thereof.

136. We are less sanguine about the recommendation that a response to an interference complaint could be delayed for up to two days.[375] An unresolved incident of unacceptable interference impairs the ability of the affected public safety or CII licensee to respond to an emergency, large or small. Given the ease of communicating interference complaints electronically, and the fact that many, if not most, ESMR and cellular telephone licensees have technical staff available or on call on an around-the-clock basis in the normal course of business, we believe that a response must come in a matter of hours, not days. We thus conclude that it is not unduly burdensome to require a response to complaints from public safety or CII licensees with all possible speed, and under no circumstances, in more than twenty-four hours. In the case of other non-cellular 800 MHz licensees, (*i.e.*, B/ILT and non-cellular SMR licensees), the maximum response time shall be forty-eight hours, acknowledging that, for the most part, communications on these latter systems are not safety-related.

137. *Interference Analysis.* We will require licensees receiving an initial notification of interference to perform a timely analysis and identification of the interference, including, whenever necessary, an immediate on-site visit if they have cellular architecture equipment operating within 5,000 feet of the interference incident. Licensees must complete this analysis and initiate corrective action within forty-eight hours of the initial complaint if the licensee is a public safety or CII licensee. In the case of other non-cellular 800 MHz licensees, the time to complete the analysis and initiate corrective action shall be ninety-six hours. In both cases the time period may be extended if the affected licensee reasonably agrees, in writing (including e-mail or other electronic means which creates a record), to a longer period.

138. We disagree with those parties that suggest that the analysis or on-site visit could safely be delayed for up to five working days of the date of the original complaint.[376] We assume that an ESMR or cellular telephone operator would not allow a failure in a critical element of its network to remain uncorrected for five working days, and thus believe that forty-eight hours (ninety-six hours in the case of other than public safety and CII systems) is a generous allowance for ESMR or cellular telephone carriers to determine (including making any necessary site visits), whether their operations are interfering with public safety, CII or other 800 MHz communications. In focusing on the obligations of ESMR and cellular telephone licensees we do not mean to imply that similar obligations do not attach to public safety, CII and other non-cellular 800 MHz licensees. They are bound by the good-faith obligation to exhibit the utmost cooperation with the ESMR and cellular telephone representatives, including, without limitation, the obligation to timely meet appointments and provide whatever technical assistance is appropriate under the circumstances.

139. *Mitigation Steps.* Although we leave the means whereby interference is abated to the discretion of the involved ESMR and cellular telephone licensees, we couple this discretion with an obligation on such licensees to provide all test equipment (and technical personnel skilled in the operation of such equipment) necessary to determine the most appropriate means of timely eliminating the interference. The record contains considerable guidance concerning techniques that parties can apply to the problem, including those described in the *Best Practices Guide*, the separately issued Motorola

[375] *See e.g.*, Supplemental Comments of the Consensus Parties at Appendix F, § 3.2; 800 MHz User Coalition June 11, 2003 *Ex Parte* at 5.

[376] *See* Supplemental Comments of the Consensus Parties at Appendix F at F 6; Comments of Alltel, *et. al.* to Supplemental Comments of the Consensus Parties, Appendix A at A-3; McDermott, Will and Emery March 12 *Ex Parte,* Appendix A at A-3, item 3; 800 MHz User Coalition May 29 *Ex Parte* presentation, Appendix A at 5.

Technical Appendix thereto,[377] and the recently described measurement protocol for ascertaining the exact interference mechanisms involved in a given complaint.[378] We expect parties to resolve interference in the shortest practicable time; however, should all short-term measures prove inadequate, we recognize that parties sometime cannot readily or rapidly implement other remedial measures—for example, "channel swaps" or the installation of new or modified base stations.[379] In such cases, we believe a rule of reason should apply and that the licensee affected by interference, while not compromising safety, should make all necessary concessions to accepting the interference until the implementation of [illegible]r-term remedies.[380] However, we will consider the failure to timely implement an interference abating remedy—whether it be near term or long term—as evidence of bad faith and will deal with it accordingly.

140. We also provide public safety licensees a "safety valve" for use when the continued presence of interference constitutes a clear and imminent danger to life or property.[381] Under such circumstances, we will require the interference source(s) to immediately discontinue operation, pending the identification and application of corrective measures. The request for this action: (a) must be made by affidavit or statement under penalty of perjury,[382] from an officer or executive of the affected public safety licensee; (b) shall completely describe the basis of the claim of clear and imminent danger; (c) must be stated to be on personal knowledge or on belief after due diligence; (d) may not be made by a contractor or other third party; and (e) will not be effective until approved by an official of the Commission's Wireless Telecommunications Bureau or other authorized Commission official. The public safety party must serve the statement on the ESMR and/or cellular telephone licensee by hand-delivery or receipted fax and transmit a copy by fastest available means to the Washington, D.C., office of the Wireless Telecommunications Bureau.[383] If the Wireless Telecommunications Bureau determines that the claim of imminent and present danger is valid, it will immediately refer the matter to the Enforcement Bureau for

[377] *See generally* Appendix D *infra*.

[378] *See* Motorola April 11, 2003, *ex parte* presentation to Federal Communications Commission Office of Engineering and Technology at 15-17.

[379] In cases in which intractable interference problems have not yielded to other technical remedies, Nextel and public safety licensees have entered into agreements for "channel swaps," whereby Nextel moves its 800 MHz ESMR operations to the public safety licensees' channels and the public safety licensee relocates its operations to Nextel's ESMR frequencies. Under these agreements, Nextel would pay all or most of the expense associated with equipment retuning or replacement. The Commission has granted several applications implementing channel swaps in Anne Arundel County, Maryland. *See, e.g.*, Application for Modification of License of Station KNJU756, File No. 476003. The Commission is also reviewing another such agreements between Nextel and the City of Denver. We also have been informed that the city and county of San Diego, California are considering similar agreements. *See generally*, Denver SOW and San Diego *Ex Parte*. As yet, insufficient information exists on the results of channel swaps to allow us to assess their efficacy. However, we believe that the swaps will provide a test bed for band reconfiguration, to the extent they yield valuable information on process; *i.e.*, the time required to negotiate the agreements; the determination and apportionment of costs and responsibilities, the time required to make the necessary technical changes, and the disruption, if any, of public safety services.

[380] Should disputes arise in connection with such matters, parties are encouraged to resolve them using arbitration, mediation or other alternative dispute mechanisms.

[381] We stress that we only provide this "safety valve" to public safety licensees.

[382] *See* 47 C.F.R. § 1.16.

[383] The Washington, D.C. office of the Wireless Telecommunication Bureau is: 445 12th Street SW, Washington, D.C. 20554. Complaints should be addressed to the Public Safety and Critical Infrastructure Division.

appropriate action. Any party alleging intentional or negligent misrepresentation or omission in such an affidavit or statement made under penalty of perjury may submit documentation thereof to the Commission's Enforcement Bureau; whereupon the Enforcement Bureau may institute an enforcement action which could result in, without limitation, forfeitures and license revocation. Such Commission action would be in addition to, and not to the exclusion of, other remedies available under local, state or federal law.

141. Finally, we note that we will monitor interference complaint data on an ongoing basis to ensure the interference abatement objectives addressed in this proceeding will continue to be accomplished both before and after band reconfiguration. We emphasize that our responsibility to ensure that 800 MHz non-cellular licensees do not suffer from unacceptable interference from CMRS carriers will be complaint-driven, and we urge affected licensees to carefully monitor their systems and promptly report any incidents of unacceptable interference to the relevant CMRS carrier(s).[384] To the extent that our experience reveals that the interference abatement procedures we adopt today require refinement to ensure high-quality 800 MHz public safety or CII service, we will do so as necessary.

C. Band Reconfiguration

142. As noted in the Introduction to this *Report & Order,* the root of the instant problem lies in fundamentally incompatible mix of two types of communications systems in the 800 MHz band: cellular-architecture multi-cell systems—used by cellular telephone and ESMR licensees—and high site systems—used by public safety, private wireless and non-cellular SMR licensees. For the reasons discussed below,[385] we believe reconfiguring the 800 MHz band to separate these incompatible technologies, supplemented, when necessary with, Enhanced Best Practices provides the best long-term solution to the problem of interference in the 800 MHz band.[386]

1. Technical Issues Addressed by Band Reconfiguration

143. Segregating ESMR systems from non-cellular systems by placing them in opposite segments of the 800 MHz band will make it possible for ESMR and cellular telephone licensees to avoid some intermodulation interference. However, in some instances, consolidating ESMR channels into a single band segment may not—in and of itself—sufficiently reduce unacceptable intermodulation interference. The Radio Frequency (R.F.) carriers of systems in a consolidated ESMR band segment (and at least a portion of the R.F. carriers in cellular telephone systems), would still fall within the passband of all current public safety portable and mobile receivers. Thus, even in a reconfigured 800 MHz band, ESMR channels, or ESMR and cellular telephone channels could still, when combined in the receiver, generate intermodulation products. Therefore, as we discuss below, we believe that abatement of unacceptable intermodulation interference will require more than segregating cellular architecture systems from non-cellular systems.[387] Thus, for example, ESMR licensees will have to make careful choice of channel selection such that two or more channels at a cell do not produce an intermodulation product falling on a public safety or CII channel.

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[384] We recommend, but do not require, that the affected parties keep records of interference complaints and the resolution thereof; and make such records available to the Commission on request.

[385] *See* ¶¶ 143-146 *infra.*

[386] We take these steps pursuant to our authority under Sections 316, 303, 301 and 154(i) of the Act. *See* ¶¶ 62-87 *supra* for our legal authority to address this issue.

[387] *See* ¶ 144 *infra.*

144. Consolidating ESMR systems into one continuous segment in the upper portion of the 800 MHz band will provide ESMR licensees with greater flexibility in selecting channel pairs. The spacing between ESMR channels determines where intermodulation products will fall in the band. With closely spaced ESMR channels, the intermodulation products fall into—or just below—the upper portion of the ESMR segment of the reconfigured band. As the cell channel spacing increases, the intermodulation products become further removed from the ESMR band segment, extending further down into the non-cellular channels—including channels used by public safety systems. In the reconfigured band, a careful ESMR channel choice could reduce the potential for intermodulation interference generated between the ESMR channels in a given cell. Given careful coordination among licensees, it will also be possible, in some instances, to avoid intermodulation products formed by a combination of ESMR channels and cellular telephone channels. However, considerably more care is required when two licensees are involved. Close-spacing of channels is often not an option in that circumstance;[388] however, it still may be possible to avoid channel combinations that result in intermodulation products falling on specific frequencies used by public safety/CII systems. This latter solution may be more difficult to implement when cellular telephone systems use dynamic channel allocation whereby the channels in a given cell can change frequently, *e.g.*, on an hourly basis, in response to traffic loads. Moreover, some cellular telephone systems may make more use of technology, such as CDMA, in which wider bandwidth carriers produce IM products with a wider bandwidth thus potentially affecting more frequencies.

145. We believe that a reconfigured 800 MHz band will permit future public safety radios to be more interference resistant. Because there currently are public safety channels scattered throughout the 800 MHz band, from the bottom of the General Category band segment at 806 MHz/851 MHz to the top of the NPSPAC channels at 824 MHz/869 MHz, the device called, variously, the "preselector" or "input filter" of the public safety radio must be sufficiently wide to cover the complete 851-869 MHz range, including the current ESMR channels which fall at 861-866 MHz. Narrowing the range of Public Safety frequencies allows equipment manufacturers to utilize narrower filters that will attenuate potentially interfering signals higher in the band.[389]

146. In sum, while band reconfiguration, in conjunction with careful engineering of cell sites, will reduce intermodulation interference between ESMR channels *inter sese*, it is apparent that particular care will have to be exercised when both ESMR and cellular telephone channels are implicated. In the long term, however, band reconfiguration will result in a net reduction in both unacceptable OOBE and intermodulation interference for the following reasons:

- Nextel will completely relinquish rights to all of the interleaved channels, relieving OOBE interference to licensees operating non-cellular systems on the interleaved portion of the band.[390]

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[388] For example, the Consensus Parties propose relocating all ESMR channels to the 862-869 MHz band segment while all cellular telephone channels would remain in the adjacent 869-894 MHz band segment. Thus ESMR and cellular telephone channels could be closely spaced only in the upper portion of the ESMR band segment, which corresponds to the lower portion of the cellular telephone band segment.

[389] In a sense, the preselector or input filter is the "front door" of the radio which currently must be open wide enough that potentially interfering ESMR signals can enter unimpeded. However, when the 800 MHz band is reconfigured, the "front door" need be opened only widely enough to admit signals from 851-862 MHz. With the door not open as wide, signals above 862 MHz—including ESMR and cellular telephone signals—would have a difficult time squeezing through and causing interference.

[390] *See* Supplemental Comments of the Consensus Parties at 14.

- Nextel will relocate its systems operating on General Category channels to the upper portion of the 800 MHz band, therefore relieving OOBE interference that these systems currently can cause to non-cellular systems operating on channels immediately above the General Category channels.[391]

- Reconfiguring the 800 MHz band to separate cellular systems from non-cellular systems will substantially reduce interference to public safety created by OOBE by allowing ESMR licensees to replace current base station transmitter duplexers with new duplexers that will "roll-off" RF energy immediately below 862 MHz.[392]

- Consolidation of Nextel channels in the upper portion of the band will give ESMR operators and cellular telephone licensees greater flexibility to make a judicious choice of channel selection and channel spacing, thereby either confining potential ESMR intermodulation interference to a smaller portion of the non-cellular segment of the band, or limiting intermodulation products that fall on given CII or public safety channels.[393]

- We anticipate that, after band reconfiguration, equipment manufacturers will design public safety radios to cover only the portion of the 800 MHz band below 817/862 MHz because no public safety system will be operating in the ESMR spectrum above 817 MHz/862 MHz.[394] Thus, with public safety radios no longer required to cover the entire 800 MHz band, the first R.F. amplifier ("preselector") of the public safety radio can be designed to attenuate the potentially interfering ESMR and cellular telephone signals originating from systems that operate above 817 MHz/862 MHz.

147. Although reconfiguration of the 800 MHz band will eliminate the interference-prone interleaving of ESMR and public safety systems in the 800 MHz band, it will require changing the operating frequencies of many 800 MHz public safety, CII and other non-cellular licensees. This will be done incrementally in the fifty-five Regional Planning areas in the United States. In general, more modern 800 MHz systems can be changed in frequency with only minor changes, most of which can be implemented in software.[395] Older systems may require part changes, and, in some instances, replacement of entire transmitters and receivers. The overall band reconfiguration process will also require spectrum

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[391] *Id.*

[392] *Id.* at Appendix F, F-8 § 4.1.2.

[393] *See* Attachment to Letter, dated September 17, 2002 [sic], filed September 22, 2003 from Alan S. Tilles, Esq. Counsel to the City and County of Denver to Marlene H. Dortch, Secretary, Federal Communications Commission at 7.

[394] We expect that most public safety systems will operate below 814/859 MHz, but public safety systems will have the option of operating in the Expansion Band or Guard Band segments between 814-817/859-862 MHz should they elect to do so.

[395] On July 30, 2003, the Consensus Parties conducted a live demonstration of base station and portable retuning using both Motorola and Kenwood equipment. The retuning was accomplished within a brief period without the need to change any system components. The "down-time" of the equipment was minimal. In one instance, the technicians demonstrated use of a portable base station that was substituted, temporarily, for the equipment being retuned. In the latter demonstration, the only "down-time" was the few seconds required to disconnect and reconnect the system antennas. The Consensus Parties do not claim, nor do we believe, that all systems could be retuned with equal facility; however the demonstration suggests that retuning time need not be a concern when modern equipment is involved.

"green space;" for example, Nextel systems in the General Category band segment would be moved temporarily into Nextel spectrum at 900 MHz, thereby "clearing" the General Category band segment. Next, the current NPSPAC channels would be moved into the cleared space at 806-809 MHz/851-854 MHz. Nextel has accomplished band reconfiguration before, albeit on a smaller scale, when it cleared the Upper 200 channels of incumbent users. Based on data derived from inspection of sixteen public safety systems of varying complexity, Nextel has estimated the total cost of band reconfiguration at $850 million and has pledged to pay up to that amount. There is some disagreement over Nextel's estimates; but no real basis of choosing among competing band reconfiguration proposals on the basis of price: Nextel is the only party to this proceeding that has made a firm commitment to absorb the cost of band reconfiguration, including reconfiguration of its own systems, a factor not included in the $850 million estimate.[396]

148. We are sensitive to the concerns of those parties, including some public safety agencies whose systems do not now receive interference from ESMR and cellular telephone cells, who assert that reconfiguring the 800 MHz band could unnecessarily disrupt their communications while their operating frequencies are changed, or that their new channels would not be comparable to their original channels.[397] We are committed to ensuring that band reconfiguration will not result in degradation of existing service. We believe the rules we adopt today will ensure both continuity of service and "comparable facilities." With respect to the latter, we note that the rules we adopt today track rules the Commission has successfully used to accomplish previous band reconfigurations.[398]

2. New 800 MHz Band Plan

a. Band Plan Overview

149. In evaluating the various band reconfiguration plans submitted in this proceeding, we sought to identify, in each plan, five principal components that we deemed essential to the final "Commission Band Plan":

- The extent to which a plan would abate unacceptable interference to non-cellular systems operating in the 800 MHz band.
- The extent to which incumbents would be treated most fairly, including the degree of disruption associated with channel changes, the ability to provide relocated incumbents with truly comparable spectrum and minimum interruption of critical public safety and CII communications. These factors weighed heavily in our rejection of proposed band plans that contemplated using the Upper 700 MHz spectrum for public safety systems.[399]

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[396] The Consensus Plan envisions that Nextel would fund the reconfiguration of its own systems separately. *See* Attachment to Letter, dated March 14, 2004, from Regina M. Keeney, Esq., Counsel to Nextel to Marlene H. Dortch, Secretary Federal Communications.Commission.

[397] Some such concerns were directed to the Nextel *White Paper* proposal in which B/ILT and non-cellular SMR facilities all were to be relocated to the 700 MHz Guard Band and the 900 MHz land mobile band. That proposal was superseded by the band plan proposed by the Consensus Parties, which retains incumbents in the 800 MHz band, excepting those electing a "2 for 1" proposal whereby they would obtain double their existing spectrum if they relocated from 800 MHz to 900 MHz. *See* Supplemental Comments of the Consensus Parties at 13.

[398] *See, e.g.*, 47 C.F.R. § 90.699(d).

[399] The proposal to use the Upper 700 MHz band for public safety was advanced by, among others, AT&T Wireless, Cingular, Alltel, Southern LINC and CTIA. *See* AT&T Wireless Comments at 7-14; Cingular and Alltel Comments at 16-19; CTIA Comments at 9-10; Alltel, *et al.* Reply Comments at 15-18; CTIA Reply Comments at 4-
(continued....)

- A configuration of 800 MHz cellular-architecture channels that would make intermodulation interference less likely—a factor that argued in favor of plans that placed ESMR spectrum in a contiguous block.[400]
- A configuration that would allow effective filters to attenuate signals that fell in the portion of the reconfigured band used by public safety and CII systems.[401]
- The amount of additional 800 MHz spectrum in which public safety would have a right to operate.[402]

(Continued from previous page)
7; Southern LINC Reply Comments at 14-25. We find these plans inferior to most of the other band plans submitted. As an initial matter, the 700 MHz spectrum is unusable in most parts of the country because it is encumbered by television stations—a condition likely to persist for several years. In addition, some of these commenting parties envisioned that, when public safety is moved to the Upper 700 MHz band, the 800 MHz spectrum vacated by public safety licensees could be auctioned to pay for relocation costs. *See* Cingular and Alltel Comments at 17-18; CTIA Reply Comments at 7. However, no party advancing this proposal has provided either estimates of the cost of relocating the 800 MHz public safety licensees or the revenue that might be obtained from auctioning vacated 800 MHz spectrum. Thus, the economic feasibility of implementing these plans is highly problematic.

[400] For instance, Nextel states that once it vacates the interleaved spectrum and consolidates its systems in the 816-824 MHz /861-869 MHz band segment, it will be better able to control the spread of intermodulation products from its cell sites. *See* Nextel Reply Comments, Appendix II at 3; Comments of Nextel to Consensus Parties Reply Comments, Appendix I at 3. By limiting the span between the highest and lowest frequency at any given cell site, Nextel indicates that it will be able to avoid producing third-order intermodulation products that fall on portions of the band occupied by public safety systems. Because an instance of two-tone third-order intermodulation interference is defined by the relationship $F_{INTERMOD} = 2*F_1 - F_2$, limiting the difference between the highest and lowest frequency at a cell site correspondingly limits the range over which third-order intermodulation products will fall. *See* Motorola Comments at 18-19.

[401] *See* Supplemental Comments of the Consensus Parties at 43 and Appendix F at F-8, item 4.1.2. Nextel believes that reconfiguring the 800 MHz band to separate cellular systems from non-cellular systems will substantially reduce interference to public safety created by OOBE. Nextel states that if the 800 MHz band is reconfigured, it can replace current base station transmitter duplexers with new duplexers that will "roll-off" RF energy immediately below 861 MHz. *See* Comments of Nextel to Consensus Parties Reply Comments, Appendix I at 1-2.

[402] The Consensus Plan offers additional spectrum rights to public safety by giving it exclusive access to channels below 816/861 MHz that are either vacated by Nextel or by licensees who relocate above 816MHz/861 MHz as described in ¶¶ 152, 158 *infra*. This exclusive access will last for a five-year period after the completion of band reconfiguration. *See* Consensus Parties Reply Comments at 25. By contrast, Motorola and Preferred proposed plans which provide no additional spectrum rights for public safety after band reconfiguration. *See* Motorola Reply Comments at 8; Comments of Preferred to the Consensus Parties Reply Comments at 17. NAM and M/A COM propose plans whereby public safety will likely lose spectrum rights in markets where public safety currently operates systems in the General Category (Ch 1-150). For instance, under NAM's original plan, public safety receives only 0.25 x 0.25 MHz of spectrum rights to relocate systems from the General Category. Therefore, under that plan, public safety would lose spectrum rights in any market where it currently occupies more then ten channels in the General Category. M/A COM's proposal offers no spectrum rights for relocating public safety systems from the General Category. Therefore, under M/A COM's proposal, public safety would lose spectrum rights in markets where public safety occupies any spectrum in the General Category. *See NPRM,* 17 FCC Rcd at 4885 ¶ 22; M/A COM comments at 10. UTC proposed a plan which appears to substantially reduce the amount of spectrum public safety would have access to after band reconfiguration. UTC would allow licensees in the "lower 80" SMR channels to exchange rights with public safety licensees in the NPSPAC band. Under UTC's plan, however, public (continued....)

150. Although the thrust of our analysis was centered on the 800 MHz band, we also took into account the technical and economic fallout that a given 800 MHz band plan would have on other bands such as the Upper 700 MHz band, the 700 MHz Guard Band, the 700 MHz Public Safety Band, the 900 MHz band, and bands in the 1.5 GHz to 2.1 GHz region; all of which, in one fashion or another, came into play in the overall band reconfiguration proposals evaluated.

151. Of the various plans considered, the Consensus Plan offered benefits in each of the foregoing categories discussed in ¶ 149 *supra* and pointed us to the development of a Commission Band Plan consistent with our goals in this proceeding:

- abating harmful interference currently being encountered by 800 MHz public safety systems;
- minimizing disruption to existing services;
- responsibly managing the spectrum involved—constituting portions of the 700 MHz, 800 MHz, 900 MHz and 1.9 GHz bands[403]; and
- providing additional spectrum rights for public safety.

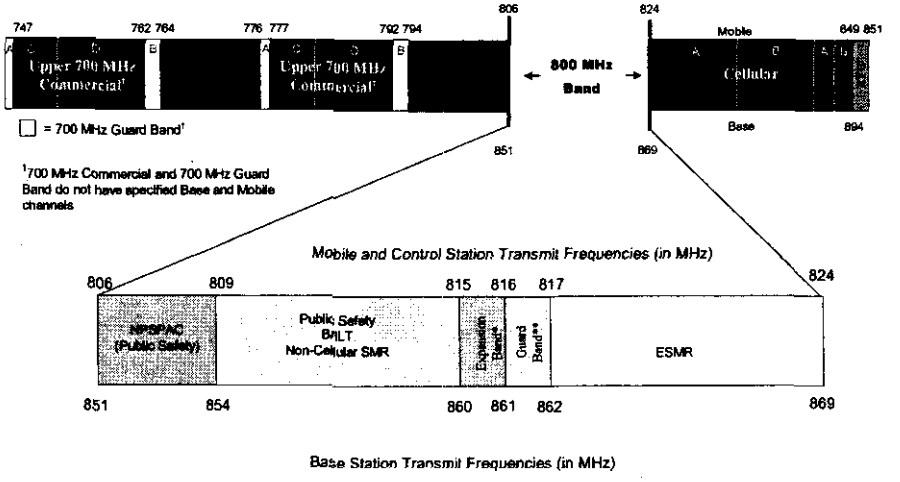
Consequently, we are adopting the following plan for the 800 MHz band.

(Continued from previous page)
safety would exchange 3 x 3 MHz of contiguous NPSPAC spectrum rights for rights to 2 x 2 MHz non-contiguous spectrum in the interleaved portion of the band. *See* UTC Comments at 26-28.

The OH MARCS, DC OCTO and the original Nextel White Paper plans offer public safety rights to more spectrum after band reconfiguration than the Consensus Plan. *See* OH MARCS Comments at 5-9; DC OCTO Comments at 6-11 and *NPRM* at 4886-87 ¶¶ 23-25. Nonetheless, the OH MARCS's plan is inferior from an interference mitigation standpoint because it would leave NPSPAC systems immediately adjacent to cellular telephone A-band systems. The DC OCTO plan and the original Nextel White Paper proposals are inferior because of their excessive cost and disruption. Thus, the DC OCTO plan would require almost every non-cellular licensee to relocate within the 800 MHz band. The original Nextel White Paper proposal would require moving all B/ILT and Non-cellular SMR systems out of the 800 MHz band into the 700 MHz and 900 MHz bands.

[403] *See NPRM,* 17 FCC Rcd 4887 ¶ 26. With regard to our management of the 1.9 GHz band, we note that we are rededicating five megahertz of spectrum from UPCS—a service for which no equipment has been verified by the Commission—to land mobile communications, thus making more efficient use of the spectrum by bringing new service to the public and rededicating five megahertz of spectrum to land mobile use from "reserve" MSS spectrum, thus providing the opportunity for initiation of a service that may be more immediately and widely used by the public.

New 800 MHz Band Plan[404]



*No public safety system will be required to remain in or relocate to the Expansion Band; although they may do so if they choose.

**No public safety or CII licensee may be involuntarily relocated to occupy the Guard Band.

Non-Cellular Portion (806-817 MHz/851-862 MHz)

- NPSPAC: Only NPSPAC systems will eligible to operate in the 806-809 MHz/851-854 MHz band segment (Channels 1-230, 25 kHz channels spaced every 12.5 kHz).

- Interleaved: The interleaved portion of the band at 809-815 MHz/854-860 MHz (Channels 231-470 spaced every 25 kHz) will consist of public safety, B/ILT and SMR channels interleaved. Public safety and CII agencies will have exclusive access to the 809-809.75 MHz/854-854.75 MHz band segment (Channels 231-260 spaced every 25 kHz) and the channels vacated by Nextel below 815 MHz/860 MHz.[405]

- Expansion Band: The Expansion Band at 815-816 MHz/860-861 MHz (Channels 471-510 spaced every 25 kHz) will consist of B/ILT and SMR channels interleaved.[406] The Expansion Band may also be used to house non-Nextel ESMR systems, as discussed *infra*.[407] No public safety system will be required to remain in or relocate to the Expansion Band; although they

[404] As with the current 800 MHz band plan, adjustments will be necessary in the areas bordering Canada and Mexico to provide for an equitable distribution of channels with those countries. *See* ¶¶ 175-176 *infra*.

[405] *See* ¶¶ 152-153 *infra*.

[406] We believe that, under most circumstances, the Expansion Band offers B/ILT, CII and non-cellular SMR licensees equivalent capacity and quality of service as defined in 47 C.F.R. § 90.699(d).

[407] *See* ¶ 162 *infra*.

may elect to do so.[408]

- Guard Band: The Guard Band at 816-817 MHz/861-862 MHz (Channels 511-550 spaced every 25 kHz) will consist of forty channels available to any 800 MHz licensee. Any licensee operating below 817 MHz/862 MHz may elect to relocate to the Guard Band. The Guard Band may also be used to house non-Nextel ESMR systems, as discussed *infra*.[409] No 800 MHz licensee may be involuntarily relocated into the Guard Band. Licensees in the Guard Band will receive less interference protection then licensees operating in lower portions of the non-cellular portion of the band as discussed *infra*.[410]

Cellular Portion: (ESMR systems at 817-824 MHz/862-869 MHz)

152. As we discuss *infra*, we decline to adopt those portions of the Consensus Plan that contemplate relinquishment of Nextel's 900 MHz spectrum rights.[411] With regard to the "running average" of 2.5 megahertz of spectrum rights that Nextel is surrendering in the interleaved segment of the 800 MHz band, we restrict eligibility for this spectrum to public safety licensees for three years from the effective date of this *Report and Order* and to public safety/CII licensees for an additional two years from that date.[412] We make an identical provision for channels vacated by licensees that voluntarily relocate to the 816-817 MHz/861-862 MHz band segment. We believe providing these windows of limited eligibility meets our spectrum management goals by accommodating the generally slow budgetary process of public safety agencies and the express needs of CII licensees, before making the spectrum generally available to other 800 MHz non-cellular licensees, *i.e.* B/ILT and non-cellular SMR licensees.[413]

153. Furthermore, in order to relocate NPSPAC systems to the bottom portion of the band, the Consensus Plan calls for clearing only the 806-809 MHz/851-854 MHz portion of the General Category (Channels 1-120 prior to band reconfiguration). We will require, however, that all non-public safety or non-CII licensees operating in the General Category (Channels 1-150 prior to band reconfiguration) relocate to the Guard Band, Expansion Band or interleaved portion of the band. The thirty remaining General Category channels available after the NPSPAC band is relocated will be available only to public safety licensees for three years from the effective date of this *Report and Order* and to public safety/CII

[408] *See* ¶ 154-155 *infra*.

[409] *See* ¶ 162 *infra*.

[410] *See* ¶ 158 and Figure 1 *infra*.

[411] *See* ¶ 207 *infra*.

[412] This time period is a modification of the Consensus Parties' original proposal to only allow public safety access to this spectrum for a five-year period. *See* Supplemental Comments of the Consensus Parties at 12. Our modification comes in response to the comments of CII parties who found this too restrictive. *See, e.g.*, Comments of Alliant Energy to Supplemental Comments of the Consensus Parties at 4, and Comments of Amaren to Supplemental Comments of the Consensus Parties at 10-11. If Nextel does not surrender its rights to operate on this spectrum, Nextel channels would remain adjacent to public safety channels potentially causing adjacent channel OOBE interference, one of the major types of interference we are seeking to abate in this proceeding.

[413] *See* "Public Safety and Sound Spectrum Management Go Hand in Hand," Keynote Address by Federal Communications Commission Commissioner Kathleen Q. Abernathy to the National Forum on Public Safety Spectrum Management, February 10, 2004. We make these modifications under the authority granted us by Sections 4, 301, 303 and 316 of the Act, 47 U.S.C. §§ 316, 303, 301, and 154(i). We set forth a detailed description of our legal authority in ¶¶ 62-87 *supra*.

licensees for an additional two years from that date.[414] Therefore—regardless of how much spectrum Nextel occupies in any given region—public safety and then CII licensees will have nationwide access to thirty channels or 1.5 megahertz of spectrum immediately adjacent to the relocated NPSPAC band.

b. Expansion Band

154. We establish an "Expansion Band" in the 815-816 MHz/860-861 MHz segment of the 800 MHz band to provide public safety licensees spectral separation from the cellular portion of the band. Although occupants of the Expansion Band will receive full interference protection, we note the Consensus Parties comments indicating that those licensees who operate in the 2 x 2 MHz segment of the band immediately adjacent to the cellular portion of the band should employ "campus-type" or other interference-resistant type systems.[415] Therefore, we believe it prudent to allow all public safety licensees the option to relocate from this portion of the band and no public safety licensee will be forced to relocate to this portion of the band. Nonetheless, any public safety licensee who willingly chooses to remain or relocate to the Expansion Band may do so.

155. The establishment of the Expansion Band required us to revise the chart in our rules that specifies channels for public safety use in the 800 MHz band.[416] Specifically, twelve channels currently designated for public safety use are located within the newly created Expansion Band. Because we are allowing public safety licensees to relocate out of the Expansion Band, we needed to find a new "home" for these twelve public safety channels. Therefore, we "exchanged" these twelve public safety channels for twelve SMR channels located below the Expansion Band. As a result of this exchange, all public safety channels will now be located below the Expansion Band. In order to ensure that non-cellular SMR licensees lose no spectrum in this "exchange," licensees from this category will now have access to the former twelve public safety channels located in the Expansion Band.[417]

156. The current chart designating public safety channels, lists the channel in groups with channels separated by one megahertz[418] as a concession to the fact that the combiners used in a trunked system to combine the output of multiple transmitters into a single antenna can introduce excessive loss if used with channels that are too closely spaced.[419] In modern systems, however, combiners suffer negligible loss even when the input channels are spaced as little as 250 kHz apart;[420] thus in the revised

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[414] *See* 47 C.F.R. § 90.615 in Appendix C *infra.*

[415] *See* Consensus Parties Reply Comments at 9.

[416] *See* 47 C.F.R. § 90.617(a), Table 1 in Appendix C, *infra.*

[417] Because we "exchanged" all public safety channels in the Expansion Band with SMR channels, the Expansion Band will consist of a mix of B/ILT and SMR channels. Nonetheless, we will allow public safety licensees to remain in the Expansion Band if they so choose. In addition, any public safety licensee who chooses to relocate to the Expansion Band may do so through inter-category sharing. *See* 47 C.F.R. §§ 90.621(e) and 90.677 in Appendix C *infra.*

[418] *See* 47 C.F.R. § 90.617(a), Table 1.

[419] "Loss" in this context refers to the attenuation of the transmitter carrier when it passes through the combiner. The loss is dissipated in the form of heat and the net result is that the ERP—and hence the coverage—of a system can be reduced significantly if the combiner introduces excessive loss.

[420] *See* Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communication Requirements Through the Year 2010; Establishment of Rules and (continued....)

table, we separate grouped public safety channels by 500 kHz.[421] Since the new twelve public safety channels were pulled from the SMR pool, there will be non-cellular SMR licensees operating on these channels. Therefore, we hereby grandfather those non-cellular SMR licensees that are operating on the new public safety channels for an indefinite period, and we will permit the filing of modification applications by these grandfathered licensees.[422] These grandfathered licensees will operate on a strict non-interference basis, subject to pre-coordination of any new of modified operations.[423]

c. Guard Band

157. We establish a "Guard Band" in the 816-817 MHz/861-862 MHz segment of the 800 MHz band to guarantee public safety licensees an additional one megahertz spectral separation from the cellular portion of the band. Nextel will vacate the Guard Band. No licensee—including public safety and CII—will be involuntarily relocated to the Guard Band. We will grandfather all non-Nextel CMRS licensees who currently operate within the Guard Band. These grandfathered licensees will be permitted to continue operating on current frequencies, with currently authorized facilities, on a strict non-interference basis, subject to pre-coordination of any new of modified operations.[424] However, we will not accept new non-public safety applications on any of the twelve new 800 MHz public safety frequencies.

158. Once Nextel has vacated the Guard Band any 800 MHz band licensee currently operating below 816 MHz/861 MHz may apply for channels there. Any channel below 816 MHz/861 MHz vacated by a licensee relocating to the Guard Band will be available only to public safety licensees for three years from the effective date of this *Report and Order* and to public safety/CII licensees for an additional two years from that date. Licensees who voluntarily relocate to the Guard Band after Nextel has vacated will be required to tolerate increasing levels of interference from cellular-architecture systems as a function of increasing frequency.[425] The minimum median received power level required for interference protection (-104 dBm for mobile units or -101 dBm for portable units) will increase as shown in Figure 1, below. The channels these licensees vacate in the spectrum below 816 MHz/861 MHz will be available to public

(Continued from previous page)
Requirements for Priority Access Service, WT Docket No. 96-86, *Third Memorandum Opinion and Order and Third Report and Order*, 15 FCC Rcd 19844, 19857 (2000).

[421] *See* 47 C.F.R. § 90.617(a), Table 1 in Appendix C, *infra*.

[422] We believe that there is little risk of interference to public safety from these grandfathered non-cellular SMR incumbents. These incumbents will be prohibited from operating cellular systems in the non-cellular portion of the 800 MHz band. *See* 47 C.F.R. § 90.614 in Appendix C, *infra*. Further, any grandfathered site-based B/ILT or non-cellular SMR licensee who chooses to modify its license on one of these new public safety channels will be required to obtain frequency coordination and receive concurrence from a certified public safety coordinator. *See* 47 C.F.R. §§ 90.175(c) and (e). EA-based non-cellular SMR licensees who are grandfathered on these new public safety channels and choose not to relocate—while not subject to frequency coordination—will nonetheless be limited to operating within the EA of their license. *See* 47 C.F.R. § 90.683(a).

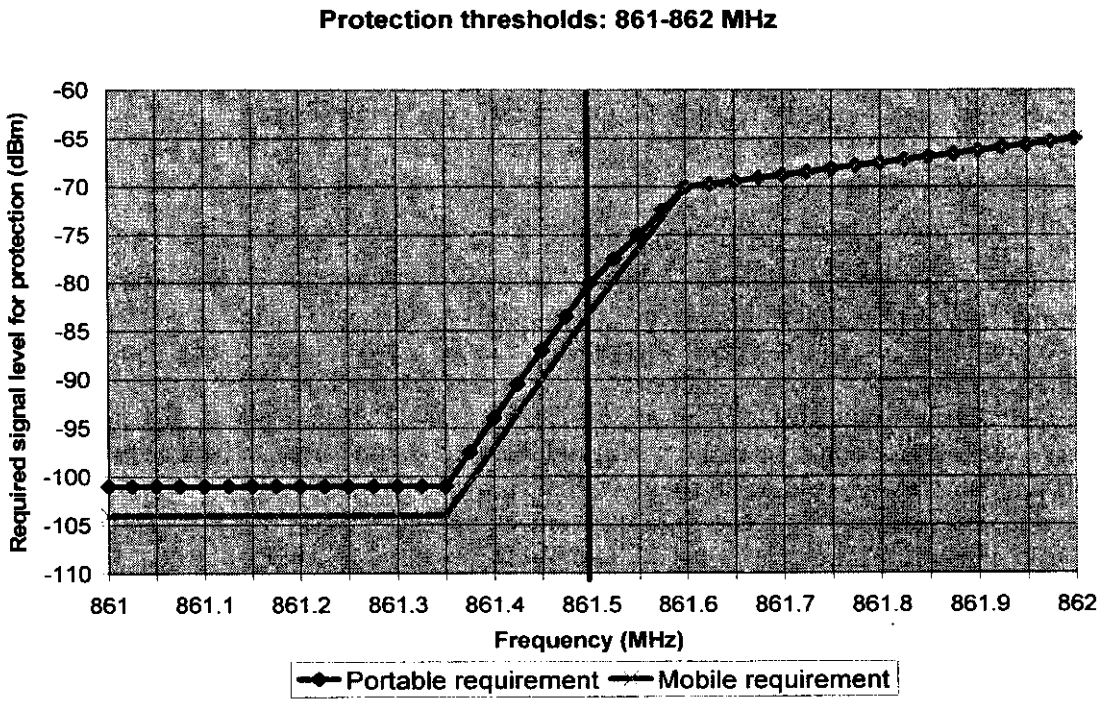
[423] *See* 47 C.F.R. § 90.617(j) in Appendix C *infra*.

[424] *Id.*

[425] The Guard Band would serve a purpose similar to the guard band channels developed to protect public safety systems from interference from commercial systems in the 700 MHz band. Cellular operations are prohibited in the 700 MHz guard band channels (746-747 MHz, 776-777 MHz, 762-764 MHz, and 792-794 MHz) to provide a buffer between public safety and commercial spectrum allocations. *See* 47 C.F.R. § 27.2(b).

safety licensees for five years and to CII licensees during years four and five of the five-year period.[426]

FIGURE 1: Required Received Signal Levels for Interference Protection



d. Relocating ESMR Operations in 800 MHz Band

159. We recognize that there are CMRS licensees other than Nextel using iDEN or iDEN-like ESMR technology in the 800 MHz band. For example, Southern LINC, a Nextel competitor, operates ESMR systems using Motorola iDEN technology in Georgia, Mississippi, Alabama and Florida.[427] Airtell Wireless, LLC, and Nevada Wireless, LLC, operate an iDEN derivative, the Harmony system, on the interleaved channels in areas of Montana and Nevada, and represent that they will be constructing Harmony systems in other markets.[428] Preferred Communications, Inc. holds spectrum rights in various areas of the continental United States and has extensive 800 MHz band spectrum rights in the Commonwealth of Puerto Rico and the U.S. Virgin Islands.[429] Some of these parties operating cellular-architecture systems in the 800 MHz band note that their systems have already created interference to public safety systems.[430]

160. The Consensus Parties did not discuss these other CMRS cellular-architecture systems,

[426] *See* 47 C.F.R. § 90.617(h) in Appendix C *infra*.

[427] *See* Southern LINC Comments at 4.

[428] *See* Letter, dated November 7, 2003, from Elizabeth Sachs, counsel for Airtell Wireless and Nevada Wireless to Marlene H. Dortch, Secretary, Federal Communications Commission.

[429] *See* Comments of Preferred to the Consensus Parties Reply Comments at 8.

[430] *Id.*

supra, but did propose that the Commission should grandfather Southern LINC's operations in the 809-821 MHz/854-866 MHz block while relocating Southern LINC's systems that currently operate in the 806-809 MHz/851-854 MHz block to the upper portion of the non-cellular segment as close as possible to the ESMR segment.[431] The Consensus Parties proposed allowing Southern LINC to operate its cellularized systems in the non-cellularized portion of the band without a waiver but with a requirement to notify all affected licensees before implementing low-site cells.[432] Under the Consensus Plan, Southern LINC would be required to pre-coordinate such operations to prevent unacceptable interference to non-cellular licensees and would be responsible for eliminating any interference.[433] The Consensus Parties did not discuss other ESMR licensees such as those mentioned *supra.* For its part, Southern LINC contends that it should be relocated to the ESMR segment, without loss of channels, where it would share spectrum with Nextel.[434]

161. We find the Consensus Parties' proposal for relocation of Southern LINC's facilities[435] too incomplete—to the extent it does not address other similarly situated licensees—and too limited. With respect to the proposal to grandfather Southern LINC's existing operations, we note that there is no evidence that these operations currently cause interference to other 800 MHz band licensees.[436] However, we can foresee that Southern LINC, in order to meet increasing subscriber demands, may desire to deploy "low site" cells which could be a source of interference to public safety and other non-cellular licensees. The interference potential is heightened because many of Southern LINC's channels are immediately adjacent to channels used by non-cellular licensees in the interleaved portion of the band. As a general proposition, ESMR systems operating in the 817-824 MHz/862-869 MHz segment of the band are less likely to cause interference than ESMR systems operating in the interleaved portion of the band. We therefore believe that the overall interference environment at 800 MHz would improve were we to allow licensees such as Southern LINC to relocate their systems to the ESMR portion of the band where they have less potential for interference to public safety and other non-cellular 800 MHz band licensees. Confining licensees such as Southern LINC to operation below 817 MHz/862 MHz is not optimal from an interference protection standpoint and could adversely affect such licensees' ability to provide adequate service to its subscribers in the future.

(i) Relocation Options

162. In order to provide an incentive for ESMR licensees to relocate their systems, we are affording them the flexibility of three options:

- Relocate all of their systems in a market into the ESMR portion of the band where they will share spectrum with Nextel; or

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[431] *See* Supplemental Comments of Consensus Parties at 44-46.

[432] *Id.*

[433] *Id.* at 45-46. Thus, for example, Southern LINC would be strictly responsible, financially and otherwise, for immediately abating any unacceptable interference; or would have to discontinue operation on the offending frequency or frequencies. *Id.* at 46.

[434] *See* Letter, dated April 5, 2004, from Christine M. Gill, Counsel for Southern LINC to Michael K. Powell, Chairman, Federal Communications Commission.

[435] *See* ¶ 160 *supra.*

[436] It attributes the lack of interference to the fact it currently operates few high-channel-density low-elevation sites. *See* Southern Comments at 6. *See also* Motorola Comments at 14, n. 24.

- Relocate their systems as close as possible to the ESMR portion of the band but remain in the non-cellular portion of the band, *i.e.* in order of preference: (a) the 816-817 MHz/861-862 MHz Guard Band;[437] (b) the 815-816 MHz/860-861 MHz Expansion Band;[438] and (c) channels below 815 MHz/860 MHz if necessary. These licensees will operate on a strict non-interference basis, subject to pre-coordination of any new or modified operations;[439] or

- Remain on their current channels in the non-cellular portion of the band on a strict non-interference basis, subject to pre-coordination of any new or modified operations.[440]

163. If non-Nextel ESMR licensees elect to relocate to the ESMR portion of the band, their EA licenses will transfer on a channel-by-channel basis, such that they have exclusive, incumbent-free, use of the new channels in the EA.[441] We recognize, however, that many of these non-Nextel ESMR licensees employ a patchwork of EA-based and site-based licenses. Therefore, we will give these licensees the option to relocate their site-based licenses along with their EA-licenses to the ESMR portion of the band. In order to transfer a site-based channel into the ESMR segment, a licensee must: (a) currently hold an EA license in the relevant market; and (b) be using the site-based license as part of a cellular-architecture system in that market as of the date of publication of this *Report and Order* in the Federal Register. Furthermore, to create a more uniform licensing scheme, the transferred site-based license will be converted to an EA-wide, incumbent-free license in the ESMR portion of the band. If non-Nextel ESMR licensees elect not to relocate to the ESMR portion of the band, but volunteer to relocate to the Guard Band or must be relocated to the Expansion Band or to the spectrum immediately below, when necessary, they must be provided comparable facilities, in the case of their site-based licenses; and, in the case of EA licenses, exclusive use of their new channels in the EA.[442]

(ii) Expanded ESMR Spectrum

164. We are aware that, in some markets, there may be insufficient spectrum in the 816-824 MHz/861-869 band segment to accommodate both incumbent ESMR licensees already operating there and new ESMR entrants migrating from the lower channels. This is particularly true of certain markets in which both Southern LINC and Nextel currently are offering service. In those markets, Southern LINC holds a large number of licenses in the interleaved portion of the band, and also holds licenses for some General Category channels. Consequently, there are an inadequate number of channels in the 816-824 MHz/861-869 MHz band segment to replicate the existing channel capacity of both Southern LINC and Nextel. We note recent *ex parte* filings in which Southern LINC and Nextel recite a preliminary agreement in which they propose that the 816-824 MHz/861-869 MHz ESMR segment be widened by five megahertz, such that the lower band edge would start at 813.5 MHz/858.5 MHz.[443] With the ESMR

[437] *See* ¶¶ 157-158 *supra.*

[438] *See* ¶¶ 154-156 *supra.*

[439] *See* 47 C.F.R. § 90.617(j) in Appendix C *infra.*

[440] *Id.* These operators, however, would be subject to possible frequency moves as necessary in order to implement reconfiguration of the 800 MHz band.

[441] These non-Nextel ESMR licensees must state their option in the realignment schedule that the Transition Administrator will transmit to the Commission. *See* ¶ 201 *infra.*

[442] *See* ¶ 201 *infra.*

[443] *See* Letter, dated June 30, 2004, from James B. Goldstein, Esq., Senior Attorney, Nextel Communications, Inc. to Michael Wilhelm, Deputy Chief - Legal, Public Safety and Critical Infrastructure Division, (continued....)

portion of the band so widened, Southern LINC and Nextel would engage in a channel exchange that would result in the configuration of channels shown in Appendix G, which also includes a map of the area in which the ESMR portion of the band would be increased, and the list of counties within the area shown on the map.

165. We note from the *ex parte* filings that the Southern LINC and Nextel agreement is not final and that the parties have not been able to agree on a final apportionment of channels in the Atlanta, Georgia market. Because of the preliminary nature of the agreement, we need not address it further here, but encourage the parties to come to an agreement that is equitable for all licensees involved.

166. Although we do not rule on the acceptability of the provisions contained in the preliminary agreement, the filings inform us that the distribution of cellular-architecture and non-cellular systems in the area shown in Appendix G is atypical. Moreover, we believe that we should change the band plan for that region now, before band reconfiguration commences, so that the overall band reconfiguration process takes the revised band plan into account. Accordingly, on our own motion, we define the ESMR band in the area shown in Appendix G as the band segment 813.5 - 824 MHz/858.5-869 MHz. The Expansion Band in this area shall extend from 812.5-813.5 MHz/857.5-858.5 MHz. All licensees operating in the band segment 806-813.5 MHz/851-858.5 MHz shall be afforded the same protection against unacceptable interference as specified in ¶¶ 96-141, *supra*.

167. Moreover, because Southern LINC's recent *ex parte* submission indicates that it intends to exercise the option of relocating into the ESMR portion of the band, we will give Nextel and Southern LINC the opportunity to finalize their agreement and recommend a channel distribution that equitably reflects the interests of all 800 MHz licensees in the area shown in Appendix G. That agreement shall be completed and submitted to the Commission for review no later than thirty days following the publication of this *Report and Order* in the Federal Register. The agreement must include mutual non-disclosure provisions and a clear delineation of the costs to be borne by each party. It shall also include a proposed band reconfiguration schedule consistent with the obligations we have imposed on Nextel in this *Report and Order*. The agreement also shall contain an engineering analysis demonstrating that the channel plan can be implemented consistent with public safety and B/ILT licensees retaining the spectrum necessary to accommodate them. We delegate to the Chief of the Wireless Telecommunications Bureau, the authority to review the agreement, and to resolve any disputed matters submitted to the Commission for *de novo* review.

168. In the event the parties fail to reach agreement by the date specified *supra*, they shall submit their differences to the Transition Administrator who will attempt to facilitate a final agreement. If the disputed matters are not resolved within thirty days, the Transition Administrator will submit the entire record to the Commission for *de novo* review. Parties are hereby put on notice that disputed matters concerning ESMR channels in any area of the country, including the area shown in Appendix G may be resolved by the Commission making a *pro rata* distribution of ESMR channels.[444] In the case of the area

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Wireless Telecommunications Bureau, Federal Communications Commission. *See also* Letter, dated June 30, 2004, from Christine M. Gill, Esq., Counsel to Southern LINC to Michael Wilhelm, Esq., Federal Communications Commission.

[444] When the ESMR spectrum is not adequate to accommodate all eligible licensees that wish to relocate to the ESMR block, and parties are unable to agree, we may apportion the ESMR block as a function of the relative spectrum rights each licensee holds in a given EA. For example, in a hypothetical market, outside the area shown in Appendix G, in which licensee "A" currently has rights to 150 channels and licensee "B" has rights to 250 channels, the 320 channels in the ESMR block would be apportioned by giving licensee "A" access to 128 channels (40%) and licensee "B" access to 192 channels (60%).

shown in Appendix G, a *pro rata* apportionment could reduce the current number of channels available to Nextel. However, we observe that Nextel has additional spectrum at 900 MHz which can be used to offset the shortfall and is receiving spectrum at 1.9 GHz. With respect to Southern LINC, we observe that its relocation to the ESMR block would provide Southern LINC with clear, contiguous spectrum arguably of greater value and capacity than the spectrum it now occupies. This would occur because, in some instances, Southern LINC would receive clear spectrum, in exchange for site-based channels which cannot currently be used in the entire EA because of the need to protect incumbents.

169. Finally, because we are extending the ESMR band to 813.5 MHz/858.5 MHz in the counties listed in Appendix G, some coordination between licensees will be necessary at the edge of these counties. Specifically, ESMR licensee operating within these counties will be required to maintain minimum co-channel spacing distances to incumbent non-cellular licensees operating just outside these counties.[445] In addition, there may be instances where a non-cellular licensee operating just outside these counties may need to relocate above 813.5 MHz/858.5 MHz in order to complete band reconfiguration. In these instances, the EMSR licensees operating within the counties listed in Appendix G will make all necessary accommodations in order to provide the non-cellular licensee with the minimum required co-channel spacing on the new channel.[446]

e. Permitting Additional Non-ESMR Cellular Architecture Systems in the 800 MHz Band

170. Some CII parties, such as utilities, contend that excluding cellular systems from the non-cellular portion of the 800 MHz band (806-817 MHz/851-862 MHz) will impose a hardship on CII licensees whose communications needs require a transition of their systems to cellular architecture.[447] We wish to proceed cautiously in this area out of concern over replicating the unacceptable interference problem we are attacking through band reconfiguration; but we also wish to avoid unnecessarily constraining the use of innovative technology in the process. The record suggests that CII cellular systems, with well-designed network architecture, can operate without causing unacceptable interference so long as they avoid the high-density cell operations that have been a frequent source of interference to date. We reach this finding in part because we do not anticipate that such CII or public safety systems will require high density, high user-capacity systems such as those used by CMRS licensees. The "non-CMRS" nature of these systems would suggest that they would not grow to have such high user demand that extensive deployment of low site cells would be required.[448]

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[445] *See* 47 C.F.R. § 90.621.

[446] We note that co-channel spacing may be reduced through short-spacing agreements. *See* 47 C.F.R. § 90.621(b)(5).

[447] *See* Comments of Cinergy to Supplemental Comments of Consensus Parties at 19; Comments of AMTA to Supplemental Comments of Consensus Parties at 4; Comments of Baltimore to Supplemental Comments of Consensus Parties at 7; Comments of Entergy to Supplemental Comments of Consensus Parties at 29; Comments of Scott C. Macintyre to Supplemental Comments of Consensus Parties at 1; Reply Comments of Cinergy to Supplemental Comments of Consensus Parties at 28; Reply Comments of Con-Ed to Supplemental Comments of Consensus Parties at 10; letter, dated May 6, 2004, from Shirley Fujimoto, Council for Entergy Corporation, Consumers Energy and Cinergy Corporation, to John Muleta Chief, Wireless Telecommunications Bureau, Federal Communications Commission (Entergy, Consumers and Cinergy May 6 *Ex Parte*).

[448] We note that, because we are affording CII licensees a special status because of their safety-related communications, we believe it would be anomalous to allow CII licensees to convert their systems to CMRS operation in which communications seldom are safety-related. Accordingly, we limit our definition of CII to those (continued....)

171. In this regard, the Consensus Parties offer a definition for the type of "high-density cellular" system they believe should be prohibited from operating in the non-cellular portion of the 800 MHz band.[449] The Consensus Parties would define a "high-density cellular" system as any system with (1) five or more overlapping interactive sites featuring hand-off capability; (2) any one of such sites having an antenna height of less than 100 feet above ground level with an antenna height above average terrain (HAAT) of less than 500 feet; (3) and any one of such sites having more than twenty paired frequencies.[450]

172. Several CII licensees, however, believe that the Consensus Parties definition is overly broad and would unduly limit the operation of many non-CMRS systems that pose little or no likelihood of harmful interference to other licensees in the 800 MHz band.[451] For instance, these CII licensees contend that the Consensus Parties definition would prohibit systems where any of these characteristics are present even though no individual site exhibits all of these characteristics.[452] Therefore, these CII licensees suggest applying the Consensus Parties definition on a site-by-site basis rather then on a system-wide basis.[453] We agree. The Consensus Parties were unclear about whether their definition should be applied system-wide or on a site-by-site basis. We believe that only sites which exhibit all of the characteristics described by the Consensus Parties would likely cause interference to other licensees in the 800 MHz band. Therefore, we will permit licensees to operate cellular-architecture systems in the non-cellular portion of the band without need for waiver so long as those systems are not high-density cellular systems under the following definition of "800 MHz cellular system": [454]

- a system having more than five overlapping interactive sites featuring hand-off capability; and
- any one of such sites has an antenna height of less than 100 feet above ground level with an antenna height above average terrain (HAAT) of less than 500 feet and more than twenty paired frequencies.[455]

173. If a licensee does wish to operate an 800 MHz cellular system, it will be required to obtain waivers for any and all sites that meet the second of our two criteria. In that case, a CII or public safety system licensee may avail itself of the Commission's waiver process pursuant to the waiver criteria set out in Section 1.925 of the Commission's Rules.[456] Any such request shall contain both a persuasive

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entities who operate radios systems for private internal use. See n. 11*supra*. Any licensee who converts to CMRS will fall outside our definition of CII and no longer be eligible for any of the benefits we extend to CII licensees

[449] *See* Reply Comments of Consensus Parties to Supplemental Comments of Consensus Parties at 28.

[450] *Id.*

[451] *See* Entergy, Consumers and Cinergy May 6 *Ex Parte* at 1.

[452] *Id.* at 1.

[453] *Id.*

[454] We emphasize that this definition of "800 MHz cellular system" applies only for this purpose in the 800 MHz band, and is not intended as a basis for making cellular/non-cellular distinctions for other purposes.

[455] We recognize that this definition encompasses operations where the overlapping interactive sites comprise only a portion of the overall communications "system" of a licensee. The licensee needs to obtain a waiver, however, only with respect to particular sites in the overlapping site clusters that satisfy the second criterion.

[456] 47 C.F.R. § 1.925.

showing of need and a demonstration of non-interference. Any waiver granted, will contain a continuing non-interference condition.[457] As stated above, cellular-architecture systems that do not come within the foregoing "800 MHz cellular" definition may be operated without need for a rule waiver; nonetheless, they must not cause unacceptable interference to 800 MHz "high-site" non-cellular systems. Our reason for requiring waivers for sites in high-density cellular systems is, in one respect, a means to ensure that system designers "do their interference abatement homework" before seeking Commission authorization for a facility in the non-cellular portion of the band. Moreover, proceeding only pursuant to waiver will allow us to more carefully gauge the effect that such high-density cellular technology in the non-cellular portion of the 800 MHz band would have. We can then revisit the matter at a later date before serious harm is done if new systems proliferate and cause unacceptable interference. Most importantly, were we to decide, here, to allow unrestricted, high density cellular operation in the non-cellular portion of the band, we would undo four years of intensive study and terminate this proceeding by virtually issuing an invitation for a high-density, multi-cell operator to construct interference-generating systems in incompatible spectrum and potentially put our first responders at risk and threaten their ability to adequately address Homeland Security threats. We will monitor this cellular restriction carefully and revisit it if necessary. As with any of our rules, waivers are available to accommodate special circumstances. However, there would be a high burden to surmount for any party seeking a waiver for CMRS operation.

174. As stated above, our definition of "800 MHz cellular system" should not be interpreted to allow cellular-configuration systems that do not come within the cellular definition to cause unacceptable interference or to relieve them from the cost and other responsibility for promptly abating unacceptable interference in the 800 MHz band should it occur. Rather, our cellular definition in the 800 MHz band context serves only as a demarcation between systems that can operate in the non-cellular portion of the 800 MHz band without a waiver and those that require a waiver.

3. Border Regions

175. Several parties note, and we concur, that no feasible band plan suggested in this proceeding comports with the current arrangement the United States has with Canada or with the protocols it has with Mexico for use of the 800 MHz band in the border areas. The existing border band plans, contained in Section 90.619 of our rules have evolved from periodic negotiations with these countries and have been adjusted from time to time. The border band plans are not consistent along the border; there are different distributions of channels in given border regions, primarily because of demographic considerations. The Consensus Parties were the only party to file a band plan for the border area; and several commenting parties, including Industry Canada—pointed out that the border area plan proposed by the Consensus Parties' had multiple flaws, including:

- *Mutual Aid Channels.* The border area plan fails to maintain channels designated by international agreements for mutual aid with Canada and Mexico.[458] The Consensus Parties

[457] Any cellular architecture system operating in the non-cellular portion of the band, whether authorized by waiver or otherwise, must strictly comply with the provisions of Section 90.673 as adopted in this *Report and Order.*

[458] *See* Comments of King County RCB to Supplemental Comments of the Consensus Parties at 4; Comments of MI DIT to Supplemental Comments of the Consensus Parties at 5; Comments of NY OIT to Supplemental Comments of the Consensus Parties at 6-8; Reply Comments of NY OIT to Supplemental Comments of the Consensus Parties at 5-6. Current international agreements designate five channels in the NPSPAC portion of the band (821-824/866-869 MHz) for public safety mutual aid between the U.S. and Canada and Mexico. These five channels are intended to facilitate interoperability between Canadian, Mexican and U.S. public safety licensees. The mutual aid channels are 821.0125/866.0125 MHz (calling), 821.5125/866.5125 MHz, 822.0125/867.0125 (continued....)

suggest relocating these channels to the lower portion of the 800 MHz band.[459] The Consensus Parties, however, fail to explain how users in Mexico or Canada would be compensated for retuning or replacement of equipment needed to operate on the new mutual aid channels.

- *Maintaining Spectrum for Various Pools.* The Consensus Parties' border area plan fails to maintain comparable spectrum for various 800 MHz band pools (public safety, B/ILT, SMR).[460] For instance—in certain regions—public safety loses channels after band reconfiguration while ESMR licensees gain channels after band reconfiguration.[461]

- *Public Safety Spectrum in Mexico Border Area.* Many of the channels in the Consensus Parties' border plan, designated for public safety use in the Mexico Border Region—after band reconfiguration—may be unusable because of short-spacings to co-channel incumbents outside of the border area.[462] For instance—due to co-channel spacing requirements—incumbent non-border licensees may "block" numerous channels designated for public safety use in San Diego, CA and Tucson, AZ.[463]

- *U.S. Operations on Canada/Mexico Primary Channels.* The Consensus Parties' border area plan is silent on relocation of U.S NPSPAC systems currently operating on Canada or Mexico primary channels.[464]

- *Channel Spacing.* The Consensus Parties' border area plan would reduce the span of frequencies available to B/ILT and non-cellular SMR licensees thus greatly reducing the span

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MHz 822.5125/867.5125 MHz and 823.0125/868.0125 MHz. *See U.S –Mexico Agreement,* Appendix C at Section 1 and *1990 U.S.-Canada Agreement* at Section 2.1c.

[459] *See* Supplemental Comments of the Consensus Parties, Appendix G-4.

[460] *See* Comments of American Elec. to Supplemental Comments of the Consensus Parties at 15-16; Comments of Boeing to Supplemental Comments of the Consensus Parties at 5-8; Comments of Border Area Coalition to Supplemental Comments of the Consensus Parties at 6-8; Comments of Consumers to Supplemental Comments of the Consensus Parties at 11-12; Comments of NY OIT to Supplemental Comments of the Consensus Parties at 4-6; Comments of Pinnacle to Supplemental Comments of the Consensus Parties at 6; Reply Comments of Boeing Reply to Supplemental Comments of the Consensus Parties at 9; Reply Comments of Central ME Power to Supplemental Comments of the Consensus Parties at 2-3; Reply Comments of Consumers Energy to Supplemental Comments of the Consensus Parties at 5-6; Reply Comments of NY OIT to Supplemental Comments of the Consensus Parties at 4-5; Reply Comments of San Diego Reply to Supplemental Comments of the Consensus Parties at 2-5.

[461] *See* Comments of American Elec. to Supplemental Comments of the Consensus Parties at 16; Comments of Border Area Coalition to Supplemental Comments of the Consensus Parties, Exhibit B at 3; Comments of Pinnacle to Supplemental Comments of the Consensus Parties at 6; Comments of NY OIT to Supplemental Comments of the Consensus Parties at 6.

[462] *See* Comments of Border Area Coalition to Supplemental Comments of the Consensus Parties, Exhibit A at 1-2, Exhibit B at 1-2, 7-8; Comments of San Diego to Supplemental Comments of the Consensus Parties at 2-4. Co-channel stations are generally required to maintain a fixed distance separation of 70 miles (113 km). *See* 47 C.F.R § 90.621(b).

[463] *Id.*

[464] *See* Comments of Snohomish County ERS to Supplemental Comments of the Consensus Parties at 2-3.

of frequencies which can be combined into a trunked system.[465]

- *Exacerbating the "Double Border."* Border area licensees currently need to coordinate both with licensees outside the U.S (Mexico/Canada) and U.S licensees in the non-border area. The Consensus Parties' reconfiguration plan exacerbates this problem due to the extensive channel relocations involved in band reconfiguration.[466]

- *Canada/Mexico NPSPAC Licensees.* The Consensus Parties make no mention of whether their reconfiguration proposal will negatively affect NPSPAC operations in Canada and Mexico.[467] Under the Consensus Parties band plan, after band reconfiguration, ESMR operations on the U.S. side of the border would operate on the same channels as NPSPAC operations in Canada and Mexico.

- *iDEN Arrangement.* The border area plan will affect a current agreement between the U.S. and Canada to reserve certain channels in the 800 MHz band for iDEN digital networks.[468]

176. We note that our agreements with Mexico and Canada establish a distance beyond which U.S licensees need not consider border stations when selecting channels. The distance is 140 km (87 mi.) and 110 km (68.4 mi.) from the border for Canada and Mexico, respectively.[469] Depending on how the border band plans develop, there is the possibility of a "double border." The second border would be created if the overall U.S. band plan differs from a band plan for the border regions. For example, the overall U.S. band plan may assign a given channel for public safety use, *e.g.* Channel 88 and the border band plan may assign the same channel for ESMR use. In this example, the strict responsibility regime we establish today requires the ESMR Channel 88 licensee to protect the non-cellular 800 MHz system against unacceptable interference. In instances in which a border band plan results in different uses of a given channel for non-cellular systems, *e.g.* a U.S. SMR system operating in the Mexican border area and a public safety channel operating beyond the 110 km line, *supra,* our current coordination procedures would come into play and the two users would be protected against mutual unacceptable interference by required distance spacings.[470] The details of the border band plans will be determined in our ongoing discussions with the Mexican and Canadian governments. One principal goal of these discussions will be to ensure that the capability for cross-border mutual aid communications is maintained. Thereafter, we will address any "double border" issues. Until border agreements are reached, however, 800 MHz licenses in the border area will be conditioned on compliance with international agreements. We further note that Nextel will bear the financial responsibility for the completion of any system modifications

[465] *See* Comments of Border Area Coalition to Supplemental Comments of the Consensus Parties, Exhibit D at 2-3; Comments of Consumers Energy to Supplemental Comments of the Consensus Parties at 9.

[466] *See* Comments of Boeing to Supplemental Comments of the Consensus Parties at 10-11; Comments of Border Area Coalition to Supplemental Comments of the Consensus Parties, Appendix D at 3; Comments of Pinnacle to Supplemental Comments of the Consensus Parties at 3-4; Reply Comments of Boeing to Supplemental Comments of the Consensus Parties at 8-9.

[467] *See* Comments of Industry Canada to Supplemental Comments of the Consensus Parties at 7.

[468] *Id* at 6.

[469] *See, e.g.,* 47 C.F.R. § 90.619 in Appendix C *infra.*

[470] *Id.*

necessitated by any future international agreements.[471]

4. Cost Responsibility

177. Band reconfiguration will be costly. We believe, however, that sole reliance on Enhanced Best Practices to abate unacceptable interference would entail a continuing expense that—over the long term—would eclipse the admittedly high initial cost of band reconfiguration.[472] Under the Consensus Proposal, and the rules that we adopt today, the cost of band reconfiguration can be accommodated to successfully address the critical interference problems faced by public safety providers. Moreover, we are confident that Nextel is capable of fulfilling its central role in achieving this result, given its demonstrated ability to bear the upfront costs of band reconfiguration.[473] The record does not reveal any effective alternative to the one we fashioned here—either by band reconfiguration or otherwise—to solve the instant problem. No other spectrum management approach provided the same assurances of success. Furthermore the plan we are adopting today will preserve the abilities that public safety licensees are likely to need in order to meet their increased Homeland Security obligations.

178. Under the band reconfiguration plan, the principle cost component will be borne by Nextel, which will pay for all channel changes necessary to implement the reconfiguration.[474] Nextel is obligated to ensure that relocated licensees receive at least comparable facilities when they change channels.[475] Moreover, a licensee electing to relocate to the ESMR block voluntarily, must receive clear, incumbent-free replacement spectrum. Thus, Nextel shall be responsible for the clearance of any incumbents affecting the replacement channel. If disputes arise concerning the cost allocation, the matter may be referred to the Transition Administrator for resolution; and, failing that, to the Chief of the Wireless Telecommunications Bureau for *de novo* review.[476]

a. Relocation Costs and Remuneration

179. The Consensus Parties estimated the cost of reconfiguring the 800 MHz band at $850 million. Nextel committed to pay up to that amount conditioned on Commission approval of the Consensus Plan without material change.[477] We conclude, however, that we cannot reasonably "cap" the amount required for band reconfiguration if completing the reconfiguration process requires more than

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[471] In the event that the requisite border area agreements are not reached within thirty-six months of the release date of the Public Notice announcing the start of reconfiguration of the first NPSPAC Region, Nextel shall elect to extend the life of the letter of credit or secure a separate letter of credit for a sum of money equal to that which would have been incurred had the Commission band plan been implemented along the borders without regard to international agreements.

[472] *See* ¶¶ 120-121 *supra*.

[473] *See* ¶ 29 *supra*. *See also* n. 478 *infra*.

[474] We note that 800 MHz licensees may divide relocation costs with Nextel if they so choose. For instance, we observe that Southern LINC and Nextel are working on an agreement whereby costs for relocating Southern LINC's facilities may be divided between the two parties. *See* ¶¶ 164-168 *supra*.

[475] *See* ¶ 201 *infra*.

[476] *See* ¶ 194 *infra*.

[477] Supplemental Comments of the Consensus Parties at iv-v.

$850 million.[478] First, as discussed above, our band reconfiguration plan differs from that of the Consensus Parties, most particularly with respect to considerations affecting efficient use of the spectrum. In light of these changes, we place less reliance on the assumptions Nextel made when it estimated the cost of band reconfiguration. We did not undertake an *ab initio* analysis of the cost of band reconfiguration but instead carefully analyzed the data contained in the record. In that regard we have taken careful notice of certain sensitive assumptions in Nextel's analysis, which, if varied by only a few percent, greatly affect Nextel's cost estimate.[479] The one certainty that we derive from our analysis is that it would be unwise in the extreme to proceed with band reconfiguration without making it clear that Nextel is obligated to cover the entire cost thereof, with no "cap."[480] Thus, if we accepted any cap on Nextel's reconfiguration cost obligations and its estimates proved low—*i.e.*, if we capped costs at $850 million and that amount was exhausted before the completion of nationwide band reconfiguration—a balkanized 800 MHz band would likely result, in which public safety agencies in one section of the country would operate pursuant to a revised band plan and other agencies would operate pursuant to the current, interference-ridden, band plan. This could seriously diminish public safety interoperability between NPSPAC Regions, and could also impair the ability of non-NPSPAC public safety systems to develop interoperable networks. We also observe that the Consensus Parties themselves admit the possibility that $850 million may prove inadequate.[481] Thus, when discussing the assurance that the exhausted funds would not result in a half-reconfigured 800 MHz band, they state that: "no incumbent licensees will be required to relocate within a Region...unless funding is available for all licensee relocations required in that Region."[482] While this addresses the possibility of the incomplete reconfiguration of a single Region, the Consensus Parties are silent on the greater hazard resulting from the funds evaporating before the reconfiguration of all Regions: *e.g.*, a negative effect on inter-region interoperability.

b. Continued Availability of Funds

180. In the *NPRM*, the Commission sought comment on how to guarantee the availability of funding to complete the reconfiguration of the 800 MHz band regardless of the financial status of the contributing party or parties.[483] In response, parties suggested how to ensure the completion of band reconfiguration notwithstanding the inability of the funding entity to continue to furnish funds for reasons of bankruptcy or otherwise.[484] The Consensus Parties, for example, initially proposed that Nextel could secure its ability to fund retuning costs by setting up a separate corporate entity to hold assets securing the Nextel funding obligation. The stock of the entity would be pledged to an escrow agent/trustee, with the

[478] We take this step pursuant to Section 4(i) of the Communications Act. 47 U.S.C. § 154(i).

[479] *See* n. 489 *infra*.

[480] This is consistent with the Commissions actions in the Upper 200 and Microwave Relocation proceedings. *See* Amendment of Part 90 of the Commission's Rules to Facilitate Future Development of SMR Systems in the 800 MHz Frequency Band, PR Docket No. 93-144 and Amendment to the Commission's Rules Regarding a Plan for Sharing Costs of Microwave Relocation, WT Docket No. 95-157.

[481] Supplemental Comments of the Consensus Parties at 6 (noting estimate of total costs for relocating public safety licensees is subject to several significant variables such as the number of total radios which will need to be replaced).

[482] *See* Supplemental Comments of the Consensus Parties at 12.

[483] *See NPRM*, 17 FCC Rcd at 4899 ¶ 45.

[484] *See, e.g.*, Supplemental Comments of the Consensus Parties at 8; Nextel Nov 3 *Ex Parte*.

power to sell the assets and hold the cash proceeds in escrow for the benefit of the Fund Administrator in the event Nextel failed to meet its payment obligations.[485] However, this proposal was superseded on November 3, 2003, when Nextel committed to deposit $100 million in cash into an escrow account created and designated for paying 800 MHz band reconfiguration costs pursuant to the Consensus Plan and securing up to an additional $750 million for this purpose through an irrevocable stand-by letter of credit.[486] Nextel claims that this proposal would insulate band reconfiguration funds from any financial reversals that Nextel might encounter, including bankruptcy.[487]

181. Nextel's escrow deposit and irrevocable stand-by letter of credit appear better capable of assuring continued relocation funding than the Consensus Parties' earlier proposal, although we prefer to rely solely on the Letter of Credit. However, we remain mindful of those parties who questioned the Consensus Plan cost estimates, both with respect to the number of systems that would have to be relocated and whether equipment in those systems could be retuned or would have to be replaced.[488] We also recognize that even small errors in certain sensitive parameters could dramatically increase total relocation costs.[489] We are therefore faced with the question of who should assume the risk if relocation cost projections prove to be inadequate: Nextel, which made the estimates, or the public, which would suffer the consequences of incomplete implementation of a nationwide 800 MHz band plan. In resolving that question, we note that Nextel has stated that it is "highly confident" in the accuracy of its estimates, which suggests that it perceives little risk in assuming the entire band reconfiguration obligation.

[485] *See* Supplemental Comments of the Consensus Parties at 8.

[486] *See* Nextel Nov. 3 *Ex Parte* at 3.

[487] *See id.* at 3; Supplemental Comments of the Consensus Parties at 7-8; *cf. NPRM,* 17 FCC Rcd at 4899 ¶ 45 (seeking comment on safeguards to guarantee that the "then state of finances of a contributing party or parties" would not hinder the completion of band reconfiguration).

[488] *See* Comments of Mobile Relay Associates to Supplemental Comments of the Consensus Parties at 6; (no way to determine whether Consensus Plan adequately estimates overall funding needs); Comments of Border Area Coalition to Supplemental Comments of the Consensus Parties at 12 (Consensus Plan does not take into account additional costs that border area licensees would incur); Comments of Small Business in Telecommunications to Supplemental Comments of the Consensus Parties at 2-4 (questioning estimate of $17,000 per channel for relocation and $12,000 per channel for rebanding.). *See also* Comments of CTIA to Supplemental Comments of the Consensus Parties at 10 and Comments of Michigan DIT to Supplemental Comments of the Consensus Parties at 3 (Consensus Plan underestimates number of small public safety systems that would be relocated).

[489] Nextel's estimates are based on replacing one percent of public safety portable and mobile radios. However, the City and County of San Diego provided estimates that more than thirty percent of its units would have to be replaced. *See* Comments of San Diego to Supplemental Comments of the Consensus Parties at 12-13. Subsequently, Nextel filed a letter stating that the San Diego estimates were overstated; but that, nonetheless, more than one percent of the units in the San Diego system would have to be replaced. *See* Letter, dated February 20, 2004, from Larry Krevor, Esq., Nextel to Michael Wilhelm, Esq. Public Safety and Critical Infrastructure Division, Wireless Telecommunications Bureau, Federal Communications Commission. The San Diego system may not be representative inasmuch as it was constructed in 1991 and is still using radios of that vintage. *See also, e.g.* Reply Comments of ALLTEL *et. al.* to Supplemental Comments of the Consensus Parties at 6-7 (the cost of receiver replacement increases $78 million for every one percent increase in number of receivers that must be replaced.) *See also* Comments of Verizon Wireless to Supplemental Comments of the Consensus Parties at 10 and Comments of Preferred Communications to Supplemental Comments of the Consensus Parties at 9-10 (Questioning Consensus Plan estimate that one percent of public safety receivers would need to be replaced) Comments of Ameren to Supplemental Comments of the Consensus Parties at 5 (Consensus Plan proposal of $150 million to relocate B/ILT incorrectly assumes that relocation would only require the replacement of only five percent of B/ILT equipment).

However, we also believe it is important to protect against the risk of Nextel experiencing an unanticipated financial crisis or insolvency that would impair its ability to fully fund relocation.

182. Because the Commission Plan requires Nextel to shoulder a greater financial obligation than the financial obligation envisioned in the Consensus Plan, we will require Nextel to increase the amount of money irrevocably available to ensure completion of band reconfiguration. Specifically, we will require Nextel to provide an irrevocable letter of credit securing $2.5 billion.[490] This letter of credit will serve as the funding source for the costs involved in reconfiguring the 800 MHz systems for non-Nextel licensees and possibly as the source for any payment to the United States Treasury.[491] Nextel must directly pay its own relocation costs as well as such obligations such as the reimbursement of UTAM, the relocation of BAS incumbents and the compensation of the Transition Administrator and the Letter of Credit Trustee. We have provided a model letter of credit at Appendix E, *infra,* and expect that the letter of credit will be issued in substantially the same form set forth therein.[492] While we require that only one financial institution, acceptable to the Commission,[493] issue the letter of credit, we have no objection to the indirect participation of other financial institutions, acceptable to the Commission, if necessary.[494]

183. As described more fully at ¶¶ 198-200 *supra,* the Trustee will draw upon the letter of credit those funds necessary to accomplish band reconfiguration. As part of the process by which the Transition Administrator will certify that band reconfiguration in a particular NPSPAC region is complete—or at Nextel's reasonable request, the Transition Administrator will evaluate the sum remaining available under the initial letter of credit and any subsequent letter(s) of credit issued pursuant to this *Report and Order*. If, at any time, the Transition Administrator documents that the letter(s) of credit does not retain sufficient undrawn funds to ensure completion of band reconfiguration, Nextel will be required to open an additional letter of credit. If, however, the Transition Administrator documents

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[490] We emphasize that the required $2.5 billion security is not a "cap" on Nextel's obligations hereunder, whether for 800 MHz band reconfiguration or 1.9 GHz band clearance. We further emphasize that this determination does not represent a finding by the Commission that 800 MHz band reconfiguration can, in fact, be accomplished for $2.5 billion.

[491] *See* ¶¶ 186 *infra.*

[492] The model letter of credit provides that the letter will be issued for five years unless it contains an "evergreen" clause. If such a clause is included in the letter of credit and the issuing institution gives notice of non-renewal, Nextel shall ensure that a replacement letter is issued no later than thirty days prior to the expiration date of the letter of credit. A failure to do so shall entitle the Commission to instruct the Trustee to make a draw on the letter of credit for the entire remaining balance thereof.

[493] A bank that is acceptable to the Commission to issue the Letter of Credit is a) any United States Bank that (i) is among the 50 largest United States banks, determined on the basis of total assets as of December 31, 2003, (ii) whose deposits are insured by the Federal Deposit Insurance Corporation, and (iii) has a long-term unsecured credit rating issued by Standard & Poor's of A- or better (or an equivalent rating from another nationally recognized credit rating agency); and b) any non-U.S. bank that (i) is among the 50 largest non-U.S. banks in the world, determined on the basis of total assets as of December 31, 2003 (determined on a U.S. dollar equivalent basis as of such date), (ii) has a branch office in New York City or such other branch office agreed to by the Commission, (iii) has a long-term unsecured credit rating issued by a widely-recognized credit rating agency that is equivalent to an A- or better rating by Standard & Poor's, and (iv) issues the Letter of Credit payable in United States dollars. Should the bank's credit rating fall below A- or equivalent rating, the Commission may require Nextel to procure the issuance of a letter of credit in an amount equivalent to that remaining on the current letter of credit by a bank that meets the criteria set forth herein.

[494] *Id.*

nat the letter(s) of credit secures funds in excess of those needed to ensure completion of band reconfiguration, Nextel will be allowed to reduce the amount of the letter(s) of credit. At no point, however, will the Transition Administrator allow Nextel to reduce the total aggregate secured by the letter(s) of credit below $850 million. We believe that allowing reductions in the letter(s) of credit will relieve Nextel of an unnecessary financial burden and anticipate that Nextel may use the monies freed by the reduction to improve or expand its network, including its operations in the 1.9 GHz band. This would not only improve its service to the public, but the revenues derived from this improved service would strengthen its financial position and serve as an additional hedge against financial reversals that might affect band reconfiguration. At the conclusion of the true-up process, including securing the funds necessary to ensure reconfiguration of the band in border areas, Nextel's obligation to provide security for the cost of 800 MHz band reconfiguration shall terminate and the letter(s) of credit will terminate.[495]

184. The letter(s) of credit shall specify a trustee, acceptable to the Commission, as the beneficiary, which shall administer the funds from the letter of credit and receive the funds from the letter of credit in the event of a Nextel default. Nextel and the Letter of Credit Trustee shall formalize the terms of their relationship with a written contract and/or a trust deed, drafts of which shall be submitted for Commission final review and approval.[496] On the occasion of a material breach by Nextel of its obligations hereunder, as declared by the Commission, said trustee shall be entitled to draw on the letter of credit as specified in such instrument. The funds shall be devoted to reconfiguration of the 800 MHz band and possibly payment to the United States Treasury.[497] Neither the Transition Administrator nor the Letter of Credit Trustee will be compensated from funds available under the letter of credit, but will be compensated directly by Nextel.

185. If Nextel is unable or unwilling to fulfill its obligations pursuant to this *Report and Order*, the Commission can approve the use of letter of credit funds to compensate the Transition Administrator and the Letter of Credit Trustee for their services. The trustee shall stand as a fiduciary to the Commission. Letter of credit funds shall be applied first to band reconfiguration of non-Nextel licensees; and then to the relocation of Nextel's facilities as required to conform to the new 800 MHz band plan. Should the funds be insufficient to complete relocation of Nextel's facilities, the licenses of un-relocated Nextel facilities shall automatically revert to secondary status. Pursuant to such secondary status, such unfinished Nextel facilities must not interfere with, and must accept interference from, any other 800 MHz licensee.

186. As described in paragraph 330 *infra*, the Wireless Telecommunications Bureau will issue a Public Notice specifying the amount that Nextel will pay the United States Treasury. If Nextel does not make payment of any amount that it owes within thirty days of issuance of this Public Notice, the amount Nextel owes will be paid from the letter(s) of credit. If the letter(s) of credit do not secure sufficient funds, then, in addition to debt collection remedies that the government may employ, the Commission will determine whether forfeitures should be imposed and/or whether Nextel licenses, included, but not limited to its 1.9 GHz licenses, should be revoked.

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[495] *See* Appendix E–Annex C, *infra* (Termination of Letter of Credit form).

[496] The contract will authorize the formation of the "800 MHz Relocation Trust" and the corpus of the trust will be the letter or letters of credit issued pursuant to the terms of this Order. The trust will be permitted to receive and hold draws under the letter of credit to facilitate multiple payments to particular licensees, vendors, contractors, etc., to pay for approved relocation costs. An outline of the key terms envisaged by the Commission are attached hereto as Appendix E-Annex D.

[497] *See* ¶¶ 186, 329-332 *infra*.

187. Because the Commission does not engage in deciding debtor-creditor matters, including those relating to bankruptcy, we, *inter alia,* will not permit Nextel to operate within the 1.9 GHz band without first providing the Commission with a legal opinion letter, at Nextel's cost, from bankruptcy counsel chosen by Nextel. This restriction is a condition of Nextel's modified license. In order to meet this condition, the opinion letter must clearly state, subject only to customary assumptions, limitations and qualifications, that in a proceeding under Title 11 of the United States Code, 11 U.S.C. Section 101 et seq. (the "Bankruptcy Code"), in which Nextel is the debtor, the bankruptcy court would not treat the Letter of Credit or proceeds of the Letter of Credit as property of Nextel's bankruptcy estate under Section 541 of the Bankruptcy Code. The scope of the opinion letter must also cover such other opinions as the Commission shall request. The opinion letter must contain detailed legal analysis of the basis of counsel's opinion. A draft opinion letter must be submitted for review and approval by the Commission's Office of General Counsel prior to issuance of the opinion. Bankruptcy counsel, and, if applicable, counsel's firm, must have a Martindale-Hubbell rating of "A/V" and must satisfy the Commission in all other respects.

5. Logistics of Band Reconfiguration

188. In the *NPRM,* the Commission acknowledged that any band restructuring proposal would require incumbents to relocate.[498] We therefore sought comment on how to implement reconfiguration of the 800 MHz band with minimum disruption to incumbent licensees. We did not endorse or propose any specific transition plan, but instead sought comment on several proposals that would help inform our decision regarding relocation and which reflected our underlying goal that relocation plans should appropriately balance the interests of all licensees.

189. In the *NPRM,* the Commission sought comment on the best mechanism to collect and administer funds and to resolve disputes with respect to the relocation of public safety systems.[499] The Consensus Parties recommend creation of a five member Relocation Coordination Committee (RCC) to oversee the relocation process.[500] For example, the RCC would first prioritize the NPSPAC regions for relocation according to population and greatest incidence of interference.[501] They also proposed a Planning Committee—separate from the RCC—to review each new relocation channel assignment to ensure that the relocated licensee would not cause or receive unacceptable co-channel interference on the new channel(s).[502] The RCC certification of a relocation plan would trigger a mandatory nine-month negotiation period between affected licensees and Nextel.[503] If an agreement were not reached by the end of the nine-month period, the parties would submit to binding arbitration by an RCC-established arbitration panel.[504] The RCC would be certified as a frequency coordinator by the Commission and—after selecting channels for a relocated system and obtaining approval of the relevant frequency coordinator—would file the applications with the Commission. They also proposed cancellation of the

[498] *See NPRM,* 17 FCC Rcd at 4891 ¶ 31.

[499] *Id.* at 4898 ¶ 45.

[500] *See* Supplemental Comments of the Consensus Parties at 14-17.

[501] *Id.* at 16. Appendix E of the Supplemental Comments of the Consensus Parties provides a sample prioritization scheme.

[502] *Id.* at 18.

[503] *Id.* at 21.

[504] *Id.* at 21-22.

licenses of any licensee that failed to relocate within thirteen months, absent special circumstances.[505]

a. Transition Administrator

190. In the *NPRM*, the Commission sought comment on the best mechanism to collect and administer funds and to resolve disputes with respect to the relocation of public safety systems.[506] No other party filed a proposal giving details of how its band plan would be implemented; although several commenting parties criticized the Consensus Parties implementation plan as excessively Nextel-centric and unduly complex.[507] We are in general agreement with the parties who raised those issues. Although we fully appreciate the significant effort that band reconfiguration will entail, we believe the administrative structure proposed by the Consensus Parties would delay, rather than facilitate, timely completion of band reconfiguration. Moreover, we are sensitive to the comments of those parties who expressed concern about the potential conflict of interest inherent in the proposed RCC and questioned whether the Commission could legally grant the RCC the powers envisioned by the Consensus Parties.[508]

191. Accordingly, we believe that using an independent individual or company, who, or which, will serve as a Transition Administrator subject to oversight by the Commission is the best approach for ensuring that band reconfiguration proceeds on schedule. The Transition Administrator may also serve to mediate disputes that may arise in the course of band reconfiguration.[509] As contemplated by the Consensus Parties in their proposal for a RCC, Nextel will pay for the services of the Transition Administrator and staff as one of the transactional costs borne by Nextel in connection with band reconfiguration. We will follow a selection process similar to that suggested by the Consensus Parties; *i.e.*, the Transition Administrator will be an independent party with no financial interest in any 800 MHz licensee; and will be selected by a committee representative of 800 MHz licensees. We direct the following organizations to designate a representative to serve on the search committee for the Transition

[505] *Id.* at 24.

[506] *See NPRM*, 17 FCC Rcd at 4998-99 ¶ 45.

[507] *See, e.g.*, Comments of Carolina Power and Light to Supplemental Comments of the Consensus Parties at 3, 7-8; Comments of Cinergy to Supplemental Comments of the Consensus Parties at 16; Comments of Consumers Energy, Inc. to Supplemental Comments of the Consensus Parties at 25-26.

[508] *See, e.g.*, Comments of Alliant Energy to Supplemental Comments of the Consensus Parties at 3, Comments of Ameren Corp. to Supplemental Comments of the Consensus Parties at 12-13, Comments of Boeing to Supplemental Comments of the Consensus Parties at 25-26.

[509] We will make this appointment pursuant to the authority given to us under Section 4(i) of the Act. *See* 47 U.S.C. § 154(i). The Commission has used similar third-party solutions in the past. In 1994, the Commission appointed an independent, non-governmental entity, UTAM, as the coordinating body to oversee the transition from fixed microwave operations to UPCS and to manage the transition to full band clearing. *See* Amendment of the Commission's Rules to Establish New Personal Communications Services, *Memorandum Opinion and Order*, 9 FCC Rcd at 4957 ¶ 209 (1994). In 1996, the Commission appointed the Personal Communications Industry Association (PCIA) and the Industrial Telecommunications Association, Inc. (ITA), two private non-governmental entities, to administer the microwave clearinghouse cost-sharing plan. *See* Amendment of the Commission's Rules Regarding a Plan for Sharing the Costs of Microwave Relocation, WT Docket No. 95-157, *Memorandum Opinion and Order*, 11 FCC Rcd 9394 (WTB 1996).

Administrator:[510]

- Nextel Communications, Inc.;
- The Association of Public Safety Communications Officials-International;
- The Industrial Telecommunications Association;
- Southern LINC; and
- United Telecom Council;

192. Should any of the organizations, *supra,* decline to designate a representative; the Commission will designate a substitute organization. The Public Safety and Critical Infrastructure Division of the Wireless Telecommunications Bureau is hereby delegated the authority to choose such substitute organization. The search committee shall convene within fifteen days of the date this *Report and Order* is released, and shall select the Transition Administrator within forty-five days of the date this *Report and Order* is released. The search committee should proceed by consensus; however if a vote on selection of a Transition Administrator is required, it shall be by a supermajority of the representatives of four of the organizations, *supra.* The search committee shall notify the Commission of its choice for Transition Administrator. This notification shall: (a) fully disclose any perceived potential conflicts of interest or appearance of conflicts of interest of the Transition Administrator or his or her staff; and (b) set out in detail the salary and benefits associated with each position.

193. On receipt of this notice regarding selection of a Transition Administrator, the Commission will issue a public notice to that effect. The Chief of the Public Safety and Critical Infrastructure Division is hereby delegated the authority to issue said Public Notice. During the course of the Transition Administrator's tenure, the Commission will take such measures as are necessary to ensure timely compliance with this *Report and Order*, including, should it become necessary, convening another search committee to choose a replacement Transition Administrator.

194. The Transition Administrator will serve both a ministerial role and a function similar to a special master in a judicial proceeding.[511] In the latter role, the Transition Administrator may mediate any disputes that may arise in the course of band reconfiguration; or refer the disputant parties to alternative dispute resolution fora. Any dispute submitted to the Transition Administrator, or other mediator, shall be decided within thirty days after the Transition Administrator has received a submission by one party and a response from the other party. Any party thereafter may seek expedited non-binding arbitration which must be completed within thirty days of the Transition Administrator's, or other mediator's recommended decision or advice. The parties will share the cost of this arbitration.[512] Should issues still remain unresolved they may be referred to the Chief of the Public Safety and Critical Infrastructure Division of the Wireless Telecommunications Bureau within ten days of the Transition Administrator's, or other

[510] We chose these parties because we believe they closely represent a cross-section of the viewpoints presented in the proceeding by parties having a vested interest in the manner in which the 800 MHz band is to be reconfigured.

[511] Courts often appoint special masters as a means of addressing, *inter alia,* judicial limitations such as time constraints, lack of expertise in esoteric areas and lack of skill in certain roles, such as the facilitation of settlement negotiations. *See* Wayne D. Brazil, *Special Masters in Complex Cases: Extending the Judiciary or Reshaping Adjudication?*, 53 U. Chi. L. Rev. 394-394-395 (1986).

[512] We note, however, that some government agencies can not engage in mediation or arbitration.

mediator's recommended decision or advice. When referring an unresolved matter to the Chief of the Public Safety and Critical Infrastructure Division, the Transition Administrator shall forward the entire record on any disputed issues, including such dispositions thereof that the Transition Administrator has considered. Upon receipt of such record and advice, the Commission will decide the disputed issues based on the record submitted. The authority to make such decisions is hereby delegated to the Chief of the Public Safety and Critical Infrastructure Division of the Wireless Telecommunications Bureau who may decide the disputed issue or designate it for an evidentiary hearing before an Administrative Law Judge. If the Chief of the Public Safety and Critical Infrastructure Division of the Wireless Telecommunications Bureau decides an issue, any party to the dispute wishing to appeal the decision may do so by filing with the Commission, within ten days of the effective date of the initial decision, a Petition for *de novo* review; whereupon the matter will be set for an evidentiary hearing before an Administrative Law Judge. Parties seeking *de novo* review of a decision by the Wireless Telecommunications Bureau are advised that, in the course of the evidentiary hearing, the Commission may require complete documentation relevant to any disputed matters; and, where necessary, and at the presiding judge's discretion, require expert engineering, economic or other reports or testimony. Parties may therefore wish to consider possibly less burdensome and expensive resolution of their disputes through means of alternative dispute resolution.

195. The duties of the Transition Administrator will include, but not be limited to:

- Obtaining estimates from licensees regarding the cost of reconfiguring their systems and ensuring that estimates contain a firm work schedule and other matters set forth in Appendix E-Annex E, *infra*. The Transition Administrator will retain copies of all estimates and make them available to the Commission on request.

- Resolving disputes between Nextel and licensee on cost estimates for reconfiguring a system.

- Issuing the Draw Certificate to authorize and instruct the Letter of Credit Trustee to draw down on the Letter of Credit to pay relocation costs in connection with reconfiguring a licensee's system.[513] *See* Appendix E–Annex B2.

- Establishing a relocation schedule on a NPSPAC region-by-region basis, prioritizing the regions on the basis of population.[514] However, should a given region be encountering unusually severe amounts of unacceptable interference, that region may be moved up in priority. Any party disputing such a change in priority may refer the matter to the Chief of the Public Safety and Critical Infrastructure Division, who hereby is delegated the authority to resolve such disputes. The Transition Administrator may direct that adjoining regions be reconfigured simultaneously when conditions so require.

- The Transition Administrator will coordinate relocation of a NPSPAC Region's NPSPAC channels with the relevant Regional Planning Committee(s) prior to commencing band reconfiguration in a NPSPAC Region.

[513] The Transition Administrator will devise a suitable payment system with respect to each system that is reconfigured, including, if appropriate, instructing the Letter of Credit Trustee to make stage payments to licensees, vendors, *etc.*

[514] In developing such a schedule, the Transition Administrator has the discretion to exclude certain non-public safety licensees from a NPSPAC region relocation schedule, provided that they are eventually relocated prior to the end of band reconfiguration.