Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
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Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550-3650 MHz Band	)	GN Docket No. 12-354
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	)	

To: The Wireless Telecommunications Bureau

REPLY COMMENTS OF THE UTILITIES TELECOM COUNCIL

The Utilities Telecom Council (UTC) hereby files the following reply comments in response to the Wireless Telecommunications Bureau's Public Notice in the above-referenced proceeding.[1] UTC continues to support the FCC's general approach for the Grandfathered Wireless Protection Zone (GWPZ), and it continues to recommend expanding the geographic area in order to adequately protect all consumer premises equipment (CPE) within the coverage area of an incumbent base station. As the comments of UTC and several utilities on the record explain, the GWPZ should be expanded because utilities have made significant investments in the 3.5 GHz band (3550-3700 MHz band), and the reliability of these systems must be maintained in order to ensure the safe, effective and secure delivery of essential electric, gas and water services to the public at large. Loss of coverage and interference from CBSDs that operate on a GAA basis would require utilities to add sites or migrate to alternative bands, which would impose significant costs. Utilities represent the significant majority of incumbent systems in the 3.5 GHz band, and the GWPZ uniquely impacts utilities, given their demanding requirements to support mission critical communications and the significant investment that they have made in the band.

[1] *See* Wireless Telecommunications Bureau Seeks Comment on an Appropriate Method for Determining the Protected Contours for Grandfathered 3650-3700 MHz Band, GN Docket No. 12-354, *Public Notice*, DA 15-1208 (rel. Oct. 23, 2015) (*3650-3700 MHz Band Protection Contours Public Notice*).

I. Grandfathered Wireless Protection Zones Should Cover Geographic Areas Around the Center Coordinates of Fixed and Base Stations.

The comments on the record support the Bureau's approach for establishing GWPZ around incumbent base stations in the 3.5 GHz band. This approach will provide a simple, straightforward and enforceable process for protecting incumbent systems. CBSDs would be prohibited from operating within geographic areas extending from a distance from the center coordinates of the incumbent base station. That way, incumbent systems would be protected from interference from CBSDs, and at the same time, operators of CBSDs would have clear notice about the geographic areas in which they can deploy. For these reasons, UTC and other parties have fundamentally supported the Bureau's approach that the GWPZ should be based on a geographic distance from the center coordinates of the incumbent base station, even though they believe that the geographic area of the GWPZ should be expanded from what the Bureau has proposed.

UTC disagrees with comments that suggest that the Bureau should use field strength measurements as the basis for the GWPZ, and that the GWPZ should be further reduced so that it would only protect certain devices – including base stations and CPE -- that are registered in the SAS database.[2] The proposals in these comments would inadequately protect incumbent systems from interference by CBSDs, as described more fully below.

A. The Bureau should not define the GWPZ based upon field strength limits alone.

At the outset, UTC disagrees with basing the GWPZ on a field strength measurement of -95 dBm (or -85 dBm/10 MHz), because it would significantly reduce the coverage of existing systems. As the Bureau observed, the receiver sensitivity of the most widely deployed CPE is -95 dBm.[3] Further, the

[2] *See e.g.* Comments of Google in GN Docket No. 12-354 at 3-7 (filed Dec. 28, 2015); Comments of the Wireless Innovation Forum in GN Docket No. 12-354 at 3-6 (filed Dec. 24, 2015) and Comments of the Wireless Internet Service Provider Association in GN Docket No. 12-354 at 1-3 (filed Dec. 28, 2015).

[3] *See* Public Notice, Appendix D, Table 1 (showing that CPE with FCC ID# E5MDS-MERCURY 3650 has a RX sensitivity of -95 dBm).

Bureau proposed that the field strength limit of any Citizens Broadband Radio Service station should be 44 dBuV/m/MHz at the boundary of the Grandfathered Wireless Protection Zone, explaining that "[t]his level is derived to ensure that potentially interfering signals do not raise the noise floor at the incumbents' CPE locations and will provide a conservative margin below the receive sensitivity of the CPE to ensure protection from harmful interference."[4] Thus, UTC disagrees with basing the GWPZ on a field strength measurement of -95 dBm, because it would eliminate any margin against interference with incumbent system CPE at the boundary of the GWPZ.[5] In addition, UTC supports the comments of the American Petroleum Institute, which raises concerns that the Bureau's proposed field strength limit may need to be further reduced in order to adequately protect incumbent systems' CPE.[6] As such, the field strength limits need to be more protective, not less.

B. The Bureau should define GWPZ to protect the entire area around incumbent base stations rather than only certain devices.

UTC also disagrees with the comments that would limit protection to certain devices rather than the entire area around incumbent fixed or base stations. While UTC agrees that there should be incentives for incumbents to register their systems with the database and otherwise comply with the FCC rules, UTC submits that the Commission has done that already by requiring incumbents to register their systems with the SAS database in order to be protected. The Commission explained that,

> In order to be afforded Grandfathered Wireless Broadband Provider protections, we require incumbent operators to register their frequency usage with approved SAS Administrators. Existing licensees must register their fixed and base stations as well as

[4] *Id.* at 3.

[5] Incumbent systems should not be forced to reduce existing coverage in order to accommodate multiple CBSDs which may produce aggregate interference that exceeds the maximum field strength limit that the Commission has determined is minimally necessary to adequately protect incumbent systems. *But see* Comments of Google at 6 (stating that "[t]o address the real-world issue of aggregate interference from all relevant CBSDs, the Commission should establish protection at the level of -95dBm/MHz—which is equivalent to -85 dBm/10 MHz -- from all CBSD transmissions.")

[6] *See* Comments of the American Petroleum Institute at 2-3 (urging the Commission to adopt a 37 dBu contour to protect both registered and unregistered CPE on incumbent systems.)

> their service contours with the SAS. In addition, existing licensees must indicate the specific frequencies and channel bandwidth in use at each site. [7]

Thus, incumbent licensees already have incentives to register their fixed or base stations with the SAS database, because if they don't, they lose their protection as incumbents. In this context, the Commission clarified that the registration requirement applies to fixed or base stations – and not CPE – when it stated that:

> Grandfathered Wireless Protection Zones will not be specifically defined for subscriber units operated by Grandfathered Wireless Broadband Licensees, regardless of whether they have been registered in ULS. We expect, however, that the methodology for defining the Grandfathered Wireless Protection Zone around based and fixed access points will provide appropriate protections for the subscriber units, customer premise equipment, and remote terminals associated with registered base and fixed stations.[8]

As such, the Commission has already decided against limiting the GWPZ, as some comments have suggested. UTC agrees with the Commission that defining the GWPZ to include geographic areas around base and fixed access points will provide appropriate protections for the incumbent systems, provided that the geographic areas are expanded beyond what the Bureau proposed. Conversely, UTC disagrees with comments that attempt to reduce protections for incumbent systems by limiting the GWPZ to only protect certain devices, rather than the entire area around the base stations.

UTC also believes that the Bureau's approach strikes the appropriate balance between promoting CBSD deployment and protecting incumbent operations.[9] UTC emphasizes that utilities have made significant investments in the 3.5 GHz band and that these investments need to be protected. Utilities

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[7] Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550-3650 MHz Band, GN Docket No. 12-354, *Report and Order and Second Further Notice of Proposed Rulemaking,* 30 FCC Rcd 3959 at ¶407 (2015) *(3.5 GHz Order).*

[8] *Id.* at ¶405, n. 859.

[9] *But see* Comments of Google at 5-6 (stating that "Protecting registered base stations, registered CPE, and point-to-point link stations – as opposed to establishing relatively large protection zones covering areas where Part 90 devices may be sparsely deployed and unregistered devices may or may not be operating – strikes the right balance between potentially competing objectives.")

need reliable communications in order to ensure the safe, effective and secure delivery of essential energy and water services to the public at large. As such, the public interest would be served by defining the GWPZ so that reliability is maintained.

While it is true that there are public interest benefits to promoting CBSD deployment, the harms of limiting the GWPZ outweigh the benefits. First, the CBSDs can be deployed without having to limit the GWPZ, as some comments have suggested. There is 150 megahertz of spectrum and the incumbents only occupy 50 megahertz of it at most.[10] In this way CBSDs can be accommodated without needing to limit the GWPZ. Second, limiting the GWPZ would impose significant costs on incumbent licensees, forcing them to install additional sites to ensure coverage to CPE at the boundary of the coverage of their existing base stations. Worse, if coverage and reliability can't be maintained or is cost prohibitive, utilities may be forced to transition out of the 3.5 GHz band entirely, resulting in massive stranded investments. Finally, this is only a temporary measure; after the transition period expires, incumbents will be subject to the same level of protection as any other GAA operation in the 3.5 GHz band. Until then, incumbent systems should be granted protection so that they are able to maintain communications reliability and are otherwise made whole in the interim.

II. The Bureau Should Expand the Grandfathered Wireless Protection Zone to Sufficiently Protect Incumbents.

UTC reiterates its earlier comments and echoes the other comments in support of expanding the GWPZ beyond the Bureau's proposed GWPZ for registered and unregistered CPE.[11] As these comments agree, limiting the GWPZ to 4.4 km for systems using unregistered CPE and 18 km for systems using registered CPE would significantly underestimate the actual coverage of some of these systems, which are capable of talking back with CPE that are as far away as 24 km from the base station. There are various

[10] Many incumbent systems only use 25 megahertz of the 3650-3700 MHz portion of the band.

[11] *See* Comments of UTC in GN Docket No. 12-354 at 3-5 (filed Dec. 28, 2015); Comments of Exelon Corporation in GN Docket No. 12-354 at 2-4 (filed Dec. 23, 2015); Comments of Centerpoint Energy Houston Electric in GN Docket No. 12-354 at 3-4 (filed Dec. 9, 2015) and Comments of the WiMAX Forum in GN Docket No. 12-354 at 2-4 (filed Dec. 28, 2015).

possible reasons why the Bureau's model underestimates the necessary size of the GWPZ. As Centerpoint suggests, the talk back range may be much farther where there is flat terrain and low obstructions.[12] It may also be true that certain elevated sites may have better coverage over a wider area as well. Finally, the comments by the WiMAX Forum may also help to explain the discrepancy between the Bureau's model and the reality of the coverage of some of these sites.[13] As the WiMAX Forum explains, the Commission's model assumes the *average* receiver sensitivity of base stations commonly used by incumbents, but the actual receiver sensitivity of some of these base stations may be significantly greater.[14] Whatever the reason, the fact is that the proposed GWPZ doesn't match up to the actual coverage of incumbent base stations, and the GWPZ needs to be expanded in order that incumbent systems are fully protected so that they are made whole during the transition period.

III. Incumbents Should Have Flexibility to Change Frequencies.

UTC also reiterates its earlier comments and echoes the other comments of Centerpoint and Exelon, which urge the Bureau to allow utilities the flexibility to change the frequencies of their existing base stations in Grandfathered Wireless Protection Zones.[15] As they explain, utilities need flexibility to be able to change frequencies in order to avoid interference that they encounter in certain areas.[16] Conversely, restricting the Grandfathered Wireless Protection Zone to the center frequency of the incumbent base station would unnecessarily prevent utilities from modifying their operations in order to avoid interference and ensure communications reliability. As explained above, utilities must ensure the reliability of these communications systems in order to maintain the operational safety, security and reliability of essential electric, gas and water services. Therefore, the Bureau should define and

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[12] Comments of Centerpoint Energy Houston Electric at 3.

[13] Comments of the WiMAX Forum at 3-4.

[14] *Id.*

[15] *See* Comments of UTC at 5-6. *See also* Comments of Centerpoint at 4 and Comments of Exelon at 4-5.

[16] *Id*.

implement the Grandfathered Wireless Protection Zone so that utilities can fully protect their incumbent systems, including modifying their frequency of operation as necessary to ensure communications reliability.[17]

Conclusion

In conclusion, UTC fundamentally supports the Bureau's approach for the GWPZ, based upon geographic areas around incumbent base stations, and it disagrees with those comments that propose basing the GWPZ upon field strength limits for devices that are registered with the SAS database. As UTC has explained, the proposed GWPZ would sufficiently protect incumbent systems, provided that the geographic distance of the zone is expanded to protect the entire coverage area of incumbent base stations. Conversely, limiting the GWPZ to only protect certain devices based on field strength limits that leave no margin for interference between incumbent CPE and nearby CBSDs would not sufficiently protect incumbent systems. The GWPZ must ensure that incumbent systems are protected, especially considering the importance of maintaining reliable communications that support the safe, effective and secure delivery of essential power and water services to the public at large. Moreover, this strikes the appropriate balance, because it won't impede CBSD deployment and it protects significant investments that have been made by incumbent systems in this band during the transition period.

UTC and other comments continue to urge the Bureau to expand the size of the Grandfathered Wireless Protection Zone, so that it extends beyond the current proposal of 4.4 km or 18.4 km from the center coordinates of an incumbent base station, and it encompasses the entire coverage area of an incumbent base station, not just those areas where there are registered CPE that are constructed, registered and in operation by April 17, 2016. In addition, UTC respectfully requests that the Bureau provide incumbent licensees with flexibility to change frequencies and to protect those frequencies from interference as part of the Grandfathered Wireless Protection Zone.

[17] UTC also supports the comments of Exelon, which request clarification that would allow incumbent licensees to submit information regarding the frequencies of operation for use by the FCC database and the SAS so as to allow for a single CPE to be served by multiple 3.65 GHz grandfathered base stations. *See* Comments of Exelon at 5.

Respectfully,

Utilities Telecom Council

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