Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC

In the matter of:	)	
	)	RM-_____
Amendment of Parts 73 and 74 of the	)	
Commission's Rules to create a second class	)	MB Docket No. _____
of service for Low Power FM broadcast	)	
stations	)	

SUMMARY

Originally created in response to the decreased diversity in broadcast choices and voices, the Commission, under the leadership of former Chairman William Kennard created the Low Power FM (LPFM) radio service to bring new voices to the airwaves that would otherwise not have a voice.

In the past 20 years, we have seen many interesting organizations extend their educational outreach programs to include radio. During this time, we have heard the airwaves graced with everything from story readings to whale songs. LPFM stations have been a form of artistic expression exposing the general public to new local music artists and exposing them to music genres that they would have never otherwise considered. LPFM stations have given voices to various minority communities, such as our Somali American and Haitian American communities that otherwise would have no voice on our airwaves. In places like Detroit and Philadelphia, LPFM has brought the voices back to the community. With an effective range of 3 ½ miles, 100-watt LPFM stations have been effective in larger population centers.

Then, there is the rest of America. In small town America where radio stations are fewer and where any kind of coverage outside of a Nielsen market is nearly nonexistent and with more room on the dial, LPFM stations in these areas are doing the best they can by providing news, weather, emergency information, agricultural updates and overall companionship. Small town LPFM stations have been instrumental in their role as many small towns try to revitalize their downtown "Main Street" areas, despite the takeover of the retail market by big box stores and shopping websites. The farms and processing plants in these areas put the food on our table every day. Farming requires land, which means that people who have a nexus to a certain community would be located further away from that town. Those in rural areas are less likely to have as many choices for broadband as their urban counterparts, some are in areas that do not over-the-air television and in some cases, their only educational FM broadcast services would otherwise be satellite delivered from California or Mississippi. In the rest of America, 3 ½ miles is hardly what anyone would call "local", hence the term, "country mile".

The facts are that 21.3% of all LPFM stations currently licensed are located in Nielsen Audio markets 101 and down while another 41.3% of LPFM stations are outside of any rated metro county. This means that nearly two-thirds of all LPFM stations are outside of the Top-100

markets. In fact, only 15% of all LPFM stations are in deep-urban areas. What about the other 85%?

8 years ago, the Commission had proposed to allow LPFM stations that would otherwise qualify, to increase to 250 watts thus effectively giving them nearly a 4 ½ mile effective range. The "LP-250" proposal at the time was supported by organizations that, like REC, interfaced with LPFM stations and understood their challenges. The original LP-250 proposal was also supported by the Catholic Radio Association, which recognized that a considerable number of LPFM stations operating in rural America were licensed to Catholic churches and other Catholic organizations. While supporting LP-250, the original proposal was diluted by those who were trying to legitimize pirate-like "microradio" stations in urban areas and suburban neighborhoods through the segregation of LP-250 stations into the most rural areas thus denying many LPFM stations from having an opportunity to grow their stations and better serve their community. The hobbyists were trying to save the former LP-10 service, a service that both low-power and full-service advocates agreed would be ineffective. Therefore, the advocates that interfaced with LPFM stations on a regular basis opposed the segregation while interests that do not normally interface with LPFM stations including "social justice" and "media justice" organizations wanted to keep LP-250 stations well out of the way in some false hope that 10-watt microstations would flourish everywhere. The studies conducted in 2012 proved clearly, that even if LP-250 was segregated, there would be very few LP-10 opportunities nationwide.

In 2012, the FCC proposed a novel concept for LP-250. The 2012 Commission had proposed to allow an LP-250 service that used the same distance separations on co- and first-adjacent channels as LP-100 by penetrating a 20 km artificial "buffer zone" that was created back in 2000 in order to protect LPFM stations in the event that a full-service station made a minor modification. The Local Community Radio Act of 2010 (LCRA) states that the FCC is unable to decrease the minimum distance separation between LPFM stations and full-service broadcast stations. The 2012 Commission felt that that as long as the "numbers" remained the same, then it would comply with the LCRA. The FCC did not create an LP-250 service in 2012 due to mistakes made when the Commission at the time mistaken non-LPFM organizations for LPFM organizations and suspected infighting among the ranks within the LPFM movement.

In response, REC Networks filed RM-11749, which would revitalize the LP-250 proposal but also addressed some concerns about interference that were brought up in the original FCC LP-250 proceeding as well as real-world concerns expressed in a high profile "suspected" interference case. RM-11749 introduced us to the "foothill effect" which meant that due to distance separation rules, some LPFM and full-service FM stations could have large lobes of service contour well beyond their class maximums. Concerned about interference, REC introduced the concept of using a "backstop" method what would assure that the interfering contour of the LPFM station does not overlap a full-service protected contour following well-accepted engineering standards.

Then, in response to the large number of FM translators converging into major metro areas, REC filed RM-11810, which proposed a full "hybrid" method of protection in a manner similar to what applies to full-service stations under §73.215. Using the original FCC assumption from 2012 that LCRA complaint minimum distance separation was based on "numbers", REC

attempted to argue that at the time when the LCRA was enacted, the LP-10 "numbers" were still on the books. With that, REC proposed a second service class for LPFM designed for advanced users, but with that advancement came more flexibility. Called the "§73.815 Regime", named after its §73.215 counterpart that it was stylized after, this different method involved using contour overlap to determine protections (out to the LP-250 service level with a minimum of the original LP-10 service). To meet LCRA statutory requirements, the LP-10 distance separations were used as a minimum threshold to protect full-service stations. We had proposed that those who had stations engineered under the "§73.815 Regime" would have been subject to the same exact interference remediation regulations that applied to FM translators. Even if the "§73.815 Regime" came to reality, the simple "§73.807 Regime" (status-quo) would have always been available.

In MB Docket 19-193, the Commission made two important determinations. First, there remained a desire to keep LPFM as simple as possible by avoiding the need wherever possible for any kind of a contour study. Second, there was a very important reinterpretation of the LCRA that, despite the FCC proposal in 2012, the 2020 Commission has determined that it is necessary to maintain the integrity of the 20 kilometer "buffer zone" in order to remain compliant with the will of Congress in the LCRA.

Based on this new information that was not known until the publication of the circulation draft two weeks before Sunshine cut-off, REC introduced a "Simple 250" concept to the Audio Division and to Commissioner media advisors. While this new concept did address the two key issues the FCC brought up in the circulation draft, we were just a little too late to the party in order for it to be considered for a *Further Notice of Proposed Rulemaking.*

This *Petition for Rulemaking* revives that last-minute discussion and puts before the Commission for consideration, a simple LP250 proposal that acknowledges the hard work and challenges of rural LPFM stations while not discriminating against any LPFM station that would otherwise qualify for an upgrade. Specifically, this *Petition* will:

- Create a new "LP250" class of service in addition to the current LP100 service with an effective service contour of 7.1 kilometers.
- Establishes a 451 meter maximum HAAT for new or modified LP100 facilities.
- Create a second distance separation table for the new class of service which includes distances up to 9 km longer than the LP100 service.
- Fully respects the 20-kilometer buffer zone.
- Propose policy for upgrades on stations already second-adjacent channel short-spaced.
- Does not add any new process that would involve a contour study.
- Propose to allow class upgrades and downgrades as a minor change as long as all other minor change criteria is met.
- Suggests, but does not require a "launch window" method in order to assure fairness during the initial "rush" by existing LPFM stations wanting to upgrade.
- Propose a simplified radio frequency radiation standard for LP250 similar to the simplified standard for LP100.

In other words, this is simply like the LP100 service that has been around for the past 20 years, but just an add-on with the LP250 "numbers". Or, in other words, SIMPLE. With that, REC Networks submits the following *Petition for Rulemaking* for full Commission consideration.

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PETITION FOR RULEMAKING

I. INTRODUCTION

1. REC Networks ("REC") is a leading advocate for a citizen's access to spectrum with a heavy focus on the Low Power FM (LPFM) broadcast stations as well as full-service noncommercial educational (NCE) broadcast stations and non-broadcast services such the Amateur Radio Service. REC's Michelle Bradley is a Society of Broadcast Engineers (SBE) Certified Broadcast Technologist.

2. In this *Petition*, REC Networks re-opens the discussion on the establishment of a second class of service that would permit hyperlocal broadcasting, especially in suburban and rural areas with a service contour of 7.1 kilometers (4.4 miles). The new "LP250" service class would operate with an effective radiated power (ERP) of 250 watts (0.25 kW) at 30 meters height above average terrain (HAAT) and would be offered in addition to the existing "LP100" LPFM service class. Throughout MB Docket 19-193, REC called for LP250 to be considered for a *Further Notice of Proposed Rulemaking* in that proceeding however, due to concerns by the Commission regarding statutory issues and the complexity of the previous proposals, REC reengineered the proposal to be more simplistic and to address a revised interpretation of statute by the Commission, which was presented to Staff in last-minute *ex parte* discussions. This instant *Petition* picks up from those final *ex parte* discussions leading up to the adoption of the *Report and Order* in MB Docket 19-193.[1]

[1] *See, Amendment of Parts 73 and 74 to Improve the Low Power FM Service Technical Rules,* Report and Order, FCC 20-53 (Apr. 22, 2020) ("*Tech Order*"). A complete history of the various LP250 pleadings and proceedings from the past 8 years can be found in Appendix F.

3. When considering our next steps in the LP250 proceeding, we had two possible paths to follow. We could have filed a *Petition for Reconsideration*. We would not feel that reconsideration was warranted in this proceeding as what we were requesting in the first place was to bring LP250 to a *Further Notice of Proposed Rulemaking* thus giving it a full comment and reply comment period so a complete record, concentrated on the specific questions of LP250 could be addressed by both supporters and those who may have concerns about the proposed new service class.[2] REC recognizes that filing for reconsideration would be more burdensome on Staff compared to filing a new *Petition for Rulemaking.* In the latter case, it will still result in a comment and reply comment period if the Commission decides to adopt an NPRM therefore meeting our original request for consideration of this vital enhancement to the LPFM service.

4. Finally, we note that what is being proposed in this proceeding are mainly geared towards existing LPFM stations (even though we would not object with new entrants using these methods) and we would see this proceeding as no reason to delay any filing windows for new-entrant LPFM construction permit applications as LP100 stations. They would be able to upgrade to LP250 at a future date. In addition, by not offering LP250 during a new station filing window, this could better gauge demand for new LPFM stations and could reduce the number of mutually exclusive applications in areas where demand for new LPFM stations is higher.

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[2] A *Petition for Reconsideration* also requires that such pleadings be limited to 25 double-spaced typewritten pages; *see* 47 C.F.R. §1.429(d). The extensive amount of data in this *Petition,* including new information that was not previously presented to the Commission far exceeds that limit and is relevant to describe the public interest benefits. While the Commission tentatively rejected an earlier concept of LP250 in the *Notice of Proposed Rulemaking* (34 FCC Rcd. 6537, 6539 at n. 15), the plan presented in this *Petition for Rulemaking* far differs from what was previously proposed by REC in RM-11810. The instant *Petition* is a work product of 8 years of data that has been collected on the subject and reflects evolving interpretations of statute by the Commission and only made aware to the public three weeks prior to the vote to adopt the item. REC recognizes that the basis of this "flavor" of LP250 was presented to the Commission just prior to the beginning of the Sunshine period and that the Commission had not had enough time to take the revised proposal into consideration prior to the May Open Meeting. REC also recognizes that due to the COVID-19 pandemic, the Commissioners and Commission staff (as well as REC) are working in a different mode where collaboration between colleagues can be more challenging. While REC does recognize the urgency of the hundreds of LPFM stations that have a true need to upgrade their stations if given the opportunity, especially during this time of national crisis, we also recognize that it is in the public interest to have the most full and complete record on this subject. The instant *Petition* will, on its own, demonstrate the overall public interest benefit, especially to the underserved rural areas in our nation, that the ability for LPFM stations meeting the proposed criteria could voluntarily request an upgrade to the proposed LP250 class of service, would be in the public interest. This instant *Petition,* in this form, is being filed in the public interest, as opposed to a *Petition for Reconsideration,* which would limit the information we could present.

II. THE RECORD ALREADY REFLECTS OUTSTANDING SUPPORT FOR A 250-WATT LPFM CLASS OF SERVICE

A. LPFM stations face very unique challenges, now more than ever

5. For the past eight years since LP250 was first debated, there have been many stories that have been reported by LPFM stations regarding their coverage. In 2015, we heard from WDFC-LP, Greensboro, North Carolina, who told the story about issues related to building penetration at the LP100 levels including at one retirement home that because of building penetration issues, WDFC-LP was only heard on one side of the building, but not on the other.[3] As we are currently going through a pandemic, we discover more and more how important radio's role is in keeping people informed as they are shuttered in their homes, especially in our senior housing.[4] LPFM stations are uniquely qualified to tailor its programming towards various specialized demographics. Even with the the "Simple" LP250 plan we propose in the instant *Petition*, WDFC-LP does have an opportunity to upgrade on their channel and their upgrade would not cause any interference to any other station.[5]

6. We recently heard from WOMP-LP, in Cambridge, Ohio is another station with a high elderly population. Radio has become very important in their community as many senior citizens are comfortable listening to the radio than listening to a streaming station on a computer. During the COVID-19 pandemic, WOMP-LP has been engaged in broadcasting vital information on resources for seniors, especially since the local senior centers and restaurants are closed. WOMP-LP is eligible for an upgrade to LP250.[6]

7. The comments in MM Docket 99-25, RM-11749, RM-11810 as well as MB Docket 19-193 are loaded with many testimonials about LPFM stations and what they can do if given the opportunity to upgrade to LP250.

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[3] *See, REC Networks,* Petition for Rulemaking, RM-11749 (Apr. 20, 2015) ("RM-11749") at 4.

[4] *See also, Radio's Finest Hour Comes Amid Covid-19 [sic] Pandemic*, Chief Executive (Apr. 6, 2020), retrieved May 27, 2020 from https://chiefexecutive.net/radios-finest-hour-comes-amid-covid-19-pandemic/

[5] See Appendix H-10, *infra.*

[6] *See* Appendix H-4, *infra.*

B. For those in rural areas, "hyperlocal" is more than just Main Street

1. What is considered hyperlocal depends on where you are

8. The UK-based NGO charity Nesta, defines "hyperlocal" as "online news or content services pertaining to a town, village, single postcode or other small, geographically defined community."[7] One of the biggest arguments that has been made by those who oppose LP250 was that anything over 3.5 miles may not be considered as "hyperlocal".[8] While that may be true if you are in a major city like New York, Los Angeles or Washington, D.C., it is not the case of many small towns scattered throughout our country. In our rural areas, farmers, tribal members and others living remotely are more spread out and, in many cases, between 3.5 and 4.4 miles from the center of the nearest town with amenities of which they would identify as "local" or even "hyperlocal". Others are located even further away. Those in rural areas depend on LPFM stations to provide more localized information on news and weather, especially during emergencies such as tornados. A rural focused LPFM station can speak more directly to the non-urbanized community, something that larger full-service broadcast stations simply do not have the time in the day or the resources to do, even for rural full-service stations.[9] Despite the Commission's efforts to improve broadband access in rural areas, there are some portions of the country that have limited wireless service offerings ("dead zones" and limited service provider choice) as well as limited offerings of fixed and mobile broadband internet services.[10] Rural communities still depend on radio for news, information, agricultural reports, weather, education, entertainment and companionship. To those who live in the wide portions of this country that are

[7] *See*, Radcliffe, Damian, *Here and Now-UK Hyperlocal Media Today*, Nesta (Mar. 2012), copy of document archived at https://recnet.net/fcc/Here_and_Now_v17.pdf

[8] *See, Comments of National Association of Broadcasters* (NAB), RM-11810 (Jul. 20, 2018) at 10-11.

[9] *See, America's Rural Radio Stations Are Vanishing – and Taking the Country's Soul With Them*, The Guardian (Jun. 6., 2019), retrieved May 27, 2020 from https://www.theguardian.com/tv-and-radio/2019/jun/06/radio-silence-how-the-disappearance-of-rural-stations-takes-americas-soul-with-them

[10] *See, Advanced Telecommunications Capability to All Americans,* 2019 Broadband Deployment Report, 34 FCC Rcd. 3857 et. seq. (2019).

sparsely populated, being 4 and a half miles away from the nearest town is still not just local, but hyperlocal and vital for quality of life.[11]

9. REC has evaluated the populations served by most of the LPFM stations across the country. We have found that at least two-thirds of the stations that serve populations of under 100,000 would be able to upgrade and with that said, upgrade opportunities exist for at nearly 93 percent of LPFM stations that currently serve populations of less than 25,000 persons and nearly 95 percent that serve populations of less than 9,000 persons.[12] The average population served by an LP100 station that will be eligible to upgrade to LP250 is 40,564 persons. If every identified station upgraded, then at the LP250 service contour, that average population would be 54,034 persons. Compare that to 143,687 persons, the average service contour population of stations that are unable to upgrade (based on their current LP100 coverage). Of the LP100 stations that can upgrade, less than 10 percent of these stations will result in service contours that exceed 143,687 persons. Simply put, providing LP250 to those stations that can upgrade will allow these smaller stations to elevate their population served and better serve the more spread-out areas that have a nexus to the nearby small towns.

2. In dense urban areas, 3.5 miles has a wide potential reach

10. For the past two decades, we have achieved the goal of introducing new LPFM stations into deep urban areas, especially in the 2013 LPFM filing window. The 2013 window brought us stations like WNUC-LP, Detroit Michigan. Licensed to the North End Woodward Community Coalition (NEWCC). With the station located just blocks away from the Motown Museum, NEWCC started as a grassroots organization comprised of faith-based organizations, businesses and residents who have historically not been heard on decisions related to the public

[11] The first time the term "hyper-local" was used to describe LPFM was in 2012 by former Chairman Julius Genachowski, in his statement on adoption of the *Sixth Report and Order* in MM Docket 99-25; *see*, 27 FCC Rcd. 15402, 15512 (2012) ("*The Information Needs of Communities report we released last year found that 86 percent of the news and public affairs programming broadcast on news-talk radio was national and not local. Low-power community radio is intended to be a hyper-local radio service. This was the vision of my friend, former Chairman Bill Kennard, who led the Commission in authorizing LPFM.")* The first time "hyper-local" was used in a proceeding was in the *Notice of Proposed Rulemaking* in MB Docket 19-3, 19 years after LPFM was first adopted; *see*, 34 FCC Rcd. 851, 887-888 (2019) at ¶ 85.

[12] See Appendix D.

transportation needs of thousands of low income people and people of color.[13] WNUC-LP showcases the talent of local DJs and musicians and features the work of local grassroots organizations.[14] With a 60 dBu contour of nearly a quarter of a million people, WNUC-LP is an excellent example of a urban hyperlocal LPFM. LP100 stations reaching urban areas also exist in cities like San Francisco, Seattle, Portland Oregon, Boston, Philadelphia and Baltimore as well as many other cities. For the population density and amenities provided in these cities, 3.5 miles can be perceived as hyperlocal enough. In the big cities, spectrum crowding will "naturally" prevent upgrades to the 4.4-mile LP250 service area. While urban LPFMs would like to have the additional building penetration benefits that LP250 could provide, the overall demand for finite spectrum is much higher in these areas thus reducing the upgrade opportunities.

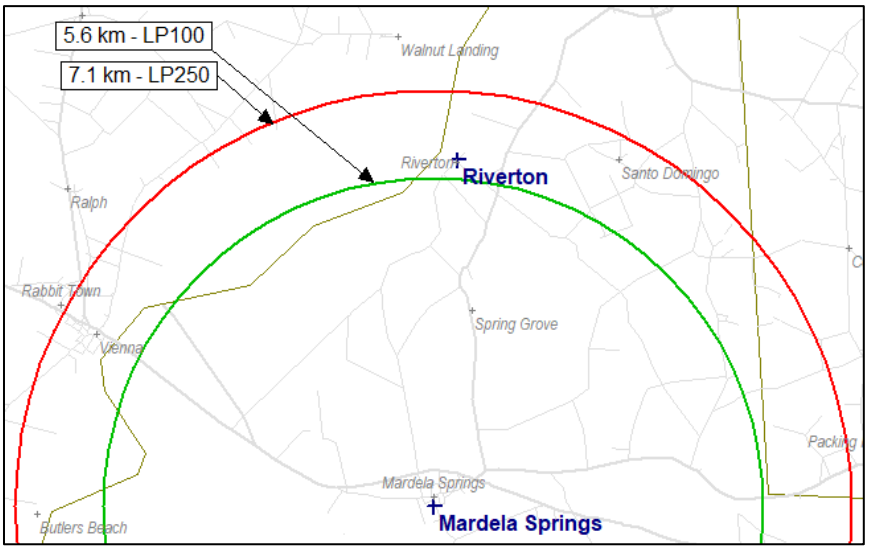
3. Meanwhile, in the rest of America

11. Call it what you want, "the boonies", "the sticks", "flyover country", "out there", whatever, rural and small town America as well as our medium sized communities are the fabric of this nation providing the many resources that our country, including those in the urbanized areas need in order to sustain daily life. In these sparsely-populated areas of our country, the term "country mile" seems to be really a thing. It is not abnormal to have the nexus of your community be more than 3.5 miles away. In many ways, what is proposed with LP250 could be perceived as covering 3.5 "country miles", per se.

[13] https://www.northendwoodward.org/about/

[14] https://www.northendwoodward.org/wnuc-96-7-lpfm-detroit/

12. *Riverton, Maryland.* Located along the Nanticoke River, Riverton, Maryland was once a port town that featured a cannery and daily steamship services. Riverton once had a general store and post office. That was almost 100 years ago. Today, Riverton is now a quiet community with family farms raising crops and poultry. The nearest town that had a railroad station back in the day is Mardela Springs, located about 4 miles to the south of Riverton. The area that is still known as Riverton is served by the Mardela Springs post office and various amenities are available in the community. In addition, the public elementary, middle and high schools for the entire region are in Mardela Springs. Therefore, there is a nexus between Riverton and Mardela Springs. A 5.6 km contour from Mardela Springs would barely reach Riverton, despite our community's close relationship where a 7.1 km contour would reach Riverton just fine and also reach to other nearby rural areas like Santo Domingo not to mention family crop, livestock and dairy farms, which are also dependent on Mardela Springs and other towns. The headquarters of REC Networks is in Riverton. Mardela Springs, nor any community within 7.1 km of it has a full-service broadcast station attributed to it. All full-service NCE stations are licensed to and targeted towards more distant urbanized areas so in many ways, this region is truly underserved.



13. *KPGC-LP, Norman, Arkansas*. KPGC-LP broadcasts from Norman, a rural town with a population of about 350. There are many families living in the surrounding communities outside of the city limits. The area around Norman is very popular for various outdoor activities

such as boating, fishing and camping. In the past, campers have been swept away by flash floods because they did not have access to weather warnings.[15] In addition, there are no tornado sirens to warn of danger and the need to take shelter. Norman is inside the 60 dBu of three stations in the Hot Springs Urbanized Area including KLRO, KLAZ and KQUS-FM we well as KTTG in Mena, Arkansas. KLRO, the only station placing educational service over Norman, carries primarily national satellite programming. KPGC-LP is the only station (full or low power) in Montgomery County. Just in May, 2020, within a one week span, the KPGC-LP Emergency Alert System (EAS) decoder forwarded two tornado watches, one tornado warning and four flash flood warnings. KPGC-LP is serious about EAS and has participated in all National Periodic Tests. Like in many rural areas, mountainous terrain and forest limit the broadcast signal preventing weather alerts from reaching homes. Many local families who are at home during severe weather cannot take advantage of the alerts as the signal is too weak for them to listen inside of their homes. The closest adjacent-channel FM facility to KPGC-LP is a translator in Hot Springs 55.6 km away.[16] KPGC-LP can clearly upgrade to LP250 without causing any interference to any other primary or secondary facility.[17]

14. *KRAM-LP, Montevideo, Minnesota.* KRAM-LP is licensed to Montevideo, a community with a 2010 Census of 5,346 persons. Like many small towns, their downtown started to decline as a result of major national chain stores, however, the area is being revitalized with more boutiques, craft and artisan businesses. The community is also well known for its farming and outdoor recreation. With two rivers going through the town, the area is prone to flooding. Montevideo receives three educational services. Of those, two are for two different Minnesota Public Radio services imported from Saint Paul (about 145 miles away) and the other is satellite programming imported from Tupelo, Mississippi. KRAM-LP is the only

[15] *See, "At Least 16 Campers Killed in Arkansas Flash Flood",* ABC News (Jun. 11, 2010), retrieved May 26, 2020 from https://abcnews.go.com/WN/Media/campers-killed-arkansas-flash-flood-albert-pike-campground/story?id=10889327; *see also, "Flash Flood Hits Campsites Near Norman"*, Nexstar Broadcasting, Inc. (May 23, 2020), retrieved May 26, 2020 from https://www.ozarksfirst.com/local-news/flash-flood-hits-campsites-near-norman/

[16] For the purposes of this discussion about rural LPFM stations, "adjacent channel" refers to co-channel, first-adjacent, second-adjacent and intermediate frequencies as these would be the channels that would be impacted by a change in an LPFM station.

[17] See Appendix H-1, *intfra.*

noncommercial educational voice. Being able to upgrade to LP250 would permit KRAM-LP to reach fringe areas that are part of this very spread-out farming community and in town, it will help with building penetration. There are no full-service adjacent channel FM stations within 100 kilometers of KRAM-LP and therefore, the station can very easily upgrade to LP250 if offered a chance.[18]

15. *KPGZ-LP, Kearney, Missouri.* About an hour out of Kansas City, Kearney is known to be the birthplace and burial site of Jesse James as well as a destination for nearby recreation including camping and hiking.[19] With a 2010 U.S. Census population of 5,472 persons, Kearney is also surrounded by farmland and families that have a nexus to the community. The schools in Kearney bring in students from over 7 miles away and their fire protection district extends to about 10 miles from their downtown area. The residents who live out this far have Kearney mailing addresses and are considered a part of the Kearney hyperlocal community. The station has a good relationship with first responder organizations, civic organizations and locally-owned businesses. For the only broadcast facility attributed to Kearney, a community that is blocked from the 20 reserved band channels due to the Kansas City metro area, the "small boost" of a LP250 upgrade will help KPGZ-LP reach more people who consider Kearney their home, but who do not live in the center of the community. KPGZ-LP meets all distance separation requirements for a LP250 including second-adjacent channel.[20]

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[18] See Appendix H-2, *infra.*

[19] https://www.visitclaymo.com/

[20] See Appendix H-3, *infra.* In this example, because of terrain, there is a slight overlap of the actual 60 dBu protected contour of FM translator K275BQ with the 54 dBu interfering contour of KPGZ-LP as an LP250 facility (0.18 kW at 36 meters HAAT). However, because of the original distance separation rules, the maximum service contour size for a "top-tier" FM translator (one that is described in 47 C.F.R. §73.807(c)(1) as "13.3 km or greater", calculated as 20 + 10.149 = 30.149 = 30 km minimum distance separation). The actual interfering contour of KPGZ-LP does not overlap the 20 km maximum service contour an LPFM protected translator. Likewise, some contour overlap is expected in cases where distance separation is used. The Commission originally chose distance separation as an interference protection standard for LPFM stations because it deemed distance separation more efficient and less resource-intensive than either contour overlap methodology or U/D analysis. *See, Creation of a Low Power Radio Service,* Report and Order, 15 FCC Rcd. 2205 *et. seq.* (2000) ("Original Order") at ¶ 70; *See also* ¶ 20, *infra.* We note that even within the current LP100 service, there are many situations where LPFM stations meet minimum distance separations, but there is some contour overlap. The Commission was very aware of this when the LPFM service was created. *See* 47 C.F.R. §73.209(c) ("*Permittees and licensees of FM stations are not protected from interference which may be caused by the grant of a new LPFM station or of authority to modify an existing LPFM station, except as provided in subpart G of this part.*")

16. Across the country, there are many stations like KPGC-LP, KRAM-LP and KPGZ-LP, all with their own story to tell. The Commission, overall, has been focusing quite a bit on improving the quality of life in rural areas.[21] As stated throughout this *Petition*, the overwhelmingly largest recipient of the benefits of LP250 will be rural communities, many of which, like KPGC-LP and KRAM-LP are very well distanced from any other facilities. Even with this wide availability in rural areas, it should also be available in any location that meets the minimum distance separations, up to, and including inner-city urban areas.[22]

C. We have addressed the Commission's concerns

1. Distance separation and the "buffer zone"

17 In the *Tech Order*, the Commission raised concerns that REC's proposal to use the same distance separation as LP100 stations for LP250 through the penetration of the 20 kilometer "buffer zone" by the increased LPFM interfering contours would contravene the *Local Community Radio Act of 2010*.[23] We do note that what REC has proposed in RM-11749 and later in *Comments* in MB Docket 19-193 treated the buffer zone the same exact way the Commission proposed in the *Fourth NPRM*.[24] The Commission, in the *Tech Order*, had determined that the 20 kilometer buffer zone must remain as part of the equation.[25] REC will agree with that conclusion. REC evaluated the availability of upgrades if, instead of the buffer zone being penetrated, that the interfering contours for co- and first-adjacent channels were measured to the buffer zone without penetrating it. This would result in an increase in minimum distance separation requirements by 5 to 9 kilometers on co-channel and 2 to 3 kilometers on first-adjacent channels from the Commission's original proposed LP250 distance separations

[21] *See, Rural Digital Opportunity Fund, et. al.*, Report and Order, 35 FCC Rcd. 686 (2020); *See also, Promoting Rural Telehealth in America,* 33 FCC Rcd. 6574 (2018); *See also, Connect America Fund, et al,* Report and Order, 33 FCC Rcd. 2990 (2018) (FCC provides additional $500 million in funding for rural broadband); *See also, Policies to Promote Rural Radio Service and to Streamline Assignment Procedures,* Third Report and Order, 26 FCC Rcd. 17642 (2011) (Tribal priority for commercial FM allotments).

[22] *See*, ¶¶ 26-28, *infra*.

[23] *See, Tech Order* at ¶ 39; citing Pub L. No. 111-371, 124 Stat. 4072 (2011) ("LCRA") at § 3(b)(1).

[24] *See, Creation of a Low Power Radio Service,* Fourth Notice of Proposed Rulemaking, 27 FCC 3315 *et. seq.* (2012) ("Fourth NPRM") at ¶ 51.

[25] *See, Tech Order* at ¶ 39.

specified in the *Fourth NPRM*. While our results did show that some existing LP100 stations would lose their ability to upgrade, there is still a significant number of stations, mainly in suburban and rural areas that would be able to achieve the upgrade.[26] REC presented these results with Commission staff just over a week prior to the adoption of the *Tech Order*.[27]

18. Therefore, to address the Commission's concerns, we are proposing the LP250 minimum distance separations to full-service stations to consist of the sum of the standard interfering contour of the LPFM station, the standard protected contour of the incumbent full-service station, and for co-channel and first-adjacent relationships and the full 20 kilometer buffer zone.[28] For example:

LPFM co-channel protection to a full-service Class A station (except Puerto Rico & Virgin Islands)

LPFM station class	**LP100**	**LP250**
60 dB protected contour of Class A	28.295 km	28.295 km
20 km buffer zone	20.000 km	20.000 km
40 dB interfering contour of LPFM	18.577 km	23.758 km
Sum of the three values above	66.872 km	72.053 km
Rounded minimum distance separation	**67 km**	**72 km**

[26] *See*, Appendix E, *infra.*

[27] *See*, REC *ex parte* presentation with Albert Shuldiner, et. al. in the Media Bureau, Audio Division (Apr. 7, 2020) and subsequent meetings with Commissioner media advisers on various dates leading up to the Sunshine Notice announcing the Commission April, 2020 Open Meeting.

[28] The 20-kilometer buffer zone has never been used for second- or third-adjacent channel relationships, nor is the buffer zone used for spacing relationships between LPFM and FM translators, other LPFM stations and foreign FM allotments. In those cases, the distance separation is calculated by adding the standard interfering contour of the LP250 service class with the standard protected contour of the incumbent service class or in the case of incumbent facility in respect to domestic facilities and allotments. Protections to foreign allotments are consistent with the international agreements.

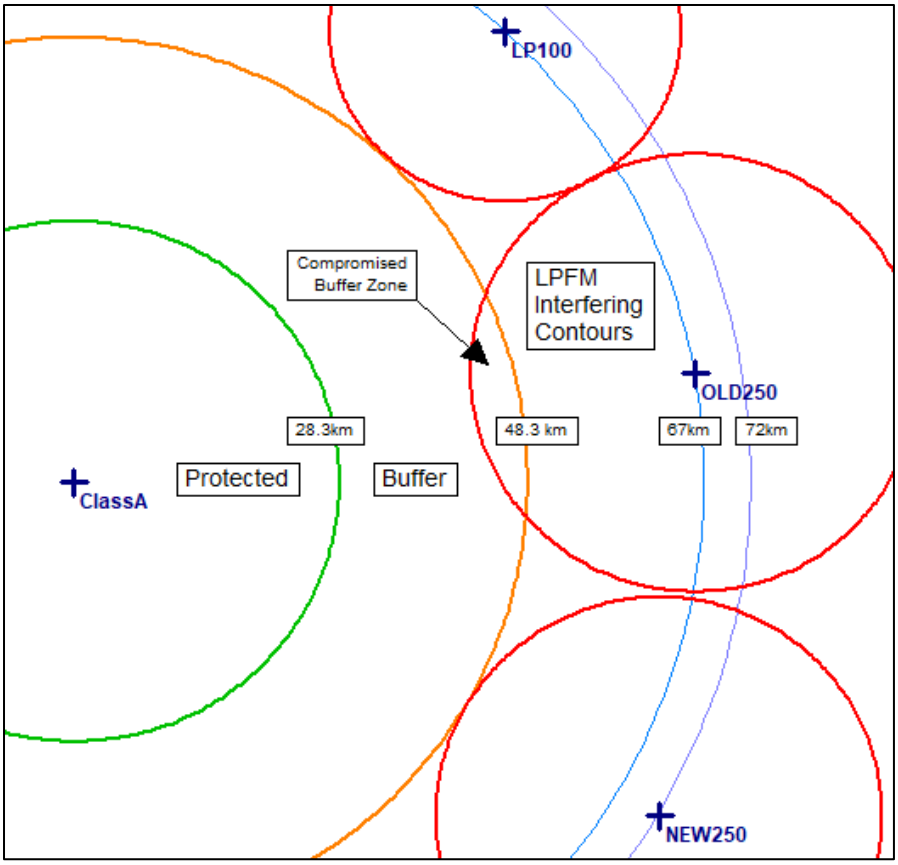

Figure 1

In the figure above, we show three hypothetical LPFM facilities. Their class-standard interfering contours are shown in red, the full-service station's protected contour is depicted by the green curve and the buffer zone is depicted by the orange curve 20 kilometers outside of the green protected contour curve. The LPFM curve at the top depicts an LP100 station under the current rules. The middle curve (OLD250) depicts the method originally proposed by the Commission in the *Fourth NPRM* and by REC in RM-11749 as well as comments in MB Docket 19-193 where the buffer zone is penetrated in order to keep the same minimum distance separation requirements. The bottom curve (NEW250) depicts what is being proposed in this instant *Petition.* By increasing the distances for the LP250 class of service on co- and first-adjacent channels, we satisfy the Commission's LCRA concerns about the past Commission and REC proposals.

2. Contour overlap vs. distance separation

19. The *Tech Order* also raised a concern regarding some of the methods that were being proposed for LP250 which involved the use of contour protection in addition to distance separation.[29] In REC's previous proposals, the additional contour element was added to the protection scheme in order to address situations where the LPFM station is located in a place

[29] *See*,hj *Tech Order* at ¶ 39.

where, due to terrain in a particular direction, resulted in a lobe of their 60 dBu service contour to extend to a significantly longer than average distance.[30] In previous proceedings, REC called this phenomenon, the "*foothill effect*".[31] REC added this contour "backstop" in RM-11749, RM-11810 and in *Comments* for MB Docket 19-193 as a method to assure that despite any remaining "buffer zone" that minimum distance separation would pick up, that an LP250 station that would put an interfering contour into the protected contour of an incumbent station.

20. The Commission concluded that "[t]he proposed use of contour overlap would also introduce an unnecessary level of complexity to LPFM licensing by requiring all LP250 applicants to provide engineering studies examining their own contours to those of all adjacent channel stations, a requirement that is inconsistent with the simple design of the LPFM service.[32]" In principle, we had disagreed with the Commission's findings in the *Tech Order* on this subject, especially since operating at LP250 is *optional.* In other words, LP100 would have remained the original "simple" service under every proposal made by REC.[33] Despite this previous position, the changed circumstances that were unveiled in the *Tech Order* would make LP250 more accommodating to a "simple" regime with a structure that mirrors the existing LP100 service.

21. With the Commission's clarified interpretation of LCRA Section 3(b)(1) that the full 20-kilometer buffer zone must be recognized and not compromised in order to comply with statute, we would have to keep the interfering contour outside of the buffer zone thus resulting in slight increases to the proposed distance separation. The longer distance separation would reduce the chance that the interfering contour lobe of a "foothill" LP250 station would actually cross into the protected contour of a co-channel full power station. For example, let us assume the full-service station is a Class A and has a perfect 28.3 km protected contour in the direction of the LPFM station. Using the LP100 distances proposed by the Commission in the *Fourth*

[30] *See, REC Networks,* Petition for Rulemaking, RM-11749 (Apr. 20, 2015) ("RM-11749") at 17.

[31] See, *Id.*

[32] *See, Tech Order* at ¶ 39

[33] *See, REC Networks,* Petition for Rulemaking, RM-11810 (Jun. 20, 2018) ("RM-11810") at n. 1 (This was referred to as the "§73.807 Regime", which kept the status quo for LP100 while providing a more "advanced" offering to permit stations to obtain a higher ERP through engineering while maintaining what was considered at the time, statutory compliance with the LCRA (the "§73.815 Regime").

NPRM and by REC in RM-11749, the foothill LPFM station would have to be at greater than 75 meters HAAT along the radial in the direction of the full-service station (equivalent LPFM service contour, 11.3 km) in order for there to be co-channel contour overlap.[34] By comparison, using the new LP250 distances proposed in this *Petition*, the 250-watt foothill LPFM station would have to be greater than 97 meters HAAT along the radial in the direction of the full-service station (equivalent LPFM service contour, 12.7 km).[35] This, of course, would reduce the chances that a foothill LPFM station would overlap their interfering contour into the protected contour of the full-service station.

22. REC has identified 50 LPFM stations that have LP100 peak service contour lobes which exceed 12.7 kilometers and would be able to upgrade to LP250 at their current site locations and antenna heights. We have individually evaluated each of these facilities and have determined that only four of those facilities, KEPT-LP, Hayward, California, KQLH-LP, Yucaipa, California, KEAJ-LP, Cell Site, Montana and KIEV-LP, Camas, Washington would create or increase new contour overlap of the LPFM's interfering contour with the protected contour of a co-channel or first-adjacent full-service FM station over a populated area.[36] All other facilities, if upgraded, would not create any overlapping contours. Therefore, it can be concluded that due to the increased distance separation requirements and the reduction of same-channel upgrade facilities compared to previous proposals which penetrated the buffer zone, the possibility that LP250 stations will create interference with full-service stations within their protected contour is *de minimis*. For that reason, REC feels that it is no longer necessary to require any kind of a contour-based "backstop" as was proposed in previous versions of the LP250 proposal. Therefore, only requiring distance separation without contour studies, as suggested by the Commission would be sufficient in order to maintain proper spacing of LP250

[34] For Class B and B1 stations in the commercial band (channels 221~230), the maximum HAATs are 50m and 62m respectively. Class B and B1 stations in the reserved band (channels 201~220) use the standard 60 dBu protected contour therefore a "foothill" 100-watt LPFM station would have to be at 216 m and 121 m respectively in the direction of the full-service station before a standard protected contour is overlapped; *see also* Appendix B.

[35] *See, Id.*

[36] KEAJ-LP, Cell Site, Montana which would have contour overlap at LP250, however the contour overlap appears to be entirely over unpopulated rugged terrain.

stations. Therefore, REC will propose only distance separation methodology without any requirement of a contour study for LPFM stations, thus keeping LPFM a "simple" service.

D. LP250 is statutorily sound and consistent with the will of Congress

23. The record so far on LP250 has been clear on the will of Congress. Specifically, in the *Sixth Order,* the Commission stated that the LCRA does not contain any language limiting the power levels at which LPFM stations may be licensed.[37] Further, the Commission found unpersuasive, opposition from full-service interests that a 100-watt maximum is mandated due to references to a 100-watt service in the LCRA legislative history.[38] We note that in the Congressional Record, exclusive of "Dear Representative" letters, House Communications, Technology, and Internet Subcommittee Chairman Boucher was merely describing the current LPFM service during a statement made on the floor of the House and that statement was made in support of the Local Community Radio Act of 2009, *not* the Local Community Radio Act of 2010, the legislation that actually became law.[39] Further, in the *Tech Order,* the Commission clarified that an increase in power without a comparable increase in interference was effectively a reduction in channel distance separation and therefore is inconsistent with the LCRA.[40] This *Petition* specifically addresses the latter item, now that it has been determined by the Commission that the 20 kilometer buffer zone can't be compromised, contrary to what was proposed by the Commission in 2012, we propose different co-channel and first-adjacent full-service FM distance separation tables for LP250 in order to remain consistent with this updated interpretation of the LCRA. Likewise, it is REC's position that the proposal in this *Petition* has met all LCRA concerns and therefore is statutorily sound.

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[37] *See, Creation of a Low Power Radio Service,* Sixth Report and Order, 27 FCC 15402 *et. seq.* (2012) ("Sixth Order") at ¶ 206.

[38] *See,* Id.

[39] *See,* 155 Cong. Rec. H14904 (Dec. 15, 2009), Statement of House Communications, Technology and Internet Subcommittee Chairman Boucher. ("Low-power stations, which are community-based nonprofits which operate at 100 watts or less of power and which have a broadcast reach of typically, a few miles, play a unique role in our media."). We note that nowhere in the *Congressional Record* for the Local Community Radio Act of 2010 (the one that became law) was any power level ever mentioned; *see,* 156 Cong. Rec. H8619-8623 (Dec. 17, 2010); *see also* 156 Cong. Rec. S10696 (Dec. 18, 2010).

[40] *See, Tech Order* at ¶ 39.

E. Even with increased spacing, many opportunities remain

24. With the increased LP250 separation requirements in this *Petition*, there has been some impact on the availability of LP250 compared with previous proposals by REC and the Commission which were based on LP100 and LP10 distance separation tables.[41] Most of the opportunities in urban and dense suburban areas have been eliminated due to other facilities that would be short-spaced at the longer LP250 minimum distances. Despite that, many opportunities still exist, especially in areas where the LP100 service contour populations are less than 25,000 persons where over 90 percent of all existing LPFM stations would have some opportunity to upgrade to LP250.

25. Based on studies conducted by REC based on the premise that the facility would remain at the same location, we have determined the following summary of the availability of LP250 upgrades to existing LPFM stations:

Facility can upgrade on the same channel at the same site.	1,185
Facility can upgrade with a channel change to a first, second, third, 53rd or 54th adjacent channel.	92
Facility can upgrade with a channel change to a "non-adjacent" channel. This type of change can only be made either during a filing window or in conjunction with a showing of reduced interference.	405
Unable to upgrade at the current location on any of the 100 FM channels.	503

F. LP250 should not be subject to geographic exclusion

26. In the *Fourth NPRM*, the Commission, in response to Amherst Alliance and the Catholic Radio Association proposed LP250 that included various geographic restrictions to specify that LP250 stations would only be available in rural counties that do not meet the now obsolete "metropolitan" or "micropolitan" statistical area designations.[42] This was because Amherst was lobbying for the furtherance of the former 10-watt LP10 service class.[43] In the

[41] *See*, RM-11749 at 12-13 (based on LP100 tables); *See also*, RM-11810 at ¶¶ 16, 22-23 (based on LP10 tables).

[42] *See*, *Comments of The Amherst Alliance*, MM Docket 99-25 (Feb. 4, 2011) at 2.

[43] See, *Id.* at 1.

Fourth NPRM, the Commission considered two possible methods of implementing "exclusion zones" for LP250 stations including prohibiting LP250 stations in the top 100 radio markets where the distance to the city center is within a certain radii as well as just an overall prohibition on LP250 within the counties that comprise the top 50 radio markets.[44] In comments, three groups, that unlike Amherst, actually interface with a considerable number of LPFM stations on a daily basis; REC, Prometheus Radio Project ("Prometheus") and Common Frequency ("CF") all opposed some form of long-term geographic exclusion.[45] In the *Sixth Order*, the Commission errored in a decision rejecting LP250 at the time citing "disagreement among commenters about, among other things, LP-250 station location restrictions.".[46]

27. In the instant proceeding, as well as in MB Docket 19-193, there is no longer a discussion of an LP10 service that would distract from the discussion about the concept of exclusion zones for LP250 stations in metro market areas. As a part of an upgrade study performed by REC just prior to filing this *Petition*, we have determined that out of the 327 LP100 stations located in the 30/20/10 km previously-proposed exclusion zones, 82 of these facilities can upgrade to LP250 as a minor change and an additional 39 stations could upgrade with a non-adjacent channel change.[47] Of all LPFM stations currently licensed, only 15% of

[44] *See, Fourth NPRM* at ¶ 51. The Commission requested comments on creating exclusion zones where LP250 would not be available regardless of distance separation requirements. This included either a complete prohibition of LP250 within any county designated by Nielsen Audio as a top-50 market as well as an alternate proposal that called for a prohibition of LP250 within 30 km of the city center of markets 1-20, within 20 km in markets 21-50 and within 10 km in markets 51-100.

[45] *See, Reply Comments of Prometheus Radio Project*, MM Docket 99-25 (May 21, 2012) at 13-14; *See also, Comments of Common Frequency*, MM Docket 99-25 (May 7, 2012) at 16-18 (restricting filing windows to LP100 stations and then permitting LP250 on amendment or modification); *See also, Comments of REC Networks*, MM Docket 99-25 (May 7, 2012) at ¶¶ 38-41 (restricting filing windows to LP100 within the proposed excluded areas and then permitting an amendment or modification to LP250 after the conclusion of the window.). REC's current policy is that our preference is for filing windows to propose new LP100 facilities during a filing window and to amend or modify to LP250 however we would accept LP250 in a new station filing window.

[46] *See, Sixth Order* at ¶ 206 (citing comments of National Layers Guild (NLG) and Media Alliance in comparison to comments by Prometheus Radio Project. Like with Amherst, NLG and Media Alliance were not engaged in direct dialog with LPFM stations thus was not representing the interests of LPFM stations seeking an upgrade to LP-250, meanwhile, Prometheus, along with REC and CF, supported LP250 without any exclusion areas, however would accept that during a filing window, all applications be filed for LP100 stations and then the stations can upgrade at a later time. It is REC's position that the Commission did error on that decision by taking the word of social justice organizations by confusing those organizations as those that directly touch LPFM stations on a daily basis. REC's petitions RM-11749 and RM-11810 specifically address this misstep and brings the issue back to light with the support of the organizations that actually represent the interests of current on-air LPFM stations).

[47] *See*, Appendix E, p. 90., *infra.*

them are located in the previously proposed 30/20/10 km exclusion zones. If a complete prohibition of LP250 within the top 50 market counties was implemented, it would block 142 LP100 stations that can upgrade as a minor change and an additional 93 stations that would need a non-adjacent channel change; this is in comparison to 308 stations within the top-50 counties that would not be allowed upgrade on any channel.[48]

28. REC will not support any form of long-term geographic exclusion. Because of the increased distance separation, the ratio of stations within those previously proposed exclusion zones that can't upgrade has substantially increased therefore, it can be suggested that such boundaries will not be necessary to implement LP250 as defined in the instant *Petition*. Instead, the attributes of spectrum crowding in the areas surrounding the metro areas will "naturally" restrict LP250 from most urban settings in major markets. Of the 1,682 LP100 stations that can upgrade to LP250 either on channel, adjacent channel or non-adjacent channel, 1,267 (75.3%) of the stations are located either in markets 101 or smaller as well as in non-metro counties.[49] As three quarters of the upgrades will be outside the top-100 markets, there is no need for any kind of geographic exclusion of the location of LP250 stations.

G. Translators are not always the answer

29. In the *Tech Order*, the Commission stated that they addressed the coverage issues LPFM stations face through the ability for LPFM stations to obtain FM translators.[50] REC argues that the use of FM translators in LPFM is for a distinctively different need than the needs addressed by LP250. FM translators are intended for the addition of additional spot areas outside of the service contour of the LP100 station and not necessarily for the simple expansion of the local area to cover all nearby areas, especially in sparsely populated rural areas.[51] In addition, with the requirement of contour overlap between an LPFM station and a commonly owned FM translator, the presence of the translator would duplicate the LPFM station in some parts of its

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[48] *See*, *Id.*

[49] *See*, *Id.*

[50] *See*, *Tech Order* at ¶ 36.

[51] *See*, Appendix H-9, *infra.* for an example of an FM translator for an LPFM station despite an upgrade to LP250.

service contour. This is an inefficient use of spectrum as in some areas, two channels would be taken up. In most cases, the expansion of the existing service contour by less than a mile would be a much more efficient use of spectrum as it will not take up a second frequency and put duplicating services on both of them. We also note that in the *Tech Order*, the Commission was not only concerned about "complex" engineering arrangements for LPFM stations, but also concerns about directional antennas. While the FM translator rules include provisions regarding remediation of interference which would be a concern where it comes to directional antennas, the perceived complexity of using contour studies was one of the main reasons why LP250 was originally rejected in the *Tech Order*.[52] While REC continues to support FM translators for LPFM, most LP100 stations needing extra coverage but not in a very unusual geographic situation would benefit more from an upgrade to LP250 as it would not require the expense of constructing a second facility and would be able to use the non-complex methods of LPFM engineering and most importantly, it would be less of a burden on listeners as it would prevent confusion on which channel they would have to listen to; this, in addition to the spectrum efficiency that using a LP250 facility would have over using an FM translator.

30. We also note, and it has been acknowledged in the *Tech Order*, that LPFM stations had never been given any opportunity to obtain an FM translator under an original construction permit application.[53] The last opportunity for any entity, other than an AM licensee to obtain a translator was on March 10, 2003.[54] On that date, 595 LPFM original construction permits from the original 2000/2001 window series had already been granted. Of those granted permits, less than half of them are still on the air today. Noncommercial broadcasters have been waiting since the last century for another translator opportunity in the reserved band. Translators can serve a specific need for LPFM licensees however, they are no replacement for the more spectrally efficient LP250 service.

[52] *See, Tech Order* at ¶ 10 & 39.

[53] *See,* Id. at n. 93.

[54] *See*, *FM Translator Auction Filing Window and Application Freeze,* Public Notice, 18 FCC Rcd 1565 (Feb. 6, 2003).

III. REC PROPOSES THE LP250 CLASS OF SERVICE IN A WAY THAT ADDRESSES LCRA CONCERNS AND IS SIMPLIFIED IN THE SPIRIT OF THE LPFM SERVICE

31. In this instant *Petition*, REC Networks moves forward for timely consideration, the "Simple 250" proposal that was discussed by REC to the Commission staff in the April, 2020 *ex parte* presentations.[55] This plan addresses the Commission's concerns over past proposals, which were very much premised on a penetrated 20 kilometer LPFM buffer zone, maintains the simplicity of the service and spaces LP250 stations further away from full-service stations thus reducing the potential for interference compared to previous proposals (including the Commission's own proposal in the *Fourth Notice*) thus eliminating the need for contour-based "backstops".[56] As a result, we propose the following rule changes:

A. §73.807 – Minimum Distance Separation for LP250 Stations

32. *How distance separation is calculated.* When the Commission created LPFM (LP100), they used a distance separation method to determine the required spacing between stations. This is similar to the basic commercial FM rules.[57] Normally, this is based on first determining the standard distances to the protected service contour of each service class[58] and the standard distance to the appropriate interfering contours of the service class of the proposed facility.[59] Commercial rules require the same calculations in both directions to assure mutual protection however for LPFM, the proposed station must provide protection while not being protected from inward interference.[60]

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[55] *See, Tech Order* at ¶ 40.

[56] *See, Id.* at ¶ 39.

[57] 47 C.F.R. §73.207(b).

[58] For example, the class maximum parameters for Class A is 6 kW ERP at 100 meters HAAT. For a facility of that parameter, the 60 dBu (1 mV/m) contour measures at 28.295 kilometers.

[59] For different channel relationships, the interfering contour varies. For the current LP100 service, which is 0.1 kW at 30 meters HAAT, the distance to the 40 dBu interfering contour (which is used to protect co-channel facilities) is 18.577 kilometers; the distance to the 54 dBu interfering contour (to protect first-adjacent channel facilities) is 7.987 kilometers and the distance to the 100 dBu interfering contour (to protect second- and third-adjacent channel facilities) is 0.701 kilometers using the free space method.

[60] *See*, 47 C.F.R. §73.207(b) (full-service) *comp.* 47 C.F.R. §73.807(a) (low-power FM).

33. *The 20 kilometer "buffer-zone"*. When LPFM was created in 2000, the Commission included a 20-kilometer buffer-zone in the LPFM service rules.[61] This buffer zone is exclusive to LPFM and is not included in the rules of any other service. The buffer zone is only used in respect to LPFM protection of primary full-service stations on co-channel and first-adjacent channels. The buffer-zone was created "to help protect FM radio facilities that were modified or upgraded in a manner that would create a short-spacing with an operating LPFM station."[62] Because of the buffer zone, the undesired to desired (U/D) ratios of the LPFM station arriving at the protected contour of the incumbent facility are greatly reduced. For most FM stations, the buffer-zone creates an additional 11 dB of overprotection from co-channel LP100 stations and 20.7 dB of overprotection from first-adjacent channel LP100 stations.[63]

34. *LP250 will have a longer minimum distance separation requirement.* Unlike the previous LP250 proposals that have come from both REC and from the Commission, the instant *Petition* proposes to maintain the integrity of the 20-kilometer buffer zone. Even with the full buffer zone in place, most full-service FM stations will be overprotected from LP250 stations by 8.6 dB on co-channel and 17.8 dB on first-adjacent channels.[64] This would mean that the minimum distance separations between LP250 stations and full-service FM stations would be increased between 5 and 9 kilometers for co-channel and either 2 or 3 kilometers for first-adjacent channel based on service class.

35. *Incoming interference.* LP100's standard distance to the 60 dBu service contour is 5.636 kilometers. For LP250, that distance is 7.089 kilometers. As a courtesy, the Commission includes in the rules, a "recommended" distance to prevent receiving interference.[65] This distance is based on adding the distance from the full-service station class interfering contour with the size of the standard LPFM service contour. While codified, these distances need not be

[61] *See, Original Order* at ¶¶ 64 & 71.

[62] *See, Id.*

[63] LP100 overprotection ranges on co-channel from 7.4 dB for a commercial Class B station to 16.2 dB for a noncommercial Class B station. On first-adjacent, those ranges are between 16.4 dB for a commercial Class B to 26.9 dB for a noncommercial Class B station; *See* Appendix C, *infra.*

[64] *See*, Appendix C, *infra.* for overprotection figures for Class B and B1 stations.

[65] 47 C.F.R. §73.807(a)-(c).

kept, but instead is available as a guide to applicants and was another method the Commission originally put in place to simplify the service. [66]

36. *Distance separation tables for LP250 co- and first-adjacent channels.* REC proposes to add the following full-service FM distance separation tables for co-channel and first-adjacent channel LP250 stations:

Co-channel

	LPFM protecting incumbent (required distance)					Incumbent into LPFM			
Class	LPFM interfering	Incumbent protected	Buffer Zone	Total	Rounded	Incumbent interfering	LPFM service	Total	Rounded
A	23.758	28.295	20	72.053	**72**	86.664	7.089	93.753	94
B1	28.508	44.735	20	93.243	**93**	113.632	7.089	120.721	121
B	35.590	65.061	20	120.651	**121**	137.715	7.089	144.804	145
C3	23.758	39.081	20	82.839	**83**	113.632	7.089	120.721	121
C2	23.758	52.196	20	95.954	**96**	137.715	7.089	144.804	145
C1	23.758	72.305	20	116.063	**116**	171.876	7.089	178.965	179
C0	23.758	83.430	20	127.188	**127**	186.984	7.089	194.073	194
C	23.758	91.600	20	135.576	**136**	197.764	7.089	204.853	205
A[PR]	23.758	41.685	20	85.443	**85**	105.206	7.089	112.295	112
B1[PR]	28.508	52.174	20	100.682	**101**	122.099	7.089	129.188	129
B[PR]	35.590	91.600	20	147.190	**147**	173.436	7.089	180.525	181

[PR] – Stations in Puerto Rico and the U.S. Virgin Islands.

First-adjacent channel

	LPFM protecting incumbent (required distance)					Incumbent into LPFM			
Class	LPFM interfering	Incumbent protected	Buffer Zone	Total	Rounded	Incumbent interfering	LPFM service	Total	Rounded
A	10.149	28.295	20	58.444	**58**	43.735	7.089	50.824	51
B1	11.983	44.735	20	76.718	**77**	60.175	7.089	67.264	67
B	14.147	65.061	20	99.208	**99**	78.110	7.089	85.199	85
C3	10.149	39.081	20	69.230	**69**	60.175	7.089	67.264	67
C2	10.149	52.196	20	82.456	**82**	78.110	7.089	85.199	85
C1	10.149	72.305	20	102.454	**102**	104.979	7.089	112.068	112
C0	10.149	83.430	20	113.579	**114**	123.978	7.089	131.067	131
C	10.149	91.600	20	121.967	**122**	136.568	7.089	143.657	144
A[PR]	10.149	41.685	20	71.834	**72**	61.719	7.089	68.808	69
B1[PR]	11.983	52.174	20	84.157	**84**	78.077	7.089	85.166	85
B[PR]	14.147	91.600	20	125.747	**126**	138.094	7.089	145.183	145

[PR] – Stations in Puerto Rico and the U.S. Virgin Islands.

[66] *See*, *Original Order* at ¶ 70.

37. *Protection of all other FM facilities.* LPFM protections to domestic full-service second- and third-adjacent channels as well as all protections to FM translators, LPFM stations, Class D (Secondary) stations and foreign FM allotments do not involve a buffer zone. Distance separations are determined based on the standard class interfering contours plus the distance to the protected contour of the incumbent stations. Protections to foreign stations are consistent with the appropriate international agreements. These were the values originally proposed in the *Fourth Notice* as well as in RM-11749 and we continue to propose those distances here.[67]

Domestic full-service FM second/third adjacent channel:

	LPFM protecting incumbent (required distance)				
Class	LPFM interfering	Incumbent protected	Buffer Zone	Total	Rounded Up
A	1.109	28.295	0	29.404	**30**
B1	1.567	44.735	0	46.302	**47**
B	2.213	65.061	0	67.274	**68**
C3	1.109	39.081	0	40.190	**41**
C2	1.109	52.196	0	53.305	**54**
C1	1.109	72.305	0	73.414	**74**
C0	1.109	83.430	0	84.539	**85**
C	1.109	91.600	0	92.927	**94**
A[PR]	1.109	41.685	0	42.794	**43**
B1[PR]	1.567	52.174	0	53.741	**54**
B[PR]	2.213	91.600	0	93.813	**94**

[PR] – Stations in Puerto Rico and the U.S. Virgin Islands.

38. *Intermediate frequency.* Intermediate frequency (I.F.) is an additional protection that is placed for a shorter distance which protects the internal 10.7 MHz oscillator in FM broadcast receivers. This additional protection applies to both 53 and 54 channels removed (+/- 10.6 and 10.8 MHz) from the LPFM output channel. In the *Original Order*, the Commission required IF protection from LP100 stations.[68] As proposed in the *Fourth Notice* and adopted in the *Sixth Order*, citing harmony with rules for FM translators, the Commission removed the I.F. minimum distance separation requirements for LPFM stations operating at 100 watts ERP or

[67] *See*, Appendix B, *infra.* for proposed LP250 distance separations towards FM translators and foreign FM allotments.

[68] *See*, *Original Order* at ¶ 2.

less.[69] I.F. protections to foreign allotments remained in accordance with international agreements.[70]

39. For LP250 stations, REC proposes to require stations that operate at 101 watts ERP or greater to also protect I.F. channels of domestic full-service FM facilities using the values shown in the proposed rules of the *Fourth Notice*.[71] Because, for the first 12 years of the service, LPFM stations were required to maintain I.F. protections and to this day, I.F. protections are required to foreign allotments, it can be argued that requiring LP250 stations proposing to operate 101 watts or greater to protect domestic I.F. channels using distance separation would not be an added complexity to the service.

40. We will not propose to require an LP250 station operating 101 watts ERP or greater to protect an FM translator facility on I.F. channels. REC recognizes that this is a departure from previous proposals, such as the *Fourth Notice*. Currently, FM translators operating at 100 watts or greater are only required to protect "FM Broadcast Stations", and not other FM translators on the I.F. channels.[72] Low Power FM is its own separate service and for regulatory purposes is not necessarily considered an "FM Broadcast Station".[73] It is REC's position that it is only fair that there would be equality between the services and not require an LP250 station to protect an FM translator on an I.F. channel.[74]

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[69] *See, Fourth Notice* at ¶ 53; *Sixth Order* at ¶¶ 207-210. The removal of I.F. separation requirements to LP100 stations met the statutory requirements. LCRA §3(b)(1) only addresses co-, first- and second-adjacent relationships with full-service FM stations. I.F. is not addressed anywhere in the statute.

[70] *See, Sixth Order* at ¶ 207.

[71] LP250 stations operating at HAAT of 49 meters or greater will be assigned a maximum ERP of less than 100 watts. These stations will not be protected to protect domestic facilities on I.F. Since a minimum facility based on a 5.7 kilometer service contour will be proposed, LP250 stations between 31 and 48 meters HAAT would normally be required to protect I.F. at "full power" but can propose an ERP of 100 watts or less to avoid the domestic I.F. protection requirements. LPFM stations operating at 100 watts or less at HAAT 30 meters or below would be classified as LP100 stations.

[72] 47 C.F.R. §74.1204(g).

[73] LPFM is its own distinct radio service, regulated in 47 C.F.R. Part 73, Subpart G. Within that subpart, 47 C.F.R. §73.801 recites which Commission rules outside of Subpart G also apply to LPFM stations.

[74] We further note that there is a continued disparity where FM translators are not required to protect an LPFM second-adjacent channel, while LPFM stations are required to protect the second adjacent channel of an FM

41. *Second-adjacent channel waiver requests.* In accordance with the LCRA, the Commission permits LPFM stations to request waivers of the second adjacent minimum distance separation rules when a showing can be made that proposed operations will not result in interference to "any authorized radio service".[75]

42. For existing LP100 stations that are already on a second-adjacent channel waiver based on those facilities, an upgrade to LP250 will increase the interfering contour where a U/D ratio greater than 40 dB would be encountered. While a literal read of §73.807(a)(1) would suggest that modifications to LPFM facilities must meet the required distance separations and if already short-spaced, not lessen the spacing to subsequently authorized stations, the LCRA refers to "proposed operations".[76] Based on this, REC would find it appropriate that an LP100 station that wishes to upgrade to LP250 from their same location and channel must submit a new second-adjacent study to demonstrate that the proposed LP250 upgraded facility would continue to not interfere with any radio service on a short-spaced second-adjacent channel.[77] Likewise, as the minimum distance separation requirements for LP250 are different than LP100, we would propose that in order for a station to upgrade from LP100 to LP250, they must also meet the longer distance separation requirements.

B. §73.811 – LPFM power and antenna height requirements

43. For LP250, REC proposes a maximum facility of 250 watts ERP at 30 meters HAAT. If the HAAT is greater than 30 meters, the ERP will be based on a service contour of 7.1 kilometers. REC proposes a minimum facility of 101 watts ERP at 30 meters HAAT. If the

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translator. For the sake of keeping this proceeding simple, we will not pursue this disparity any further in this *Petition* but may explore this issue in a future petition.

[75] *See*, *Sixth Order* at ¶ 72 *citing* LCRA §3(b)(2)(A).

[76] *See,* 47 C.F.R. §73.807(a)(1) ("LPFM modification applications must either meet the distance separations in the following table or, if short-spaced, not lessen the spacing to subsequently authorized stations."); *comp*. LCRA §3(b)(2)(A) ("[...] that their *proposed* operations will not result in interference to any authorized radio service.") *(emphasis added)*

[77] A downgrade of class from LP250 to LP100 at the same radiation center height would result in a smaller interfering contour from the LPFM station thus meaning that if, at LP250, the station can demonstrate a lack of interference, that a lack of interference would also be demonstrated for the lower LP100 power. Therefore, in those cases, a downgrade in class should not be required to submit a new showing unless in the interpretation of the Commission, such a study would be necessary to comply with statute. In this case, REC will not object to such a requirement.

HAAT exceeds 30 meters, the minimum ERP will be based on a service contour of 5.7 kilometers.[78] We do note that unless otherwise permitted (i.e. protecting TV channel 6 by waiver), an LP250 station operating with a service contour of 5.7 kilometers would still protect other facilities as if they had a service contour of 7.1 kilometers. Unlike previous REC LPFM proposals, there is no "flex" option or the ability to use a contour (or "phantom" service classes based on distance separation) to reduce the minimum distance to a value between the LP100 and LP250 requirements. This is to assure simplicity in the LPFM service while opening the door for stations to operate at LP250. LP100 facilities exceeding 451 meters HAAT would create a service contour that exceeds 5.6 kilometers. REC is proposing that all new or modified LPFM applications specifying HAAT of 452 meters or greater must specify LP250 facilities. Existing LP100 facilities at or above 452 meters HAAT would be grandfathered and would not be required to upgrade.[79]

ERP FOR LP100 & LP250 STATIONS EXCEEDING 227 METERS HAAT.

HAAT	**LP100**	**LP250**
227	2 watts	4 watts
228~245	1 watt	4 watts
246~292	1 watt	3 watts
293~432	1 watt	2 watts
433~451	1 watt	1 watt
452 or greater	Not available	1 watt

C. §73.825 – Protection to reception of TV channel 6

44. LP100 stations operating on reserved band channels 201 through 220 are required to maintain a minimum distance separation to low-power and full-service channel 6 TV stations in accordance with the tables shown in §73.825 of the Commission's Rules.[80] For LPFM stations,

[78] We note that a reduction in power no lower than the minimum power/service contour for a station class is sometimes used in order to demonstrate protection to a second-adjacent channel short-spaced facility. A reduction in power can't be used to demonstrate protection to a full-service FM, FM translator, LPFM station or foreign allotment on the co- or first-adjacent channels.

[79] REC is aware of only two LP100 stations that operate in excess of 451 meters HAAT, KCWG-LP, Crown King, Arizona (Facility ID #133424 at 736 meters HAAT) and WUIC-LP, Wallins Creek, Kentucky (Facility ID #192958 at 453 meters HAAT).

[80] REC acknowledges that at the time of filing this instant *Petition,* FM broadcast band protections to TV channel 6 spectrum is a fluid issue at the Commission. For the purposes of the instant *Petition*, we will base our proposal on policies and rules adopted in the *Tech Order* on the date of adoption. If policies or rules are amended or repealed on

the Commission bases the §73.825 minimum distance separations assuming that a full-service TV station is operating at 100 kW ERP at 610 meters HAAT and a low-power TV station is operating at 3kW ERP at 610 meters HAAT.[81] For LP250, we simply recalculate the appropriate interfering contours for the LP250 facility in order determine the new distance requirement.[82] In the *Tech Order*, the Commission also permitted LP100 stations to request a waiver of §73.825 with notification to the TV licensee if a contour study shows a lack of overlap between the appropriate interfering contour of the LP100 facility and the 47 dBu protected contour of the TV station.[83] We propose the same policy in respect to LP250 facilities.

D. §73.870 – Minor changes of LPFM stations

45 *Moves of facilities.* As adopted in the *Tech Order*, LP100 stations can move up to 11.2 kilometers as a minor change.[84] A move of over 11.2 kilometers may be granted upon a contour study showing overlap between the service contours of the current and proposed facilities. Consistent with the changes made in the *Tech Order*, REC would propose the ability for LP250 stations to move up to 14.2 kilometers on a minor move. Maximum distance should be based on the class of service that is being *proposed* at the new location. For example, an LP100 station moving and upgrading to LP250 would be subject to the 14.2 kilometer maximum move where an LP250 station moving and downgrading to LP100 would be subject to the 11.2 kilometer maximum unless a contour study will demonstrate overlap.

46. *Upgrades and downgrades.* REC proposes that applications to upgrade from LP100 to LP250 and downgrade from LP250 to LP100 should be handled as a minor change as long as all other requirements for a minor change are met. Such upgrades and downgrades should

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reconsideration in the *Tech Order* or in a subsequent proceeding, any changes to LP100 protection rules should also reflect on LP250 and if necessary, be scaled up to meet the parameters of the LP250 service.

[81] *See, Creation of a Low Power Radio Service,* Memorandum Opinion and Order, 15 FCC Rcd. 19208 *et. seq.* (2000) at n. 47.

[82] This distance is based on an interfering contour for the FM station's channel from 54 dBu for operation on channel 201 to 90 dBu for operation on channel 220. The protected contour of the TV station is based on the 47 dBu F[50, 50] service contour based on the "worst case" facilities described in *Id.* For the purpose of this rule, digital TV stations are treated the same as analog TV stations.

[83] *See, Tech Order* at ¶ 34.

[84] *See, Id.* at ¶ 21.

not be treated any different from how FM translator power increases and reductions would be handled pursuant to §74.1233.[85]

E. §73.871 – Amendments to applications

47. In our previous *Petitions* related to LP250, we had suggested that during a filing window, all applications should be LP100 and then after the applicant is granted, they can make a move to LP250. We had originally proposed this due to the higher availability of LP250 (based on a compromised buffer zone) in urban and suburban areas. With the increased distance separation requirements of the current proposal for LP250, the number of opportunities for LP250 stations in urban areas has substantially declined. While there may still be urban opportunities, we must act in the sake of service simplicity and not propose such a procedure at this time. If there is a LP250 service enacted at the time of a future filing window, that service can be offered for new entrants during the window without the need to wait. We do note that LP250 applicants that become mutually exclusive (MX) and are a certain distance separated from the other LPFM station could propose to amend their application to LP100 in order to break out of a MX situation. While requiring all applicants to file as LP100 first and upgrade later would result in fewer MX groups, slightly increased opportunities and more grants; we will not insist on such a process and will leave it to the Commission to determine the best course of action.

F. §74.1204 – Protection of LPFM stations by FM translators

48. §74.1204 of the Commission's Rules needs to be amended to make non-substantive changes in order to accommodate the LP250 service. No other changes in respect to FM translators are proposed in this instant *Petition.*[86]

G. Implementing LP250 upgrades for existing LP100 stations

49. While we would leave it up to the Commission staff to determine the best course of process in the implementation of the new LP250 service class, we will provide some possible

[85] 47 C.F.R. §74.1233.

[86] REC plans to address the methods that LPFM stations use to protect FM translators in a subsequent Petition for Rulemaking.

suggestions for the course of best handling the launch and avoiding, if possible, a surge of "first day" applications and avoidance of mutually exclusive applications. In RM-11749, we offered a unique arrangement we called Automatic Upgrade Authority (AUA), which staff may or may not find practical to implement. REC will remain neutral, but we will offer it as a suggested option. Regardless, there needs to be some form of "launch window" to prevent mutual exclusivity or other difficulties often encountered at the time of a new service offering.

50. *The concept of "Automatic Upgrade Authority".* AUA was originally recommended in RM-11749 as a method of implementing the new service class. Under AUA, LPFM stations that met specific criteria were listed on a public notice and then were given a shortened period for which they could make an upgrade without first having to file for a modification.[87] Once the power increase is completed, then a modification of license (then Form 319) was filed to certify that the station has made the power upgrade. During the AUA period, AUA eligible LP100 stations would be protected by other LPFM stations and FM translators as if they were LP250 stations and then after the AUA period was over, stations that did not modify their licenses would continue to be authorized and protected as LP100 stations. Non-AUA eligible stations would be handled either on a first-come first-served basis or through the "launch window" process we will describe below. For this instant *Petition*, REC has identified 534 LPFM stations that would likely meet the AUA criteria if such a process were established.[88] Again, REC offers this for information only and is not being formally proposed at this time.

51. *Launch window*. The launch of the new service class needs to be done in a manner that is fair for all licensees, especially those that are located between 28.5 and 31.499 km of

[87] The specific requirements for AUA as proposed in RM-11749 included the following: (1) the LPFM station is fully licensed [RM-11749 limited eligibility to existing station upgrades], (2) stations must meet all distance separation requirements including second-adjacent [an upgrade to LP250 would increase the interfering contours towards short-spaced second adjacent channels requiring an evaluation to determine if the extended interfering contour does not reach any occupied spaces], (3) "foothill effect" stations with a peak 60 dBu F(50,50) lobe that exceeeds 12.7 kilometers [this was because of the proposed "foothill" rules in RM-11749 that prevented upgrade facilities from extending into protected contours of incumbent stations], (4) stations must be located at least 320 kilometers from an international border [to prevent any issues such as new interfering contours that may exceed those permitted under international agreements] and (5) station must currently operate on channels 221 through 300 [mainly to eliminate potential issues with TV channel 6]; Also *see REC Networks*, Petition for Rulemaking, RM-11749 (Apr. 20, 2015) ("First Petition") at 26-28.

[88] *See*, Appendix E, *infra.* at pp. 91-103.

another LPFM station on co-channel or between 15.5 and 17.499 km of another LPFM station on a first adjacent channel.[89] If the opening of the new service class is conducted in a "first come, first served" manner from the start, it is likely that there will be mutually exclusive and hastily filed applications. The way to avoid this can be through conducting a "launch window" period. During the launch window, LP100 stations would be required to protect other LP100 stations and LP250 proposals as if both stations in the relationship were LP250. This would mean that during the designated launch window period, LP100 stations and LP250 proposals seeking to modify during the launch window period (regardless whether it is for an upgrade or not) must maintain a minimum of 31 kilometer spacing on co-channel and a 17 kilometer spacing on first-adjacent channel to any LPFM station, regardless of whether it is an LP100 or LP250. Following the conclusion of the launch window, modifications to upgrade or downgrade would go to normal "first come, first served" processing pursuant to §73.870 and would be subject to the standard distance separation requirements outlined in proposed §73.807. The launch window would assure that all upgrade eligible applicants will be handled fairly by both staff and from other applicants.

52. *Channel changes to upgrade.* REC has identified 92 LP100 stations that in order to upgrade, they would have to change their channel to a first-, second- or third-adjacent channel or to an intermediate frequency channel ("minor channel change")[90] and an additional 405 LP100 stations that would require a channel change that does not fall under the definitions of a minor channel change.[91] Pursuant to current rules, LPFM stations may change to a first-, second-, third- or intermediate frequency channel; or upon a showing of reduced interference, to any channel.[92] While we will not make a specific formal proposal, the Commission could consider allowing LPFM stations to make a change to any channel during the launch window in order to achieve an upgrade. We note that for some applicants, a channel change may not be a prudent

[89] *See also, Id.* at pp. 88-89.

[90] *See, Id.* at pp. 45-49.

[91] *See, Id.* at pp. 49-68.

[92] 47 C.F.R. §73.870(a)(1).

idea because it is likely that the only available LP250 channels may actually have more incoming interference or "HD Hijack".[93]

[93] "HD Hijack" is a term coined by REC Networks to describe the phenomena where an HD radio receiver tuned to a local station that is not HD has the local station's audio overridden by a more distant co-channel FM station operating HD and the receiver is detecting the distant station's HD sidebands. REC has received several reports from LPFM stations regarding this. This is more likely to happen to LPFM stations and FM translators because these facilities are permitted to operate inside the interfering contours of full-service stations.

H. Technical considerations.

1. Transmitters used by LPFM stations

53. In the *Tech Order*, the Commission further clarified that transmitters used in the LPFM service must be certified and have a label with a valid "FCC ID" number on it.[94] REC supports the use of certified transmitters in the LPFM service. The FCC OET equipment database shows 88 Part 73 certifications for transmitters operating between 250 and 500 watts. Depending on the gain of the antenna as well as losses caused by feedline and other devices, in many cases, a transmitter between 300 and 500 watts will suffice. In some cases, especially where a single-bay circular polarized antenna is used, it may be necessary to use a transmitter rated higher than 500 watts. The FCC OET equipment database shows 54 certified broadcast transmitters that are rated between 501 and 1,000 watts. Based on this, it can be concluded that there are enough transmitter models that can accommodate the LP250 service.

2. Antennas used by LPFM stations

54. LPFM stations have a lot of flexibility where it comes to their choice of antenna. Unlike full-service FM stations, LPFM stations are permitted to operate vertical only antennas if they desire.[95] They may also use horizontal, circular and elliptical polarized antennas. Certain types of antennas may be required in order to demonstrate compliance with a second adjacent channel waiver. In the *Tech Order*, the use of directional antennas was clarified that such an antenna could easily be used is where it comes to meeting international agreements such as the 50 watt maximum in all directions within 125 km of the Mexico border.[96] This instant *Petition* makes no proposed changes to the types of antennas that can be used in LPFM as that was clarified in the *Tech Order*. We do note that for some LPFM stations, a change in antenna system may be required in order to upgrade to LP250, especially if they desire to use their same transmitter.

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[94] *See, Tech Order* at ¶ 56.

[95] 47 C.F.R. §73.816(a), *comp.* 47 C.F.R. §§73.316(a) and 73.510(a). NCE stations operating in the reserved band can use vertical-only antennas as a method of protecting TV channel 6; *See* 47 C.F.R. §73.525(b)(3).

[96] *See, Tech Order* at ¶ 11.

55. *Side-mounted circular polarized antenna.* Many stations use these types of antennas as they are able to provide the best overall coverage regardless of the orientation of the receive antenna. Models include the Nicom BKG-77 and BKG-88, Shively Labs 6812b, ERI FM-100, Jampro JLCP, OMB MP series, PSI FML series and SWR FMEC series, among others. Normally these antennas in a multi-bay configuration would result in zero gain or some form of gain. For example, a two-bay Nicom BKG-77 or 88 at 0.85 wavelength spacing has been specified at a 2.14 dBd of gain. With 2.14 dB of gain from the antenna and 1 dB of feedline loss (100 feet of Andrews LDF4-50A ½"), achieving 250 watts ERP would require a transmitter power output (TPO) of 192 watts. Circular polarized antennas only operating with one-bay require double the transmitter power to achieve the needed ERP, exclusive of feedline loss. For example, a single bay Shively Labs 6812b, rated at -3.39 dBd gain and in addition, a 1 dB of feedline loss would require a 687-watt TPO from the transmitter.

56. According to pre-September 25, 2019 CDBS license data, there are approximately 600 LPFM stations that have reported to be running some form of a multi-bay antenna. While we have demonstrated that there are certified transmitters available for 501 to 1,000 watts TPO, it will always be suggested (but not required) that the licensee replace their antenna system with two bays in order to best operate the station with, when possible, their current transmitter as well as lower power consumption compared to operating a single-bay circularly polarized antenna.

57. *Vertical-only antennas.* Vertical antennas are a low-cost option for many LPFM stations. With only vertical polarization, coverage to receivers with certain types of antennas may be compromised. Except in locations where the second-adjacent channel field strengths are very strong, the use of a vertical only antenna will not provide the proper elevation pattern in order to protect nearby occupied structures from second-adjacent channel interference if the LP250 would not meet the minimum distance separation requirements for second-adjacent channel. The two most popular models of vertical antennas used in LPFM include the Comet CFM-95SL and the Norwalk Dominator NWE-34. The Comet CFM-95SL is a ground plane style antenna that exhibits 1.25 dBd of gain. At least 50 LPFM stations are reported as using this model. The Norwalk Dominator has a unique design and is rated at 3 dBd of gain. There are about 68 Dominators in service on LPFM stations. When using the Dominator with 1 dB of feedline loss, the TPO is 158 watts for 250 watts ERP.

3. Radio Frequency Radiation

58. Guidelines in OET Bulletin #65, Supplement A call for a maximum power density of 200 μW/cm^2 for general population/uncontrolled exposure and 1,000 μW/cm^2 for occupational/controlled exposure.[97] For LP100 stations, Form 318, Worksheet 3 gives a standard minimum distance of 6.5 meters from the ground level or roof to the lowest part of the antenna.[98] A study using the Commission's FM Model software would also indicate that at 6.5 meters, a single bay antenna operating 100 watts horizontal and 100 watts vertical would give a power density of just less than 200 μW/cm^2 thus meeting the environmental requirements. At LP250, the same height would be 9.1 meters (30 feet) in order to meet the guideline. As such, 9.1 meters would have to be used as a baseline for LP250 on Worksheet 3 in order to meet the similar "simple" OET guideline that currently applies to LP100.[99]

IV. CONCLUSION

59. For the past eight years, the record has been very clear that there is wide support for LP250 and the Commission has recognized that.[100] Despite the extensive support within the LPFM service, the Commission was concerned that the previous proposals by REC would create undue complexity to the licensing process and that the previous proposals, especially the "§73.815 regime" concept would not be statutorily sound under the LCRA.[101] While we would like to see more technical flexibility in the service, REC agrees with the Commission on their concerns. The technical complexities were originally proposed to address potential interference from some LPFM stations that were in certain terrain situations in order to protect full-service

[97] *See, Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields – Additional Information for Radio and Television Broadcast Stations*, OET Bulletin 65, Supplement A (Edition 97-01) at p. 11.

[98] *See*, Form 318 Instructions, Worksheet 3.

[99] We do note though that certain antenna types are designed to further limit radiation in the downward direction and would require an RF study that may involve the use of the FM-MODEL software as well as the elevation pattern of the proposed antenna in order to assure compliance with the RF guideline if the antenna location does not meet the 30 foot guideline that would be proposed for Worksheet 3.

[100] *See*, *Tech Order* at ¶ 41.

[101] *See*. *Id.* at ¶ 36.

stations.[102] Our goal had always been to allow LPFM stations to be able to operate under rules similar to FM translators while respecting the statutory requirements to maintain specific minimum distance separation requirements to full-service FM stations without causing harmful interference to those stations.[103]

60. Our previously-proposed "penetration" of the 20 km buffer zone was premised on the Commission's proposal in the *Fourth NPRM* which called for LP250 using the LP100 distance separation values.[104] Unfortunately, in the *Sixth Order*, the Commission confused established groups that actually interface with and advocate for LPFM stations with groups representing social justice, hobbyist and pirate radio interests and rejected LP250 at that time because of conflicting positions by groups perceived to be pro-LPFM. As a result of this, the LCRA issues surrounding the penetration of the buffer zone were never discussed at that time.[105] Eight years after the Commission made their original decision on LP250, the Commission's analysis now states that LCRA §3(b)(2) was not just about the "numbers" but also the formula used to reach those numbers. Specifically, they called for the full 20 km buffer zone to be respected.[106]

61. REC agreed with the Commission's findings in the circulation draft of the *Tech Order*. As a result, REC had drawn up another proposal for LP250 service that eliminated the contour study requirements to obtain an LP250 station as well as developed new distance separation values that fully respected the 20 kilometer buffer zone. Within days of the Sunshine Period, REC introduced this new concept to Staff. Since this proposal was submitted well too late into the proceeding where others would be precluded from filing responsive comments, the

[102] *See*, RM-11749 at pp. 19-20.

[103] *See*, RM-11749 at p. 19 ("*In order to strike a balance between the need to maximize LPFM stations and to address the concerns of full-service broadcast stations, REC proposes that LPFM stations defined as Foothill Stations desiring upgrade to LP250 must make a showing that the interference contour of the proposed LP250 station will not overlap the service contours of any full-service FM or FM translator stations.*")

[104] *See*, *Fourth NPRM* at n. 125.

[105] *See*, *Sixth Order* at ¶ 206.

[106] *See*, *Tech Order* at ¶ 38.

Commission rightfully had to reject it based on an insufficient record.[107] REC had decided not to file a *Petition for Reconsideration* in this proceeding but instead, filed this instant *Petition* to allow the question of LP250 to be considered individually without any distraction from the discussion of other topics. With this instant *Petition*, we pick up the LP250 discussion from where we left off at the Sunshine cutoff period.

62. As demonstrated, while distance separations are increased in this proposal, the "Simple 250" plan will reduce the number of urban upgrade opportunities (this is in areas where the NAB may be right in saying that anything more than 3.5 miles is not hyperlocal) but it will maintain a significant number of opportunities in more sparsely populated rural areas, especially those areas with farms, ranches and homesteads that, while distant from a small populated town are still hyperlocal in government, commercial, religious and social activities. In some of these areas, not even 4.5 miles is hyperlocal enough. Because of the retention of the full buffer zone, many of the concerns we had about foothill stations causing interference have been alleviated because (1) the increased minimum distance separation requirements have reduced the opportunities of many urban and other "foothill" stations to upgrade and (2) for "foothill" stations that can upgrade, the actual point of interference is lengthened by 5 to 9 kilometers and in almost all of those cases, the LPFM interfering contour will not cause an actual contour overlap.

63. Despite previous statements made by the opposition, there are absolutely no statements made in the Congressional Record of the Local Community Radio Act of 2010 that would even suggest a 100-watt limit for LPFM stations, nor was there any statutory language in the bill requiring it.[108] Therefore, as long as the 20 kilometer buffer zone is fully respected, there is nothing in the LCRA that would prohibit a second service class in LPFM.[109] With that, we designed "Simple 250" to be just that, simple. LP250 is now mainly an overlay to the existing LP100 service, just a different set of numbers but the same distance separation theory. It is also

[107] *See*, *Id.* at ¶ 40 and n. 107.

[108] *See*, *Sixth Order* at ¶ 206. ("*We note, however, that the LCRA does not contain any language limiting the power levels at which LPFM stations may be licensed.*")

[109] The LCRA was passed under the notion that there were two classes of service, LP100 and LP10. LP10 was eliminated subsequent to the enactment of the LCRA.

more spectrum efficient than proposing to use a 250-watt translator to cover mainly the same area.

64. With that, REC petitions the Commission to adopt a *Notice of Proposed Rulemaking* to promote more local coverage, especially in underserved rural and suburban areas and well as to promote more diversity, allow LPFM stations that qualify, the ability to increase from 100 to 250 watts ERP in a manner that is simple for applicants and is statutorily sound. This is not necessarily about "better access to underwriting"[110], this is about better serving our true hyperlocal communities.

Respectfully submitted,

/S/
Michelle Bradley, CBT
Founder
REC Networks

May 28, 2020

[110] *See*, *Sixth Order* at ¶ 205.

APPENDIX A

LP250 AT A GLANCE

	Current LP100	**Proposed LP250**
Maximum effective radiated power	100 watts at 30 meters HAAT.	250 watts at 30 meters HAAT.
Minimum effective radiated power	50 watts at 30 meters HAAT.	101 watts at 30 meters HAAT.
Minimum and maximum service contours	4.7 to 5.6 kilometers.	5.7 to 7.1 kilometers.
Full service station protection	Co-channel, first-adjacent, second-adjacent and where necessary, third-adjacent. Minimum distances take into consideration a full 20 km buffer zone.	Co-channel, first-adjacent, second-adjacent and where necessary, third-adjacent. Minimum distances take into consideration a full 20 km buffer zone.
Intermediate frequency protection	To foreign allotments only.	Stations operating 101 watts or greater must protect IF channels of full-service FM stations. Stations of all power levels must protect IF channels of foreign allotments.
Channel 6 protection requirements (for reserved band stations)	Minimum distance separation that can be waived by contour study (based on LP100 interfering contours)/notification or consent from the channel 6 broadcaster.	Minimum distance separation that can be waived by contour study (based on LP250 interfering contours)/notification or consent from the channel 6 broadcaster.
Minor move distance	11.2 km if proposed facility is LP100.	14.2 km if proposed facility is LP250.
Class available in a filing window	Yes	Yes (unless the Commission wants to limit to LP100 in order to gauge demand).
Need for contour studies	Only when needing to protect a second-adjacent channel, moving more than 11.2 km, demonstrating compliance with international agreement or requesting a channel 6 waiver.	Only when needing to protect a second-adjacent channel, moving more than 14.2 km, demonstrating compliance with international agreement or requesting a channel 6 waiver.

APPENDIX B

TEXT OF PROPOSED RULES

For the convenience of the reader, the text changes in the proposed rules are highlighted in blue.

Part 73 of Title 47 of the U.S. Code of Federal Regulations is proposed to be amended to read as follows:

Part 73 – Radio Broadcast Services

1. In section Section 73.807, modify the introductory statement and paragraphs (a), (b), (c), (d) and (g) to read as follows:

§ 73.807 Minimum distance separation between stations.

Minimum separation requirements for LP100 and LP250 stations are listed in the following paragraphs. Except as noted below, an LPFM station will not be authorized unless the co-channel, first-, second-adjacent and I.F. channel separations are met. LP100 and LP250 stations need not satisfy the third-adjacent channel separations listed in paragraphs (a) through (d) in order to be authorized. The third-adjacent channel separations are included for use in determining for purposes of Section 73.810 which third-adjacent channel interference regime applies to an LPFM station.

Minimum distances for co-channel and first-adjacent channel are separated into two columns. The left-hand column lists the required minimum separation to protect other stations and the right-hand column lists (for informational purposes only) the minimum distance necessary for the LPFM station to receive no interference from other stations assumed to be operating at the maximum permitted facilities for the station class. For second-adjacent channel and intermediate frequency (I.F.) channels, the required minimum distance separation is sufficient to avoid interference received from other stations.

(a) Minimum distance separation to full-service FM stations.

(1) An LP100 station will not be authorized initially unless the minimum distance separations in the following table are met with respect to authorized FM stations, applications for new and existing FM stations filed prior to the release of the public notice announcing an LPFM window period for LPFM stations and vacant FM allotments. LPFM modification applications other than a change in station class from LP100 to LP250 must either meet the distance separations in the following table or, if short-spaced, not lessen the spacing to subsequently authorized stations.

Station class protected by LP100	Co-channel minimum separation (km)		First-adjacent channel minimum separation (km)		Second and third adjacent channel minimum separation (km)
	Required	For no interference received from max. class facility	Required	For no interference received from max. class facility	Required
LP100	24	24	14	14	None
LP250	26	29	15	16	None
D	24	24	13	13	6
A	67	92	56	56	29
B1	87	119	74	74	46
B	112	143	97	97	67
C3	78	119	67	67	40
C2	91	143	80	84	53
C1	111	178	100	111	73
C0	122	193	111	130	84
C	130	203	120	142	93

(2) An LP250 station will not be authorized initially unless the minimum distance separations in the following table are met with respect to authorized FM stations, applications for new and existing FM stations filed prior to the release of the public notice announcing an LPFM window period for LPFM stations and vacant FM allotments. LPFM modification applications must either meet the distance separations in the following table or, if short-spaced, not lessen the spacing to subsequently authorized stations.

Station class protected by LP250	Co-channel minimum separation (km)		First-adjacent channel minimum separation (km)		Second and third adjacent channel minimum separation (km)	I.F. channel minimum separations
	Required	For no interference received from max. class facility	Required	For no interference received from max. class facility	Required	10.6 or 10.8 MHz
LP100	29	29	16	15	None	None
LP250	31	31	17	17	None	None
D	29	29	16	16	7	3
A	72	94	58	58	30	6
B1	93	121	77	77	47	9
B	121	145	99	85	68	12
C3	83	121	69	69	41	9
C2	96	145	82	85	54	12
C1	116	179	102	112	74	20
C0	127	194	114	131	85	22
C	136	205	122	144	94	28

(3) LP100 and LP250 stations must satisfy the second-adjacent channel minimum distance separation requirements of paragraphs (a)(1) and (a)(2) of this section with respect to any third-adjacent channel FM station that, as of September 20, 2000, broadcasts a radio reading service via a subcarrier frequency.

(4) LP250 stations operating with 100 watts or less effective radiated power (ERP) need not satisfy the I.F. channel minimum separation requirements.

(b) (1) In addition to meeting or exceeding the minimum separations in paragraph (a)(1), new LP100 stations will not be authorized in Puerto Rico or the Virgin Islands unless the minimum distance separations in the following tables are met with respect to authorized or proposed FM stations:

Station class protected by LP100	Co-channel minimum separation (km)		First-adjacent channel minimum separation (km)		Second and third adjacent channel minimum separation (km)—required
	Required	For no interference received from max. class facility	Required	For no interference received from max. class facility	
A	80	111	70	70	42
B1	95	128	82	82	53
B	138	179	123	123	92

(2) In addition to meeting or exceeding the minimum separations in paragraph (a)(2), new LP250 stations will not be authorized in Puerto Rico or the Virgin Islands unless the minimum distance separations in the following tables are met with respect to authorized or proposed FM stations:

Station class protected by LP250	Co-channel minimum separation (km)		First-adjacent channel minimum separation (km)		Second and third adjacent channel minimum separation (km)—required	I.F. channel minimum separations—10.6 or 10.8 MHz
	Required	For no interference received from max. class facility	Required	For no interference received from max. class facility		
A	85	112	72	69	43	9
B1	101	129	84	85	54	11
B	147	181	126	145	94	19

(3) LP100 and LP250 stations must satisfy the second-adjacent channel minimum distance separation requirements of paragraphs (b)(1) and (b)(2) of this section with respect to any third-adjacent channel FM station that, as of September 20, 2000, broadcasts a radio reading service via a subcarrier frequency.

(4) LP250 stations operating with 100 watts or less effective radiated power (ERP) need not satisfy the I.F. channel minimum separation requirements.

NOTE TO PARAGRAPH (a) AND (B): Minimum distance separations towards "grandfathered" superpowered Reserved Band stations are as specified.

Full service FM stations operating within the reserved band (Channels 201-220) with facilities in excess of those permitted in § 73.211(b)(1) or § 73.211(b)(3) shall be protected by LPFM stations in accordance with the minimum distance separations for the nearest class as determined under § 73.211. For example, a Class B1 station operating with facilities that result in a 60 dBu contour that exceeds 39 kilometers but is less than 52 kilometers would be protected by the Class B minimum distance separations. Class D stations with 60 dBu contours that exceed 5 kilometers will be protected by the Class A minimum distance separations. Class B stations with 60 dBu contours that exceed 52 kilometers will be protected as Class C1 or Class C stations depending upon the distance to the 60 dBu contour. No stations will be protected beyond Class C separations.

NOTE TO PARAGRAPH (a): Effective [date] and for [days] following in order to accommodate the implementation of the LP250 service class, modification applications specifying operation in the LP250 service class must be separated from LP100 stations by a minimum of 31 kilometers co-channel and 17 kilometers on first-adjacent channel.

(c)(1) In addition to meeting the separations specified in paragraphs (a) and (b), LP100 applications must meet the minimum separation requirements in the following table with respect to authorized FM translator stations, cutoff FM translator applications, and FM translator applications filed prior to the release of the Public Notice announcing the LPFM window period.

Distance to FM translator 60 dBu contour	Co-channel minimum separation (km)		First-adjacent channel minimum separation (km)		Second and third adjacent minimum separation (km)—required
	Required	For no interference received	Required	For no interference received	
13.3 km or greater.....	39	67	28	35	21
Greater than 7.3 km, but less than 13.3 km..	32	51	21	26	14
7.3 km or less	26	30	15	16	8

(c)(2) In addition to meeting the separations specified in paragraphs (a) and (b), LP250 applications must meet the minimum separation requirements in the following table with respect to authorized FM translator stations, cutoff FM translator applications, and FM translator applications filed prior to the release of the Public Notice announcing the LPFM window period:

Distance to FM translator 60 dBu contour	Co-channel minimum separation (km)		First-adjacent channel minimum separation (km)		Second and third adjacent minimum separation (km)—required
	Required	For no interference received	Required	For no interference received	
13.3 km or greater.....	44	69	30	37	21
Greater than 7.3 km, but less than 13.3 km....	37	53	23	27	14
7.3 km or less.....	31	32	17	18	8

(d) Existing LP250 and LP100 stations which do not meet the separations in paragraphs (a) through (c) of this section may be relocated provided that the separation to any short-spaced station is not reduced.

(e) * * * * *

(f) * * * * *

(g) International considerations within the border zones.

(1) Within 320 km of the Canadian border, LP100 stations must meet the following minimum separations with respect to any Canadian stations:

Canadian station class	Co-channel (km)	First-adjacent channel (km)	Second-adjacent channel (km)	Third-adjacent channel (km)	Intermediate frequency (IF) channel (km)
A1 & Low Power ……....	45	30	21	20	4
A ……...	66	50	41	40	7
B1 …….....	78	62	53	52	9
B ……...	92	76	68	66	12
C1 …….....	113	98	89	88	19
C ……...	124	108	99	98	28

(2) Within 320 km of the Canadian border, LP250 stations must meet the following minimum separations with respect to any Canadian stations:

Canadian station class	Co-channel (km)	First-adjacent channel (km)	Second-adjacent channel (km)	Third-adjacent channel (km)	Intermediate frequency (IF) channel (km)
A1 & Low Power ……....	54	33	22	20	4
A ……..	76	53	42	40	6
B1 …….....	88	65	54	52	9
B ……..	102	80	68	67	12
C1 …….....	123	101	90	88	19
C ……..	133	111	100	98	28

(3) Within 320 km of the Mexican border, LP100 stations must meet the following separations with respect to any Mexican stations:

Mexican station class	Co-channel (km)	First-adjacent channel (km)	Second- and third-adjacent channel (km)	Intermediate frequency (IF) channel (km)
Low Power ……. …….	27	17	9	3
A ……..	43	32	25	5
AA ……	47	36	29	6
B1 …….....	67	54	45	8
B ……...	91	76	66	11
C1 …….....	91	80	73	19
C ……	110	100	92	27

(4) Within 320 km of the Mexican border, LP250 stations must meet the following separations with respect to any Mexican stations:

Mexican station class	Co-channel (km)	First-adjacent channel (km)	Second- and third-adjacent channel (km)	Intermediate frequency (IF) channel (km)
Low Power ……. ……..	33	19	10	3
A ……	49	35	26	6
AA ……..	53	39	30	6
B1 …….....	74	57	46	9
B ……	102	80	68	12
C1 …….....	97	83	74	19
C …….....	116	102	93	27

(5) The Commission will notify the International Telecommunications Union (ITU) of any LPFM authorizations in the US Virgin Islands. Any authorization issued for a US Virgin Islands LPFM station will include a condition that permits the Commission to modify, suspend or terminate without right to a hearing if found by the Commission to be necessary to conform to any international regulations or agreements.

(6) The Commission will initiate international coordination of a LPFM proposal even where the above Canadian and Mexican spacing tables are met, if it appears that such coordination is necessary to maintain compliance with international agreements.

(7)(i) LPFM stations located within 125 kilometers Mexican border are limited to 50 watts (0.05 kW) ERP, a 60 dBu service contour of of 8.7 kilometers and a 34 dBu interfering contour of 32 kilometers in the direction of the Mexican border. LP100 stations may operate up to 100 watts and LP250 stations may operate up to 250 watts in all other directions.

(ii) LPFM stations located between 125 kilometers and 320 kilometers from the Mexican border may operate in excess of 50 watts up to a maximum ERP of 100 watts for LP100 stations and 250 watts for LP250 stations. However, in no event shall the location of the 60 dBu contour lie within 116.3 kilometers of the Mexican border.

(iii) Application for LPFM stations within 320 kilometers of the Canadian border may employ an ERP of up to a maximum of 100 watts for LP100 stations and 250 watts for LP250 stations. The distance to the 34 dBu interfering contour may not exceed 60 kilometers in any direction.

2. Revise §73.811 to read as follows:

§73.811 LPFM power and antenna height requirements.

(a) Maximum facilities.

(1) LP100 stations will be authorized to operate with maximum facilities of 100 watts ERP at 30 meters HAAT. An LPFM station with a HAAT that exceeds 30 meters will not be permitted with an ERP greater than that which would result in a 60 dBu contour of 5.6 kilometers. In no event will an ERP of less than one watt ERP be authorized. No new or modified LP100 facility will be authorized specifying a HAAT of 452 meters or greater.

(2) LP250 stations will be authorized to operate with maximum facilities of 250 watts ERP at 30 meters HAAT. An LPFM station with a HAAT that exceeds 30 meters will not be permitted with an ERP greater than that which would result in a 60 dBu contour of 7.1 kilometers. In no event will an ERP of less than one watt ERP be authorized.

(b) Minimum facilities.

(1) LP100 facilities may not operate with facilities of less than 50 watts ERP at 30 meters or the equivalent necessary to produce a 60 dBu contour that extends at least 4.7 kilometers.

(2) LP250 facilities may not operate with facilities of less than 101 watts ERP at 30 meters or the equivalent necessary to produce a 60 dBu contour that extends at least 5.7 kilometers.

3. Revise §73.825 to read as follows:

§73.825 Protection to reception of TV channel 6.

The following spacing requirements will apply to LPFM applications on Channels 201 through 220 unless application is accompanied by a written agreement between the LPFM applicant and each affected TV Channel 6 broadcast station concurring with the proposed LPFM facilities.

(a) LPFM stations will be authorized on Channels 201 through 220 only if the pertinent minimum separation distances in the following table are met with respect to all full power TV Channel 6 stations.

FM channel number	Class LP100 to TV channel 6 (km)	Class LP250 to TV channel 6 (km)
201	140	143
202	138	141
203	137	139
204	136	138
205	135	136
206	133	135
207	133	133
208	133	133
209	133	133
210	133	133
211	133	133
212	132	133
213	132	133
214	132	132
215	131	132
216	131	132
217	131	132
218	131	131
219	130	131
220	130	130

(b) LPFM stations will be authorized on Channels 201 through 220 only if the pertinent minimum separation distances in the following table are met with respect to all low power TV, TV translator, and Class A TV stations authorized on TV Channel 6.

FM channel number	Class LP100 to TV channel 6 (km)	Class LP250 to TV channel 6 (km)
201	98	101
202	97	99
203	95	97
204	94	96
205	93	94
206	91	93
207	91	92
208	91	92
209	91	92
210	91	92
211	91	92
212	90	91
213	90	91
214	90	91
215	90	90
216	89	90
217	89	90
218	89	89
219	89	89
220	89	89

4. Update paragraph (a) of §73.870 to insert subparagraph (3) as follows:

§73.870 Processing of LPFM broadcast station applications.

(a) * * * * *

(3) Upgrades from LP100 to LP250 and downgrades from LP250 to LP100.

* * * * *

5. Update paragraph (c) of §73.871 to insert subparagraph (8) as follows:

§73.871 Amendment of LPFM broadcast station applications

(c) * * * * *

(7) * * * * *

(8) Upgrades from LP100 to LP250 and downgrades from LP250 to LP100.

(d) * * * * *

Part 74 of Title 47 of the U.S. Code of Federal Regulations is proposed to be amended to read as follows:

Part 74 – Experimental Radio, Auxiliary, Special Broadcast and Other Program Distributional Services

1. Revise §74.1204 to update the title and make changes to subparagraph (a)(4) and revise note to paragraph to read as follows:

§74.1204 Protection of FM broadcast, FM Translator and LPFM stations.

(a) * * * * *

(4) LP100 and LP250 stations (Protected Contour: 1 mV/m)

Frequency Separation	Interference contour of proposed translator station	Protected contour of LP100 or LP250 LPFM station
Co-channel	0.1 mV/m (40 dBu)	1 mV/m (60 dBu)
200 kHz	0.5 mV/m (54 dBu)	1 mV/m (60 dBu)

NOTE TO PARAGRAPH (a)(4):
LP100 and LP250 stations, to the purposes of determining overlap pursuant to this paragraph, LPFM applications and permits that have not yet been licensed must be considered as operating with the maximum permitted facilities. All LPFM TIS stations must be protected on the basis of a nondirectional antenna.

APPENDIX C

ARRIVING LPFM INTERFERING CONTOURS

This chart demonstrates the differences in the interfering contour of an LPFM station as they arrive at the full-service protected contour and the 20 km extended buffer zone based on standard values for each class of service. For LPFM stations in "foothill" situations (long lobe in a particular direction despite low HAAT and maximum LPFM power), we show the HAAT a full 100 or 250 watt facility would have to exceed in order to overlap the class standard protected contour of a full-service FM station.

CURRENT FCC RULES – LP100
0.1 kW at 30 meters HAAT + 20 km buffer zone (enforced). 7.1 km service contour.

Co-channel:

Incumbent station class	LPFM distance to buffer zone	LPFM interfering contour at buffer zone	LPFM distance to protected contour	LPFM interfering contour at protected contour	U/D ratio at protected contour	Over protection	100 W Max. HAAT before overlap
B	26.819 km	34.0 dBu	46.819 km	26.6 dBu	-27.4 dB	7.4 dB	87 m
[NCE]B	26.819 km	34.0 dBu	59.804 km	23.8 dBu	-36.2 dB	16.2 dB	328 m
B1	22.406 km	37.0 dBu	42.406 km	27.8 dBu	-29.2 dB	9.2 dB	103 m
[NCE]B1	22.406 km	37.0 dBu	47.919 km	26.4 dBu	-33.6 dB	13.6 dB	201 m
Others	18.577 km	40.0 dBu	38.577 km	29.0 dBu	-31.0 dB	11.0 dB	122 m

First-adjacent channel:

Incumbent station class	LPFM distance to buffer zone	LPFM interfering contour at buffer zone	LPFM distance to protected contour	LPFM interfering contour at protected contour	U/D ratio at protected contour	Over protection	100 W Max. HAAT before overlap
B	11.359 km	48.0 dBu	31.359 km	31.6 dBu	-22.4 dB	16.4 dB	206 m
[NCE]B	11.359 km	48.0 dBu	44.804 km	27.1 dBu	-32.9 dB	26.9 dB	745 m
B1	9.593 km	51.0 dBu	29.593 km	32.5 dBu	-24.5 dB	18.5 dB	261 m
[NCE]B1	9.593 km	48.0 dBu	34.919 km	30.3 dBu	-29.7 dB	23.7 dB	482 m
Others	7.987 km	54.0 dBu	27.987 km	33.3 dBu	-26.7 dB	20.7 dB	330 m

[NCE] Class B and B1 stations in the reserved band (Channels 201~220, 88.1~91.9 MHz) has a 60 dBu service contour instead of the 54 and 57 dBu contours that are used in the non-reserved band. Because §73.807 treats all Class B and B1 stations with the larger contours, the rules (both current and proposed) permit the reserved band Class B and B1 stations to be substantially overprotected. Minimum distance separation to these facilities cannot be reduced through rulemaking due to LCRA statutory requirements.

LP250 PREVIOUSLY PROPOSED IN *FOURTH NPRM* AND RM-11749
0.25 kW at 30 meters HAAT + 20 km buffer zone (can be penetrated). – 7.1 km service contour.
NOTE: This is not the current proposal; but is one of the rejected proposals.

Co-channel:

Incumbent station class	LPFM distance to buffer zone	LPFM interfering contour at buffer zone	LPFM distance to protected contour	LPFM interfering contour at protected contour	U/D ratio at protected contour	Over protection	250 W Max. HAAT before overlap
B	26.819 km	38.0 dBu	46.819 km	30.6 dBu	-23.4 dB	3.4 dB	50 m
NCEB	26.819 km	38.0 dBu	59.804 km	27.8 dBu	-32.2 dB	12.2 dB	216 m
B1	22.406 km	41.0 dBu	42.406 km	31.8 dBu	-25.2 dB	5.2 dB	62 m
NCEB1	22.406 km	41.0 dBu	47.919 km	30.4 dBu	-29.6 dB	9.6 dB	121 m
Others	18.577 km	44.0 dBu	38.577 km	33.0 dBu	-27.0 dB	7.0 dB	75 m

First-adjacent channel:

Incumbent station class	LPFM distance to buffer zone	LPFM interfering contour at buffer zone	LPFM distance to protected contour	LPFM interfering contour at protected contour	U/D ratio at protected contour	Over protection	250 W Max. HAAT before overlap
B	11.359 km	52.0 dBu	31.359 km	35.6 dBu	-18.4 dB	12.4 dB	131 m
NCEB	11.359 km	52.0 dBu	44.804 km	31.1 dBu	-28.9 dB	22.9 dB	492 m
B1	9.593 km	55.0 dBu	29.593 km	36.4 dBu	-20.6 dB	14.6 dB	163 m
NCEB1	9.593 km	55.0 dBu	34.919 km	34.2 dBu	-25.8 dB	19.6 dB	320 m
Others	7.987 km	58.0 dBu	27.987 km	37.3 dBu	-22.7 dB	16.7 dB	206 m

LP250 – INSTANT PETITION
0.25 kW at 30 meters HAAT + 20 km buffer zone (enforced). 7.1 km service contour.
NOTE: This is the current proposal..

Co-channel:

Incumbent station class	LPFM distance to buffer zone	LPFM interfering contour at buffer zone	LPFM distance to protected contour	LPFM interfering contour at protected contour	U/D ratio at protected contour	Over protection	250 W Max. HAAT before overlap
B	35.590 km	34.0 dBu	55.590 km	28.7 dBu	-25.3 dB	5.3 dB	77 m
NCEB	35.590 km	34.0 dBu	68.804 km	26.1 dBu	-33.9 dB	13.9 dB	308 m
B1	28.508 km	37.0 dBu	48.508 km	30.2 dBu	-26.8 dB	6.8 dB	83 m
NCEB1	28.805 km	37.0 dBu	53.919 km	29.1 dBu	-30.9 dB	10.9 dB	165 m
Others	23.758 km	40.0 dBu	43.758 km	31.4 dBu	-28.6 dB	8.6 dB	97 m

First-adjacent channel:

Incumbent station class	LPFM distance to buffer zone	LPFM interfering contour at buffer zone	LPFM distance to protected contour	LPFM interfering contour at protected contour	U/D ratio at protected contour	Over protection	250 W Max. HAAT before overlap
B	14.147 km	48.0 dBu	34.147 km	34.5 dBu	-19.5 dB	13.5 dB	154 m
NCEB	14.147 km	48.0 dBu	46.804 km	30.6 dBu	-29.4 dB	23.4 dB	528 m
B1	11.983 km	51.0 dBu	31.983 km	35.4 dBu	-21.6 dB	15.6 dB	192 m
NCEB1	11.983 km	51.0 dBu	37.919 km	33.2 dBu	-26.8 dB	20.8 dB	370 m
Others	10.149 km	54.0 dBu	30.149 km	36.2 dBu	-23.8 dB	17.8 dB	241 m

APPENDIX D

UPGRADE ELIGIBILITY BY POPULATION GROUP

Based on census block centroid population within the 60 dBu service contour of the LPFM station using Commission-published contours[111]:

LP100 Population range	Eligible for upgrade	Not eligible for upgrade
Less than 2,000	97.7%	2.3%
2,001~4,000	94.0%	6.0%
4,001~6,000	96.3%	3.7%
6,001~9,000	91.7%	8.3%
9,001~13,000	89.3%	10.7%
13,001~18,000	90.2%	9.8%
18,001~25,000	88.0%	12.0%
25,000 persons or less	**92.8%**	**7.2%**
25,001~35,000	83.3%	16.7%
35,001~45,000	76.6%	23.4%
45,001~60,000	73.9%	22.1%
60,001~75,000	73.0%	27.0%
75,001~100,000	65.8%	34.2%
100,001~150,000	62.9%	37.1%
150,001~300,000	38.8%	61.2%
Greater than 300,000	14.9%	85.1%

Through the use of the existing distance separation concepts as opposed to some form of geographic exclusion as proposed in the past by others, we can see how rural and suburban LPFM stations with LP100 service areas of less than 18,000 persons would naturally be the biggest beneficiary to the LP250 service class. This will allow LP250 to serve the areas where its needed the most.
(2173)

[111] Stations where limited or no census block data is available are not included in this count. This includes LPFM stations in Puerto Rico, US Virgin Islands, Guam, CNMI, American Samoa and many portions of Alaska.

APPENDIX E

LPFM EXISTING STATION UPGRADE STATUS LIST

(See separate document in this filing.)

APPENDIX F

HISTORY OF LP250 PROCEEDINGS

For informational purposes, in order to understand what lead us to this point, we must reexamine a historical summary of the various events that have brought us to this current proposal.

A. Fourth Notice of Proposed Rulemaking & Sixth Report and Order

The concept of LP250 was originally proposed by Amherst Alliance (Amherst) and the Catholic Radio Association (CRA). In their proposal, Amherst originally supported that LP250 stations be deployed solely in areas considered to be outside of "Standard Metropolitan Statistical Area" (SMSA) or Micropolitan Standard Metropolitan Statistical Area" (Micro SMSA).[112] As a result of the comments of Amherst and CRA, the Commission requested comments on whether to permit LPFM stations in rural areas or "non-core" locations (*i.e.,* areas outside population centers) to increase power levels to a maximum ERP of 250 watts at 30 meters HAAT.[113] In the *Fourth NPRM,* the Commission inquired on whether LPFM stations located outside the top 100 markets as well as stations within the major markets but outside of specific radii be permitted to upgrade.[114] As a part of the Commission's proposed rulemaking, the Commission developed distance charts using similar distances to protect domestic full-service stations on co-channel and first-adjacent channel to what currently applied to the LP100 service while using the justification that because of a 20 kilometer "buffer zone" that was placed around the standard full-power service contours could be penetrated to compensate for the larger LPFM interfering contour at 250 watts.[115]

In comments, groups that were actually involved with and interfacing with LPFM broadcast stations, such as Prometheus Radio Project (PRP) opposed any kind of location restrictions for LP250 stations while organizations that were involved solely with social justice, such as the National Lawyer's Guild and Media Alliance supported such restrictions.[116] Because of this disagreement between LPFM and non-LPFM organizations, the Commission felt that the issue required "further study" and declined to establish a 250-watt LPFM service at that time.[117]

[112] See Comments of Amherst Alliance, MM Docket 99-25 (Feb. 4, 2011) at 2.

[113] *Fourth NPRM* at ¶¶ 48-51.

[114] *See*, Id. at ¶ 51.

[115] *See*, Id. at n. 125.

[116] *Sixth Order* at ¶¶ 201-206.

[117] *See*, Id. at ¶ 206.

B. REC's first *Petition for Rulemaking*: RM-11749

On April 20, 2015, nearly 18 months following the filing window for original LPFM construction permits and major change applications ("2013 Window"), REC filed a *Petition for Rulemaking* ("First Petition"). On May 15, 2015, the *First Petition* would eventually be assigned RM-11749, go on public notice and opened a 30-day comment period.[118]

In RM-11749, REC introduced a version of LP250 with some "enhancements" that were based around the comments in the *Fourth Notice,* the outcome of the *Sixth Order* and certain events that transpired in the *2013 Window*. Like with the *Fourth Notice,* the *First Petition* proposed a 250 watt at 30 meter HAAT LPFM service class[119], the use of distance separation including similar distances for LP100 and LP250 as a result of the Commission proposal in the *Fourth Notice* to penetrate the "buffer zone"[120] and the requirement to protect the intermediate frequency channels when the proposed ERP is greater than 100 watts.[121]

In response to comments made in the *Fourth Notice* and in real-world experiences in the *2013 Window,* REC added several other provisions to the *First Petition* such as the introduction to the concept of "foothill effect" and the designation of LPFM facilities with a peak service contour lobe that exceeds 12.7 kilometers as "foothill stations" thus making their proposed facility more vulnerable to causing interference and thus proposing a "backstop" method which requires any LP250 proposal of a designated "foothill station" to also assure that the appropriate interfering contour does not overlap the protected service contour of the incumbent station[122]; a reciprocal designation of a full-service facility as a "foothill station" and thus requiring additional protection from a proposed LP250 facility[123]; a prohibition on LP250 facilities in areas within 125 kilometers of the Mexican border[124]; restricting LP250 applications to upgrades only

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[118] *See, Consumer & Governmental Affairs Bureau Reference Information Center Petition for Rulemaking Filed,* Public Notice, Report No. 3022 (May 15, 2015).

[119] *First Petition* at 11.

[120] Id. at 12-13.

[121] Id. at 15-16.

[122] Id. at 17-19.

[123] Id. at 19-20. "Foothill effect" is a term coined by REC to describe the excessively large service contour that is caused by the facility being in a location that has a much higher mountain range in one direction and a deep valley in the other direction. Because the HAAT uses an average of 8 radials consisting of both terrain types, the averages would result in a HAAT that is equal or less than 30 meters thus permitting an LPFM station to use their fully authorized power at the site, which in turn creates very large service contours in the direction of the valley. "Foothill effect" is the most prevalent in the western United States especially Southern California and California's Central Valley. REC's proposal for the "foothill rule" was premised on the various pleadings made by Educational Media Foundation (EMF) in the application for *Razorcake-Gorsky Press*. See File No. BNPL-20131114AXZ (Granted June 30, 2016, Canc. June 30, 2019) and related pleadings.

[124] Id. at 22-23. When the *First Petition* was filed, there was a prohibition on directional antennas except in cases of public safety agencies providing a traveler's information service and to address second-adjacent channel waivers; *see also* 47 C.F.R. §73.816. Since the filing of the *First Petition,* the Commission would adopt new rules that

meaning new entrants start at LP100 class of service[125] and the ability for the Commission to identify LP100 stations that can clearly upgrade and give them advanced (automatic) authority to upgrade within a particular period and then file a license to cover application to finalize their LP250 operation.[126]

C. REC's Second *Petition for Rulemaking*: RM-11810

On June 13, 2018, REC filed another *Petition for Rulemaking* ("*Second Petition"*). This petition called for a different approach for doing LP250 recognizing the maturity of the LPFM service. This *Petition* was also a follow-up to REC's comments in the *Media Modernization initiative*, MB Docket 17-105. On June 20, 2018, the *First Petition* would eventually be assigned RM-11749, go on public notice and opened a 30-day comment period. [127]

In the *Second Petition*, REC did a complete review of the Local Community Radio Act of 2010[128] including proposed interpretations of the statutory language.[129] Specifically related to the implementation of LP250, REC argued that because of the specific language in the LCRA, it would argue that with the enactment of the LCRA, the Commission may not reduce minimum separation distances from those that were codified on the date the LCRA was enacted and to further indicate that those "numbers" also include those for the (now former) LP10 service class. [130] To acknowledge the maturity of the LPFM service, recognizing a majority of applications that were filed with "hired help", REC proposed, in addition to the traditional distance separation method used for LP100 stations and described in §73.807 of the Commission's Rules, a second regime that used a "hybrid" of statutorily required distance separation (at the LP10 distances) and contour overlap to permit up to the equivalent of 250 watts ERP at 30 meters HAAT.[131]

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permit LPFM stations within 125 kilometers of Mexico to utilize directional antennas to exceed 50 watts along radials which do not measure to being less than 125 kilometers to the common border. *See also, Tech Order* at ¶ 11.

[125] *First Petition* at 25.

[126] Id. at 26-28.

[127] *See, Consumer & Governmental Affairs Bureau Reference Information Center Petition for Rulemaking Filed,* Public Notice, Report No. 3094 (Jun. 20, 2018).

[128] Pub. L. No. 111-371, 124 Stat 4072 (2011) ("LCRA").

[129] *Second Petition* at 8-14.

[130] Id. at 11-12; citing LCRA §§ 2 and 3(b)(1); amending *DC Appropriations Act*; Pub. L. 106-553, §632, 114 Stat. 2762, 2762-A-111 (2000).

[131] Id. at 14-19. This alternative method was called the "§73.815 Regime", named after a currently non-existent rule but called that because the "hybrid" method of using distance separation and contours is remotely similar to current regulations that permit commercial FM stations to use a shorter distance separation, supplemented by contours in order to demonstrate protection; see 47 C.F.R. §73.215. Like with commercial FM rules, the applicant was given the option of operating under current rules ("§73.807 Regime"), but they would be limited to LP100 or they could use the "§73.815 Regime" to operate at up to LP250. REC proposed that the use of the "§73.815 Regime", as well as a separate proposal to allow LPFM stations to use contours instead of distance separation to protect FM

The *Second Petition* would also include many other changes to the LPFM service not directly related to LP250 including the expanded use of allowing the use of contours instead of distance separation towards facilities where there is no LCRA statutory mandate requiring distance separation[132], directional antennas[133], permit full LPFM operating power within 125 kilometers of Mexico when done in accordance with international agreement[134], modifying the §73.825 TV channel 6 protection rules to mirror those used by FM translators[135], permit LPFM commonly-owned translators to waive contour overlap with the primary station and allow for alternate program delivery as long as the translator is within 10 or 20 miles of the LPFM station[136], codify FM boosters for LPFM stations[137], restructure the policies in respect to LPFM assignments and transfers[138], allow minor moves of more than 5.6 kilometers when the request is accompanied by a contour study demonstrating overlap[139] and extending the construction period to three years to match all other broadcast services.[140]

D. NCE Administrative *NPRM* and Report and Order: MB Docket 19-3

On February 14, 2019, the Commission adopted a *Notice of Proposed Rulemaking* which would be followed up on December 10, 2019 with a *Report and Order* in MB Docket 19-3.[141] In this proceeding the Commission would propose and adopt items proposed by REC in the *Second Petition* related to assignments, transfers and construction periods.[142]

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translators would require the LPFM to be subjected to an interference remediation policy similar to that applies for FM translators; see 47 C.F.R. §§ 74.1204(f) and 74.1203(a).

[132] Id. at 19-21.

[133] Id. at 22-25.

[134] Id. at 21-22.

[135] Id. at 26-28.

[136] Id. at 29-31.

[137] Id. at 32-34.

[138] Id. at 34-38.

[139] Id. at 38-39.

[140] Id. at 39-41.

[141] *See*, 34 FCC Rcd. 851 *et. seq.* (2019) ("Administrative NPRM"); 34 FCC Rcd. 12519 *et. seq.* (2019) ("Administrative Order").

[142] *Administrative Order* at ¶¶ 63-68.

E. LPFM Technical NPRM: MB Docket 19-193

On July 30, 2019, the Commission adopted a *Notice of Proposed Rulemaking* in response to REC's *Comments* in MB Docket 17-105 and to the *Second Petition*.[143] In the *Tech NPRM*, the Commission advanced proposals in respect to directional antennas and permitting ERP exceeding 50 watts in areas near Mexico using such antennas[144], TV channel 6 protections for all FM radio services[145], allow minor moves of over 5.6 kilometers with a showing of overlapping service contours[146] and permit the cross-ownership of FM booster stations by LPFM licensees[147].

In the *Tech NPRM*, the Commission tentatively rejects REC's proposals for LP250, modify LPFM/FM cross-ownership restrictions and provide LPFM stations with a contour-based method to protect other stations.[148] In the footnote tentatively rejecting these items, the Commission states that such changes would "alter the simplicity of LPFM licensing" and that REC provided insufficient support for adding complexities to the LPFM licensing process and that the Commission was not convinced that the "§73.815 Regime" proposed in the *Second Petition* was compatible with an LCRA prohibition on reducing distance separations.[149]

F. REC Comments in MB Docket 19-193

In *Comments*, REC modified its LP250 plan to change minimum distance separations from the controversial LP10 values proposed in the *Second Petition* to LP100 values consistent with those proposed in the *Fourth Notice*.[150] To continue to address the "foothill effect" concerns previously expressed in the history of LPFM proceedings, REC continued to propose a contour "backstop" which stated that an LP250 facility that otherwise meet minimum distance separation would still be required to make a study showing that the appropriate interfering contour of the proposed LP250 facility would not result in overlap with the incumbent station's protected service contour.[151] Because REC proposed to use contours as part of the LP250 protection method, it also proposed to utilize the interference remediation regime that was recently applied to FM translators in accordance with §§ 74.1204(f) and 74.1203(a).[152]

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[143] *See, Amendments of Parts 73 and 74 to Improve The Low Power FM Radio Service Technical Rules,* Notice of Proposed Rulemaking, 34 FCC Rcd. 6537 *et. seq.* (2019) ("Tech NPRM").

[144] Id. at ¶¶ 4-7.

[145] Id. at ¶¶ 8-13.

[146] Id. at ¶¶ 14-15.

[147] Id. at ¶¶ 16-18.

[148] Id. at n. 15.

[149] Id.

[150] Comments of REC Networks, MB Docket 19-193 (Oct. 21, 2019) ("Tech Comments") at 41-43.

[151] Id.

[152] Id. at 59-63.

G. Circulation Draft Report and Order: MB Docket 19-193

In the circulation document for the adoption of the *Report and Order* in MB Docket 19-193, the Commission explains their decision to not increase power from 100 to 250 watts.[153] In the *Draft Order*, the Commission states that REC's proposal in *Tech Comments* continues to "[conflict] with the LCRA, would complicate LPFM licensing, and is inconsistent with the with Congress's and the Commission's intent when establishing the LPFM service.", further citing that LPFM stations were given the ability to cross-own FM translators as an "alternative" to LP250.[154]

Also, for the first time in the eight years that the LPFM community has been attempting to get the Commission to adopt LP250, the Commission brings up a new reason for rejecting LP250. Specifically, the Commission states that the full distance in the 20 kilometer "buffer zone" that surrounds the service contours of domestic full-service stations on co-channel and first-adjacent channels must be not be penetrated in order to meet the statutory mandate of the LCRA.[155] The Commission further states that "an increase in power without a comparable increase in spacing is effectively a reduction in channel distance separation and therefore is inconsistent with the LCRA."[156]

On the previous proposals to include an element of contour protection, the Commission would state in the draft that "[t]he proposed use of contour overlap would also introduce an unnecessary level of complexity to LPFM licensing by requiring all LP250 applicants to prepare engineering studies examining the relationship of their own contours to all those of adjacent channel stations, a requirement that is inconsistent with the simple design of the LPFM service" and that "[t]he simplicity of LPFM licensing has worked well, facilitating filing of LPFM applications with acceptable engineering proposals that the Commission can process expediently."[157]

H. REC's April *ex parte* presentations

In April, following the release of the *Draft Order,* REC analyzed the reasoning offered by the Commission in connection with the rejection of LP250. REC developed a different concept for LP250 with the Commission's explanations in mind. REC analyzed the LP250 upgrade potential of each licensed LPFM station and compiled those results. REC's Michelle Bradley

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[153] *See, Improving Low Power Radio,* Circulation Document, FCC-CIRC2004-05 (Apr. 2, 2020) ("Draft Order") at ¶¶ 36-40. (Our citation of the Circulation Document is relevant because of future actions that pivot as a result of the information disclosed in it.)

[154] Id. at ¶ 36.

[155] Id. at ¶ 39. ("REC has not shown how its proposal is consistent with the LCRA or with the concept that the spacings needed to protect against interference increase along with the station power levels. REC still proposes to double power without any concomitant increase in spacing to other stations.")

[156] Id.

[157] Id.

then held telephone and teleconference meetings with the Audio Division staff as well as the Media Advisers of the Chairman and the other four Commissioners.

In those *ex parte* presentations, REC introduced a "simplified" LP250 proposal that will be further discussed in the instant *Petition.*[158] Specifically, REC proposes to design LP250 exactly like LP100 but with the higher ERP. To address the 20 km "buffer zone" and LCRA concerns, REC proposes to extend the minimum distance separations between LPFM stations and domestic co-channel and first-adjacent channel full-service FM stations. This will mean that for co-channel, the LP250 minimum distance separation would be extended anywhere from 5 to 9 kilometers based on incumbent station class on co-channel and comparable increases in the minimum distance separations for first-adjacent based on the smaller interfering contour.[159]

The proposal discussed in the *ex parte* presentations has addressed the Commission's concerns about LCRA compliance as the minimum distance separations are longer for LP250 versus LP100 by fully respecting the 20 kilometer "buffer zone" at all times. The presented LP250 proposal also does not involve any new contour overlap study requirements, thus addressing the concerns over adding undue complexities to the existing simple LPFM service.

I. Technical Report and Order: MB Docket 19-193

In the *Tech Order*, the Commission does acknowledge the revised proposal made by REC during the series of *ex parte* meetings.[160] However, due to the timing of the presentation, the Commission rightfully determined that REC's attempt to address the issues raised by the Commission were too late into the proceeding and therefore there is an insufficient record for the Commission to consider the latest request.[161]

[158] See REC *ex parte* presentation with Albert Shuldiner, et. al. in the Media Bureau, Audio Division (Apr. 7, 2020) and subsequent meetings with Commissioner media advisers on various dates leading up to the Sunshine Notice announcing the Commission April, 2020 Open Meeting.

[159] Because domestic full-service second- and third-adjacent channel, as well as FM translator, other LPFM and foreign FM facilities were not previously given a buffer zone, the minimum distance separations between LP250 stations and those facilities are increased and those proposed increased values have been consistent with those originally proposed by the Commission in the *Fourth Notice*.

[160] *Tech Order* at ¶ 40-41.

[161] *See*, Id. at ¶ 40; *also see* Id. at n. 107 ("Our decision not to act on REC"s latest proposal does not preclude REC or any other party from filing a separate petition for rulemaking seeking consideration of such issues in a future proceeding.")

APPENDIX G

The following list includes LP100 stations that have a peak service contour lobe of 12.7 kilometers in any direction and is able to upgrade to LP250 on the same channel. The table shows the peak lobe distance (based on 60 dBu F[50,50]) and the direction (bearing) that it is oriented. The table shows the HAAT in the direction of the other facility and a positive determination if there are overlap.

Stations chosen in the study do not meet §73.807(a) guidelines for a fully-spaced station (i.e. one that will not receive interference).

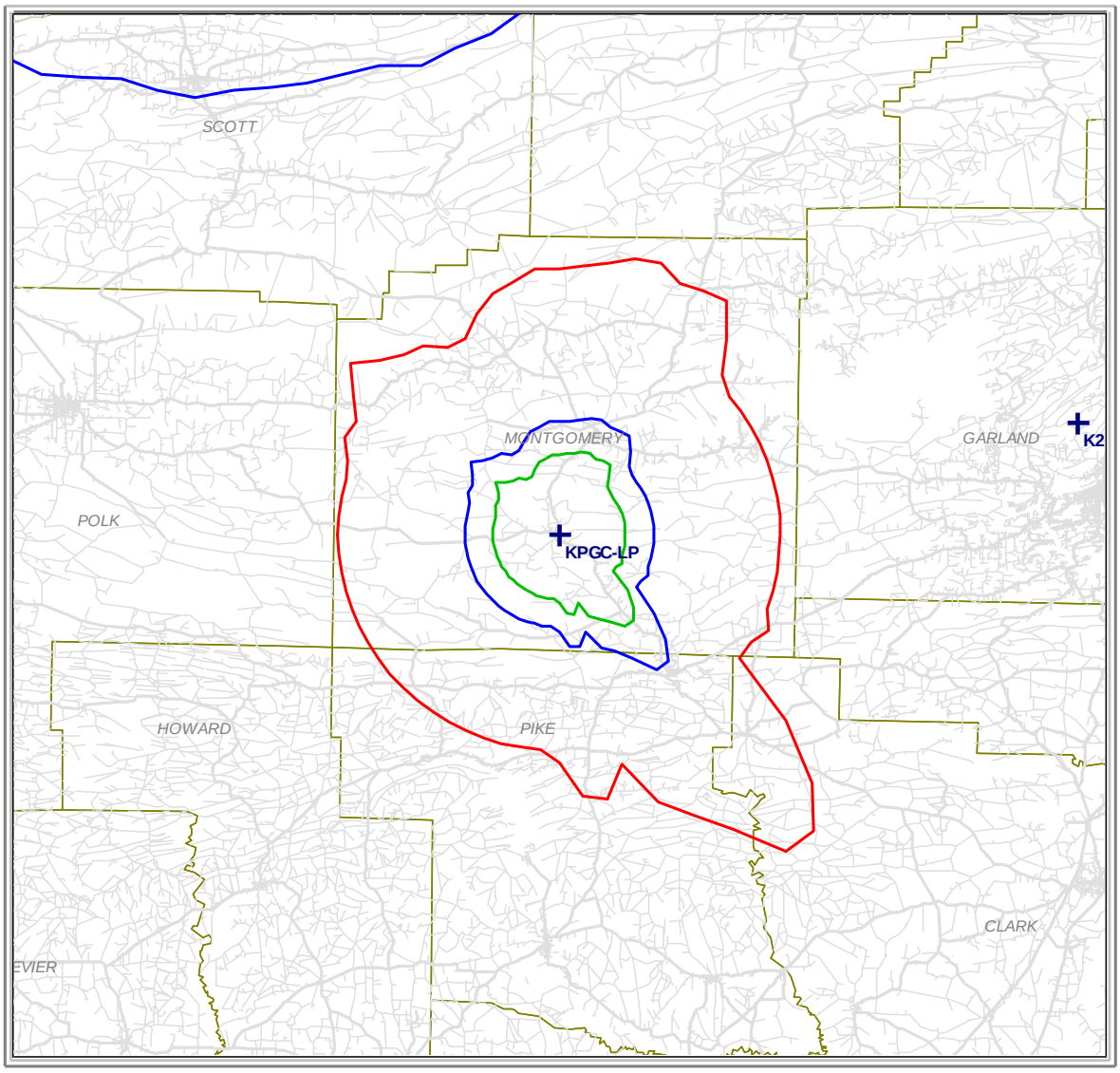
FOOTHILL LPFM STATION				Peak lobe and heading		ERP	FULL POWER STATION			LP HAAT		See
Facility ID	Callsign	Community				w	Callsign	Dist	Bear.	to full	Overlap?	Note
195110	KHRA-LP	ANCHORAGE	AK	17.518	295	250	(NONE)				None	
197253	KXTW-LP	GLOBE	AZ	15.716	336	250	(NONE)				None	
191771	KZRJ-LP	JEROME	AZ	21.947	95	250	KXQQ-FM	297.9	299	<30	None	
194120	KUOS-LP	SEDONA	AZ	12.834	222	250	KZUA	152.4	87	<30	None	
195535	KXWR-LP	TSAILE	AZ	14.986	338	250	KZUA	173.6	209	<30	None	
193468	KOYT-LP	ANZA	CA	14.070	240	250	KAMP	145.8	301	<30	None	1
193717	KSVB-LP	BIG BEAR CITY	CA	20.728	44	250	KMYI	160.1	193	<30	None	
							KISV	216.8	308	<30	None	
193597	KVBB-LP	BIG BEAR LAKE	CA	18.513	9	250	KMYT	89.6	198	-63	None	
194173	KFZR-LP	FRAZIER PARK	CA	23.213	6	250	KZOZ	167.9	291	<30	None	
193012	KEPT-LP	HAYWARD	CA	12.902	182	250	KWAV	121	164	145.2	YES	
							KSEG	126.1	20	<30	None	
195075	KRYZ-LP	MARIPOSA	CA	14.551	199	145	KRXQ	163.4	323	<30	None	
							KDFO	232.5	159	244.4	None	
							KUFX	178.2	261	213.6	None	
124869	KMSJ-LP	MT. SHASTA	CA	14.387	163	250	KOOZ	246.4	319	<30	None	2
							KLGE	188.7	243	<30	None	
192537	KOLS-LP	OAKHURST	CA	20.494	247	250	KRXQ	190.2	317	<30	None	
							KDFO	214.6	167	92.3	None	
							KUFX	207.7	265	300.4	None	
192696	KCPK-LP	PINE MTN. CLUB	CA	12.726	355	16	KMVE	135.2	73	145.6	None	
197037	KWRS-LP	REDLANDS	CA	22.321	283	250	KIXW-FM	91.7	358	<30	None	2
193635	KQBM-LP	WEST POINT	CA	20.659	238	250	KODS	115.6	29	<30	None	
							KOSF	185.1	245	320.6	None	
195813	KQLH-LP	YUCAIPA	CA	22.400	283	250	(NONE)				YES	3
131652	KLEV-LP	LEADVILLE	CO	13.952	189	250	KBPL	135.8	114	<30	None	
							KBPI	206.2	27	<30	None	
							KBKL	213	265	<30	None	
131946	KLNX-LP	MINTURN	CO	19.634	275	75	KBPL	168.8	126	<30	None	
							KBPI	175.7	37	<30	None	
							KBKL	208.2	253	<30	None	
131909	KURA-LP	OURAY	CO	27.039	331	250	KKMG	257.8	71	<30	None	
192387	KNKR-LP	HAWI	HI	13.907	58	250	(NONE)					
132082	KIHL-LP	HILO	HI	17.129	79	250	(NONE)					

197667	KFIP-LP	KAILUA-KONA	HI	21.148	265	250	(NONE)					
194958	KONA-LP	KAILUA-KONA	HI	18.974	260	250	(NONE)					
132207	KMEI-LP	KAMIAH	ID	15.301	311	250	KKRS	210.6	317	88.6	None	
135715	KMEA-LP	BOZEMAN	MT	14.612	326	250	(NONE)					
133299	KQOV-LP	BUTTE	MT	16.862	255	250	KHGC	75.6	39	<30	None	
							KBBZ	309.1	334	<30	None	
134669	KEAJ-LP	CELL SITE	MT	17.944	17	250	KLSK	116.2	34	113.1	YES	4
134971	KTGC-LP	ST. REGIS	MT	15.165	138	250	(NONE)					
126146	WJSK-LP	BARTLETT	NH	14.877	145	250	WGIR-FM	130.4	193	-104.9	None	
134657	KEDU-LP	RUIDOSO	NM	14.763	95	160	(NONE)					
132393	WMUD-LP	MORIAH	NY	15.954	88	250	WKVB	239.3	142	198.5	None	
							WKVU	167.9	234	<30	None	
194152	WQKA-LP	PULTENEY	NY	12.709	207	125	WBUF	150.8	289	<30	None	
							WMGS	181.7	145	37	None	
196489	WOOG-LP	TROY	NY	12.923	289	250	WXUR	142	291	156.8	None	
							WRRV	156.1	208	65.2	None	
135682	KJCR-LP	GRANTS PASS	OR	13.399	331	250	KKLC	209.7	142	80.8	None	
							KHPE	249.3	2	86.9	None	
135568	KSPL-LP	JOHN DAY	OR	17.229	257	250	(NONE)					
195104	WJFS-LP	GATLINBURG	TN	15.457	317	250	WLJA-FM	160.9	217	<30	None	
							WSGS	162.8	9	212.4	None	
							WROQ	163.5	138	<30	None	
195270	WJQJ-LP	GATLINBURG	TN	18.227	350	250	WHAY	148.7	324	266.4	None	
							WMTY	85.9	262	<30	None	
197599	KCVD-LP	CASTLE VALLEY	UT	19.719	305	250	(NONE)					
192651	KVWJ-LP	HYRUM	UT	12.952	329	250	KENZ	149.6	184	-64	None	
							KPKY	150.6	337	155.5	None	
123728	KAAJ-LP	MONTICELLO	UT	16.223	150	250	(NONE)					
196496	KIEV-LP	CAMAS	WA	14.908	152	250	KYTE	131.9	224	192.8	YES	
192799	KORE-LP	ENTIAT	WA	16.298	206	250	KUJ-FM	191.6	155	<30	None	
135319	KWJD-LP	ONALASKA	WA	14.409	208	250	(NONE)				None	
134798	KGTC-LP	OROVILLE	WA	17.859	172	250	(NONE)				None	5
135216	KETL-LP	REPUBLIC	WA	14.933	4	250	(NONE)				None	6
135720	KWEW-LP	WENATCHEE	WA	17.937	29	250	KRCW	113	136	78.3	None	
192469	KJHS-LP	WENATCHEE	WA	20.053	356	250	KNDD	127.6	276	<30	None	7
195791	KEFA-LP	WENATCHEE	WA	20.155	356	250	KYKV	82.9	185	<30	None	7
194424	KOFR-LP	LANDER	WY	13.896	56	250	KQEO	270.6	284	<30	None	
							KEGH	285	221	<30	None	
							KWHO	194.4	359	90.2	None	

1	Strip zone station, grandfathered class B away from Mexico. Contours do not overlap even with incumbent at super-power.
2	Based on full-power's CP facility.
3	At LP100 inside KRRL interfering contour both superpower and class maximum. LP250 will increase overlap.
4	Slight overlap over rugged terrain. No indication of occupied structures.
5	34 dBu contour well into Canada. Would need a directional antenna to the south in order to meet international agreements.
6	34 dBu contour extends 64.6 km and extends into Canada. DA or reduced power to reduce contour towards Canada.
7	34 dBu contour exceeds 60 km but does not cross into Canada.

REC Networks 202 621-2355 Tuesday, May 26, 2020

APPENDIX H-1: KPGC-LP



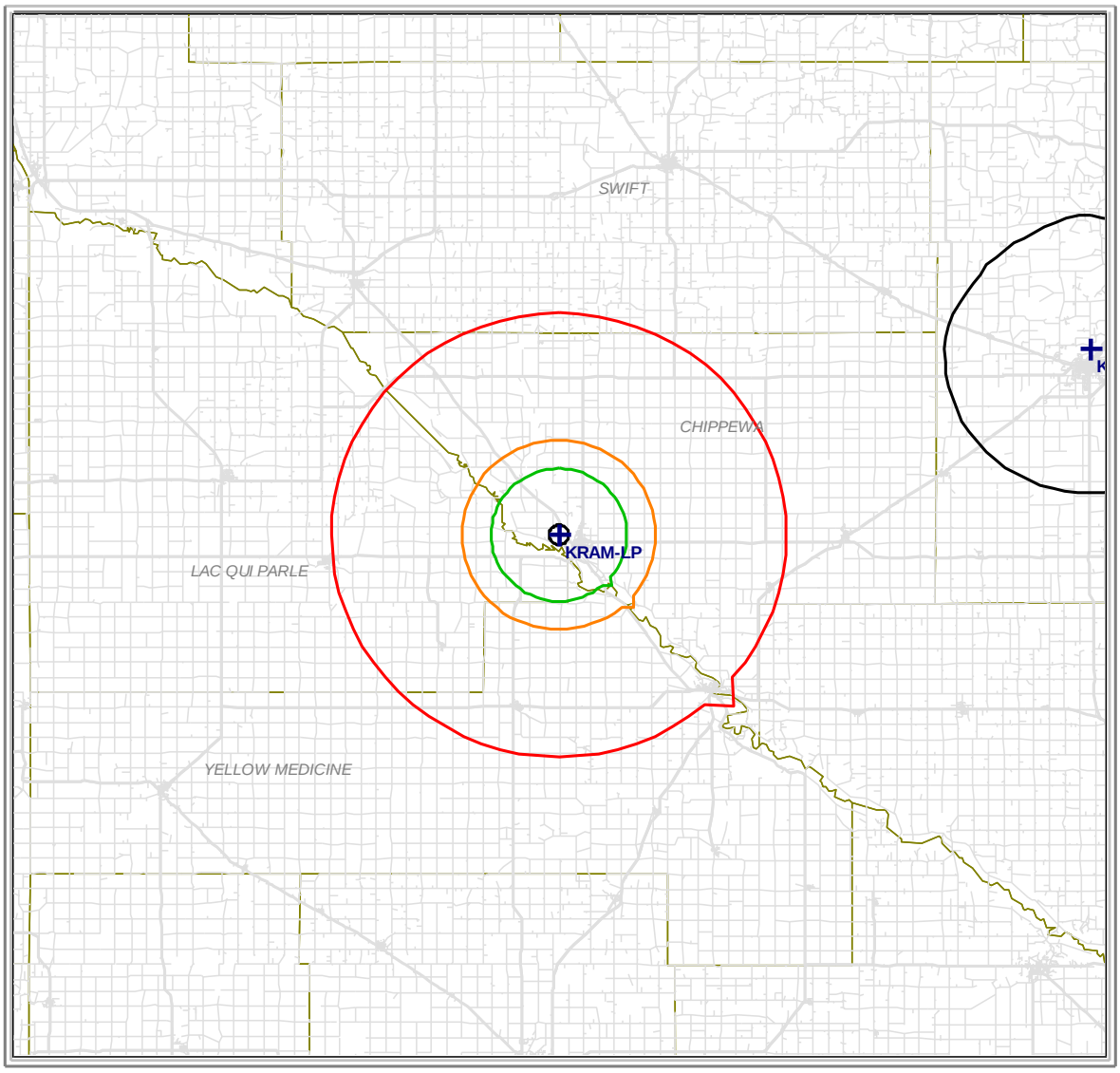
95.1 - 225W @ 32m HAAT

Map Scale: 1:601032 1 cm = 6.01 km V|H Size: 111.33 x 113.96 km

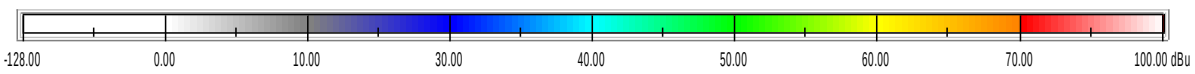
Red: Co-channel (40 dBu intefering to 60 dBu protected) Green: 60 dBu protected
Blue: First-adjacent (54 dBu interfering to 60 dBu protected)
Black: Second-adjacent (100 dBu interfering to 60 dBu protected)

REC Networks 202 621-2355 Tuesday, May 26, 2020

APPENDIX H-2: KRAM-LP



96.7 - 250W @ 14m HAAT

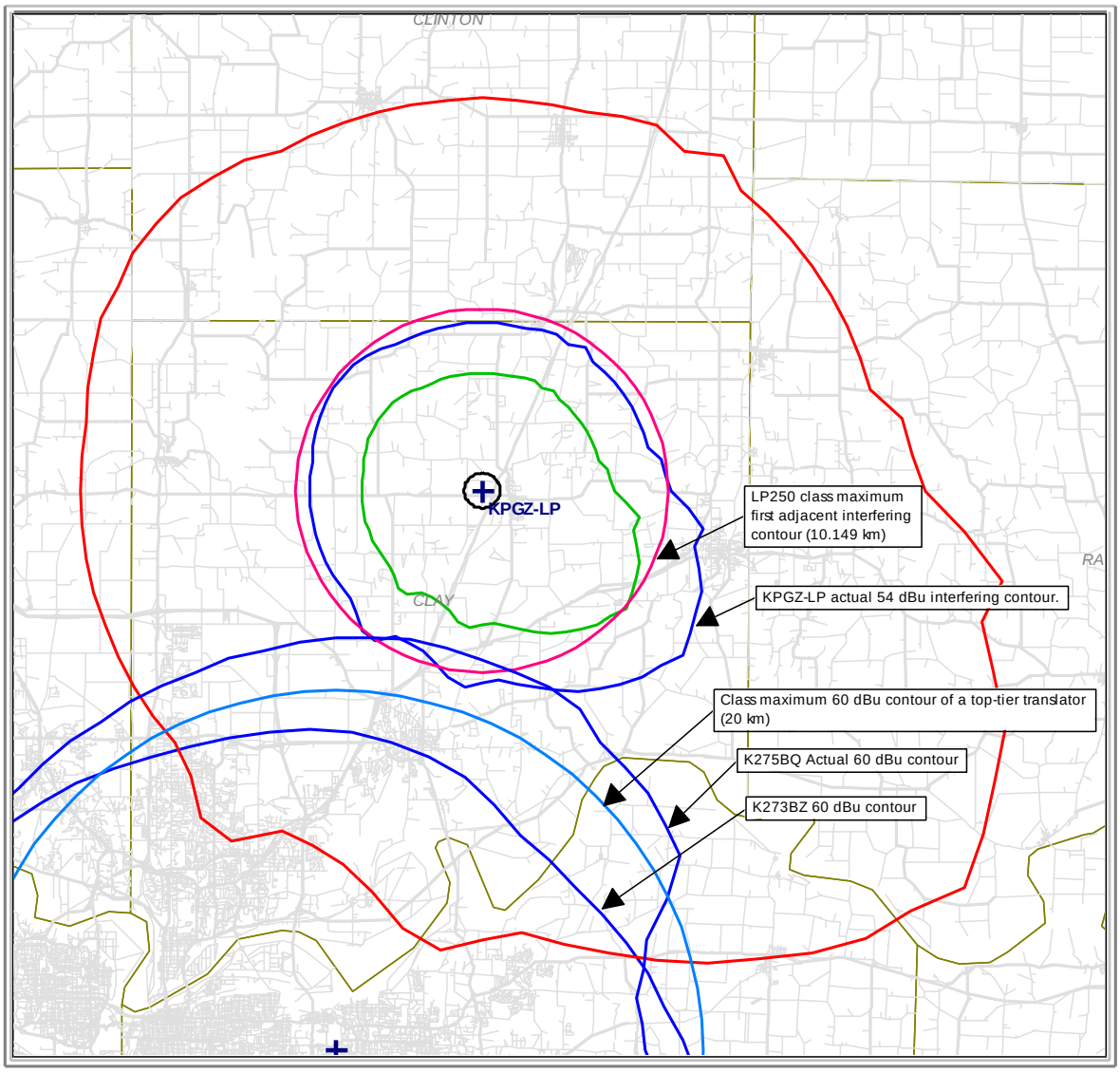


Map Scale: 1:601032 1 cm = 6.01 km V|H Size: 111.33 x 113.96 km

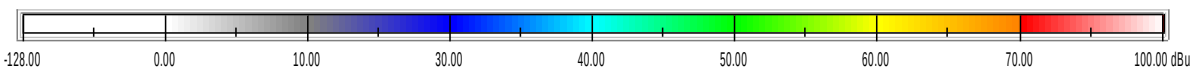
Red: Co-channel (40 dBu intefering to 60 dBu protected) Green: 60 dBu protected
Blue: First-adjacent (54 dBu interfering to 60 dBu protected)
Black: Second-adjacent (100 dBu interfering to 60 dBu protected)

REC Networks 202 621-2355 Tuesday, May 26, 2020

APPENDIX H-3: KPGZ-LP



102.7 - 180W @ 36m HAAT



Map Scale: 1:311801 1 cm = 3.12 km V|H Size: 57.75 x 59.12 km

Red: Co-channel (40 dBu intefering to 60 dBu protected) Green: 60 dBu protected
Blue: First-adjacent (54 dBu interfering to 60 dBu protected)
Black: Second-adjacent (100 dBu interfering to 60 dBu protected)

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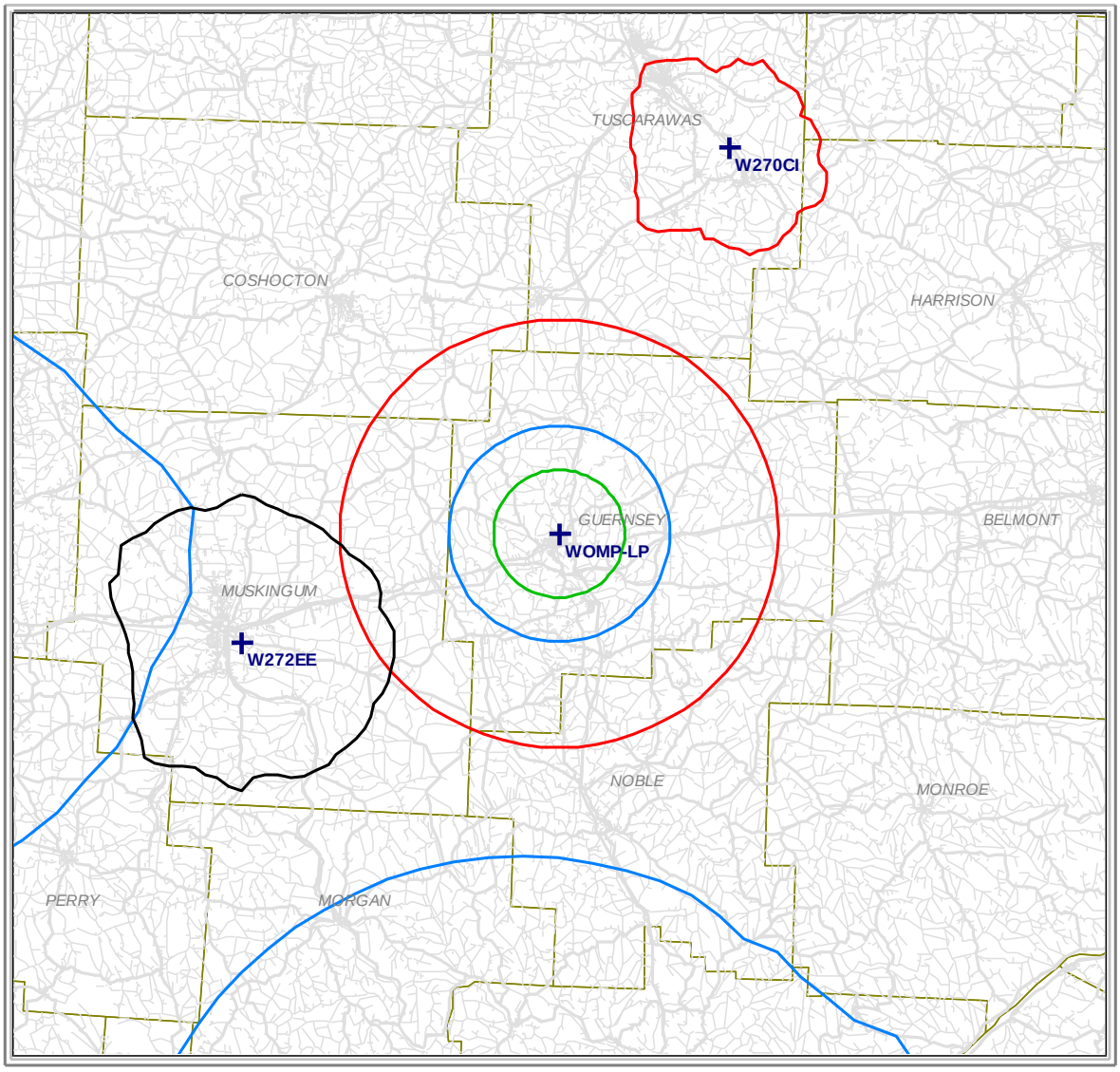
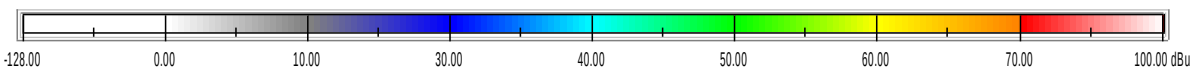
APPENDIX H-4: WOMP-LP



101.9 - 250W @ 2m HAAT



Map Scale: 1:623602 1 cm = 6.24 km V|H Size: 115.51 x 118.24 km

Red: Co-channel (40 dBu intefering to 60 dBu protected) Green: 60 dBu protected
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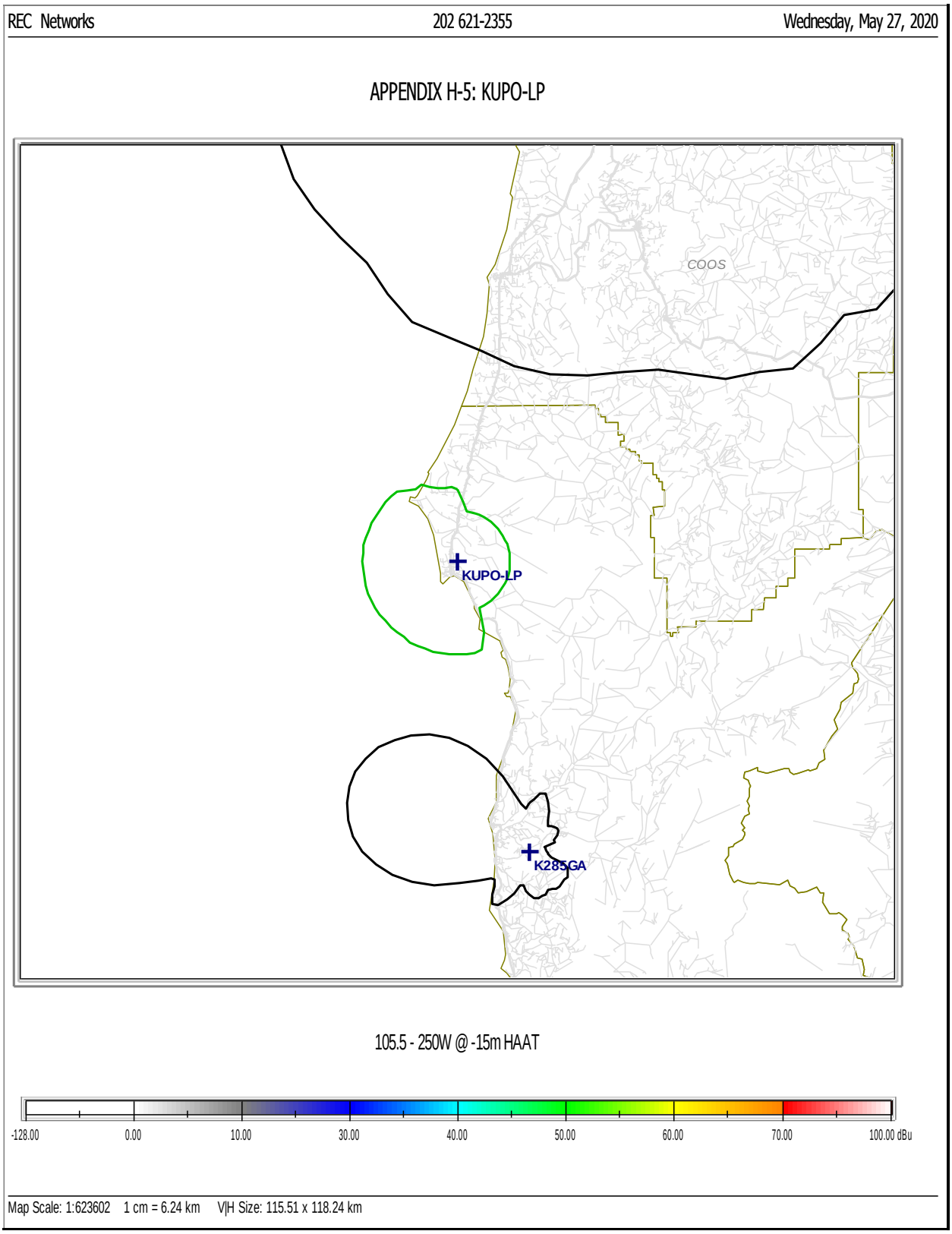
Black: Second-adjacent (100 dBu interfering to 60 dBu protected)



Green: 60 dBu protected
Black: Second-adjacent (100 dBu interfering to 60 dBu protected)

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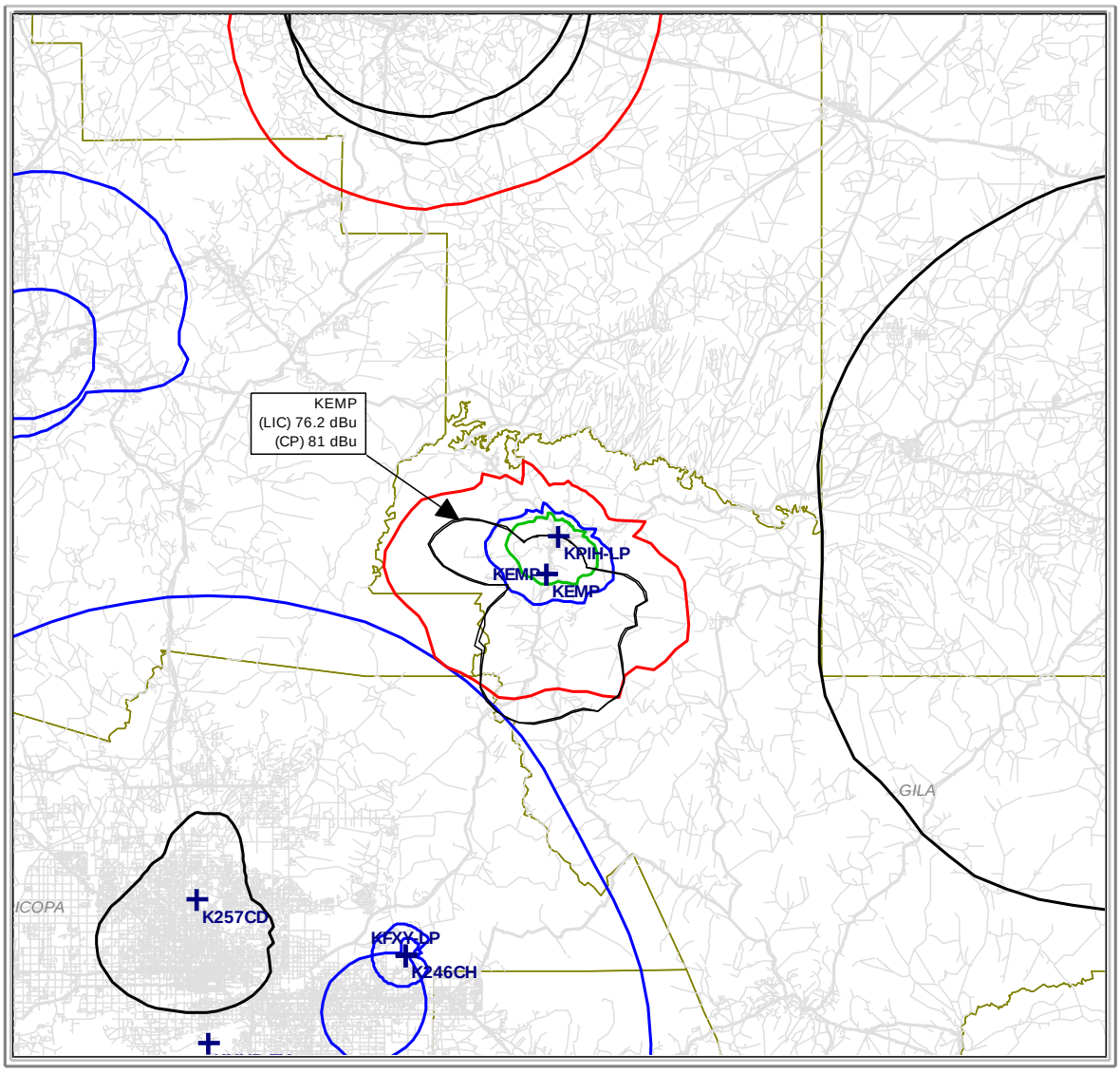
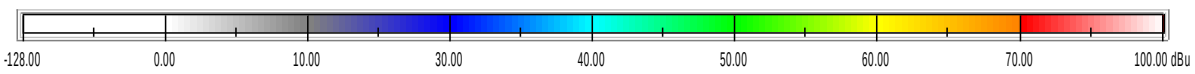
APPENDIX H-6: KPIH-LP



98.9 - 11W @ 147m HAAT



Map Scale: 1:1133401 1 cm = 11.33 km V|H Size: 209.93 x 214.90 km

Red: Co-channel (40 dBu intefering to 60 dBu protected) Green: 60 dBu protected
Blue: First-adjacent (54 dBu interfering to 60 dBu protected)
Black: Second-adjacent (100 dBu interfering to 60 dBu protected)

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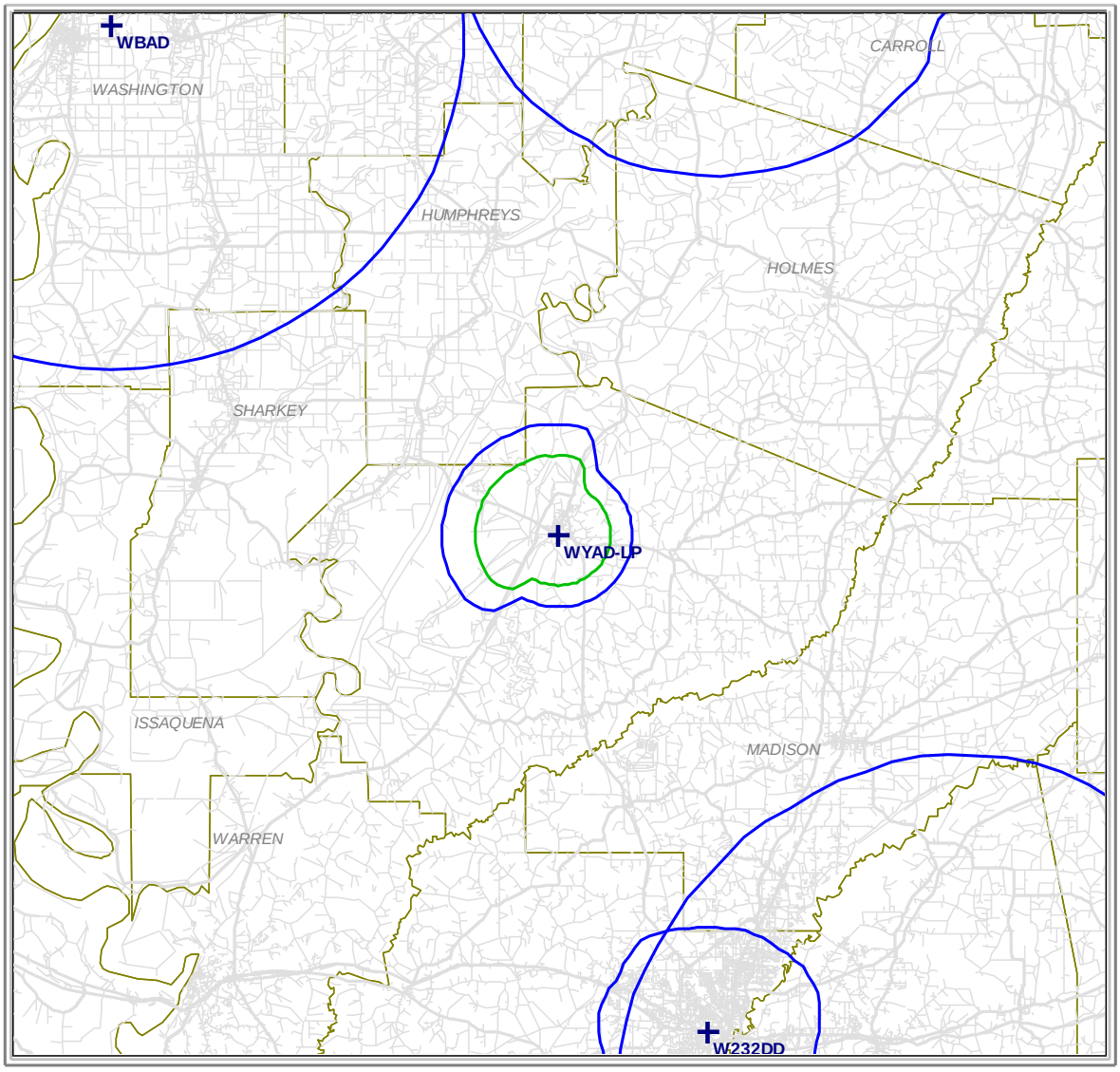
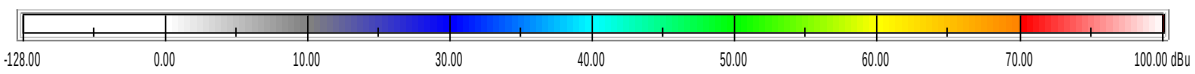
APPENDIX H-7: WYAD-LP



94.1 - 155W @ 40m HAAT



Map Scale: 1:700607 1 cm = 7.01 km V|H Size: 129.77 x 132.84 km

Red: Co-channel (40 dBu intefering to 60 dBu protected) Green: 60 dBu protected
Blue: First-adjacent (54 dBu interfering to 60 dBu protected)
Black: Second-adjacent (100 dBu interfering to 60 dBu protected)

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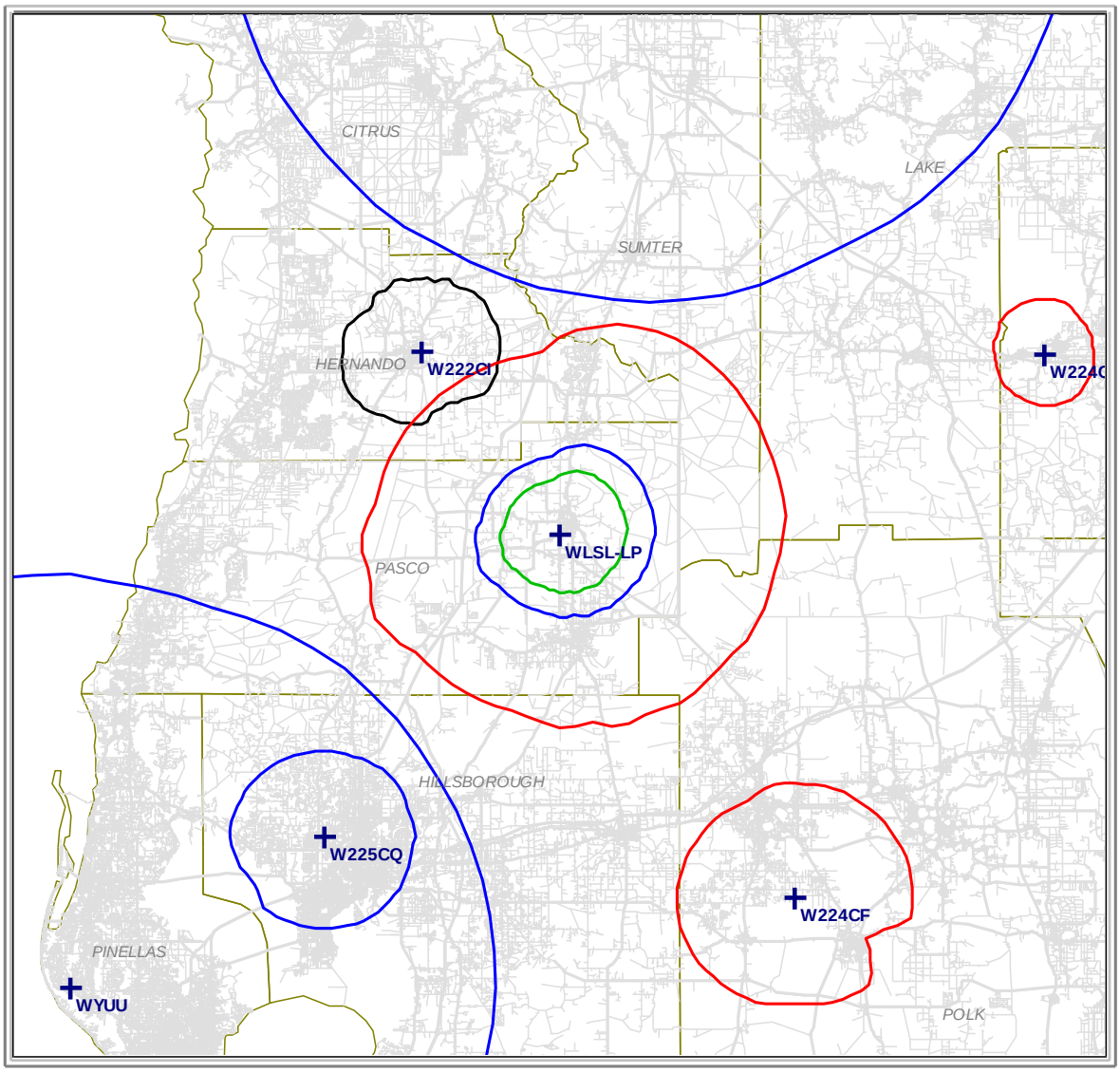
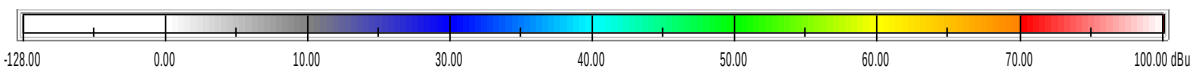
APPENDIX H-8: WLSL-LP



92.7 - 210W @ 33m HAAT



Map Scale: 1:700607 1 cm = 7.01 km V|H Size: 129.77 x 132.84 km

Red: Co-channel (40 dBu intefering to 60 dBu protected) Green: 60 dBu protected
Blue: First-adjacent (54 dBu interfering to 60 dBu protected)
Black: Second-adjacent (100 dBu interfering to 60 dBu protected)

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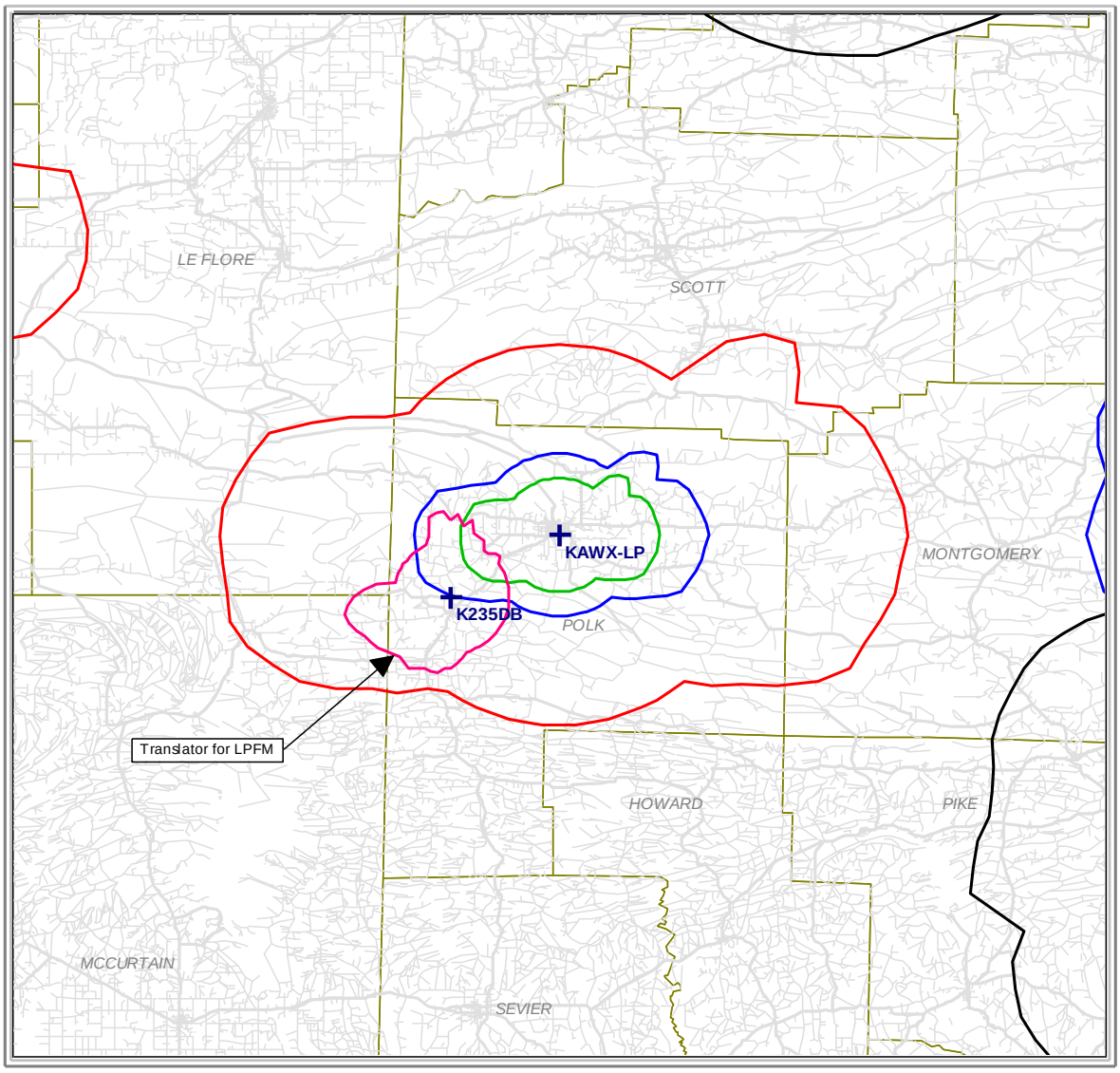
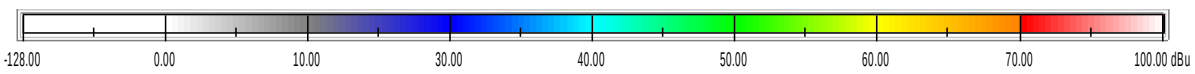
APPENDIX H-9: KAWX-LP



93.1 - 250W @ 30m HAAT



Map Scale: 1:700607 1 cm = 7.01 km V|H Size: 129.77 x 132.84 km

Red: Co-channel (40 dBu intefering to 60 dBu protected) Green: 60 dBu protected
Blue: First-adjacent (54 dBu interfering to 60 dBu protected)
Black: Second-adjacent (100 dBu interfering to 60 dBu protected)

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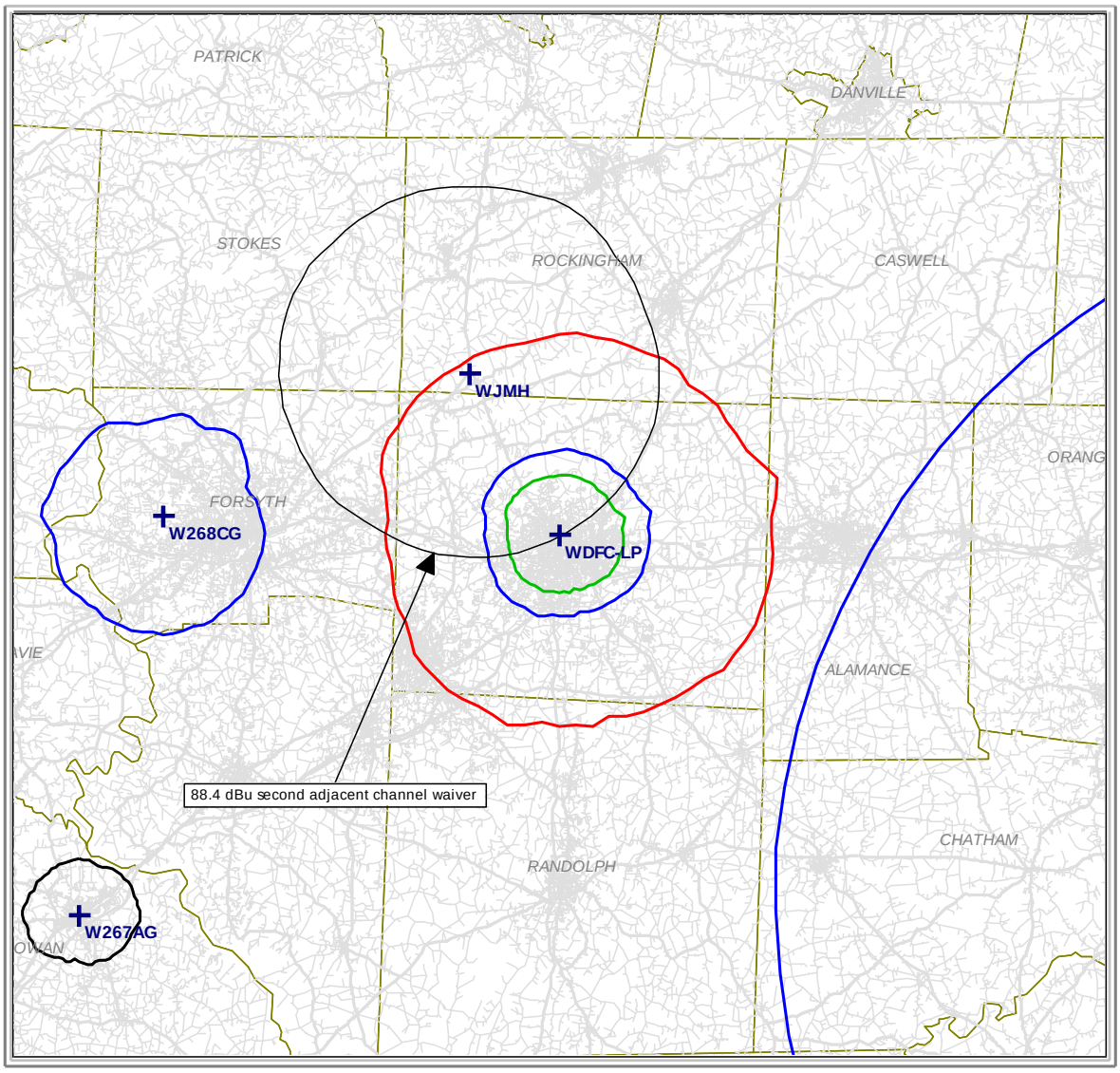
APPENDIX H-10: WDFC-LP



Red: Co-channel (40 dBu intefering to 60 dBu protected) Green: 60 dBu protected
Blue: First-adjacent (54 dBu interfering to 60 dBu protected)
Black: Second-adjacent (100 dBu interfering to 60 dBu protected)

APPENDIX I

LPFM STATION TESTIMONIALS

The following are statements that were solicited by REC Networks in support of growing the LPFM service. These includes emails directly to REC as well as surveys filled out by stations at our request. We hope that these testimonials, especially for those from rural LPFM stations will show the public interest need for LP250. We are limiting this only to stations that have been identified as those that can upgrade to LP250 on either their same channel, to an adjacent channel as a minor change or to a non-adjacent channel as a major change (or reduction in interference showing).

WOMP-LP – Cambridge, Ohio
(Can upgrade on the same channel)

This is my view of what WOMP LPFM could do a better job of if we had more power and were able to reach more of our county. Our station was developed to serve the low-income residents of Guernsey County, Ohio. We started this endeavor in 1978 and was not able to accomplish it. Thanks to low-power radio we were able to get on the air. Our median income is $24,000 per year. Household median income is $37,000. Senior citizens live on an average of $900 per month. I have spent over 50 years working to better their life with services. I was Executive Director of a Regional Development District working with the Appalachian Regional Commission. That said, if we had more power, we could get to the people that live beyond our six-mile broadcast area. As you go east and south, there are very few, if any communication services available. They can receive some other stations, but they do not program for this group. They have no disposable income. A one-minute bulletin board feature will not do it. With more power we could reach them. They could find out about produce giveaways and basic food distributions. To accomplish this, you have to pound away at it all day and everyday. It can't be a short 10-second announcement. They can't get internet and TV. The nearest TV tower is 80 miles away. They can not afford cable or internet. Their only possible source is radio. Only an LPFM can afford the privilege of offering the information they need. We do that with a music format that identifies with their age group. We worked with SEAT Transportation last year and ran two announcements an hour for several months and as a result, their ridership increased by 45%. I was told by my listeners that they did not know that the transportation service was available. One gentleman is blind, and radio is his only source of information. We have hospice patients that will not allow their caregivers to turn off the radio because it takes them back to a time when things were not so bad. I can go on and on. The bottom line here is I want to do this for the folks in the entire county. That is what LPFM is all about. Give us and the residents the opportunity to have this info available through an uncomplicated and reasonable source. Radio.

KUPO-LP – Port Orford, Oregon
(Can upgrade on the same channel)

Local services include 1 Dollar General, 1 grocery store, 1 gas station, 1 medical clinic, 1 bank, a dozen or so restaurants, 1 convenience store, 1 low power FM radio station, 2 TV translators, 2 schools in the school district, very small police department with 18 hrs per/day coverage, volunteer fire department, 1 museum, 1 public library, primary industry is a small fishing fleet. Hospital 25 miles away. Nearest towns are 25 miles away; community is isolated. Community is primarily inhabited by people age 50 and older. The nearest population cluster would be approx. 11 air miles to the north in Langlois, Oregon. The area is

known for commercial crabbing and bottom fishing. We have frequent high wind events with winds in excess of 80 miles per hour and high waves in excess of 30 feet across the port pier. We have annual flooding in coastal streams across Highway 101. Every couple of years, the major highway suffers a major landslide into the ocean. The area has had several major wildfires, destroying homes and businesses is the past several years. COVID-19 shut down near 99 percent of all services and businesses. KUPO-LP has developed a somewhat close relationship with the city government, local school district, the Senior Center, the public library, fire & police departments, and county emergency management. The station frequently communicates with all government stakeholders. We program to Port Orford, Oregon ONLY. We focus our music entertainment (Classic Hits from the 60's, 70's and 80's) and community information to the population ages 45+. We sponsor local events like a Community Christmas Party, Library events, Halloween for the kids, Classic Car Show, 4th of July events. We are hyper-local. The broadcast service area for KUPO-LP is 2 miles wide (Pacific Coastline) and 25 miles long with several mountain ridges running to the ocean. The proposed LP250 Class would enable KUPO-LP to better fill signal shadow areas, extend coverage to areas that currently have no local broadcast services at all and provide significantly better building penetration within our local community. Port Orford, Oregon has only one transportation artery in and out of the community, US Highway 101. Any disruption in the highway cuts the community off from the rest of the world. Events like severe storms off the Pacific Ocean and large wildfires make the radio station extremely important. KUPO-LP has taken years to develop community relationships based on our willingness and ability to serve the needs of the people in our city of license. Our "area of Influence" has no other local radio stations.

<u>KPIH-LP – Payson, Arizona</u>
(Upgrade may be possible with a second-adjacent waiver with an interfering contour of 116.2 dBu. Due to HAAT, LP250 ERP would be 11 watts. They are currently 4 watts ERP).

Our town has a population close to 16,000. We're the largest town in our county so smaller communities close by generally come here to shop. We have three large grocery stores and a couple of pharmacies. There are two big-box stores here - Walmart and Home Depot. We even have a small but fairly heavily used airport as well as an air park community. Golfing is big in Arizona and Payson has two world-class golf course communities. Because we are somewhat of a tourist town, we have no lack of fast food restaurants and other local and chain restaurants. We are lucky to have full time police and fire departments as well as a full school system and even a community college. The town is made up of a combination of low income, middle income and retired people. There are a couple of small communities that depend on Payson which are 13 to 15 miles away. In addition, there are small communities, or sub-divisions in the forest that are anywhere up to 15 miles or more from the town's center. Payson is known for mainly recreation and tourism, but we do have some manufacturing in the area. Being surrounded by a forest, we are always concerned about forest fires. In fact, our airport is used as a base for the Forest Service "Hot Shot" firefighting squad that is activated in late spring through the end of summer. Floods can also occur during monsoon season. The station forwards any alerts received from the state or county. Until recently we didn't have the capability to go live, but now if there's an emergency in town, we can. Being a Catholic (religious) station, we mainly carry programming from the two networks we are affiliated with. We have to form a strong relationship with our local public service agencies. Our town has a number of LPFMs - I think the total is three or four. We also have one full power AM station that simulcasts on a full power FM station. We can pick up some stations from the Phoenix area but reception, due to the mountains, isn't all that good. I'm not aware of any NPR programming that we can receive here. In addition to our network programming, we produce three local programs - two of them Christian music related and one is mainly talk oriented with interviews. Due to the mountains here in town, even though our antenna is on the tallest water tower in the area, I can't pick up our station in my house due to line-of-sight blockage from another mountain that has a water tower on it. Distance from my house to our transmitter, as the crow flies, is only about 2 to 2 1/2 miles, but that huge steel tank just wipes out our

signal. Many other people in town have trouble picking up our signal in their houses even though they easily can in their cars. We are licensed for 4 watts ERP. An increase in power would certainly help penetration in our hilly town.

WYAD-LP – Yazoo City, MS
(Upgrade possible on same channel. Due to HAAT, LP250 power is 155 watts ERP)

WYAD shares knowledge on issues like education, home ownership, good health, parenting and inspirational music to our low-income community. We cover all community announcements and school sports. We are a small town in Mississippi with a 85% minority population. Our city is in the largest county in our state and we cannot reach all of the county that we desperately need to help. Our area is famous for farming, catfish and cotton. In our area, we get tornadoes, floods, pipeline incidents, hurricanes and fires. Our station uses all of our resources to inform and direct our citizens. We use our EAS system in addition. Our station has an excellent relationship with our first responder agencies. We help our listeners to live better and have a better quality of life. We talk about parenting, good health, education and better housing. We desperately need to at least serve more people in our rural County.

WLSL-LP – Saint Leo, Florida
(Upgrade possible on same channel. Due to HAAT, LP250 power is 210 watts ERP)

Dade City has a population of about 6,000 persons. Most of the businesses in the Saint Leo/Dade City area are small businesses. The Town of Saint Leo is served by the Pasco County Fire and Sheriffs Office. Saint Leo is also host to Saint Leo University the station's licensee. Dade City is served by the Dade City Police Department. The area is known for citrus and cattle. We have a working relationship with the District School Board of Pasco County. They allow us to operate from Pasco High School at virtually no charge in exchange for working with middle school students and exposing them to radio. Most of the full power stations are advertising buckets for Tampa/ Saint Petersburg. WMNF 88.5 in Tampa is community station that serves the Tampa area well. WUSF 89.7 is an NPR affiliate. We pull down programming from radio4all as well as Democracy Now! live at 8am ET. This supplements student run programming. Our automated music mix when no other programming is scheduled. The mix is VERY eclectic and we routing receive compliments from the public on social media. Our news programming is very wide-range as well. The biggest thing is building penetration. Even though much of Saint Leo/Dade City is in the 60 dBuV contour, there are still many noisy areas. The building I am in is concrete block. I am in the contour but cannot receive our signal which is about 3 radio miles away on a portable radio. However, when I step outside it full quieting. Also the relocation of a translator on the same frequency has degrogated our signal to the south of us.

KAWX – Mena, Arkansas
(Upgrade possible on same channel. Short-spaced second adjacent channel station placing an 88.4 dBu service contour at LPFM site)

Our LPFM is is a town of 5,000 with a Walmart, Dollar General, 4 banks, a few local stores including one full service grocery store. We have a translator in a smaller community to our south that serves two small towns of less than 500 each and the rural areas near and between the two. The smaller town only have a few retail businesses, like a community store / gas station. There are several clusters of people in unincorporated communities near us, as well as a lot of sparsely populated areas in the area. Our area is known for poultry and other agriculture, outdoor recreation, and our industry is automotive and aviation mainly. The area is prone to forest fires (we are in the Ouachita National Forest), tornadoes, floods, ice storms. We have a very good working relationship with local law enforcement, fire departments, emergency managers and other elected officials. Our founder-manager-CEO-engineer is a Justice of the

Peace and member of the Quorum Court, as well as the ARRL Emergency Coordinator for the county. The other FMs are not locally owned. One is sports and have no office or studio withing 75 miles. The others are almost completely automated with less and less local programming. NPR is not easy to get at all, but there is a translator here for the University of Arkansas public station over 100 miles away and there is nothing local for this area. There is another Christian group (Moody) with a translator, but nothing local on it. We do local weather, have local church services on the air, provide free community news and announcements, have all NWS warnings interrupt our programming via our EAS system, and partner with the local school system to provide airtime and support on our website for them as well. Our local weather coverage is probably our main thing that makes us "stand out". Since increasing to 250 Watts would significantly boost our potential audience, and since we are in an area of the country that gets a lot of sever weather (we are in Tornado Alley), being able to increase power could literally save lives! Internet in rural areas like ours is not great, TV reception is bad, especially since the digital conversion, so radio is still needed for severe weather warnings and coverage. There are large areas of our county and neighboring counties with no cell service.