BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

In the Matter of

Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band	PS Docket No. 06-229
Development of Operational, Technical and Spectrum Requirements for Meeting Federal State and Local Public Safety Communications Requirements Through the Year 2010	WT Docket No. 96-86

Summary

The Tennessee Public Safety 700 MHz Regional Planning Committee, Region 39, provides these comments in response to the Commission's Further Notice of Proposed Rulemaking with the perspective of the public safety user community and those responsible for managing and ensuring public safety spectrum in the 700 and 800 MHz bands today meets the need of the user community. Region 39 feels the Commission has struck the right chord with some of its tentative conclusions proposed in the FNRPM and Regional 39 feels that other conclusions are not in the interest of the public safety user community.

Region 39 supports the Commission's attempt to regionalize the D block license in the auction process to offer more opportunity for bidder participation at the regional level. We support the issuance of a nationwide license over that of a regional approach but understand the Commission's need for the auction to include bidding opportunities for both. Another reason we support a single, nationwide licensee over multiple regional licensees is that we feel the chances are greater that a single nationwide licensee would be more capable of consistently integrating nationally future broadband technologies with the existing 2.5 and 3G technologies offered today. While such integration would also be possible with multiple

regional D block licensees, logistically it will be more difficult to provide compatible mobile data services to the public safety community than with a single, nationwide D block licensee.

Region 39 does support the Commission's use of Public Safety Regions (PSR) that are consistent with existing 700 MHz regional planning committees in this proceeding and we acknowledge that regional planning experience and familiarization with "on the ground" user needs can be beneficial to the D block licensee(s) and the PSBL in the development of the Shared Wireless Broadband Network (SWBN).

Region 39 supports the Commission's tentative conclusion naming the National Regional Planning Council (NRPC) as a voting member of the Public Safety Broadband Licensee, the Public Safety Spectrum Trust. We feel strongly that a NRPC representative on the PSST can provide a unique perspective of local spectrum management and user needs to the PSST that they will need as they work with the D block licensee in the development of the SWBN.

Region 39 supports the Commission's conclusion to aggregate the 5 MHz D block and the Public Safety 5 MHz block to affect a 10 MHz paired shared network with public safety having priority with and utilizing 50% of the 10 MHz paired network. We feel this is a more efficient method of sharing the network than one in which each 5 MHz paired block of spectrum is assigned to its respective user community. In this instance, public safety retains its assigned capacity via a consolidated, efficient network.

With regard to the issue of limiting the use of certain high bandwidth applications that can negative impact service within the network, such as streaming video, we feel these capacity management issues should be managed at the local level. Once police and fire chiefs are made aware of the impact of certain applications, they will make prudent and reasonable decisions to ensure that the management of the network capacity in their community will remain cognizant of the need of all users in all agencies. Should high bandwidth applications be necessary, a protocol will be established to effect these necessary applications in a manner that does not adversely impact the effectiveness of the SWBN. With regard to the issue of individual agencies or communities developing their own 700 MHz broadband networks

outside of or prior to the scope of the SWBN, we feel these systems can be effectively developed with oversight by the Commission using methods to ensure technology compatibility between systems developed by non-PSBL licensees and the SWBN. For example, a condition of retaining non-PSBL licenses could be the 700 MHz broadband systems being periodically reviewed to ensure that the technologies utilized are comparable to the technology utilized in the SWBN. Ensuring compliance of locally developed systems by non-PSBL licensees will enhance D block system coverage and ensure technology compatibility between wide area systems developed over the life cycle required by the Commission

Region 39 also thinks that the Commission ruling on who should be responsible for costs of hardware necessary to further voice interoperability between agencies not utilizing the SWBN is premature. It is possible that voice interoperability between users and non-uses of the SWBN will be required at some point in the future and the determination of who bears the cost for such necessary hardware should be determined when such interoperability is needed or sought and is any such decision is premature at this time.

Region 39 believes that decisions to harden the SWBN and make it more robust should be made jointly by the D block licensee, the PSST (or any other 700 MHz broadband licensee) and the local public safety community in the area of concern. These decisions must take into account a lot of factors and we feel a regular dialogue between the interested parties is the best method of creating a robust SWBN. In addition, Region 39 feels that any negotiation between the parties of interest in created a robust SWBN should highlight that, whenever possible, the design of the SWBN should promote continuity of service and sites determined as "critical" should be those that when lost sever service to the public safety end user community. We feel that the loss of a site that results in a reduction of available throughput to the users is more favorable that when a site causes a loss of service. We encourage the D block and the PSST to make it a priority to ensure that continuity of service during times of crisis is of the utmost importance to public safety users and that during critical incidents is when service, even service with diminished capacity, is needed the most.

Region 39 supports the use of non-terrestrial coverage to meet D block coverage requirements above the minimum threshold as identified by the Commission. Local input from the user community should be included in these decisions in conjunction with the PSST and the D block licensee.

Region 39 recommends each region determine what their population densities are and evaluate what degree of coverage they will receive per these recommended tiered coverage requirements. In addition, Region 39 feels that the population thresholds the Commission recommended should be modified and will be discussed below in the appropriate section.

Region 39 believes that Local, State, Federal and *certified* Critical Infrastructure Operators users should be eligible to access the SWBN when appropriate and necessary. Also, Region 39 feels strongly that the Commissions conclusion in the FNPRM of 700 MHz eligibility with regard to accessing the SWBN lacks the necessary emphasis on the importance of the public safety mission. While we understand and appreciate the Commission's differentiation of Critical Infrastructure (CI) users and their "sole or principal purpose" being one of providing/generating electricity, water, natural gas, logistics, or telecommunications and not one of "protecting the safety of Life, Health and Property", and we support the Commission's modification of 90.523 (e) and clarifications associated with "public safety services", we do not agree with the interpretation that the CI users should not have access to the public safety block of the SWBN.

TABLE OF CONTENTS

Service Rules for D Block……..

Public Safety Region (PSR) Concept for Auction……..

Combining two (2) 5 MHz blocks for D Block/Public Safety Block…..

Technical Requirements and Local Management of Capacity of SWBN…….

Technology Capability Methods for Non-PSBL 700 MHz Broadband Licensees……..

Voice Interoperability with the SWBN…….

Hardening of SWBN Network……

Non-Terrestrial SWBN Coverage Requirements…….

SWB Performance Requirements including Build-Out Requirements…

Eligibility……..

SERVICE RULES FOR D BLOCK

Region 39 supports the FCC creating regional license opportunities in the D block auction creating an environment where the chances of success at the auction are increased with regional PSR (Public Safety Regions) licenses being offered with both WIMAX and LTE technologies. However, NRPC also feels there are benefits in the issuance of a nationwide license over the issuance of regional licenses. One such benefit is that with nationwide licensee, a single entity will make the determination as to which technology will be used within the SWBN. A single entity would inherently provide greater continuity nationally than multiple regional licensees would thereby provide a consistent message to the public safety community. Region 39 also feels that its role as a voting member of the Public Safety Spectrum Trust, as recommended by the FCC in its Further Notice of Proposed Rulemaking, will provide a valuable perspective on local and regional public safety communications to both a nationwide licensee as well as regional licensees. Also, NRPC feels that either regional or nationwide licensee D block implementation should embrace and transition existing 3G legacy technologies made available by wireless carriers today in SWBN early development while migrating to new WIMAX or LTE technologies.

Region 39 (through the NRPC) looks forward to working with the D block licensee(s) and the PSST to ensure that service to the public safety user community is consistent, reliable and an improvement upon what is available to them commercially. Region 39 feels the experience associated with public safety's use of commercial wireless connectivity in their current mobile data applications is an invaluable resource in the long-term development of the SWBN.

PUBLIC SAFETY REGION (PSR) CONCEPT FOR AUCTION

Region 39 supports the PSR concept (55 Regional Planning Committees plus 3 additional) as proposed by Commission. This would allow for regional D block licensees to be established with service areas paralleling those of 700 MHz regional planning committees offering a valuable parallel between the intent regional D block licensee and the familiarity of the user community and current mobile data applications in the region by the 700 MHz regional planning committee. NRPC feels that if a nationwide license is issued to a single D block licensee and no regional D block licensees exist, RPC's would still provide an important local reference and sounding board for PSBL in a nationwide system developed by a single entity with little local public safety familiarity or cognizance. Region 39 feels in this instance, with its membership representing regional planning committees and local spectrum managers, it would be a valid public safety resource for national system implementers from "outside the beltway" that can bring a local perspective to implementation issues.

Also, the FCC concluded the Public Safety Broadband Licensee should have as one of its voting members the National Regional Planning Council (NRPC). The National Regional Planning Council (NRPC) is a national community consisting of the Federal Communications Commission (FCC) authorized 700 and 800 MHz Regional Planning Committees (RPCs), whose affiliation is linked to states and US Territories. Its mission is to serve all Public Safety Communications Users through planning and management for their spectrum needs."

Region 39 concurs with the Commission's recommendation to have the NRPC serve and represent its constituents as a member of the Public Safety Broadband Licensee. We feel

having RPC representation involved in the PSBL and its process benefit the public private partnership between the PSBL and the D block licensee and can improve service to public safety users as outlined by the FCC. In addition, Region 39 feels the NRPC's contributions as a voting member will be of benefit to the PSBL as NRPC will provide a unique perspective with regard to another of the duties of the PSBL, which is to manage the use of the1 MHz paired Guard Band between 768/769 MHz -798/799 MHz and to ensure its function of preserving the integrity of the immediately adjacent 700 MHz narrowband channels between 769-775 MHz – 799-805 MHz Some narrowband use of the Guard Band has been discussed in some national forums and Region 39 feels that NRPC's experience with 700 MHz narrowband management in each region can positively contribute to this dialogue.

Region 39 also supports the Commission aligning its PSR boundaries for issuing regional D block licenses at auction with those of 700 MHz RPC's in the absence of a national single D Block licensee.

COMBINING TWO (2) 5 MHz BLOCKS FOR D BLOCK/PUBLIC SAFETY BLOCK

Region 39 supports the Commission's tentative conclusion that it combine the two (2) 5 MHz paired D block and Public Safety blocks to make a single network 10 MHz paired shared with the public safety spectrally efficient network while offering priority access to public safety as needed and appropriate. Under this scenario, public safety has the same capacity it would if the public safety and D block channels were separated, but the technology can

utilize the consolidated band with a more efficient spectrum model while providing better service. In this configuration, public safety has unlimited priority to 50 percent of the capacity of the combined block with the other 50 % utilized commercially by the D Block licensee. The consolidation of both blocks of spectrum allows for a maximization of the SWBN resource and ensures that all available capacity is available to public safety and commercial users.

With regard to public safety accessing more than its allotted 50 % of the SWBN when necessary, Region 39 feels that public safety agencies would benefit from a "pay as you go" approach where agencies use of spectrum is documented and when the capacity available in a region has been exceeded, the user community and participating agencies will determine who utilized the additional capacity and who will pay the D block licensee for their additional use. Regionally, local agencies can work out their capacity needs and the applications they use and will strive to manage their use within the 50 % of the aggregated blocks. When that capacity is exceeded, the user community should be able to determine what caused the public safety capacity to be exceeded and who should pay for it. Region 39 feels that determining how additional usage above 50 % of the aggregated SWBN spectrum is paid for should be between the PSST, the D block licensee and the user community in that area. The user community being cognizant of their use of the public safety spectrum should be a goal for all user agencies. How efficiently an agencies applications utilize the available public safety spectrum should be part of an educational process that all users should go through to ensure that costs are always kept at a minimum while service and reliability continue to meet the user needs of that community. That education and management of agencies use of the

spectrum should be part of an ongoing dialogue between the PSST, user agencies in that community and the D block licensee.

TECHNICAL REQUIREMENT AND LOCAL MANAGEMENT OF CAPACITY OF SWBN

Region 39 believes that, while the Commission feels it should not place any prohibitions on video and other higher bandwidth applications, local priorities should be done by local users who are aware and knowledgeable about their local implementations and applications. In this proceeding some have raised concerns that certain high bandwidth applications (video feeds), will impair the effectiveness of the Shared Wireless Broadband Network (SWBN) and that restrictions should be placed on the use of such applications within the SWBN. Region 39 believes that local users, more familiar with their pertinent user applications that will utilize the available bandwidth of the SWBN, will effectively utilize and manage the capacity of their portion of the shared network when they are educated as to the limitations posed by the applications they utilize. We are confident that users will manage effectively the capacity made available to them and will responsibly utilize the available bandwidth when and where available.

Region 39 feels the FCC should require local agencies are made aware, by the PSBL, of the capacity available in their community and that they be required to manage their capacity on a community based level. We also understand that the available local network bandwidth may be a value that changes over time during the SWBN build-out and a method of making local agencies aware of additional bandwidth availability, as it occurs, also needs to be put in place by the PSBL.

If a single user wants streaming video at a particular type of incident to be a staple of their broadband toolbox on a regular basis, the other users in the area need to know the impact of this and how it will hamper the ability of the network. These decisions and the subsequent need for them should be made cognitively by those user agencies in the area that will have applications and use affected by the decisions. We feel that in this process, decisions that inefficiently use spectrum in a manner that impacts a community's users negatively will be short-lived and user agencies will collectively modify their resource planning accordingly. These adjustments can include better management of available 700 MHZ spectrum or utilizing another spectrum sources for certain high bandwidth applications such as video applications (ex. 4.9 GHz). In any case, Region 39 feels that regular community based dialogue and sharing details on network access between users of the network is crucial to those users getting what they need from the network. Education is necessary to make sure users know the limits of the ongoing technologies, to what degree applications can impact their capacity and how to effectively manage the spectrum and technology resources available to them.

TECHNOLOGY COMPATIBILITY METHODS CAN BE IMLEMENTED FOR NON-PSBL 700 MHz BROADBAND LICENSEES

Should the Commission issue 700 MHz licenses to communities to build their own internal broadband communications systems, Region 39 believes that one way to ensure there will be technological compatibility between the internal broadband system and the SWBN is to require periodic "technology compatibility reviews" by the PSBL as a condition of the non-PSBL 700 MHz broadband license. These reviews will ensure that the local broadband

system is utilizing technology that will be interoperable and compatible with the eventual build-out of the SWBN and will identify the creation of any technology gaps before public safety interoperability suffers from them.

The issuance of non-PSBL 700 MHz broadband licenses for areas that desire to implement their own 700 MHZ broadband network should require, as a condition of a licensee retaining the license, a periodic technology review sponsored by the Commission and accompanied by PSBL and D block representatives to ensure that a harmonious, interoperable technological relationship is in place between the D block system build-out and individual regional and municipal 700 MHz broadband licensees. This will provide certainty that local broadband system development can meet its goal of delivering these services to their users on their timeline while not fostering a gap in technology between the D block long term-system development and the local broadband system build-out. This will ensure that the long term D Block system development and the system build-out of individual Public Safety 700 MHz licensees is done in a manner in which both implement technologies compatible with each other throughout the D Block service area and, ultimately, the Nation.

Under the Commission's rules, the PSBL has the authority to permit and oversee 700 MHz wideband local development and licensure, so it should also have a parallel authority to oversee local 700 MHz broadband development with the ultimate issuance of a 700 MHz broadband license being the responsibility of the Commission.

VOICE INTEROPERABILITY WITH THE SWBN

The Commission's FNPRM offers an arrangement for cost distribution for agencies operating wireless voice networks that seek voice interoperability with the SWBN. They indicate that while usage of the SWBN by public safety agencies should not be mandatory, those agencies that desire to build compatible voice interoperability with other agencies through the SWBN will be required to bear the cost associated with achieving such interoperability. The SWBN will utilize a standardized interface and publish standardized IP based specifications for participating agencies to interface with, but the hardware necessary for that agency to achieve voice interoperability with its neighboring agencies will be the responsibility of the agency that seeks interoperability through the SWBN. The Commission also tentatively concludes that a minimum fee of $7.50 per user should be assessed for those seeking gateway based interoperability through the SWBN. Region 39 requests the Commission should at this time refrain from establishing a "cost for interoperability" for agencies desiring to interface with the SWBN until the details and concept of the network and its interoperable capabilities are more evident. For instance, it is quite possible that an agency will interface with the SWBN not at the user level but at the dispatch level from a fixed station. Information could then be distributed from the dispatch facility to the agency's users via the agencies internal network. Again, it is not required for an agency to interface with the SWBN to achieve voice interoperability, but if the agency seeks to interface with other agencies in its community through the SWBN, they will be required to pay for the hardware costs of such an interface.

Region 39 thinks it is premature for the Commission to identify either costs or responsibilities for ensuring interoperability between agencies not operating 700 MHz systems or those operating 700/800 MHZ narrowband systems until the SWBN becomes mature enough to be considered the "de-facto" voice interoperability platform. It is still unclear as to how interoperability that today occurs at the local level via existing public safety radio systems within a community or region will be utilized in the midst of a mature SWBN. Whether or not the SWBN becomes the national interoperability platform for mission critical communications or secondary, non-mission critical communications remains to be seen. As stated above, different agencies identify and approach interoperability in different ways and we feel that there is not enough information in the record regarding an eventual transition to SWBN based mission critical voice communications to begin to determine who bears the cost in meeting the long-term voice interoperability needs of public safety.

HARDENING OF SWBN NETWORK

Region 39 supports the Commission's proposal to permit the designation of "critical" sites in the development of the SWBN. We concur that there needs to be a joint decision between the D block licensee and the Public Safety Broadband Licensee in consultation with the local relevant community as to which sites should be designated "critical". Also, Regional Planning Committees (RPC) should be involved in the designation and selection of "critical sites" in the SWBN as they bring more perspective to local mission critical system development than the other parties. RPC's will have a perspective on how local mission critical sites are implemented and will subsequently be able to provide more pertinent

information on a regional basis to SWBN system developers with regard to ways to achieve network resiliency.

In determining "critical" sites for the network, the D block licensee and the PSBL will also be designating sites in the network not "critical" and the design of the system will be impacted by both designations. Public safety would be better served having an overall system design that reduced throughout if a "critical" site was lost rather than losing coverage completely within that service area. Region 39 supports the concept that SWBN site development and critical site determination by the D block license, the PSBL, RPC's and local authorities supports the concept that "critical" sites are sites that can maintain, in the absence of any other additional sites, a minimum degree of throughput to the users within the same coverage area. We support the concept that in an incident where sites contributing coverage to the SWBN network are lost, a reduction of system throughput to each user is a more favorable circumstance than the removal of coverage in the service area. The latency of data networks will allow, even with a reduced throughput, public safety users to still access their mobile data applications and during an incident those applications could be important enough to the user that the removal of service would be unacceptable and risk the safety of the user. As data applications, broadband and otherwise, become over time a more relied upon resource within the public safety user's toolbox, a complete loss of service will have a more negative impact on users than a reduction of available system throughput per user would. It is for this reason Region 39 supports local agencies and the region's relevant RPC's be involved in the dialogue that determines the designation of "critical" sites of the SWBN.

NON-TERRESTRIAL SWBN COVERAGE REQUIREMENTS

Region 39 supports the Commission proposing a degree of latitude to the D block licensee in determining how non-terrestrial technology is used in the development of the SWBN and where (and where not) it can be used to meet the SWBN system coverage thresholds over a 15 year period. We also concur that non-terrestrial technologies can provide resiliency and a network that is more robust overall but we stop short in declaring that non-terrestrial and terrestrial technologies can be considered equally throughout the development of the network in all areas. The development of two distinct networks (one terrestrial and one non-terrestrial) supporting the SWBN can lead to a more complex network and cost model than a single network with an accompanying technology used to address resiliency and provide an alternative path to public safety data. Again, we feel that equating both technologies today and giving the D block licensee the authority to show no distinction in their implementation is, at this time, premature and the D block license should determine, in conjunction with PSBL, where non-terrestrial technologies can be used to meet coverage requirement in excess of the minimum PSR population coverage threshold in lieu of terrestrial system build-out on a region by region basis.

In addition, the Commission also proposes allowing areas requiring coverage within each PSR that exceed coverage requirements established at at 4, 10 and 15 years, such as highway corridors and communities with established populations over 3000, to be covered by non-terrestrial technologies at the discretion of the D block license.

Also, the Commission seeks comment on whether or not to give more authority to the D block license to meets its required coverage threshold via terrestrial or non-terrestrial means. For example, FCC seeks comment on whether the D block licensee could build redundancy into the network with non-terrestrial means by allowing more sites with satellite backup to be determined "critical". Region 39 feels that utilizing non-terrestrial technologies at a site can lead to that site contributing more robustly to the overall operation of the network but we do not think the determination of a "critical" site should solely rely on whether or not the site has access to non-terrestrial technologies. We feel the backup power and generator requirements, as outlined in the FNPRM, should be implemented as a baseline requirement for sites that are determined to be "critical" to the operation of the SWBN. Providing additional resiliency at these sites can be accomplished by non-terrestrial means and will allow for additional network reliability amongst its users.

SWBN PERFORMANCE REQUIREMENTS INCLUDING BUILD-OUT REQUIREMENTS

Region 39 thinks the minimum build-out requirements established by the Commission in the FNRPM for 15 years are too low and, in many cases, require a degree of wireless coverage that is less than what is today commercially available. We concur with the Commission's population coverage requirements for the year 4 (40%) and year 10 (75%) time frame but disagree that in 15 years PSR's with less than 100 persons per square mile should only have coverage to 90% of their population. Several states with population densities of less than 100 persons per square mile today have commercial wireless coverage using 2.5G and 3G technologies greater than that proposed by the Commission over a 15 year period. Region 39

proposes the tiered threshold below for population based coverage at 4, 10 and 15 years per each PSR.

Licensee must provide signal coverage to each Public Safety Region in this manner:

40% of population in each region by year 4

75% of population in each region by year 10

Tiered population @ 15 year mark

In 15 years, D block licensee must meet following:

95% of population for regions with less than 100 persons/sq.mi.

96% of population for regions with 100-500 persons/sq.mi.

98% of population for regions with greater than 500 persons/sq.mi.

Our recommendation of 95% population coverage of a region with less than 100 people per square mile is consistent with other NRPC comments filed in this proceeding and we feel extending the build-out from 10 years to 15 years is appropriate given that we propose additional coverage. We feel that the 15 year build-out of the SWBN will most certainly find that commercially wireless technologies and coverage will exceed its current population coverage and that 95% percent of each PSR is appropriate given the build-out timeframe. We do not feel it is productive to require a lesser amount of broadband coverage in 15 years that is available today with 3G technologies in much of rural America. We also feel the threshold levels we've proposed provide more balance and are more representative of a service that public safety could benefit from over the next 15 years time and would provide a valuable tool that would make users want to participate in its use.

In addition, in support of this proceeding and to better identify realistic goals for the SWBN and its effectiveness nationally on the public safety community, Region 39 recommends each PSR determine what their population densities are and evaluate what degree of coverage they will receive per these recommended tiered coverage requirements. We appreciate the Commission's proposals in these areas and look forward to working within the PSST and with the D block Licensee on these important issues.

Eligibility

Region 39 believes that Local, State and Federal users should be eligible to access the SWBN when appropriate and necessary. Also, Region 39 feels strongly that the Commissions conclusion in the FNPRM of 700 MHz eligibility with regard to accessing the SWBN lacks the necessary emphasis on the importance of the public safety mission. While we understand and appreciate the Commission's differentiation of Critical Infrastructure (CI) users and their "sole or principal purpose" being one of providing/generating electricity and not one of "protecting the safety of Life, Health and Property", and we support the Commission's modification of 90.523 (e) and clarifications associated with "public safety services", we do not agree with the interpretation that the CI users should not have access to the public safety block of the SWBN.

We feel that the public safety *expectation* of its needs during mission critical incidents that are met by CI users is a clearer example of the need than the Commission's *interpretation* of Section 337 of the Act which leads to excluding access by CI users to the SWBN. Perhaps, on a case by case instance, the Commission can consider allowing CI users access to the SWBN utilizing a Memorandum of Understanding (MOU) and under the authority of an

entity eligible to access the SWBN with its "sole or principal purpose being protecting the safety and Life, Health and Property". Region 39 feels strongly that the service and support CI users provide to the public safety user community is substantial enough to justify another review of the benefits that CI users contribute to public safety and the citizens they protect during mission critical incidents and day-day operations.

Respectfully

John W Johnson

John W. Johnson

Region 39 Chairman