

Memorandum

To: Anne Hersch, City of Albany
From: Christy O'Berry
Reviewed by: Jonathan L. Kramer
Date: January 23, 2012
RE: PAI I-052 (Sprint/Nextel)
520 Cleveland Avenue

At the City's direction, I have reviewed the Sprint/Nextel ("Sprint") application to modify an existing wireless telecommunications facility on an existing monopole located at 520 Cleveland Avenue, commercial mixed use area.

Current Project

The existing wireless telecommunications facility consists of 4 antennas, each approximately 4' in height, and a GPS antenna mounted on the monopole. The existing panel antennas are mounted to the monopole in 2 sectors of 2 antennas per sector. The existing GPS antenna is mounted to the monopole at the height of the panel antennas.

There is no camouflaging for the existing monopole, nor is any proposed for the monopole in connection with this project.

Sprint proposes to modify the existing site by removing the existing panel and GPS antennas and installing 4 new panel antennas, each approximately 6' in height, to support its new Long Term Evolution ("LTE") service on the 1,600 MHz and 1,900 MHz bands of service as well as the existing 800 MHz band of service.

Sprint has licenses to operate in the 800 MHz (Nextel) and 1,900 MHz (Sprint PCS) bands of service. Sprint does not have a license to operate on the 1,600 MHz band of service. In this band, Sprint will resell the use of its facilities in this and other bands to third parties under a project it calls "Network Vision."

All proposed new antennas, which are capable of operating on all of its bands of interest, are to be center mounted at 43' above ground level ("AGL"). The proposed new antennas are shown in 2 sectors of 2 antennas per sector and will be oriented towards 145° TN and 340° TN.

Sprint also proposes to install 6 new remote radio units ("RRUs") on the existing monopole at the height of the new panel antennas. RRUs are transmitters/receivers that are located just behind the antennas, where they perform



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more efficiently than equivalent ground-mounted equipment because of the elimination of the coaxial cables from antenna to ground.

The existing wireless telecommunications facility is located within a commercial mixed use zone. The maximum building height within this zone is 45'. The City of Albany Municipal Code Section 20.20.100 Wireless Communications Facilities subsection E 2(h) states that "[t]he height of a wireless communication facility (building or ground mounted) shall not exceed ten (10) feet above the basic maximum building height prescribed by the regulations for the district in which the site is located," which is 55' AGL for this zone. Therefore, the height of the existing and proposed antennas at 43' AGL is within the maximum permissible height for this zone.

Sprint proposes to modify the base telecommunications station ("BTS") enclosure located at the base of the monopole by removing 2 existing equipment cabinets and installing 2 new equipment cabinets. Sprint also proposes to mount a new GPS antenna to one of the proposed equipment cabinets inside the BTS enclosure. The BTS equipment will be screened from view by an existing 6' tall chain link fence. The GPS antenna, however, will be visible above the chain link fence.

The new equipment will be connected to the antennas by new fiber optic cable that will run through new conduit placed in an existing above grade cable tray inside the BTS enclosure. The conduits will run up the exterior of the monopole through the existing cable tray and connect to the panel antennas.

Project Purpose

Sprint discloses that the dominant purpose of this project is to add new LTE network coverage in the 1,600 and 1,900 MHz bands of service. In support of this statement, Sprint has submitted existing LTE signal coverage maps for both bands of service (Figures 1 and 2, below).

The coverage maps provided by Sprint do not contain objective signal level data for the LTE band of service in the 1,600 and 1,900MHz bands, thus the maps are not reliable as to that element, but they do suggest, but do not confirm that there is a lack of service in the LTE band of service in the 1,600 and 1,900 bands in the area surrounding the site.

Sprint did not provide existing or proposed signal coverage maps for its 800 MHz band of service, used for Nextel services. Thus, I offer no opinion for that band of service.

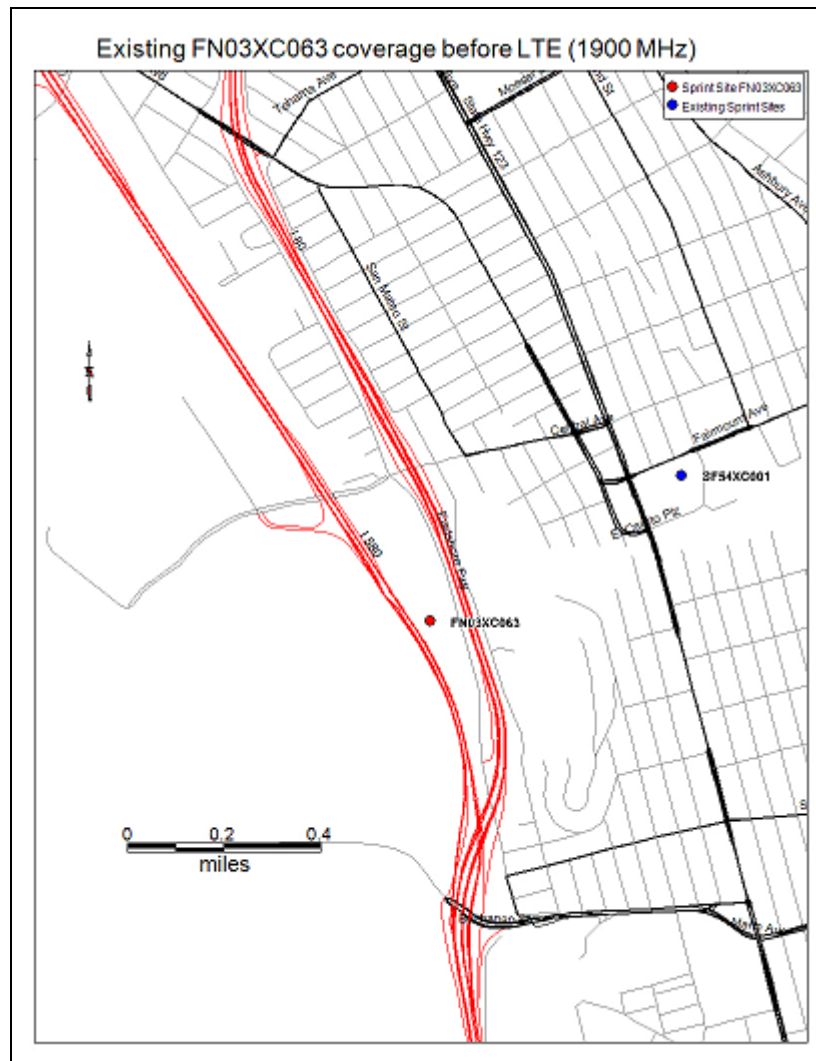


Figure 2: Existing Sprint coverage in the LTE 1,900 MHz band of service as asserted by Sprint. (Source: Sprint/Nextel).

Figures 3 and 4, below represent the proposed signal level in the 1,600 MHz and 1,900 MHz bands of service for the area surrounding the site.

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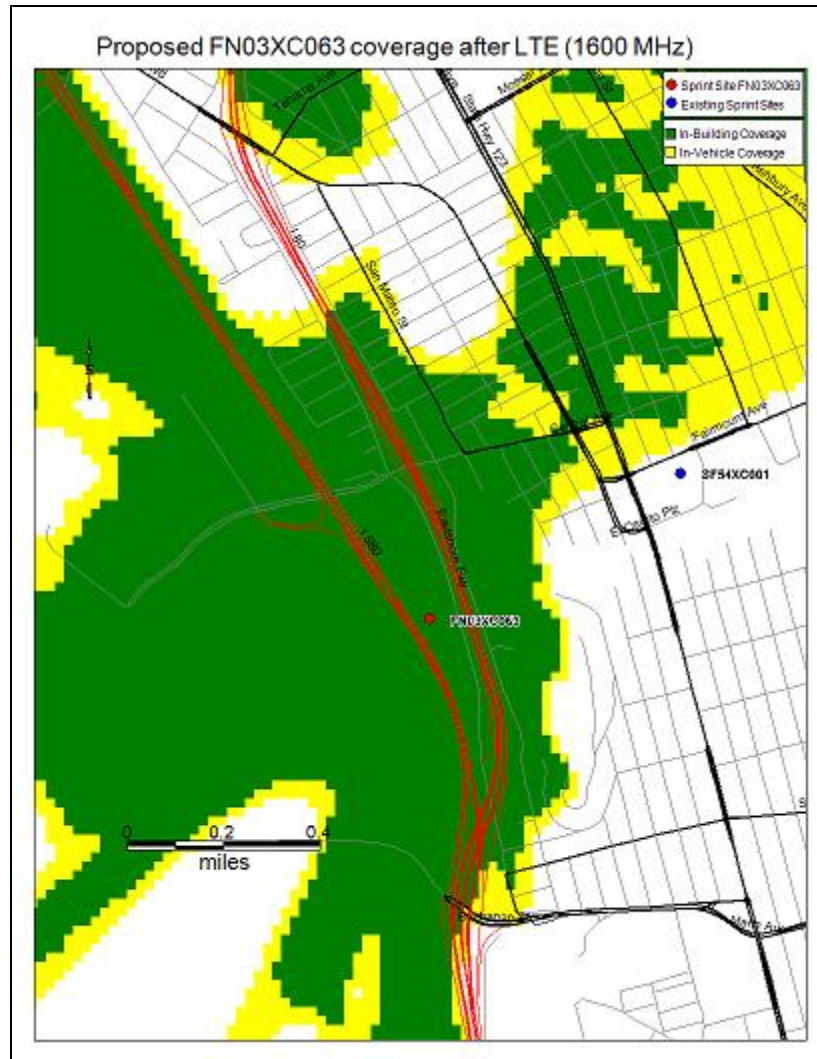


Figure 3: Proposed Sprint coverage in the LTE 1,600 MHz band of service with the proposed site operational, as asserted by Sprint. (Source: Sprint/Nextel).

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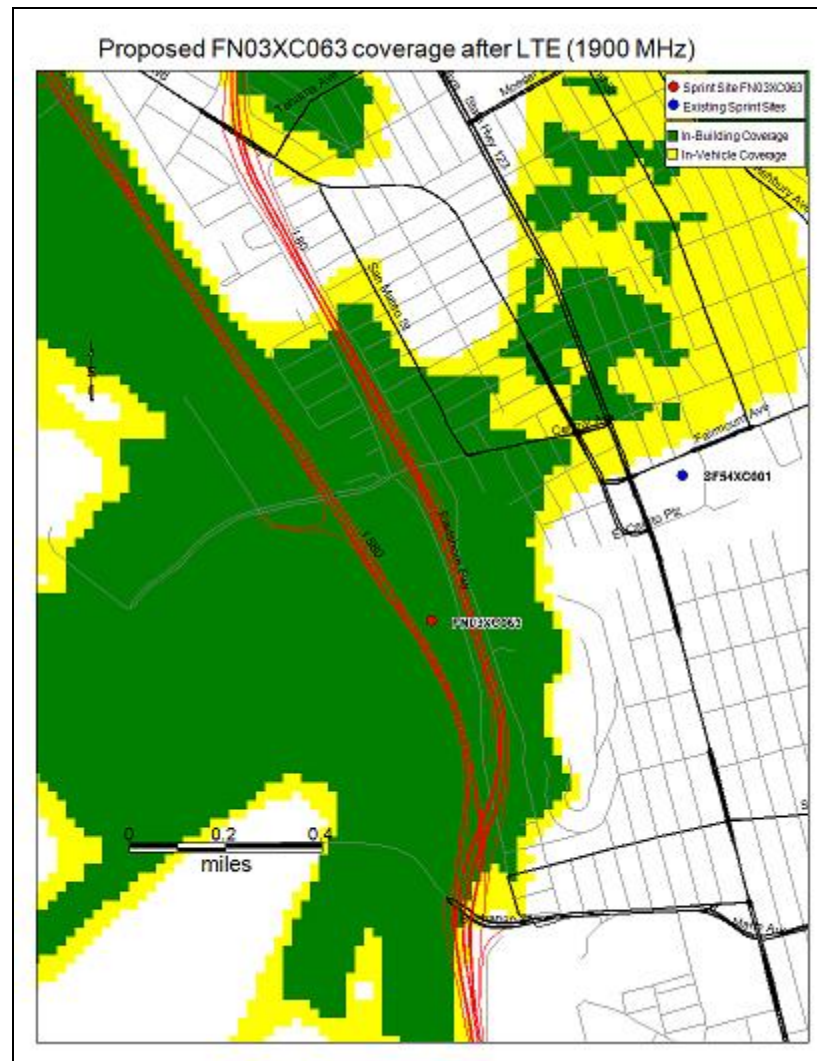


Figure 4: Proposed Sprint coverage in the LTE 1,900 MHz band of service with the proposed site operational, as asserted by Sprint. (Source: Sprint/Nextel).

Figures 3 and 4 indicate that the proposed site will provide “in-building” signal coverage (as Sprint defines that term) to the area surrounding the proposed site.

Sprint has not provided any objective signal data for the coverage maps nor has Sprint provided the measurement used to define “in-building” service in units of dBm. Therefore, I am not able to comment on the level of signal coverage provided by the proposed site.

I recommend that the City, as a condition of permit approval, require that Sprint disclose the signal coverage levels in units of dBm that are represented in the proposed and existing coverage maps.

Since Sprint has just begun to deploy its LTE band of service, it is my opinion that there is a significant gap in Sprint's LTE signal coverage in the 1,600 and 1,900 MHz bands only. This opinion is only for the 1,600 and 1,900 MHz LTE band signal coverage; I offer no opinion regarding Sprint signal coverage for any other band.

Physical Design Considerations

The existing site, constructed on an existing monopole, is completely unshielded. Sprint proposes no new shielding to reduce the visual impact this site presently has and will have on the surrounding area.

Sprint's proposed 6' antennas and RRUs will have an impact on the aesthetics of the monopole. However, based on the aesthetics of the current site along with the monopole's location in an industrial area bordered on the west by Interstate 580 and on the east by Interstate 80, I do not recommend any new camouflaging for this site.

However, I do recommend that the City require Sprint to install antennas that have cable connectors in the center rear of the antenna to mitigate additional visual impact from the cabling. Additionally, I recommend that the City require Sprint not to vary from its proposed mounting location for the RRUs behind the antennas, and that the height of the RRUs on the mounting brackets be selected to minimize the visibility of the coaxial cable jumpers connecting the RRUs to the center/rear antenna connectors. This location and configuration reduces the visibility of these devices and the associated cables.

The proposed modifications to this site will result in the use of fiber optic cable, which is smaller than the existing coaxial cable. As a result, I recommend that the City require Sprint to remove all existing coaxial cable that runs exterior to the monopole and, to the extent feasible, require Sprint to run all new and remaining cabling on the interior of the monopole. This will reduce the visual impact that the site presently has on the surrounding area. If running the cabling internal to the monopole is infeasible, Sprint must demonstrate this infeasibility to the City's satisfaction.

The GPS antenna as proposed in the project plans may be visible above the BTS enclosure. Although a GPS antenna is not a requirement of FCC regulations, a GPS antenna is a necessary technical element for proper operation of the wireless telecommunications facility to permit network synchronization. However, a visible GPS antenna is both technically unnecessary and visually unappealing. The

GPS antenna at this site can and should be mounted in such a manner that it does not protrude above the BTS enclosure fence.

To ensure that no portion of the BTS equipment or GPS is visible to the public, I recommend that the City add as a condition of approval the following:

- I. No portion of the project shall protrude above the height BTS enclosure, including without limitation the equipment cabinets; the mounting platforms, rails and racks; the GPS antenna; cables; work lights; and all other elements of the project.

RF Safety Evaluation

The FCC completely occupies the field as to setting RF safety standards in the United States. The City is not permitted to set its own standards regardless of whether higher, lower, or even the same as the FCC's standards. The Commission does, however, permit the City to determine whether a proposed wireless project meets the required FCC 47 CFR §1.1307 *et seq.* (the "FCC rules") and FCC Office of Engineering and Technology Bulletin 65 ("OET 65") RF safety requirements.

Under the FCC rules, certain types of wireless projects are deemed to be "categorically excluded" thus not subject to further RF evaluation under the rules due to identified factors including whether the antenna supporting structure is not a building or shared to perform some other function and the lowest portion of the transmitting antenna is at least 10 meters above ground.

The proposed project does qualify for categorical exclusion under the FCC rules because the support structure is exclusively for use as an antenna support and the lowest portion of the transmitting antennas are higher than 10 meters above ground.

Sprint has submitted a third party RF compliance report by EBI Consulting dated August 31, 2011 (the "EBI Report"). The EBI report is sufficient to perform an independent analysis of the proposed emissions. Based on the frequency and proposed power to be emitted from Sprint's transmitting antennas, a controlled access zone of just over 27.1 feet will extend outward from each transmitting antenna.

The existence of a controlled zone does not mean that the project violates the FCC rules; rather, it merely requires that the wireless carrier take affirmative

steps to restrict access to the controlled zones. In this case, the controlled zones will be in inaccessible airspace at the same level as the antennas mounted to the face of the building.

To comply with the existing FCC OET Bulletin 65 rules regarding RF safety, I recommend the City condition the project as follows:

1. The BTS enclosure access gate is to remain locked at all times, except during active maintenance by Sprint personnel; and
2. Sprint shall place and maintain a permanent RF Notice sign in English and Spanish on the access gate to the BTS enclosure. The sign must be a minimum of 8" wide by 12" high, compliant with FCC OET Bulletin 65 or ANSI C95.2 for color, symbol, and content conventions. The sign shall at all times provide a working local or toll-free telephone number to its network operations center, and such telephone number shall be able to reach a live person who can exert transmitter power-down control over this site as required by the FCC. The location of the sign must ensure that anyone approaching the BTS enclosure access gate may clearly see the sign before entering the BTS enclosure.

If Sprint agrees to the conditions just stated, there will be no RF emissions basis to deny or further condition the project as to RF safety matters.

Concluding Comments

Subject to the conditions in this memorandum, I recommend that this project move forward to the next planning stage.

/cob