

**BEFORE THE  
FEDERAL COMMUNICATIONS COMMISSION  
WASHINGTON, DC 20554**

In the Matter of	)	
	)	
Review of the Commission's Rules	)	WT Docket No. 17-200
Governing the 896-901/935-940 MHz	)	
Band	)	

To: The Commission

**REPLY COMMENTS OF LOWER COLORADO RIVER AUTHORITY**

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## **TABLE OF CONTENTS**

I. SUMMARY .....	1
II. THE RECORD CONFIRMS UTILITIES USE 900 MHz NARROWBAND CHANNELS FOR CRITICAL COMMUNICATIONS.....	2
III. THE COMMISSION MUST PROTECT INCUMBENTS AGAINST HARMFUL INTERFERENCE .....	3
IV. CONCLUSION .....	11

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Lower Colorado River Authority ("LCRA") hereby submits its reply comments in the above-captioned proceeding.<sup>1</sup> LCRA also joins the reply comments filed by the Critical Infrastructure Coalition.

**I. SUMMARY**

As discussed herein, LCRA remains opposed to reconfiguring the 900 MHz band – whether by voluntary realignment on a market-by-market basis or by mandatory relocation. LCRA submits that the American public is best served by ensuring reliable, cost-effective, resilient communications systems that support electric generation, transmission, distribution, flood management, and public safety communications. The proposal by PDV to realign the 900 MHz band will not allow entities such as LCRA to maintain current levels of reliability in its service territory. Any potential gains obtained through its proposal to support higher bandwidth applications compared to the extreme impact on mission critical utility and public safety

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<sup>1</sup> *Review of the Commission's Rules Governing the 896-901/935-940 MHz Band*, Notice of Inquiry, WT Docket No. 17-200, 32 FCC Rcd 6421 (rel. August 4, 2017) ("*900 MHz NOI*"). The Wireless Telecommunications Bureau extended the deadline for filing reply comments to November 1, 2017. *See* Order, DA 17-868 (rel. Sept. 8, 2017).

operations will not benefit the American public, particularly when there is other spectrum available.

## **II. THE RECORD CONFIRMS UTILITIES USE 900 MHz NARROWBAND CHANNELS FOR CRITICAL COMMUNICATIONS**

In its initial Comments, LCRA explained how it owns and operates a 900 MHz land mobile radio system for utility operations and how it provides non-profit, shared use of its system with public safety and other users.<sup>2</sup> LCRA also addressed how it utilized its 900 MHz B/ILT narrowband channels to monitor river conditions and flooding during Hurricane Harvey and to support public safety operations and restoration efforts.<sup>3</sup>

Other commenters discussed that they similarly rely on their 900 MHz narrowband channels for critical utility operations. Commonwealth Edison Company (“ComEd”), a subsidiary of Exelon Corporation, stated that it “uses spectrum within the 896-901 MHz and 935-940 MHz bands for its mission critical PLMR communications system for emergency communications and dispatch, outage recovery and general field communications.”<sup>4</sup> Westar Energy, Inc. (“Westar”) stated that its 900 MHz system “is essential to the performance of many mission-critical tasks and operations.”<sup>5</sup> Westar noted that its 900 MHz system includes Push-to-Talk (“PTT”), point-to-multipoint voice communications, which “is essential to safe high voltage line work, and when switching lines for routine and emergency work.”<sup>6</sup>

NextEra Energy, Inc. (“NextEra”) explained that it uses its 900 MHz system to “facilitate daily dispatch, maintenance and power plant operations, including voice communications

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<sup>2</sup> Comments of LCRA at 4; WT Docket 17-200 (filed Oct. 2, 2017).

<sup>3</sup> *Id.*

<sup>4</sup> Comments of Exelon Corporation (“Exelon”) at 3; WT Docket No. 17-200 (filed Oct. 2, 2017).

<sup>5</sup> Comments of Westar Energy, Inc. (“Westar”) at 3; WT Docket No. 17-200 (filed Oct. 2, 2017).

<sup>6</sup> *Id.*

required to comply with Nuclear Regulatory Commission regulations for plant security and operations at nuclear power plants, and for nuclear siren system operations for public alert notifications.”<sup>7</sup> NextEra also relies on its 900 MHz system for “critical electric service restoration voice communications, providing instant emergency access communications, long range transmissions, and easily restored two-way radio systems.”<sup>8</sup>

Duke Energy Corporation (“Duke Energy”) stated that “[t]he best and highest use of the 900 MHz band for the American public is the current use of this band, which provides discrete narrowband channels to support utilities’ highly reliable PLMR voice and narrowband data communications used for operating and maintaining the energy delivery grids.”<sup>9</sup>

Thus, the record confirms that there is a strong public interest in maintaining the availability of 900 MHz spectrum dedicated solely for site-based, narrowband B/ILT private internal communications to support critical utility operations.

### **III. THE COMMISSION MUST PROTECT INCUMBENTS AGAINST HARMFUL INTERFERENCE**

Commenters uniformly agree that the Commission should not take any action that would threaten existing narrowband operations in the 900 MHz band. LCRA urges the Commission to follow the guiding principle espoused by the Utilities Technology Council (“UTC”) – “existing utility narrowband communications systems must be able to continue to operate without

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<sup>7</sup> Comments of NextEra Energy, Inc. (“NextEra”) at 4; WT Docket No. 17-200 (filed Oct. 2, 2017).

<sup>8</sup> *Id.*

<sup>9</sup> Comments of Duke Energy Corporation (“Duke Energy”) at 7; WT Docket No. 17-200 (filed Oct. 2, 2017).

interference from broadband operations, and they must be able to expand to meet increasing coverage and capacity requirements.”<sup>10</sup>

The Enterprise Wireless Alliance (“EWA”) and pdvWireless, Inc. (“PDV”), as well as other companies that are generally supportive of the idea of a broadband allocation in the 900 MHz band, acknowledge the importance of the 900 MHz band narrowband systems and condition their support on the need to protect incumbent operations.

EWA and PDV stated that the Commission should not take action “at the expense of degrading narrowband systems for incumbents that choose to continue operating them.”<sup>11</sup>

Ericsson stated that “[t]here will, of course, be entities that wish to continue using narrowband technology and their communications must not be harmed by the broadband communications.”<sup>12</sup>

The American Petroleum Institute (“API”) stated that “due to the sensitivity and importance of current uses of the 900 MHz band, API urges the Commission to conduct a due diligence review of the PEBB proposal to ensure protection of current and future narrowband operations before initiating a rulemaking.”<sup>13</sup> Exxon Mobile Corporation, Phillips 66 and Marathon Petroleum Company strongly endorsed the option that the 900 MHz band continues to be reserved for site-based B/ILT private internal communications.<sup>14</sup>

While LCRA appreciates that EWA/PDV and others acknowledge the importance of 900 MHz narrowband operations and claim that they do not want to cause harmful interference to

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<sup>10</sup> Comments of Utilities Technology Council (“UTC”) at 9; WT Docket No. 17-200 (filed Oct. 2, 2017).

<sup>11</sup> Comments of EWA and PDV at 14; WT Docket No. 17-200 (filed Oct. 2, 2017).

<sup>12</sup> Comments of Ericsson at 5; WT Docket No. 17-200 (filed Oct. 2, 2017).

<sup>13</sup> Comments of American Petroleum Institute (“API”) at 5; WT Docket No. 17-200 (filed Oct. 2, 2017).

<sup>14</sup> Comments of Ad Hoc Refiners Group at 6; WT Docket No. 17-200 (filed Oct. 2, 2017).

such operations, the record demonstrates that reconfiguring the 900 MHz band to accommodate broadband operations would cause harmful interference to utility narrowband operations.

The Edison Electric Institute (“EEI”) explained that “[t]he proposed band plan would closely pack existing PLMR systems, increasing the potential for harmful interference to operations outside the broadband segment.”<sup>15</sup> UTC commented that “insufficient information exists to demonstrate that a realignment of the band could be accomplished without adversely affecting utility mission critical communications or that broadband networks could be deployed that would provide the same reliability on a cost-effective basis for utility communications.”<sup>16</sup>

Duke Energy stated that “[a]ny changes to the existing 900 MHz B/ILT band and channel assignments would be very disruptive to Duke Energy’s operational capabilities and efficiencies because of the interference that would result from the reallocated channel assignments.”<sup>17</sup>

Westar expressed concern that “its investment and the efficient operation of its system may be compromised if the B/ILT licensees, including Westar, are forced to move to the lower 2/2 segment of this band.”<sup>18</sup> According to Westar, “[t]he end result could be reduced coverage area and the inability to communicate in certain areas.”<sup>19</sup>

Thus, LCRA submits that the Commission should not proceed with a Notice of Proposed Rulemaking to reconfigure the 900 MHz band. The technical data submitted in this proceeding does not provide a sufficient record on which the Commission may propose further action to realign the 900 MHz band. LCRA submits that there is insufficient technical data presented in

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<sup>15</sup> Comments of Edison Electric Institute (“EEI”) at 13; WT Docket No. 17-200 (filed Oct. 2, 2017).

<sup>16</sup> Comments of UTC at 3.

<sup>17</sup> Comments of Duke Energy at 6.

<sup>18</sup> Comments of Westar at 5.

<sup>19</sup> *Id.*

the record to support any claim that a proposed realignment could be accomplished without causing harmful interference and disruption to critical utility narrowband operations.

LCRA remains concerned that the proposed realignment, even with certain suggested revisions to the proposed rules, will cause harmful interference to its narrowband operations. LCRA has begun the process of reviewing the technical analysis PDV provided, including the report by DVA Consulting<sup>20</sup> and the White Paper filed separately by PDV's consultant Pericle Communications Company.<sup>21</sup>

LCRA notes that Pericle Communications only appears to have examined a few select markets to present an unrealistic assessment of the impact on incumbent narrowband operations. As one example, Pericle Communications selected San Antonio, TX to apparently model the impact on LCRA's operations.<sup>22</sup> However, this analysis does not assess the potential impact on other markets where LCRA has substantial operations in the 900 MHz band. In addition, Pericle Communications based its analysis on the proposed interference limits and failed to take into account the actual requirements of incumbent operations that have relied on the cooperation of all parties to protect against any levels of interference.<sup>23</sup> As such, it should not be used to validate the possibility of whether reconfiguration of the 900 MHz band is likely to result in interference to incumbent 900 MHz band narrowband operations.

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<sup>20</sup> See Comments of EWA and PDV, Attachment 2 (Dominick Arcuri, DVA Consulting, LLC, *Analysis of the Proposed Petition for Realignment of the 900 MHz Band under FCC Part 90* (Dec. 7, 2015)) ("DVA Consulting Report").

<sup>21</sup> See Comments of Pericle Communications Co. ("Pericle Communications"); WT Docket No. 17-200 (filed Oct. 2, 2017), Attachment (Jay M. Jacobsmeier, P.E., *White Paper, Technical Impacts of a 900 MHz Private Enterprise Broadband Allocation*) (Sept. 29, 2017)) ("Pericle White Paper").

<sup>22</sup> See e.g., Pericle White Paper at 15.

<sup>23</sup> See e.g., LCRA Comments at 6 (noting that B/ILT incumbents and cellular carriers have historically "operated in good faith to eliminate interference above the typical operating thresholds of B/ILT users.").



The assertion by DVA Consulting that the current interference thresholds of -88/-85 dBm for Part 90 licensees in the 900 MHz band are too high<sup>24</sup> supports LCRA's previous comments that the Commission "should formalize current practices in the 900 MHz band by adopting an interference threshold that more realistically represents the current state of the band and ensures adequate protection for critical communications."<sup>25</sup> However, LCRA disagrees with DVA Consulting's suggested thresholds of -102/-99 dBm because even at those levels a substantial portion of LCRA's operations would be adversely affected. As LCRA discussed in its comments, its experience has shown that operability in the 900 MHz band is at or below -109 dBm.<sup>26</sup> This threshold level is vital to most effectively cover territory as large as LCRA's. Thus, LCRA reiterates its recommendation that the Commission adopt an interference threshold of -110 dBm.

DVA Consulting notes that licensees will need to accommodate reduced separation because of the reduced number of available narrowband channels that will result from the proposed realignment. It comments that in order to maintain ten channels, the maximum frequency separation would be reduced to 200 kHz, while a 250 kHz channel separation would allow up to eight channels.<sup>27</sup> As LCRA already discussed in the previous docket, LCRA has standardized on 250 kHz spacing combiners and has replaced several with 150 kHz capable combiners in areas where B/ILT spectrum is already congested.<sup>28</sup> This combiner spacing was

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<sup>24</sup> See DVA Consulting Report at 20.

<sup>25</sup> Comments of LCRA at 6.

<sup>26</sup> *Id.*; See also Comments of LCRA at 10; RM-11755 (filed Sept. 21, 2015).

<sup>27</sup> DVA Consulting Report at 8.

<sup>28</sup> Comments of LCRA at 5; RM-11738 (filed Jan. 12, 2015).

taken into account in LCRA's previous comments when it discussed that its channel quantity and site density could not be accommodated in the proposed 2/2 MHz segment.

PDV also continues to assert that incumbent 900 MHz narrowband operations have benefitted from an artificially low noise floor.<sup>29</sup> Contrary to this assertion, LCRA appropriately weighed the costs and benefits in compliance with existing regulations and current and foreseeable real-world conditions when it selected and designed its system. LCRA has continued to do so as its system has grown. PDV's comments only reinforce the concerns that broadband operations in the 900 MHz band will result in an increase in the noise floor and an erosion of the existing good faith cooperation that has successfully prevailed in this band to address interference concerns.

Moreover, LCRA submits that PDV has continued to underestimate the costs involved in fully reimbursing incumbent narrowband operations and overstate the public benefit and anticipated market need for its proposed services.

For example, PDV suggests that costs per transmitter relocation should be approximately \$10,200, a figure PDV indicates captures the relocation cost for the 800 MHz band.<sup>30</sup> LCRA submits that this estimate does not appear realistic for the 900 MHz band. It could perhaps cover a combiner replacement or antenna addition if the replacement frequencies did not fit the existing antenna system, which may have been all that was necessary for some systems in the 800 MHz band. However, several 900 MHz incumbents have commented on the likelihood of having to install additional fill-in sites to overcome the interference proposed by PDV.<sup>31</sup> This would result

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<sup>29</sup> See e.g., Comments of EWA and PDV at 31 (stating that incumbents claim a "non-existent 'right' to no increase in the noise floor over time.").

<sup>30</sup> Comments of EWA and PDV at 20.

<sup>31</sup> See e.g., Comments of API at 6.

in considerably increased costs because of new shelters, generators, and microwave or fiber transport on top of any additional operating and maintenance costs associated with tower leases and maintaining additional hardware.

PDV asserts that its proposal would offer a private carrier broadband option to meet the individual specifications required by critical infrastructure entities for coverage, reliability, resiliency, and security not offered by commercial wireless networks.<sup>32</sup> Yet, the consistent message from critical infrastructure incumbents is that there is little interest in obtaining these services at the expense of their current narrowband communications.<sup>33</sup> There is no public benefit to causing disruptions to operations of critical infrastructure entities or extending disaster recovery times.

As several Critical Infrastructure Coalition members have indicated, the likelihood of negative impact to incumbent systems severely outweighs any potential gains of a system that is still in the conceptual stage of development.<sup>34</sup> LCRA and other B/ILT entities have made significant investments in their existing systems and continue to expand. It is unrealistic to expect that a new system built from the ground up would provide the same level of reliability that incumbents have spent decades developing or that the costs associated with purchasing services from a new third party provider would be comparable to existing operating and maintenance costs. LCRA remains skeptical that a third party entity would be able to cost

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<sup>32</sup> See e.g., Comments of EWA and PDV at 5.

<sup>33</sup> See Comments of Critical Infrastructure Coalition (“CIC”) at 2; WT Docket No. 17-200 (filed Oct. 2, 2017) (“The costs of realigning the 900 MHz band or otherwise introducing broadband operations, as outlined above, would outweigh the limited benefits.”).

<sup>34</sup> See Comments of Exelon at 5 (discussing the potential for harmful interference and the possibility for significant disruption to ongoing critical infrastructure radio operations compared to the relatively small public benefits of realignment); Comments of NextEra at 8 (“The ill effects of creating a new 900 MHz band broadband segment would not be offset by requiring the provider to offer B/ILT entities priority service.”).

effectively provide the coverage, reliability, resiliency, and security required for LCRA's service territory. Other commenters have expressed doubt that any new system would be built out in rural areas where B/ILT users have made significant investments to develop their reliable systems.<sup>35</sup>

The proposed private broadband provider would have similar drawbacks to a consumer-focused broadband system relating to having a third party control the reliability of the most critical communications platform many utilities possess. The increased site density to support broadband in these regions would also result in excessive costs that are unlikely to be recovered by the private broadband provider through service agreements. The end result would be an underutilized 3/3 spectrum outside of major spectrum markets and a drastic impact to the narrowband operations constrained in the proposed 2/2 alignment.

The Commission should reject any assertion that the 800 MHz rebanding experience demonstrates that rebanding can be accomplished within the 900 MHz band with minimal disruption to critical utility incumbent operations. As explained by Motorola, "the 800 MHz experience is not directly applicable to 900 MHz due to the lack of sizeable guard bands separating narrowband from broadband networks in the proposed 900 MHz plan."<sup>36</sup> API warned that "[a]voiding a repeat of the narrowband interference issues that occurred with Nextel system in the 800 MHz band should be paramount."<sup>37</sup>

Another important distinction between 800 MHz rebanding and the rebanding proposed by PDV is that the 900 MHz band is a much more condensed space. The reduced size of the 900 MHz band compared to the 800 MHz band drastically reduces the number of unique frequency

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<sup>35</sup> See *e.g.*, Comments of Westar at 7; Comments of API at 6-7.

<sup>36</sup> Comments of Motorola Solutions, Inc. ("Motorola") at 6; WT Docket No. 17-200 (filed Oct. 2, 2017).

<sup>37</sup> Comments of API at 7.

sets that can be allocated in any given area. As LCRA previously discussed, the proposed 2/2 MHz narrowband segment would not provide enough unique frequency sets in the area surrounding Austin, TX to support LCRA's existing sites or any other entities with operational needs in the area.<sup>38</sup> The situation in the larger 800 MHz band was quite different and suggests that it would be more difficult to accomplish rebanding in the smaller 900 MHz band.

#### **IV. CONCLUSION**

**WHEREFORE, THE PREMISES CONSIDERED,** Lower Colorado River Authority respectfully requests the Commission to take action in this docket consistent with the views expressed herein.

Respectfully submitted,

**LOWER COLORADO RIVER AUTHORITY**

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<sup>38</sup> See Comments of LCRA at 5; RM-11738 (filed Jan. 12, 2015); Comments of LCRA at 9; RM-11755 (filed Sept. 21, 2015).