Before the

Federal Communications Commission

Washington, D.C. 20554

In the Matter of )

Review of the Commission’s Rules Governing the )

896-901/935-940 MHz Band ) WT Docket No. 17-200

Realignment of the 896-901/935-940 MHz Band to )

Create a Private Enterprise Broadband Allocation )

Amendment of the Commission’s Rules to Allow )

for Specialized Mobile Radio Services Over 900 )

MHz Business/Industrial Land Transportation )

Frequencies )

**Reply Comments of Steven A. Zecola**

1. **Introduction and Summary**

**T**he FCC initiated this proceeding with the finding that the current spectrum assignments in the 900 band are underutilized. It then rejected the proposal from the Enterprise Wireless Association (“EWA”) for reassignment of those spectrum assignments. The Commission specifically requested “comment on how to ensure that the 900 MHz band is put to its best and highest use for the American public”.

Despite this guidance, all of the B/ILT license holders filing comments in this proceeding supported the current spectrum assignments with little to no change and all of the parties in the wireless industry filing comments supported the EWA proposal.

As outlined in my original comments, the FCC should take bold action to reallocate the 900 MHz spectrum bands into one 10 MHz national broadband license in order to put this spectrum to its best and highest use. As shown below, this approach can be expected to increase the benefits to the public from the current assignments by a factor of 15. Likewise, such an approach would convey three times greater value to the public than the EWA proposal.

The Commission should focus its NPRM on the tactical issues of implementing a 10 MHz national broadband license plan such as the ownership, relocation and interference specifications of the plan.

1. **Analysis of the Comments**

The comments in this proceeding are split with B/LIT licensees opposing any significant change in the 900 spectrum allocations and members of the wireless industry supporting the EWA proposal.

Indicative of the B/IL T position is the comment of the American Association of Railroads:

AAR member railroads operate over 10,000 transceivers on this 900 MHz band spectrum for train traffic control. Railroads use ATCS for critical direct control of wayside track switches and signals by the train traffic control centers. ATCS ensures proper train routing and speed, allowing railroads to operate more safely, efficiently, and economically.

Clearly, the railroads have a valid user requirement. What is not clear is why this spectrum is needed for this application and whether the availability of dedicated free spectrum creates a misallocation of society’s scarce resources. For example, economics dictate that long, thin routes (such as railroad tracks) are best served by satellite communications. AAR provides no reason to believe that other communications services are not available to meet their needs. Moreover, AAR offers no reason why railroads should be subsidized with free spectrum to the detriment of the larger consuming public.

Similarly, the Southern Services Company writes:

Collectively, members of the Southern Company family use a variety of communications technologies and services to support the safe, reliable, and efficient delivery of energy services to their customers. One of Southern’s communications solutions is an extensive Advanced Meter Infrastructure (“AMI”) system that uses Narrowband PCS spectrum in the 901-902/940- 941 MHz band to interact with over 4.4 million meters and other remote devices throughout its operating territory, with an additional 2.2 million endpoint devices projected to be brought online over the next five years. As explained below, Southern’s AMI system is part of a comprehensive infrastructure modernization program that provides benefits to electric and gas customers, the environment, and the company far beyond the convenience of remote meter reading.

Again, there is no public interest rationale as to why Southern should have preferred access to this spectrum, nor does it provide any comparisons to the alternatives in the market. For example, the extensive deployment of Wi-Fi and Internet capabilities throughout the United States may offer a viable alternative for Southern to conduct meter reading in most, if not all, of its locations.

The American Petroleum Institute explains:

API member companies rely on 900 MHz systems principally in refineries and chemical manufacturing plants. These two-way communication systems support critical operational, security, maintenance and safety-related functions. A typical large refinery operates 365 days-a-year, 24 hours-a-day, and employs from between 1,000 and 2,000 workers. Refinery-based mobile radio facilities, including these 900 MHz systems, are used to communicate critical operational instructions from unit control rooms to personnel responsible for task execution. 900 MHz systems are also used extensively in the transportation of refined products. This includes communications with railroad crews operating inside refineries, personnel at truck racks, and those employees responsible for operating multiple pipelines that transport various products from every refinery.

These requirements – at any level of security required – can be procured in the marketplace at a reasonable (but unsubsidized) cost.

Westar Energy states:

Westar currently holds a number of licenses for spectrum within the 900 MHz band at issue in the NOI, and depends on these radio frequencies for internal communications that enable Westar to construct and maintain a safe, reliable electric system, including two-way radio systems. Westar’s personnel depend on these two-way radio systems to coordinate services across Westar’s large, rural service area, where alternative forms of communication, such as reliable cellular service, are often not available. Westar’s 900 MHz band radio systems are also essential because they allow for Push-to-Talk (“PTT”), point-to-multipoint voice communications, which are required for many of its operations.

Rural areas as described by Westar have no shortage of spectrum in any spectrum band. Therefore, it would not be difficult for Westar to enter into a private arrangement with a licensee that carves out spectrum for Westar’s utilization. Given its free spectrum allocation, Westar has had no incentive to pursue this more efficient approach.

The Critical Infrastructure Project (“CIP”) points to a current utilization of the 900 band as justification for the private allocation:

For its recovery efforts following Hurricane Irma, Florida Power & Light (“FPL”) relied on its 900 MHz two-way PLMR system to help restore power to more than 4.4 million electrical customers in 10 days. In many cases, this communications was the only available system for field restoration crews to utilize.

CIP fails to mention that the reason that the private 900 systems were the only available systems in these cases was that FPL did not plan for other approaches. The current free allocation of spectrum drives the methods used for infrastructure deployment versus the commercially-available alternatives.

The Critical Infrastructure Project argues:

Meanwhile, the benefits of permitting broadband operations in the band would be low. Because no one questions that retaining a home for incumbent narrowband users is important, any resulting broadband segment would be required to be relatively small, particularly after accounting for a proper guard band required to protect adjacent users. And to the extent the broadband licensee would be required to provide priority service to critical infrastructure providers, other commercial options are already available, such that no unique public benefits would be introduced. The costs of realigning the 900 MHz band or otherwise introducing broadband operations, as outlined above, would outweigh the limited benefits.

This argument provides the rationale for eliminating the narrowband allocations in the 900 band and removing any obligations or restrictions from the new broadband licensee(s). With these changes, the benefits to establishing a national broadband license would be substantial.

Duke Energy explains:

Duke Energy is currently evaluating the potential for establishing its own private broadband LTE system that could provide the enhanced network systems and services necessary to support both current and future mission-critical network system needs. Duke Energy is currently evaluating the feasibility of utilizing broadband spectrum provided by one of the commercial cellular carriers to do so. However, accessing spectrum greater than 2 GHz, as is being offered by these commercial carriers, would severely restrict Duke Energy’s ability to deploy a system-wide private broadband LTE system in a cost-effective manner. The restricted propagation characteristics of radio frequency signals above 2 GHz would require the acquisition and use of a very large number of towers to locate the private LTE antennas and remote equipment in order to deploy a private LTE system in these bands. The cost to establish and maintain a private LTE system with this large number of towers and the associated backhaul circuit costs would limit Duke Energy’s ability to provide low-cost energy services to its customers.

Duke is essentially saying that it warrants better frequencies and a protected spectrum allocation so that it can have lower costs than other businesses and a cost structure below the commercially-available alternatives. There is no legislative prerogative that would dictate or support such an approach.

1. **Impact to the Public of the Three Alternatives in the Record**

The Commission doesn’t have a direct measure of the public benefits derived from spectrum allocations. But it has several indirect measures; including customer subscriptions, customer utilization (actual traffic) and carrier willingness to pay for the spectrum.

No commenter in this proceeding has provided any direct factual information relating to the customer benefits of its approach. However, indirect measures are available.

First, publicly available information implies that the current approach advocated by B/ILT licensees yields very few users and very little traffic utilization. The proponents of the status quo have not offered any statistics to the contrary.

Second, using standard business planning tools, the approach advocated by EWA can be projected to result in as many as 500,000 business customers subscribing to broadband dispatch networks on the 900 bands over the next 5 years.

Third, we know that the current national broadband carriers such as Verizon and AT&T are near market saturation (i.e., 100% subscriber penetration) and have very high utilization of their prime spectrum allocations. Moreover, new wireless applications are being introduced daily thereby driving additional usage. These results provide sufficient evidence that a much higher utilization of the 900 bands would occur if they are reformatted into a 10 MHz national broadband license than the other approaches advocated in this proceeding. Moreover, such a realignment would substantially increase competition in the nationwide mobile communications market to the benefit of the public.

Separately, an alternative proxy for the consumer benefit from the spectrum is the carriers’ willingness to pay for the spectrum.

In looking at PDVW which is publicly traded, the implied value of its spectrum prior to the NOI was approximately $0.10 per MHz/POP.

If the FCC were to approve EWA’s proposal, analysts expect the PDVW’s equity to be worth up to $100 per share, implying that the spectrum’s value would increase to $0.50 per MHz/POP.

The third proposal in the record is for a 10 MHz national broadband license. This approach would be closer to the assignment of spectrum in the 700 MHz bands where transaction prices range from about $1.00 per MHz/POP to $4.00 per MHz/POP, with a weighted average of about $1.50.

Hence, the information available to the Commission in this proceeding suggests that EWA’s proposal is 5 times more desirable to the public than the status quo and a national broadband allocation would be 3 times more desirable to the public than EWA’s proposal (or 15 times greater than the status quo).

1. **Conclusion**

The Commission has ample evidence that spectrum can convey enormous benefits to society if allocated in sufficient capacity and geographic scope. That is the opportunity before the Commission in this proceeding by reallocating the 900 bands into a single 10 MHz nationwide broadband allocation.

In contrast, the factions in the B/ILT and wireless industries staunchly support their prior positions. In the case of B/ILT licensees, their approach is based on the premise that they somehow are entitled to free spectrum because it results in their 900 systems having lower cost than the commercially available alternatives.

Likewise, the EWA proposal trades away some spectrum from a higher-utilized 10 MHz broadband allocation to a lower-utilized narrowband allocation in order to effectuate a “political fix”.

Yet the proposed EWA fix does not include a member of the consuming public at the negotiating table.

Moreover, several parties in this proceeding have failed to recognize that the airwaves are owned by the public and that private parties are not entitled to free spectrum. Rather, the Commission must allocate spectrum in a manner to maximize the gain to the public interest.

Accordingly, the Commission should propose reallocating the 900 bands into a 10 MHz national broadband license to maximize the benefits to the public from this prime spectrum and it should focus its NPRM on the ownership, relocation and interference specifications of the plan.

Respectively submitted,

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Steven A. Zecola

October 11, 2017