11, 2012. The applicant is seeking Planning Board approval and a Building Permit for the proposed modifications.

This letter report is written for the review and comment of the Town of Newburgh Planning Board. Aside from the Building Permit, the applicant has not identified the need for variances or other approvals. A summary of findings and recommendations is included at the end of this report.

## 1. Application Review

Sprint is proposing modifications to its existing WTF as follows:

1. Replace four of its existing panel antennas with four new panel antennas. The dimensions of the new panel antennas are 72" x 11.8" x 7". These dimensions are comparable with the existing antenna dimensions.
2. Replace antenna mounts.
3. Install radiohead units (8 total; 2 per proposed panel antenna location), to enhance operations of Sprint's facility and local services (including "LTE"). The maximum

dimensions of the radioheads are 19.4" x 10.7" x 12.9". The units will be mounted behind or below each of the 4 proposed panel antennas, on the new antenna mounts.

4. Install one 2 ft diameter microwave dish in Sector 1 (east side), on an existing antenna mast.
5. Replace cables on the water tower and the cable bridge. The net number of cables needed for Sprint will be reduced from current conditions.
6. Install one GPS unit on the existing cable bridge within the dedicated ground-based equipment compound.
7. Retrofit one equipment cabinet within the ground-based equipment compound.
8. Install one new battery cabinet and one junction box within the equipment compound.

Based on a review of the original application materials, the following items were requested for clarification purposes:

- Completed application form for subdivision/site plan review.
- Applicant's FCC license (copy).
- Structural Certification letter, attesting that proposed upgrade can be adequately supported by the existing structures. Letter should be prepared by a New York State licensed engineer.
- Brief narrative on Sprint's need for upgrade.
- Confirmation of new antennas (type, RX/TX frequency, and antenna power levels), for new panel antennas and small dish. Also provide a description of the RHH units and their function.
- Short EAF.

Upon review of original and supplemental applicant submittals, it was confirmed that the height of the water tower and the size of the dedicated equipment compound will not change. The proposed panel antennas – along with the proposed 2 ft diameter dish antenna – will be situated at a centerline height of 138 ft above grade (which is consistent with existing Sprint antennas). Antennas will be mounted on an existing steel frame that currently supports Sprint equipment. There will be a net increase in some equipment (i.e., the microwave dish antenna, radioheads, battery cabinet, and J-box), but no increase in the number of Sprint panel antennas or coaxial cables.

A radio frequency (RF) emissions report was not provided for the proposed upgrade. However, based on a review of the antenna specification and transmit powers by HDR, it is anticipated that ground-based RF emissions will be below (and in compliance with) the applicable maximum permissible exposure (MPE) level for the general public in all areas in the site vicinity.

## 2. Additional Application Issues and Considerations

### *Aesthetics*

Based on a review of the upgrade application materials, the overall height of the existing water tower is not proposed to be increased as part of this application. No tower lighting is required or proposed, and there will not be any significant alteration to the existing water tower configuration. Cables connecting ground-based equipment and the proposed antennas will be routed from the ground-based equipment along the existing cable bridge (at grade), and then up water tower support leg and over the tank surface. The color of the proposed antennas and cables was not provided. No modification to the parking area, fencing, ground-based lighting, or landscaping is proposed.

The proposed equipment (including antennas, small dish antenna, radiohead units, and ground-based equipment) does not appear to present significant visual impacts as compared with the existing facility's conditions.

### *Structural*

A structural certification by the Applicant's NYS Professional Engineer was provided in the supplemental materials, confirming that the existing water tank can accommodate the proposed upgrade. The Applicant's engineer maintains full responsibility for the accuracy and adequacy of all aspects of the upgrade design and operation.

Structural summary calculations were also provided for the proposed equipment, and considered wind and structural loads. The analysis appeared to utilize the current TIA 222-G guidelines. The structural analysis appears to assume a total of twelve (12) Sprint antennas at the support frame on top of the water tower structure. However, it is recommended that the structural engineer confirm that the water tower can structurally support the loadings from all existing and approved wireless carrier equipment (e.g., AT&T, T-Mobile, Verizon) – in addition to the proposed Sprint upgrade. An updated certification letter from the Applicant's engineer would be adequate for the project, and may be submitted as a condition of approval.

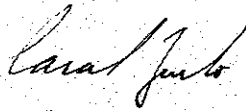
## 3. Recommendations

The following recommendations were identified based on HDR's technical review of the upgrade application. If the Sprint application is approved, the following should be considered as conditions of approval and conducted prior to or during equipment installation and/or operation.

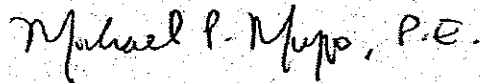
- Security fencing around the ground-based equipment and FCC warning signage should be routinely inspected and maintained at the site.
- The proposed panel antennas, 2-ft diameter microwave dish antenna, radiohead units, mounting structures, and co-axial cables shall be color matched to the existing water tower colors. A matte finish is recommended.
- If the Mid Valley Mall water tower is to be put back in service for water storage in the future, a condition survey of the tower and its supports is recommended to determine that there has been no deterioration of its structural capacity.
- Any planned water tower maintenance or inspection activities by persons not trained in RF exposures should be coordinated appropriately between the owner/operator of the tower and the applicant to eliminate the potential for RF exposures at levels above the general public MPE.
- It is recommended that the structural engineer confirm that the water tower can structurally support the loadings from the proposed Sprint upgrade along with all existing and approved wireless carrier equipment (AT&T, T-Mobile, Verizon) at the site. An updated certification letter from the Applicant's engineer would be adequate for the project, and may be submitted as a condition of approval.
- Operations should be maintained in accordance with the Town's Wireless Ordinance and all other relevant Town codes. Any proposed increase in Sprint's number of antennas, antenna sizes, or number/sizes of ground-based equipment cabinets shall be approved by the Town prior to any modifications.

Please feel free to contact us should you have any questions on this report.

Sincerely,  
Henningson, Durham & Richardson  
Architecture and Engineering, P.C.  
in association with HDR Engineering Inc.



Carol Zurlo  
Project Scientist



Michael P. Musso, P.E.  
Senior Project Engineer

cc: Snyder & Snyder, LLP