Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Improving Spectrum Efficiency Through Flexible Channel Spacing and Bandwidth Utilization for Economic Area-based 800 MHz Specialized Mobile Radio Licenses	)	WT Docket No. 12-64
	)	
Request for Declaratory Ruling that the Commission's Rules Authorize Greater than 25 kHz Bandwidth Operations in the 817-824/862-869 MHz Band	)	WT Docket No. 11-110

JOINT COMMENTS
OF
PUBLIC SAFETY LICENSEES

Orleans County, New York ("Orleans"), Genesee County, New York ("Genesee"), Oakland County, Michigan ("Oakland"), Orange County, Florida ("Orange"), Franklin County, Ohio ("Franklin"), Mobile County, Alabama ("Mobile"), the City and County of Denver, Colorado ("Denver"), the City and County of Durham, North Carolina ("Durham") and the City of Apopka, Florida ("Apopka")(jointly the "Public Safety Licensees") through counsel and pursuant to Section 1.415 of the Commission's Rules, 47 C.F.R. §1.415, hereby respectfully submit their Comments in the above-captioned rule-making proceeding.[1]

I. BACKGROUND

The Public Safety Licensees represent a wide geographic swath of 800 MHz Public Safety entities. Included in the group are licensees in the Southeast portion of the United States, locations where 800 MHz rebanding has been completed, and areas where 800 MHz

[1] *Public* Notice, 77 FR 18991 (released March 29, 2012).

rebanding has not yet begun. The Public Safety licensees hold 800 MHz NPSPAC authorizations, 800 MHz interleaved licenses, and licenses which are less than .5 MHz from Nextel's operations post-rebanding. As entities which are those that are in the "protected class" of licensees, the Public Safety Licensees have a keen interest in the outcome of this proceeding.

Oakland County operates an 800 MHz Harris OpenSky trunked radio system for its public safety communications. OpenSky is a TDMA technology, offering the Oakland integrated voice and data service and up to four (4) talkpaths per channel. The system is networked and is deployed at 37 sites incorporating 44 Public Safety 800 MHz channels and is designed to provide coverage into buildings. Also included in the County's network architecture are several 700 MHz OpenSky cell sites to fill in coverage between 800 MHz high sites. Lastly, the County employs vehicular repeaters operating on four (4) frequencies separate from the trunked infrastructure to cover those areas needing coverage enhancement, or for the creation of ad-hoc networks to accommodate field tactical situations. The County's network serves 100 public safety agencies located in Oakland (including fire, police and public safety departments and hospitals) and over 5,000 subscriber units. Oakland is presently working with the 800 MHz Transition Administrator and various local public safety entities to obtain sufficient channels for its 800 MHz reband to enable Oakland to operate closer than 1 MHz from Nextel operations.

Genesee County operates a Motorola 800 MHz, 3-site simulcast trunked radio network, licensed for seven frequency pairs in the 851-854 MHz band, plus two conventional channels in the same band. The system was constructed in 1992, and then upgraded in 1999. Genesee presently has on file with the Commission a Petition for Reconsideration of the

Memorandum Opinion and Order ("*MO&O*") issued by the Deputy Chief, Policy and Licensing Division, Public Safety and Homeland Security Bureau, on September 9, 2011.[2] In that decision, the Division found that the provision of two 800 MHz channels within 1 MHz of Nextel's operations constituted "comparable facilities."[3]

Orleans County operates an E.F. Johnson Multi-Net 800 MHz trunked radio system. The trunked system consists of one site location with seven radio channels. However, because of Canadian "overpower" issues, post-rebanding Orleans will be required to significantly reduce its ERP, and therefore will need to add transmitter sites to maintain coverage.

The City and County of Denver operates two separate 800 MHz voice radio systems: (1) a seven site Harris EDACS simulcast system consisting of twenty (20) RF channels which serves Public Safety users; and (2) a single site, auxiliary receive Harris EDACS system consisting of fifteen (15) RF channels which serves Public Utilities users. Denver also utilizes a six-site 800 MHz Data Radio network to provide wireless data for Denver Police users. Denver provided significant information to the FCC in its consideration of 800 MHz rebanding, demonstrating that the so-called "technical toolbox" would be insufficient to cure interference being experienced in the band.[4]

Franklin County, Ohio operates a Motorola 800 MHz, 2-site simulcast trunked radio network licensed for 18 frequency pairs in both the interleaved and NPSPAC portions of the band. The system operates in cooperation with the City of Columbus, Ohio, which operates a

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2 *County of Genesee, New York and Sprint Nextel Corp.*, 26 FCC Rcd 12772 (PSHSB 2011).

3 Subsequently, the Commission and the Transition Administrator informally notified Genesee that Genesee would have to reduce its ERP on the rebanded channels from 88 watts to 20 watts on some channels and 40 watts on others.

4 *Improving Public Safety Communications in the 800 MHz Band*, 33 CR 457 (2004) at para. 118-121.

Motorola 800 MHz, 6-site simulcast trunked radio network licensed for 28 frequency pairs in both the interleaved and NPSPAC portions of the band, as well as three conventional channels in the interleaved portion of the band. The systems serve a metropolitan area of over 1.2 million people.

Orange County owns and operates a Motorola 800 MHz, 12-site simulcast trunked Public Safety Radio System. The system consists of twelve (12) simulcast locations and four (4) Astro Site Repeater (ASR) sites located at twelve (12) tower sites and four (4) roof top locations. The system was originally purchased in 1992, but expended and upgraded to a P25 system in 2012. The system maintains over 400 active talk groups supporting over fifty (50) agencies. There are multiple 911 Dispatch Centers, OUC, School Board, LYNX, UCF Police, Utilities and the Convention Center who operate Centracom II Gold Elite consoles on the system. Post rebanding, Orange has two P25 control channels in the upper portions of the 800 MHz interleaved band.

Mobile County, Alabama operates a Harris Wireless, Enhanced Digital Access and Control System (EDACS) 800 MHz, Wideband radio system. Today with 57 frequencies, the 7 multi-site, 3 site simulcast trunked radio system provides radio coverage for 5,700 users on 773 talk-groups. Daily average usage is about 120,000 push-to-talks. System usage has exceeded 275,000 push-to-talks in a single 24-hour period. Including the total cost of all user equipment and site equipment, total investment is 30 Million Dollars. Mobile County's frequencies include both NPSPAC and 800 MHz Interleaved spectrum. Mobile County has not yet begun its subscriber unit rebanding.

The City and County of Durham, North Carolina operate an 800 MHz four site, simulcast, 25 channel Motorola Smartzone trunked radio system. Four dispatch centers,

including the Durham PSAP, are connected to the system. All Public Safety and other government agencies and public school system in the City and County use the system. Because Durham's spectrum includes 800 MHz NPSPAC and Interleaved channels, it was impossible to relocate 800 MHz spectrum with sufficient spectral separation to enable continued operation of Durham's Vehicular Repeater System ("VRS").[5] As a result, the only alternative was to locate the VRS units on the uppermost part of the 800 MHz Guard Band, directly adjacent to Nextel's operation.[6] Therefore, Durham worked with the FCC and Nextel to obtain an authorization for these frequencies. Even this alternative will mean that Durham will be unable to utilize its uppermost interleaved frequencies when operating the VRS units, reducing system capacity and usefulness of the VRS units.

The City of Apopka, Florida operates a six-channel P25 Phase 2 800 MHz radio system. Public Safety users on the system are TDMA-based, while public works users are FDMA-based. The system consists entirely of "interleaved" Public Safety Pool channels. As an interleaved licensee at 800 MHz, Apopka's frequencies are located slightly more than 2 MHz from Sprint Nextel's post-rebanding operations.

II. COMMENTS

The Public Safety Licensees support the ability of licensees of contiguous spectrum to aggregate their channels to utilize spectrum efficient technologies regardless of where that spectrum might be located in the band. For example, in the UHF and VHF bands, the Commission has provided licensees with the opportunity to utilize wider than 12.5 kHz

[5] Current VRS technology requires at least 3 MHz of spectral separation between the frequencies being repeated, and the frequencies repeating the communication.

[6] Based upon the history of VRS units being used on 800 MHz General Category frequencies in certain portions of the country directly adjacent to Nextel's iDEN operations without interference, it was believed that this alternative reflected the best possibility of continued use of the VRS units.

bandwidth technologies where there is "equivalent efficiency." That same theory should be applied here, and Sprint Nextel Corporation (or any other entity) should have the ability to aggregate spectrum where the licensee has contiguous, exclusive channels.

However, the FCC must ensure that any such channel combining does not increase the potential for interference to other, adjacent licensees. This issue is extremely critical, because of the Policy and Licensing Division's decision that direct adjacency by Public Safety licensees to Sprint Nextel operations is compliant with the Commission's Rules in the Canadian Border Area.[7] This lack of any spectral separation negates many of the initial advantages of rebanding. This is particularly the case because the Commission found that cellular providers much farther away than 1 MHz from public safety entities were also contributing to interference.[8] Thus, spectral separation in creating a Guard Band was a key element of rebanding.

Despite the need for a Guard Band, the Commission elected not to create a Guard Band in the Canadian Border Area, or the Southeast portion of the country where SouthernLinc operates. The Commission is well aware of the land mobile interference problems experienced in Atlanta from broadcast television operations, which essentially rendered for first dozen or so 800 MHz land mobile channels in the area useless.[9] While the interference that resulted in the need to reband is from a different source, the Commission must make every effort to ensure that the multi-year effort to clear up interference has not been wasted in those areas where a Guard Band does not exist.

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7 *County of Genesee, New York and Sprint Nextel Corporation*, DA 11-1521, released September 9, 2011.

8 *Improving Public Safety Communications in the 800 MHz Band*, 33 CR 457 (2004) at para. 13. *See also*, Reply Comments of Sprint Nextel Corporation, WT Docket No. 11-110, submitted August 16, 2011 at footnote 24 ("Sprint Nextel Reply Comments").

9 *Broadcast Corp. of Georgia (WVEU-TV)*, 55 RR 2d 854 (1984).

At the time of creation of the Consensus Plan, it was understood that, while SouthernLinc also operated an iDEN system, it was not operating the system in the same low-site, multi-channel configuration as Nextel, and therefore represented a much decreased risk of interference to public safety, thus negating the need for a Guard Band in the area. This fact led to the proposal by the Consensus Parties to create a definition of a cellular-architecture system.[10] Now, eight years later, it can be presumed that SouthernLinc would also like to implement a CDMA technology system (since the Commission has proposed including portion of the band below 862 MHz in the Southeast), enhancing the potential for interference. Further, it is unknown to the Public Safety Licensees whether there will be a Guard Band in the Mexican Border Area. Therefore, it is critical that the Commission very carefully consider any technical changes vis-à-vis Sprint Nextel's technical operations before approving wholesale technology conversions.

Sprint Nextel claims that it has "… imposed extremely tight out-of-band emissions (OOBE) filtering requirements on base station vendors for frequencies below 861 MHz…"[11] However, Sprint Nextel does not provide any specifications regarding the filters. Thus, a third party analysis to determine the validity of Sprint Nextel's claims is impossible. Since the test submitted by Sprint Nextel is an Intermodulation Interference test, and not an OOBE test, it is impossible to determine whether there is any danger from OOBE at all.[12] After eight years of rebanding, and the recent Lightsquared interference issue, the Commission

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10 *Improving Public Safety Communications in the 800 MHz Band*, *supra* at paragraph 172.

11 Sprint Nextel Reply Comments at 8.

12 For example, is the CDMA OOBE low enough that when combined with a cavity filter it is lower than then iDEN when measured in the IF bandwidth of a public safety receiver? We cannot tell without filtering specifications.

should require a higher level of demonstration of non-interference in order to approve the Sprint Nextel request, relative to this particular technology.

The Public Safety Licensees appreciate the value of Section 90.673 of the Commission's Rules, which imposes strict liability on carriers causing interference to public safety.[13] Further, the Public Safety Licensees acknowledge the cooperation of Sprint Nextel in resolving such interference cases where interference has been found. However, reactive measures are no substitute for ensuring that interference is not caused in the first place. Indeed, in the rebanding docket, Denver discussed that it had spend over $130,000 to reactively mitigate interference.[14] Herein represents one of the problems with Sprint Nextel's interpretation of Section 90.673.

Specifically, it is Sprint Nextel's view that "strict responsibility" does not include responsibility for the public safety licensee's costs in resolving interference problems with carriers. Thus, while the interference may be resolved, the public safety licensee is stuck with the costs of finding, investigating, and participating in resolving interference. Such costs should not be dismissed as nominal, as they can be substantial in certain situations (as in Denver's case). Therefore, the Commission should not default to a policy that holds that if the Nextel interference tests were wrong (or did not consider certain issues), Section 90.673 can be relied on to provide proper corrective measures. Rather, the Commission should proactively ensure that interference will not occur in the first place.

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[13] In fact, it was Denver's insistence that the Consensus Parties include a "what if interference still exists after rebanding rule" in the original rebanding proposal that led to the creation of Sections 90.672 and 90.673.

[14] *Improving Public Safety Communications in the 800 MHz Band, supra* at footnote 347.

III. CONCLUSION

On this basis, the Public Safety Licensees support a Commission policy that permits licensees of exclusive, contiguous Part 90 channels to combine their frequency allocations and utilize equipment which spans all or part of the combined bandwidth. However, for Part 90 spectrum where frequency coordination is not required, the Commission should require licensees desiring such operation to demonstrate to the Commission that interference will not be caused to neighboring licensees.

WHEREFORE, the premises considered, it is respectfully requested that the Commission act in accordance with the views expressed herein.

Respectfully submitted,

Oakland County, Michigan
Orleans County, New York
Genesee County, New York
Franklin County, Ohio
Orange County, Florida
Mobile County, Alabama
City and County of Denver, Colorado
City and County of Durham, North Carolina
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