



REC Simple250 LP-250 Foothill Effect Report

Part 1:

Introduction and Recommendations

LPFM Contour Maps (Alaska ~ Massachusetts)

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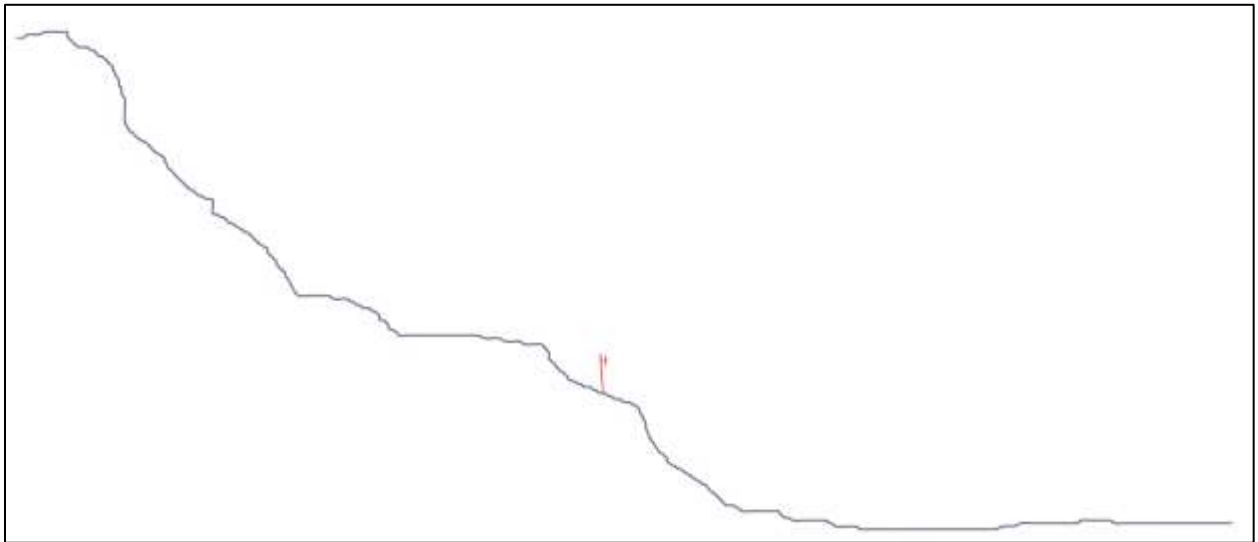
<https://check.LP250.com>



Introduction

In this document, we look at a subset of 110 licensed LPFM facilities. These LPFM facilities have been identified as being able to upgrade on channel either with or without a new second-adjacent channel waiver request and, as an LP-100 has a 60 dBu service contour that extends out at least 10.161 kilometers in any of 360 different directions. This addresses a phenomena that REC refers to as Foothill Effect.

What is “Foothill Effect”?



A very basic drawing showing Foothill Effect. The terrain “behind” the antenna (shown in red) is much higher, while the terrain “in front” of the antenna is much lower, thus resulting in a low HAAT.

Foothill Effect, frequently misidentified as “*foothills effect*”, refers to an LPFM or commercial FM broadcast station’s service contour when the station is situated at a location that has a tall mountain range “behind” it and lower elevation in “front” of it. Because of how height above average terrain (HAAT) is calculated, the higher points and the lower points will average out to make a low HAAT calculation.



KXWR-LP, located in a remote part of the Navajo Nation in Arizona is such a Foothill Effect station. While the station is at minus 31 meters above average terrain, this is how that figure averages out:

0 degrees = plus 125.8m
 45 degrees = minus 386 meters
 90 degrees = minus 284 meters
 135 degrees = minus 36.9 meters
 180 degrees = minus 28.2 meters
 225 degrees = plus 22.6 meters
 270 meters = plus 125.1 meters
 315 meters = plus 197.1 meters
 $(125 - 386 - 284 - 36.9 - 28.2 + 22.6 + 125.1 + 197.1)/8 = -31$

FCC rules for both commercial FM and LPFM use the HAAT in order to determine the maximum effective radiated power (ERP) that a station can operate at based on a standard service contour size (such as 5.6 km for LPFM, 28.3 km for commercial Class A, etc.). Because at a lower HAAT, the ERP is higher, it can create a wider coverage area that extends the service contour well past the standard distance.

Increased risk for overlap with Foothill Effect

Because commercial FM and LPFM stations use distance measurements (as opposed to a contour overlap model) to separate from other stations, there are some situations where LPFM stations can overlap with other commercial or LPFM stations and likewise, commercial stations can overlap with other commercial stations.

REC is aware of cases where even at LP-100, there is some contour overlap between an LPFM station's interfering contour and the protected contour of a full-service station. We note that in many cases, the overlap exists because the non-LPFM station moves to a location that is within the LPFM station's interfering contour. This has been a significant trend among translators. For commercial stations, this is expected because of their primary status.

§73.209 does state that full-service stations are not protected from interference by commercial and NCE full-service stations as well as LPFM stations that were

allocated based on the distance separation rules. §73.809 permits LPFM stations to be displaced by subsequently filed commercial FM stations if there is co-channel or first-adjacent channel overlap between the interfering contour of an LPFM station and the full-service station's 70 dBu community coverage contour or in the community of license for reserved band noncommercial stations.

Foothill Effect in the full-service

Just as Foothill Effect exists in LPFM, it also exists in the full-service and substantial contour overlap does exist between stations. If we use the same “-10 dBu” criteria for Foothill Effect in full-service, we would consider those stations that have a peak lobe of their service contours going further than the following:

Station Class	Service contour	Foothill Effect distance
A	28.3	46.3
C3	39.1	59.2
Noncommercial B1	39.1	59.2
Puerto Rico A	41.7	62.5
Commercial B1	44.7	66.0
Puerto Rico B1	52.2	74.5
C2	52.2	74.5
Noncommercial B	52.2	74.5
Commercial B	65.1	88.6
C1	72.3	95.9
C0	83.4	107.2
Puerto Rico B	91.6	117.8
C	91.8	119.1

Some FM stations, especially in California were originally authorized prior to 1962 with facilities that exceed the service classes B and C that we know today. Those stations have been grandfathered at their higher powers, but for protection purposes, are considered operating the power necessary to make a class maximum facility. This means that some stations that are operating several kilowatts on Mount Wilson in Los Angeles would be remeasured at less than one kilowatt. As part of the *Order* that came out in 1962, these super-power FM stations can continue to operate, but they can't use their super-power to inhibit future FM services. Contours shown on our maps are based on their super-power. In the event of overlap, we will remeasure these facilities based on their class maximum ERP and include that information in the text that follows any contour maps that indicate overlap at LP250.

“Super-power” FM translators

In this document, we will discuss “super-power FM translators”. This is not an official terminology or definition at the FCC. There are three different levels of protection that an LPFM must give to a translator based on that translator’s service contour size (based on 8 radials). Those levels are:

- Less than 7.3 kilometers.
- At least 7.3 kilometers, but less than 13.3 kilometers.
- At least or more than 13.3 kilometers.

For the top tier, the distance separations are based on a translator with an average service contour of 20 kilometers. This means that if a translator has a larger contour (which many “fill-in” facilities do), the translator will only be protected by an LPFM as if it is a 20 kilometer service contour or the equivalent of 250 watts at 233 meters height above average terrain.

“Short-spaced” FM translators

This document may discuss what we call a “short-spaced FM translator”. Again, this is not any official terminology, definition or regulation at the FCC. It is just an indication that if the tables were turned and FM translators had to use distance separation to protect LPFM stations in the same way that LPFM stations protect translators (think of a true case of “equal in status”), this is what the distances would look like.

TOWARDS LP-100

Service Contour	Equivalent Facility	Co-Channel	First-Adjacent
		Minimum	Minimum
Less than 7.3	250w @ 32m HAAT	30	16
7.3 to 13.3	250w @ 107m HAAT	51	26
More than 13.3	250w @ 234m HAAT	67	35
More than 20	250w @ 529m HAAT	93	52
More than 30	250w @ 879m HAAT	111	66

TOWARDS LP-250

Service Contour	Equivalent Facility	Co-Channel	First-Adjacent
		Minimum	Minimum
Less than 7.3	250w @ 32m HAAT	32	18
7.3 to 13.3	250w @ 107m HAAT	53	27
More than 13.3	250w @ 234m HAAT	69	37
More than 20	250w @ 529m HAAT	95	54
More than 30	250w @ 879m HAAT	112	78

Individual LPFM station contour maps

Within this document we will include contour maps that show Foothill Effect LPFM stations that are able to upgrade on their current channel based on proposed distance separation rules and the impacts those upgrades will have to the protected contours of other stations. The contours will show co-channel and first-adjacent channel stations.

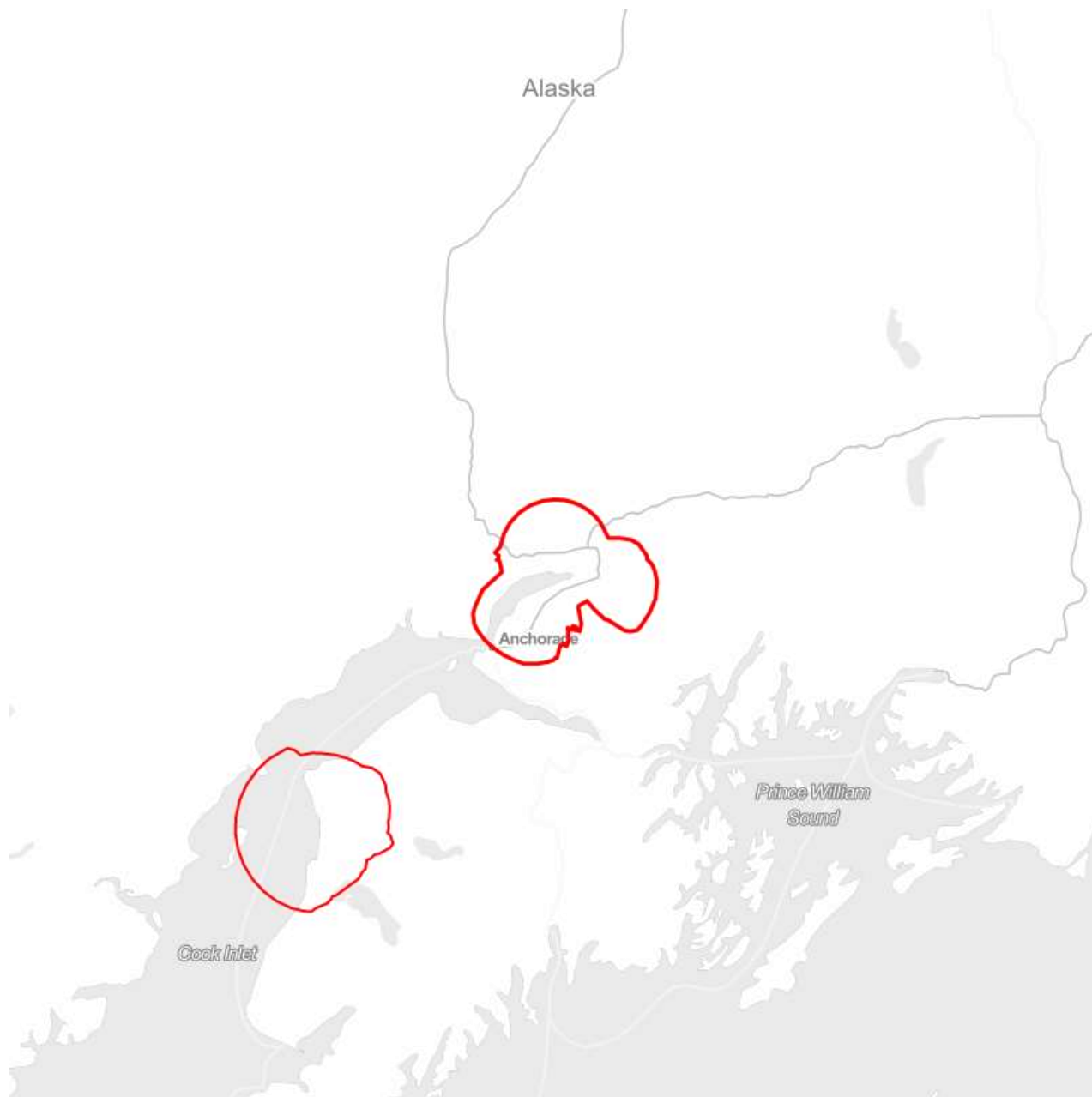
This document lists details for LPFM stations alphabetically by state from Alaska to Montana. See Part 2 for details from North Carolina to Wyoming.

On the maps, the thicker lines indicate the interfering contours of the LP250 facility while the thinner lines show the protected contours of other facilities. The curves are color coded based on their relationship and the class of the other station (as commercial Class B and B1 stations use different contours than other services). Overlap occurs when a thick curve overlaps a thin curve of the same color.

LPFM stations without individual maps

The following stations do not have any nearby co-channel or first-adjacent channel stations where protections would be an issue and therefore do not have an individual contour map:

- KHRA-LP (195110) Anchorage, AK
- KUYI-LP (194771) Upper Moencopi, AZ
- KKTT-LP (126278) Winnemucca, NV
- KJFP-LP (196386) Hot Springs, SD

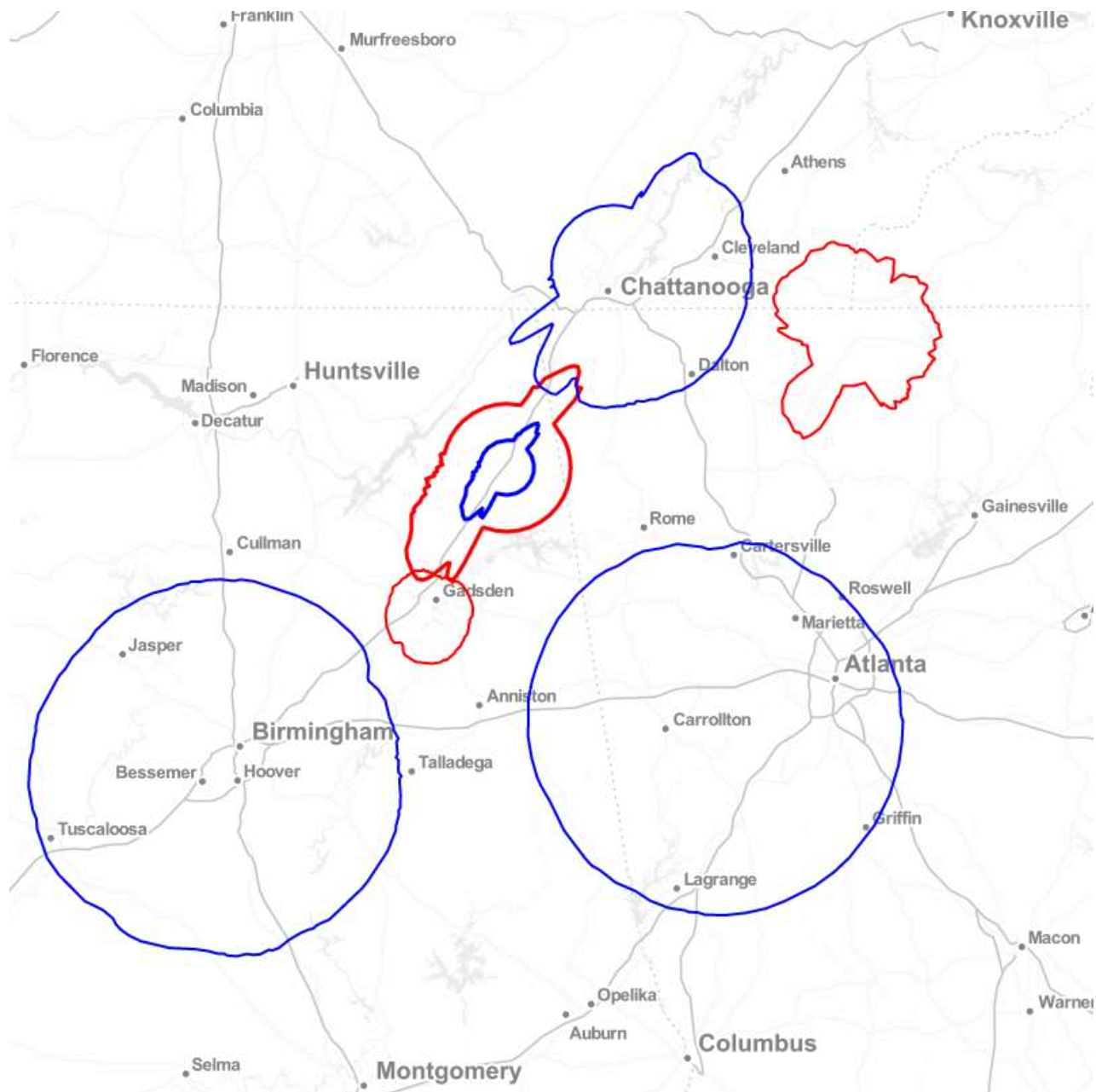


KEGR-LP (195927)

WASILLA AK

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
269	C3	KPEN-FM	SOLDOTNA AK	156.1	83

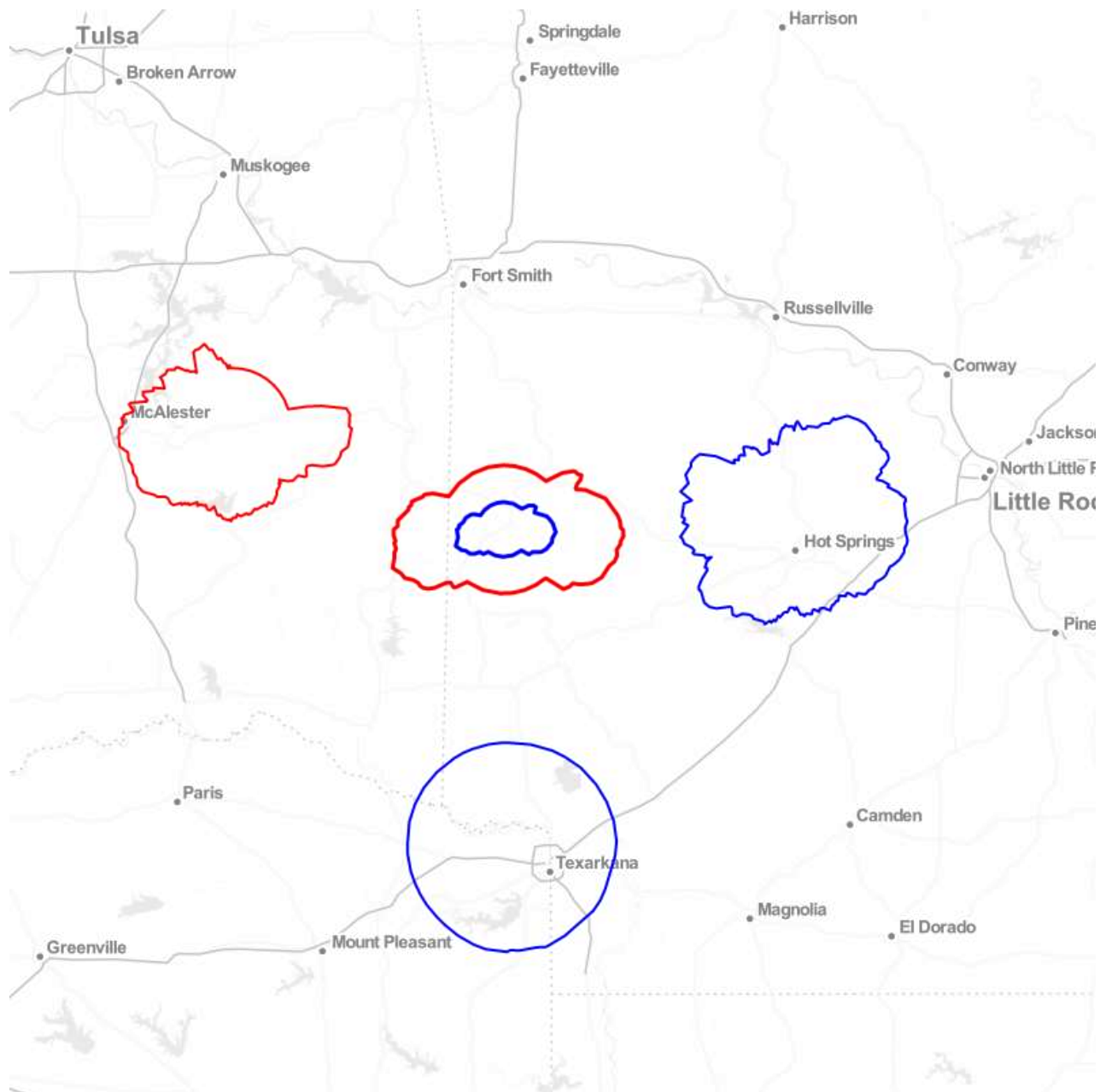


WFTP-LP (193761)

FORT PAYNE AL

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
279	C3	WKXJ	WALDEN TN	84	69
279	C1	WQEN	TRUSSVILLE AL	155.3	102
280	D	W280ER	GADSDEN AL	60.2	44
280	A	WPPL	BLUE RIDGE GA	135	72
281	C1	WALR-FM	PALMETTO GA	120.7	102

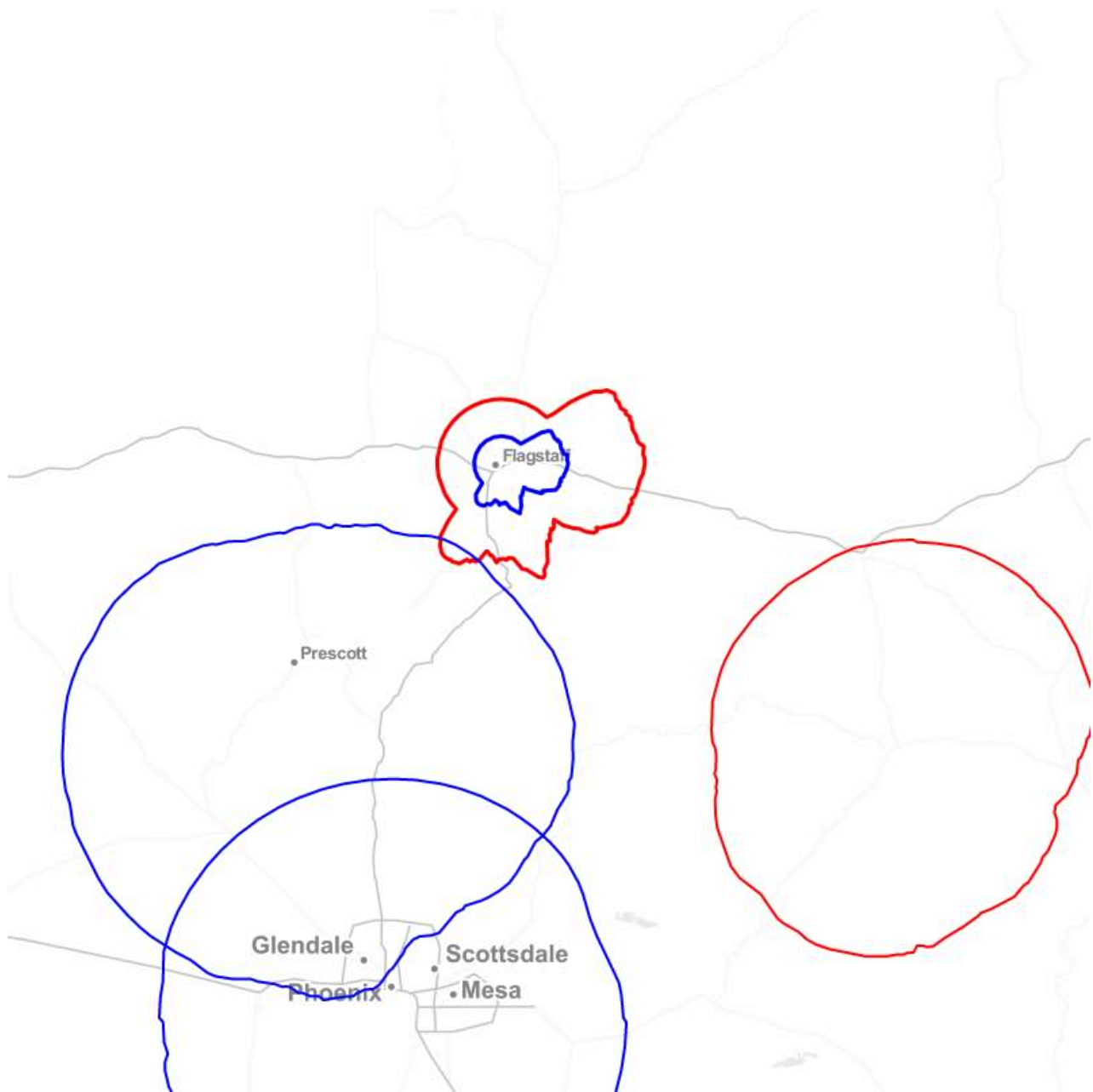


KAWX-LP (193104)

MENA AR

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
225	C3	KVRE	HOT SPRINGS VILLAGE AR	106.9	69
226	C3	KWLB	RED OAK OK	107.4	83
227	C3	KMJI	ASHDOWN AR	118.7	69

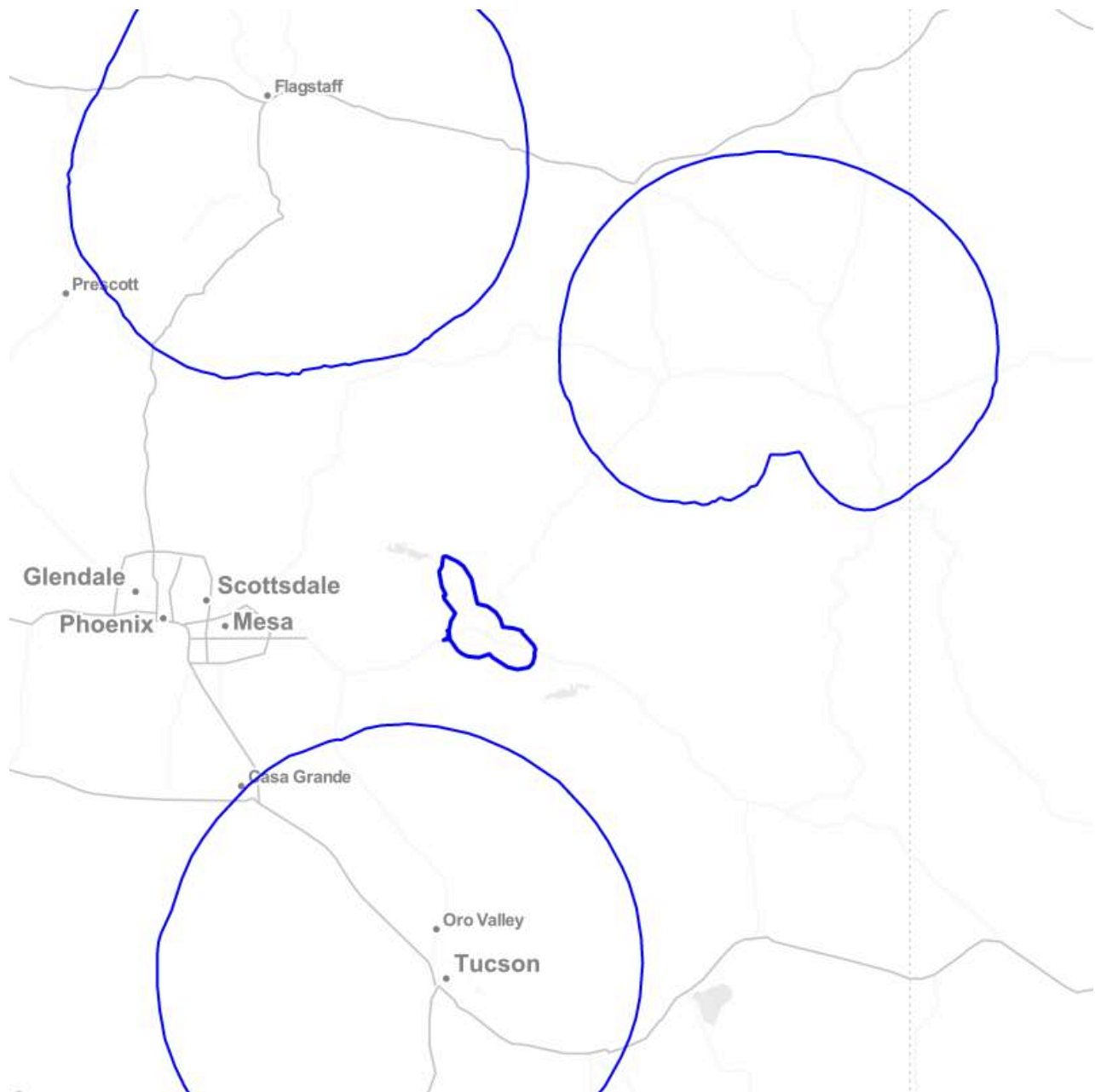


KXGC-LP (193872)

FLAGSTAFF AZ

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
252	C	KKFR	MAYER AZ	127.1	122
253	C0	KRFM	SHOW LOW AZ	189.9	127
254	C	KMVP-FM	PHOENIX AZ	211.3	122



KPMX-LP (197253)

GLOBE AZ

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
223	C1	KTHQ	EAGAR AZ	146.8	102
225	C	KHUD	TUCSON AZ	131.6	122
225	C	KAFF-FM	FLAGSTAFF AZ	185	122

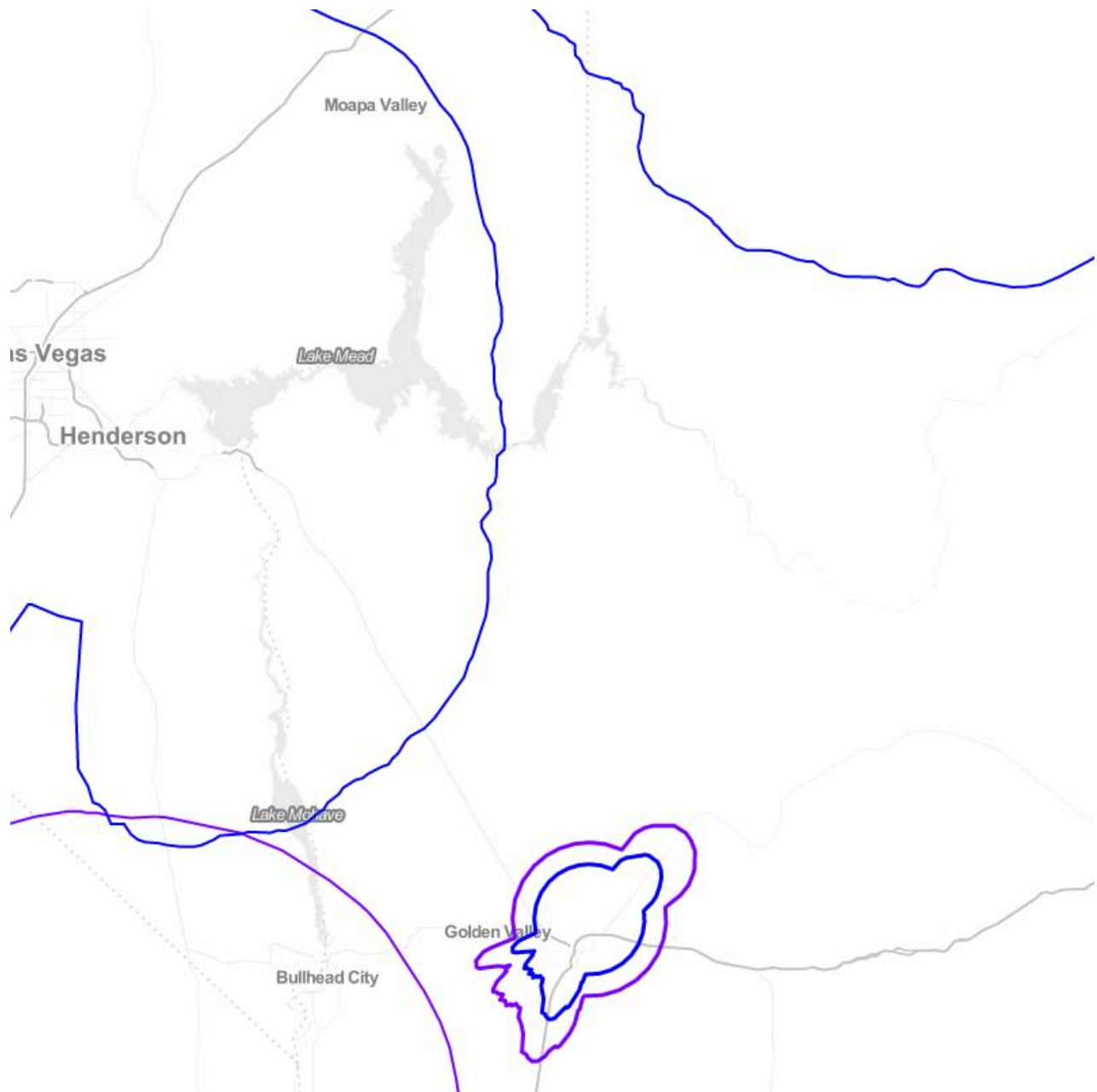


KZRJ-LP (191771)

JEROME AZ

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
262	C	KQMR	GLOBE AZ	198.4	122
264	D	K264DE	RANCHO VISTA AZ	36.9	23
264	C	KSLX-FM	SCOTTSDALE AZ	157	122

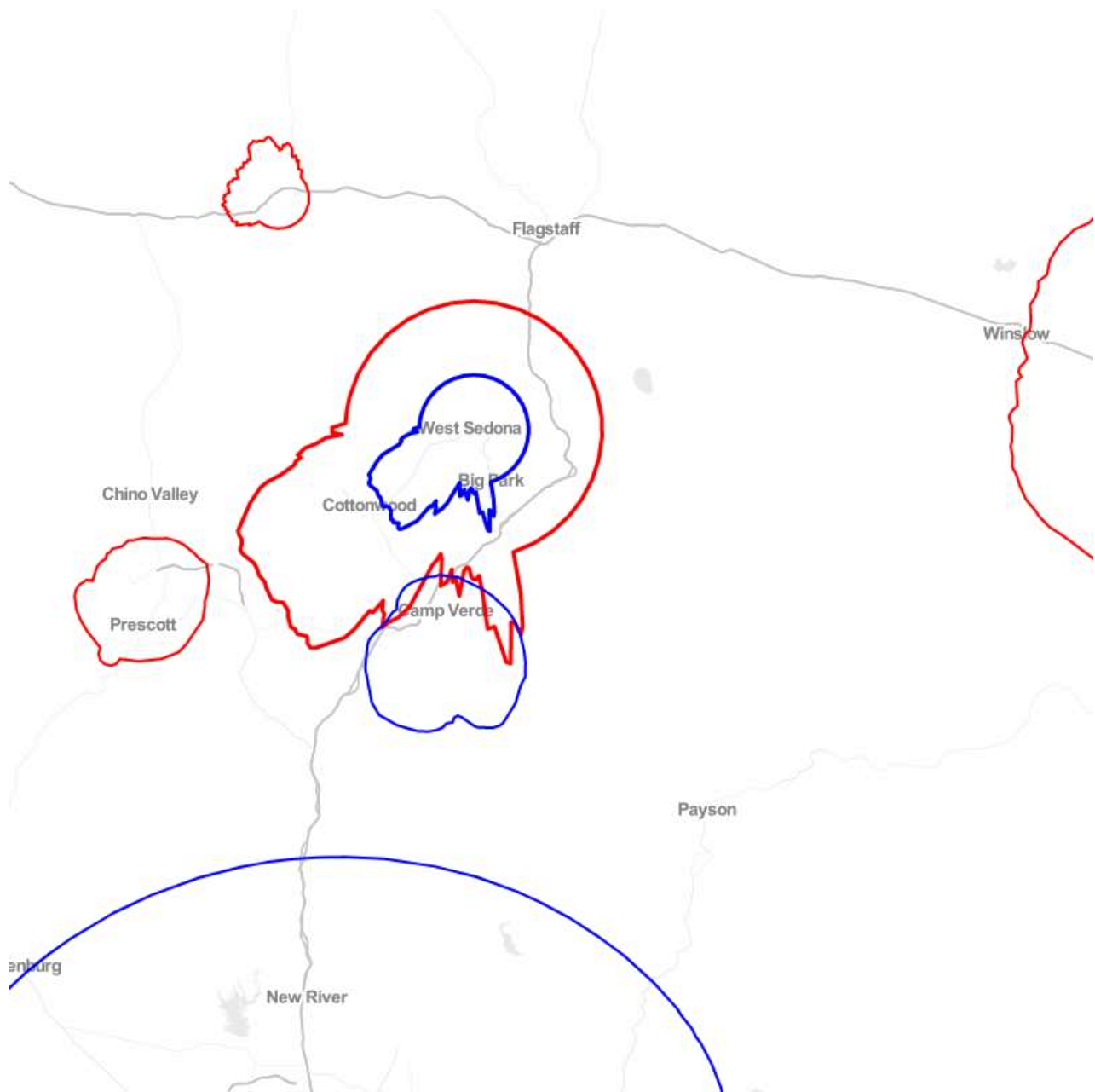


KGPS-LP (134768)

KINGMAN AZ

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
253	C	KLUC-FM	LAS VEGAS NV	122.2	122
255	B	KHWY	ESSEX CA	102.3	99
255	C1	KRQX-FM	HURRICANE UT	184.7	102



KUOS-LP (194120)

SEDONA AZ

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
220	D	K220GI	CAMP VERDE AZ	44.2	30
221	D	K221GL	PRESCOTT AZ	79.2	44
221	C1	KZUA	HOLBROOK AZ	152.4	116
221	L1	KZBX-LP	WILLIAMS AZ	55.9	31
222	C	KTAR-FM	GLENDALE AZ	171.5	122

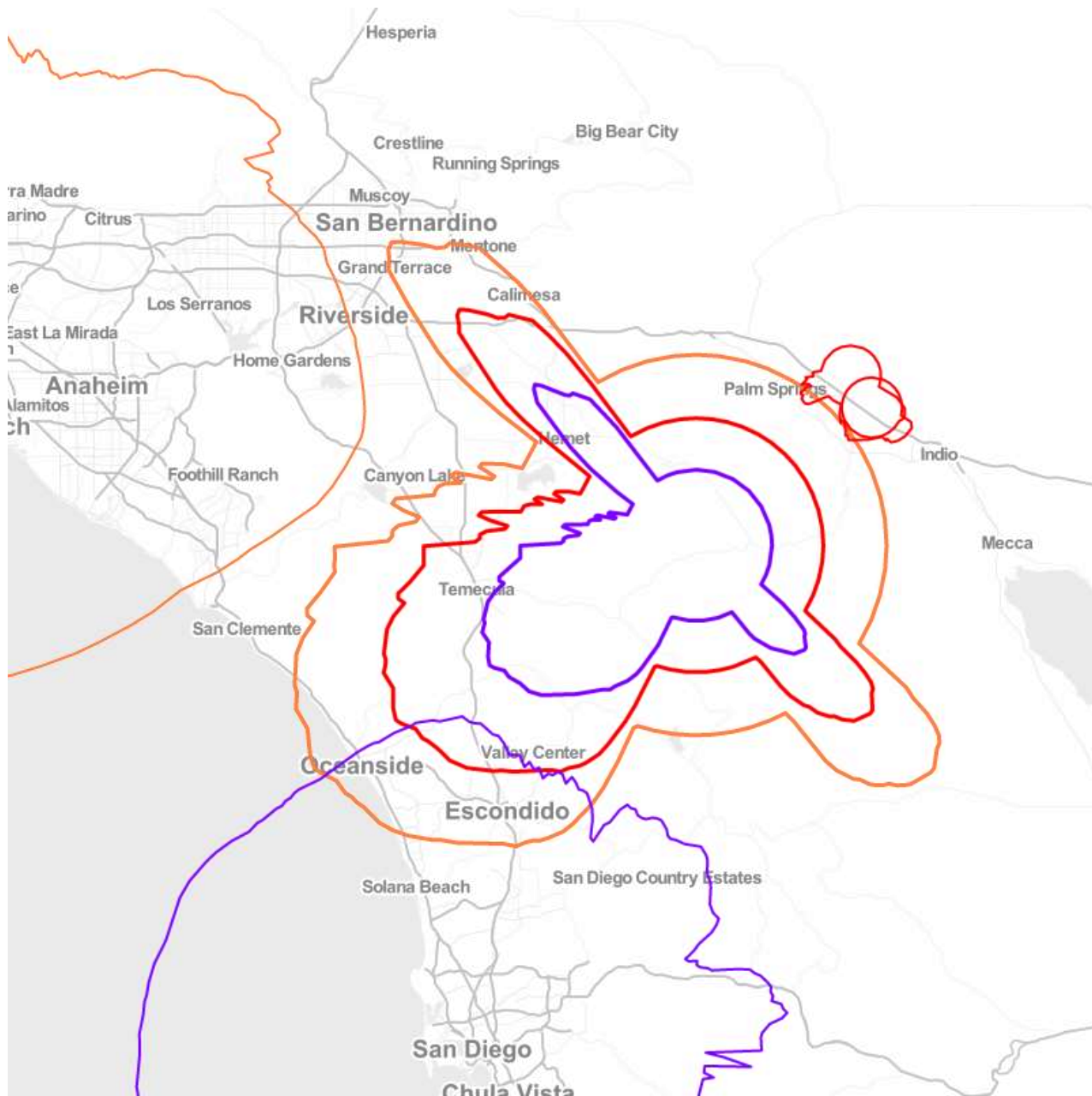


KXWR-LP (195535)

TSAILE AZ

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
221	C1	KZUA	HOLBROOK AZ	173.6	116



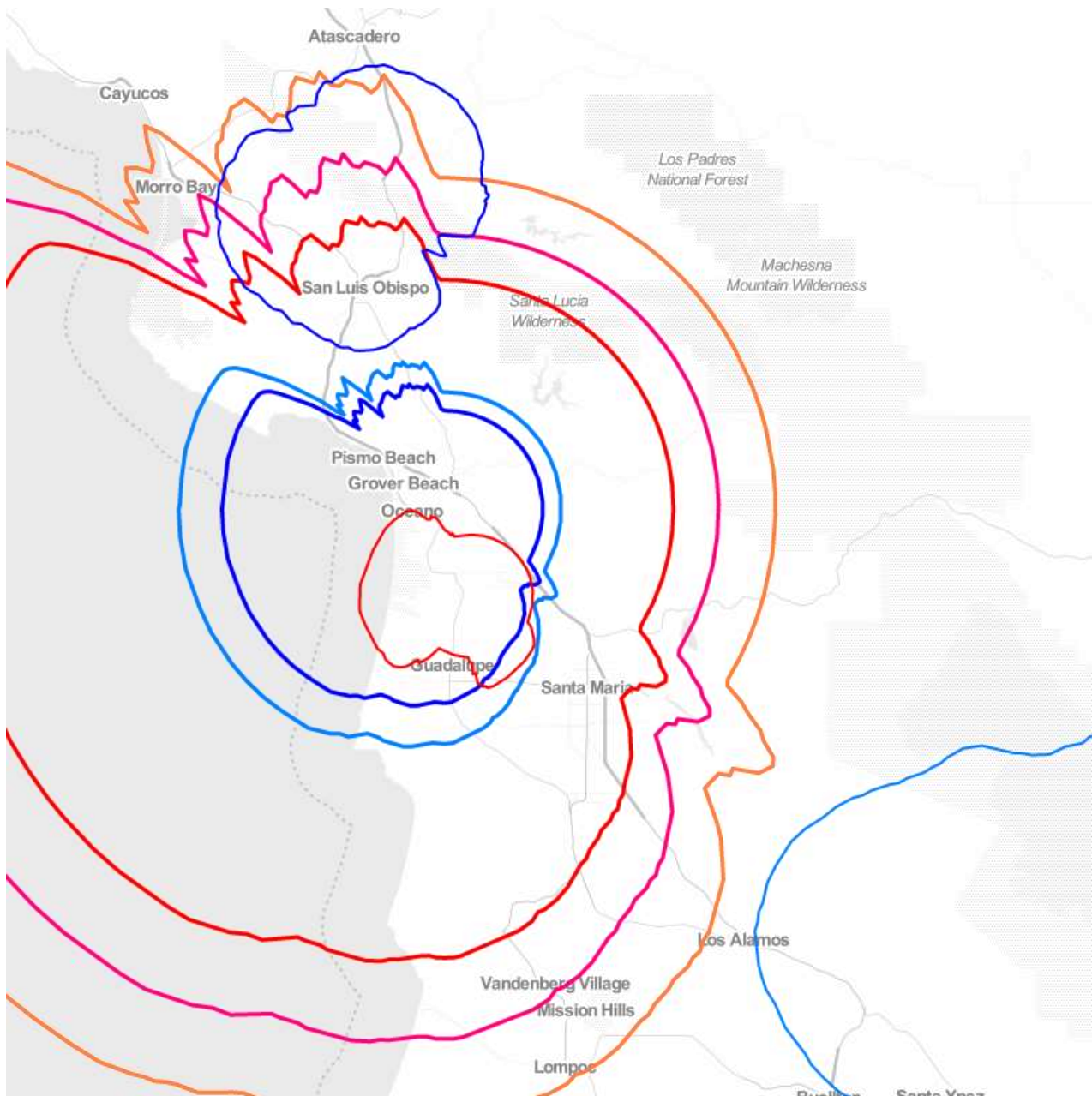
KOYT-LP (193468)

ANZA CA

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
246	B	KNOU	LOS ANGELES CA	145.8	121
246	L1	KXCP-LP	PALM DESERT CA	41.7	31
246	L1	KXCP-LP	PALM DESERT CA	42.8	31
247	B	KWFN	SAN DIEGO CA	99.8	99

KOYT-LP is in the Mexico Strip Zone and is limited to 50 watts ERP in the direction of Mexico and must use a directional antenna to achieve LP250. Actual contours towards the south would be shorter than what appears on this map.



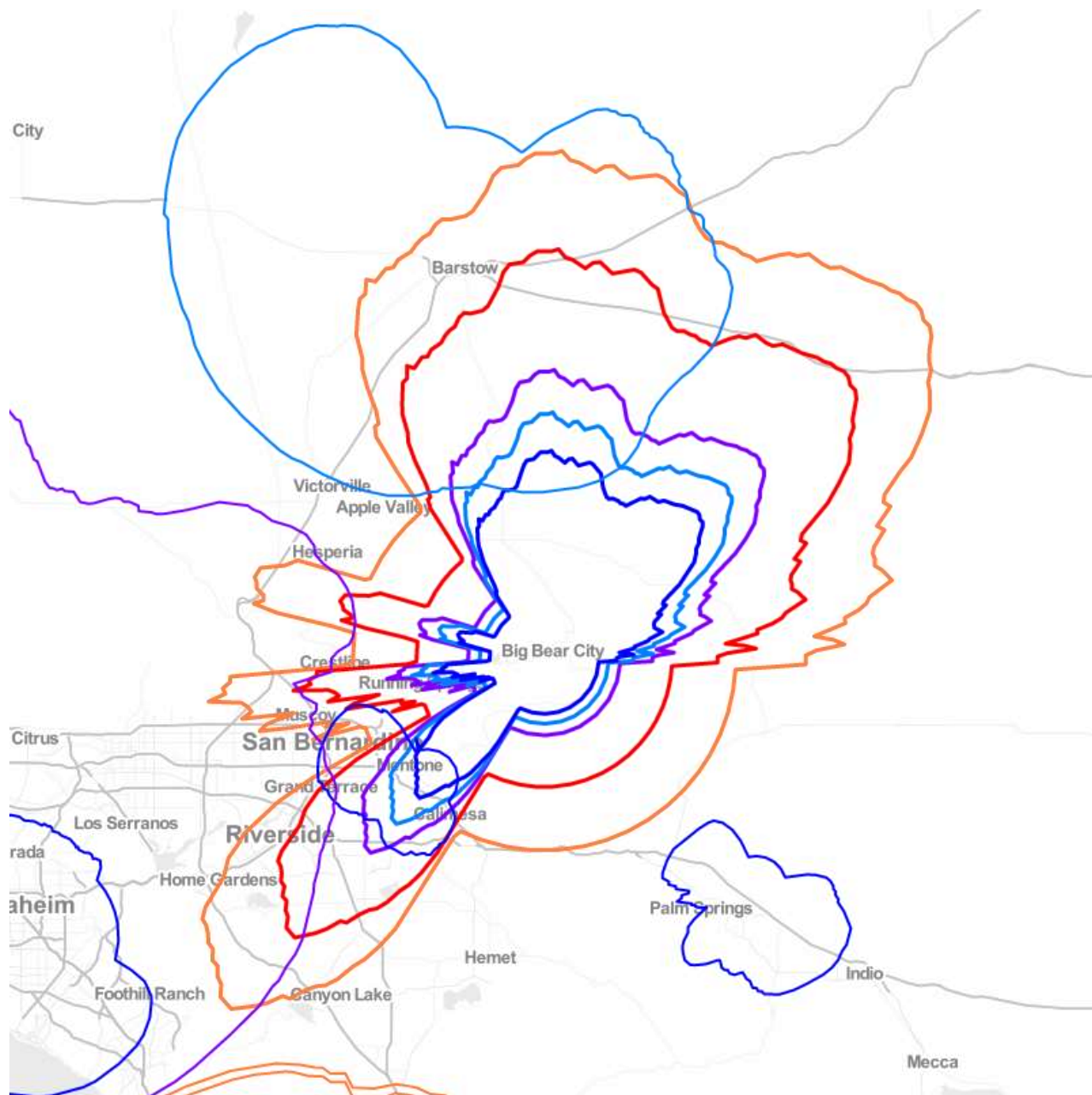
KYXZ-LP (193424)

ARROYO GRANDE CA

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
299	D	K299BE	SAN LUIS OBISPO CA	29.7	23
299	A	KZQT	KETTLEMAN CITY CA	113.1	58
299	B1	KIST-FM	CARPINTERIA CA	94	77
299	A	KZQT	KETTLEMAN CITY CA	113.7	58
300	B1	KSEA	GREENFIELD CA	161.8	93
300	L1	KTGY-LP	NIPOMO CA	8.4	0
300	L1	KZSR-LP	PASO ROBLES CA	59.6	31
300	B	KUZZ-FM	BAKERSFIELD CA	171.4	121

The red contour close to the station is KTGY-LP, which is time sharing with KYXZ-LP and cannot operate simultaneously.



KSVB-LP (193717)

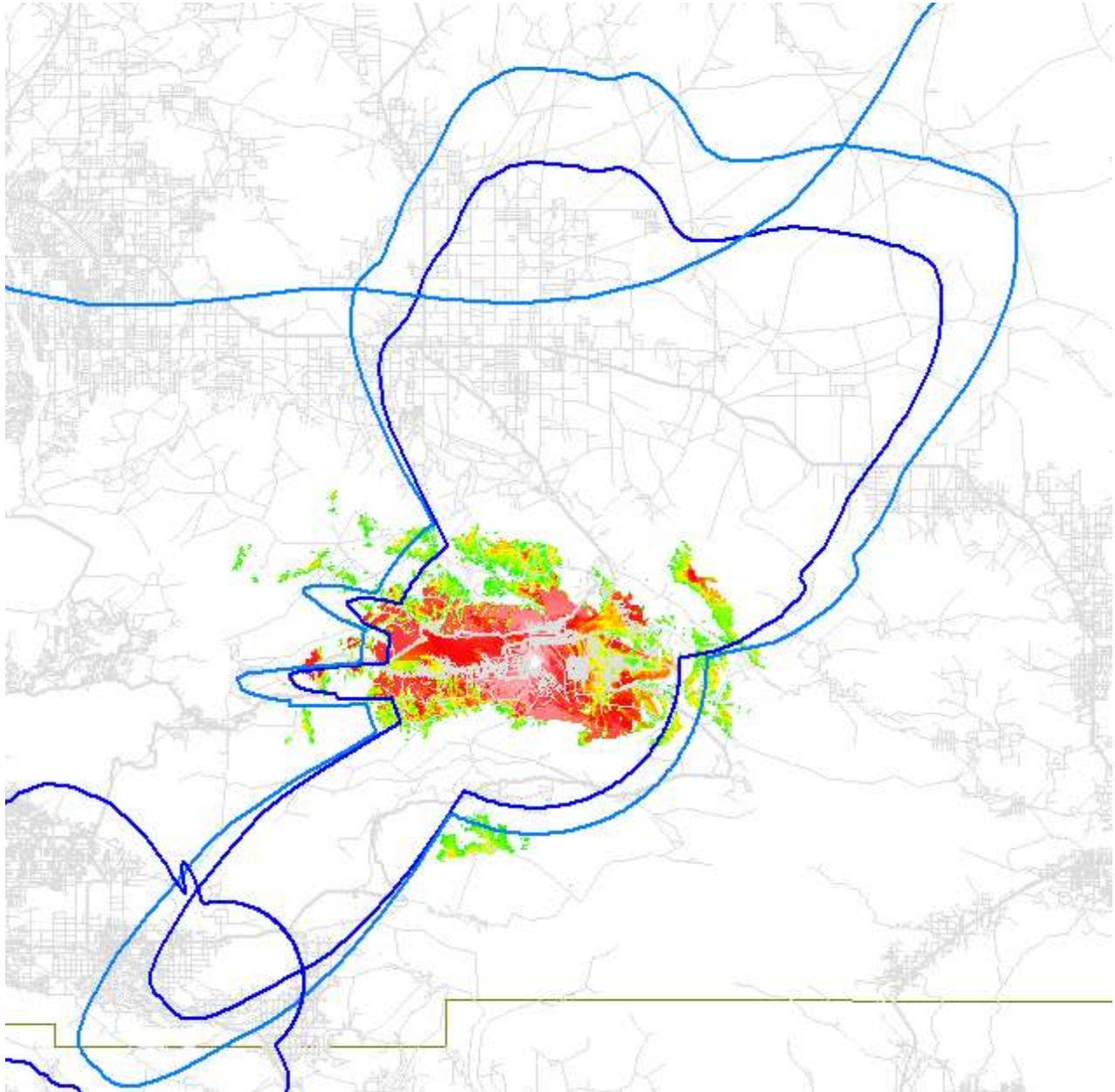
BIG BEAR CITY CA

Facilities considered:

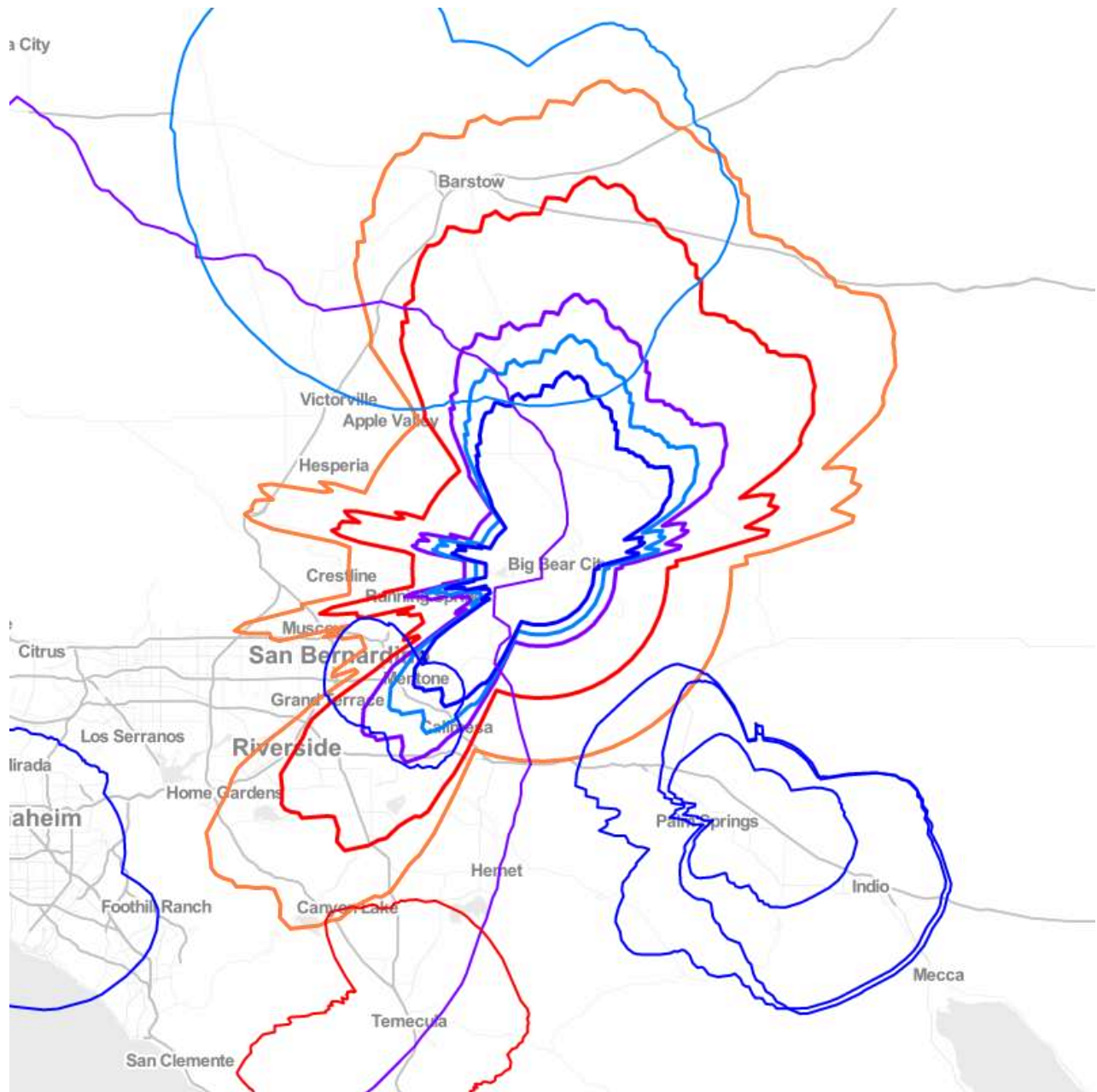
Channel	Class	Call	Location	Distance	LP250 Dist Req
230	B	KLLI	LOS ANGELES CA	111	99
231	B	KMYI	SAN DIEGO CA	160.1	121
231	B	KMYI	SAN DIEGO CA	160.2	121
231	C	KMXB	HENDERSON NV	258.6	136
231	B	KISV	BAKERSFIELD CA	216.8	121
232	B1	KDUC	BARSTOW CA	82.1	77
232	D	K232CX	DESERT HOT SPRINGS CA	57.8	30
232	A	KEBN	GARDEN GROVE CA	108.3	58
232	L1	KHSH-LP	REDLANDS CA	31.1	17

See next page...

KSVB-LP is overlapped to two facilities: KDUC, Barstow and KSHH-LP Redlands. These are both first-adjacent channel overlaps. Because Big Bear City is situated in a valley between much higher mountains all the way around, the signal does not leave the confines of the valley as this Longley/Rice showing 51 dB or greater clearly demonstrates:



Based on REC's recommendation, this station may not be able to upgrade.



KVBB-LP (193597)

BIG BEAR LAKE CA

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
232	B1	KDUC	BARSTOW CA	81.3	77
232	D	K232CX	DESERT HOT SPRINGS CA	59.5	30
232	A	KEBN	GARDEN GROVE CA	106.7	58
232	L1	KHSH-LP	REDLANDS CA	30.1	17
233	B	KSEH	BRAWLEY CA	194.5	121
233	A	KMYT	TEMECULA CA	89.6	72
234	A	KLOB	THOUSAND PALMS CA	59.5	58
234	A	KLOB	THOUSAND PALMS CA	59.4	58
234	B	KTWV	LOS ANGELES CA	108.8	99

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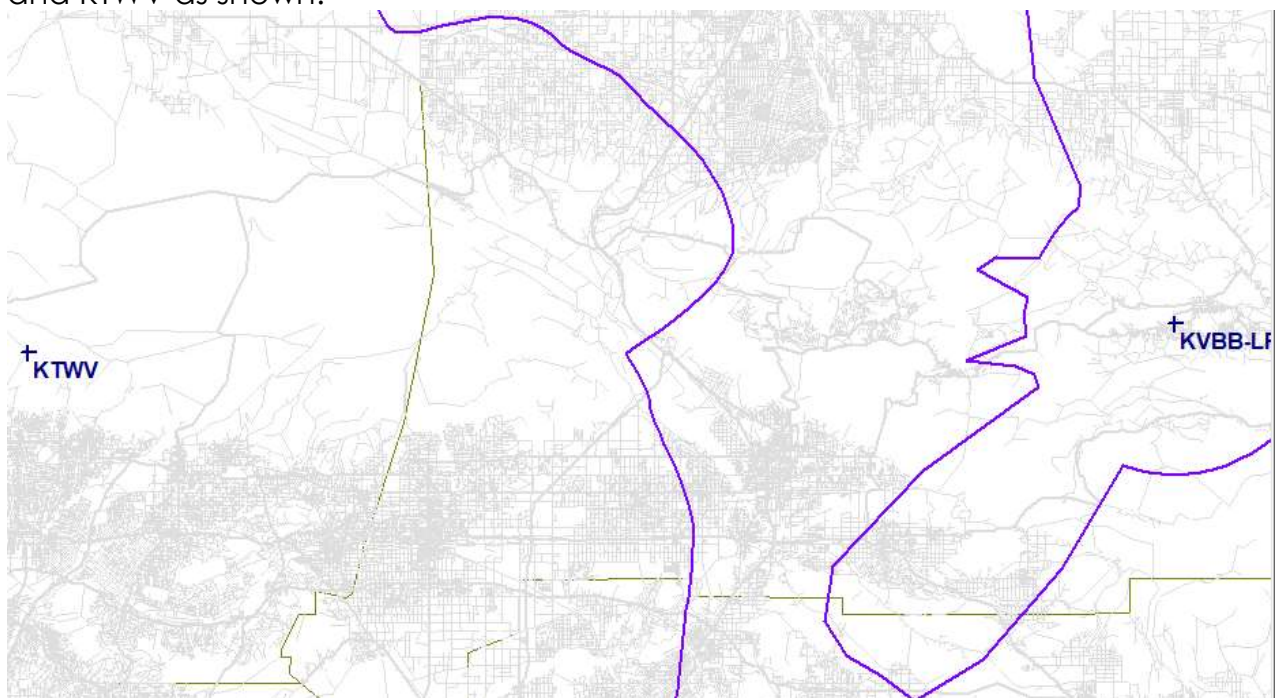
KVBB-LP shows overlap to KDUC, KSHH-LP and KTWV.

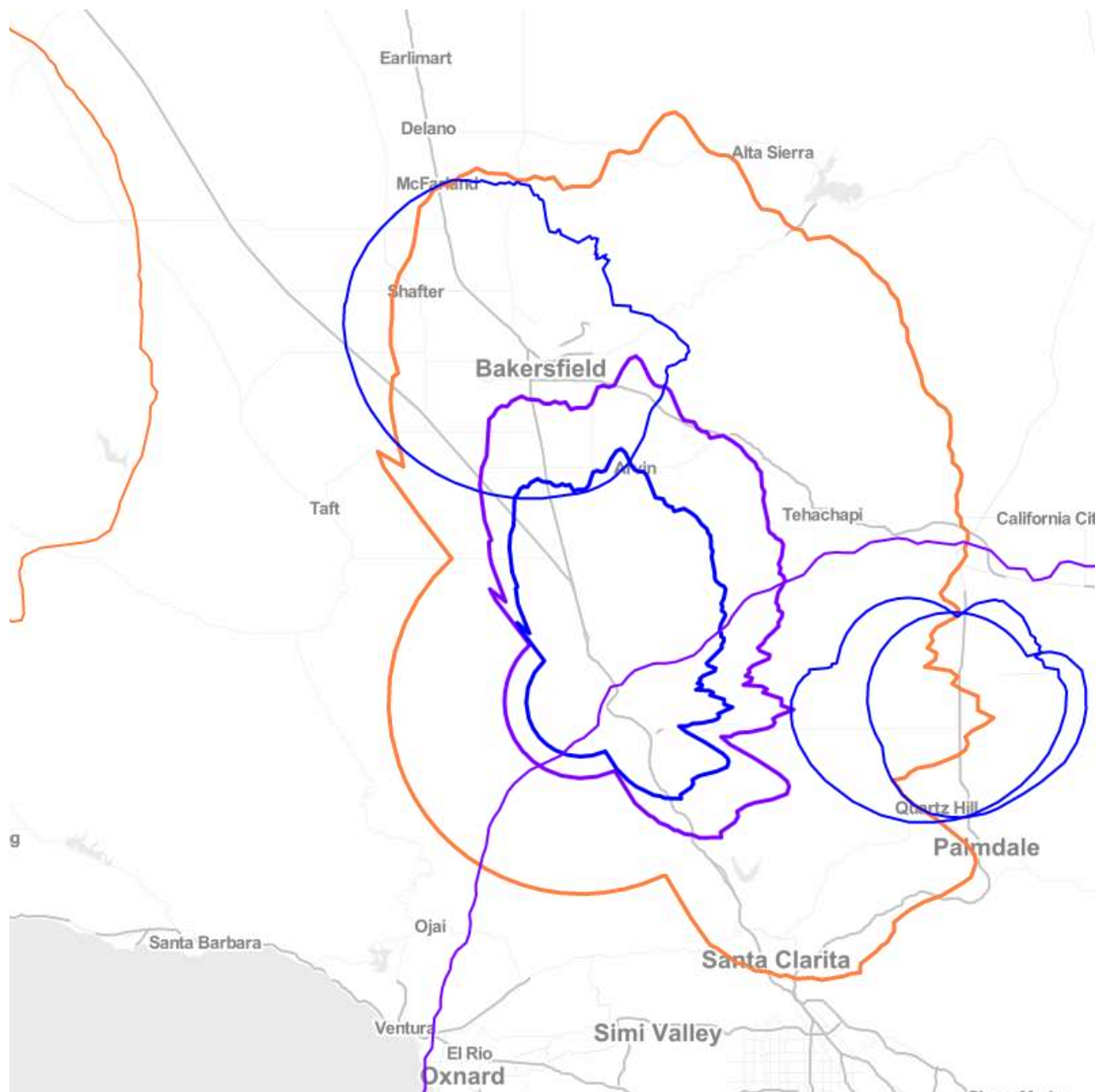
Like with KSVB-LP, due to the bowl nature of the Big Bear City area and due to the fact that KVBB-LP has a shorter antenna and lower elevation, there is no way a signal could leave the Big Bear Valley to interfere with KDUC or KSHH-LP.

KTWV is a super-powered Class B station that operates at 173% of its class maximum service contour.

Based on a Longley/Rice contour study, there is no overlap between KVBB-LP's 48 dB contour and super-powered KTWV's 54 dB contour. Therefore, there would be no populated areas where the U/D ratio in favor to super-powered KTWV would be greater than -6 dB.

Based on the 1962 *Report and Order*, KTWV would be protected only to their class-maximum service contour. This would mean that for the purposes of considering their contour, KTWV would be considered operating at 0.93 kW as opposed to their 58 kW super-power ERP based on 863 meters HAAT. With KTWV at their class maximum ERP, there would be no contour overlap between KVBB-LP and KTWV as shown:





KFZR-LP (194173)

FRAZIER PARK CA

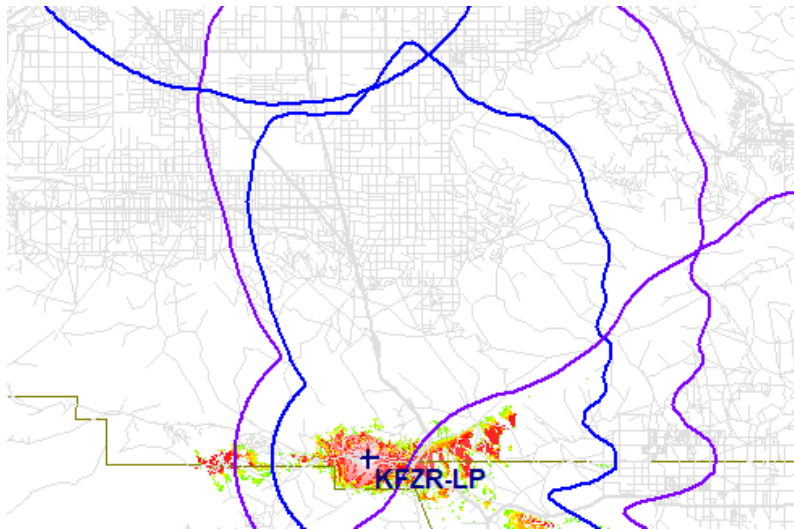
Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
226	A	KKXX-FM	SHAFTER CA	72.8	58
226	B	KCBS-FM	LOS ANGELES CA	102.8	99
227	B	KZOZ	SAN LUIS OBISPO CA	167.9	121
228	A	KQAV	ROSAMOND CA	68.8	58
228	A	KQAV	ROSAMOND CA	60.9	58
228	A	KDAY	REDONDO BEACH CA	104.7	58

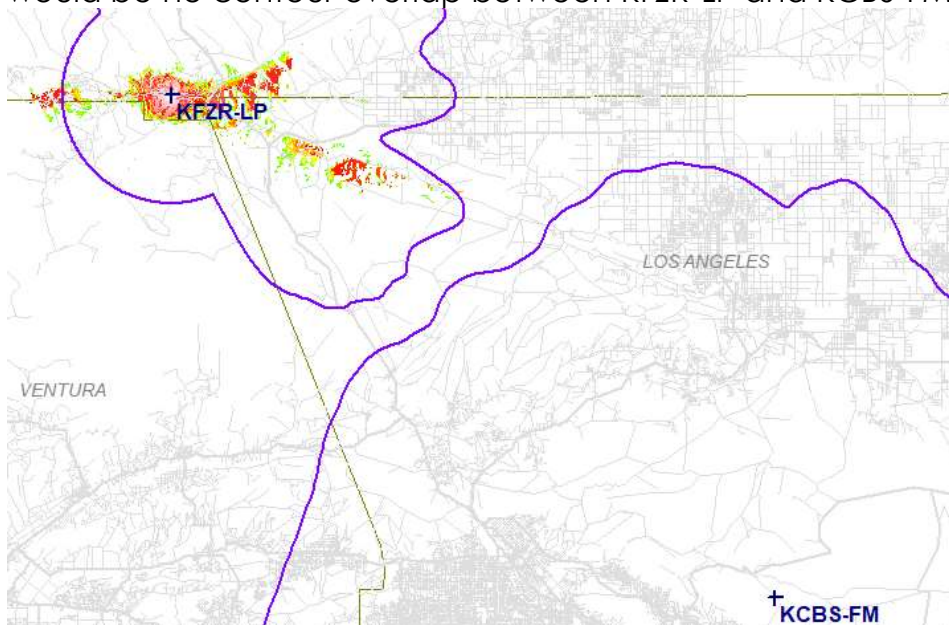
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KFZR-LP has a first-adjacent channel contour overlap with KKXX-FM, Shafter and super-power KCBS-FM Los Angeles. KFZR-LP is already overlapped with super-power KCBS-FM at LP100.

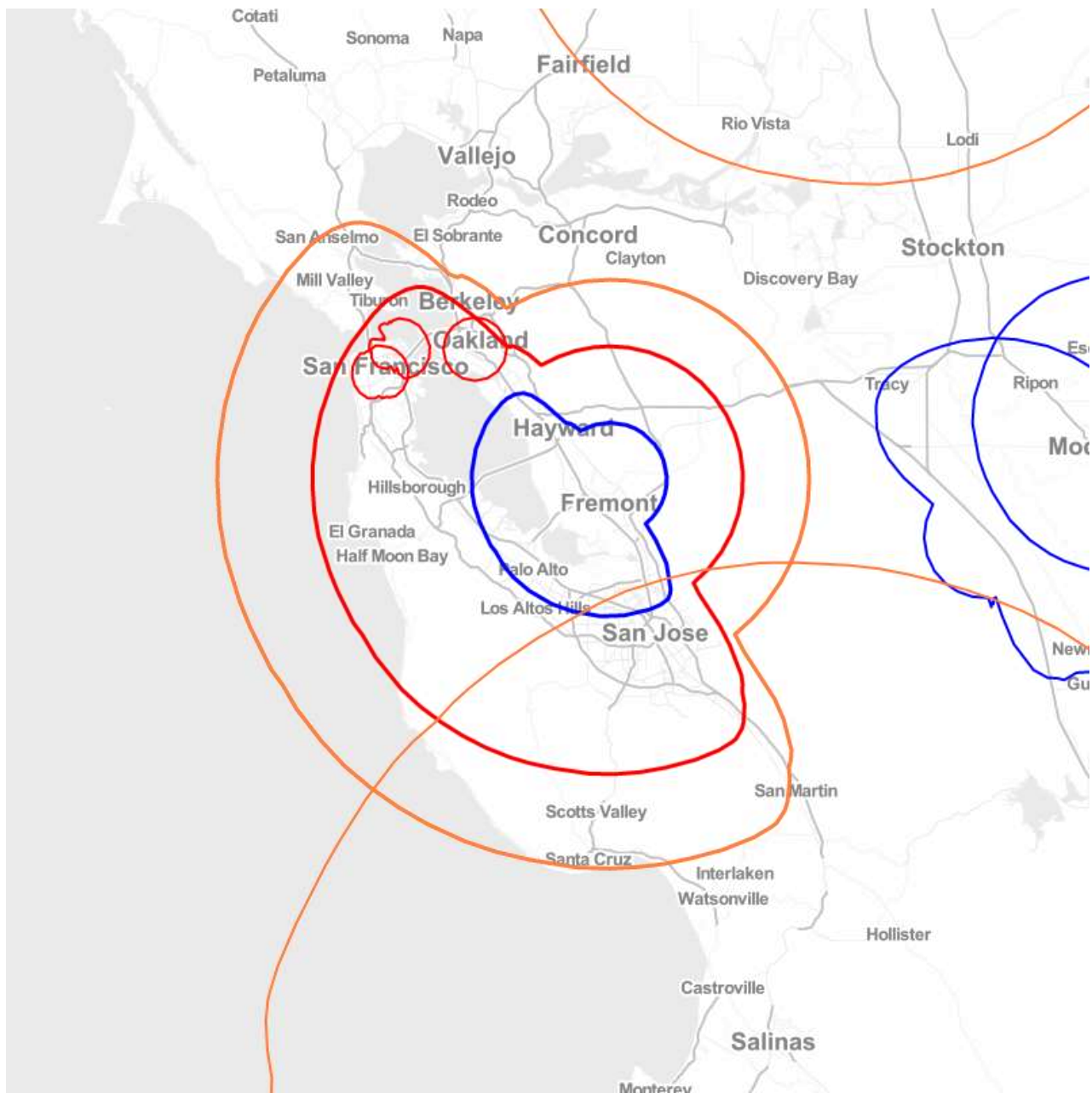
For KKXX-FM, a Longley/Rice study shows that due to the intervening terrain to the north, despite a contour overlap, a 250 watt signal from KFZR-LP would not place a 54 dB field strength anywhere near the KKXX-FM protected contour:



In respect to KCBS-FM. KCBS-FM is a super powered Class B station operating at 168% of class maximum. Per the 1962 Order, KCBS-FM is protected as if they were operating 0.6 kW based on a 1,074-meter HAAT. At their class maximum, there would be no contour overlap between KFZR-LP and KCBS-FM.



Based on REC's recommendation, this station may not be able to upgrade.



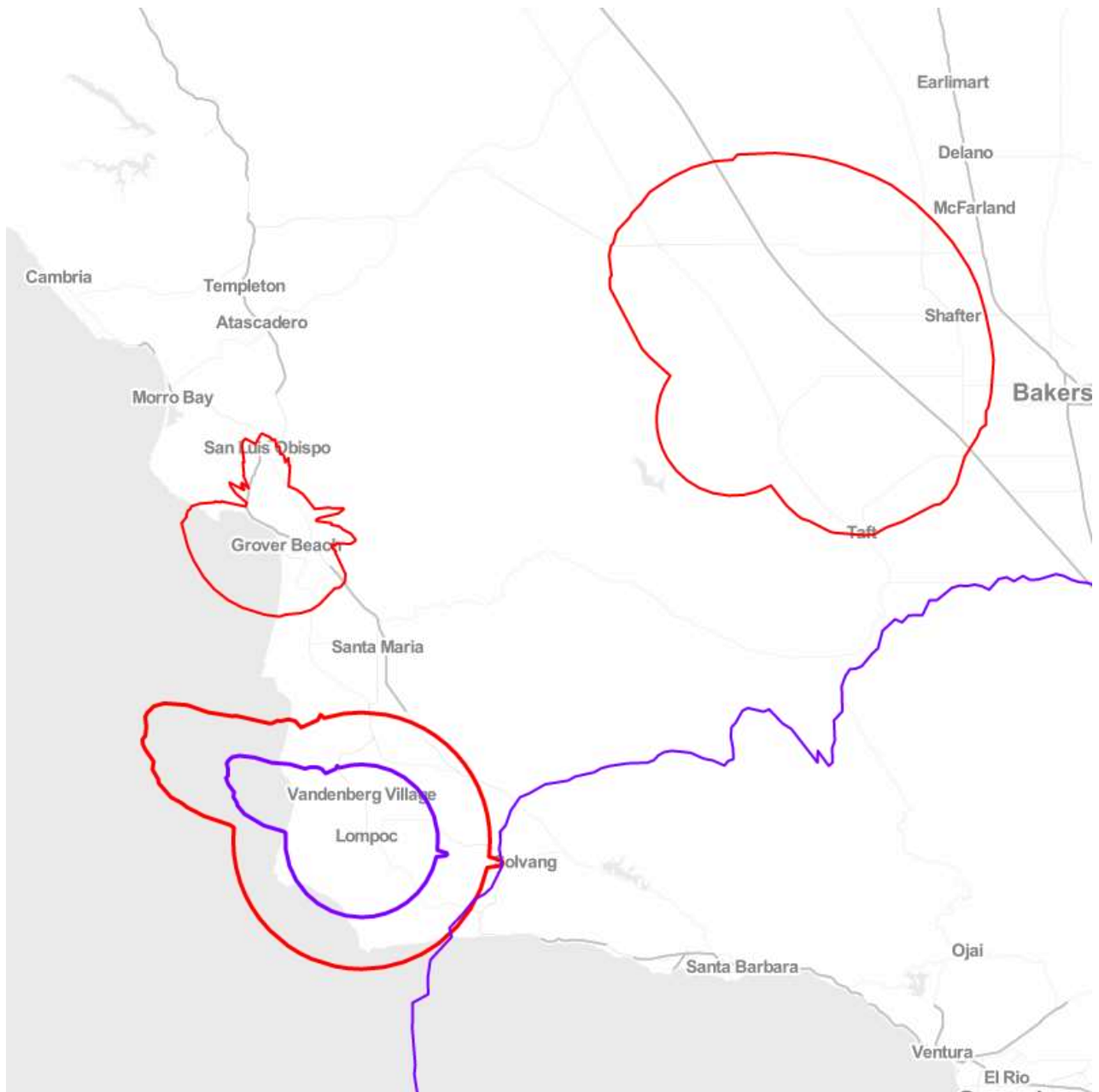
KEPT-LP (193012)

HAYWARD, CALIFORNIA CA

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
244	A	KMRQ	RIVERBANK CA	94.3	58
245	L1	KGPC-LP	OAKLAND CA	33.5	31
245	L1	KQEB-LP	SAN FRANCISCO CA	44.2	31
245	B	KSEG	SACRAMENTO CA	126.1	121
245	B	KWAV	MONTEREY CA	121	121
245	L1	KQEA-LP	SAN FRANCISCO SUNSET CA	45.3	31
246	A	KTSE-FM	PATTERSON CA	68	58

See REC comments in RM-11909 on June 21, 2021 for a detailed discussion regarding the overlap with KWAV, Monterey, CA. KWAV and KEPT-LP are separated by hard terrain and do not interfere with each other.

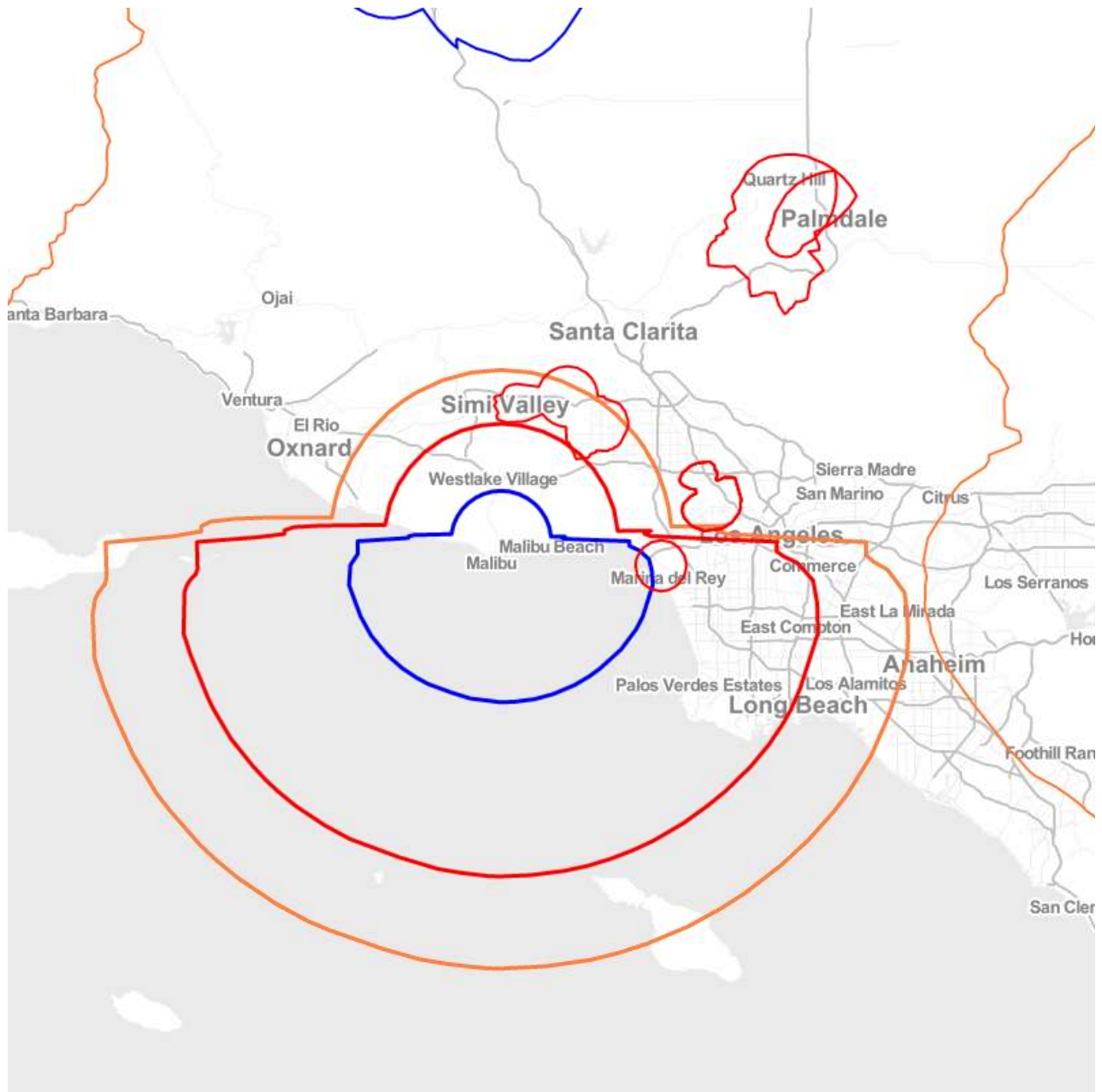


KPEG-LP (191955)

LOMPOC CA

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
264	B	KHAY	VENTURA CA	108.8	99
265	D	K265FI	PISMO BEACH CA	60.5	44
265	A	KHMU	BUTTONWILLOW CA	103.5	72



KBUU-LP (195574)

MALIBU CA

Facilities considered:

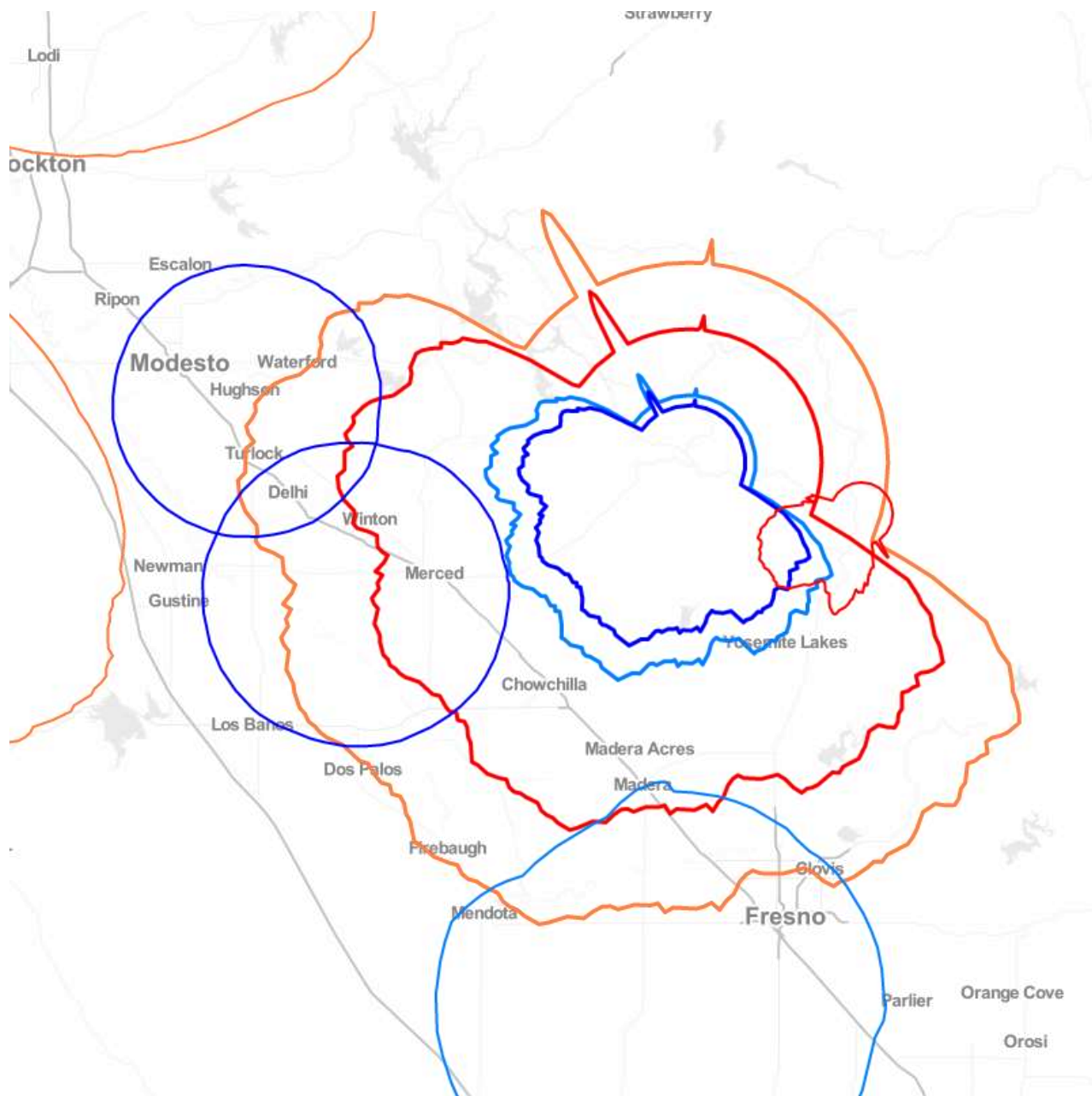
Channel	Class	Call	Location	Distance	LP250 Dist Req
255	A	KHHT	METTLER CA	109.5	58
256	L1	KLDB-LP	LOS ANGELES CA	39.8	31
256	D	K256BS	PALMDALE CA	77.1	44
256	L1	KZUT-LP	LOS ANGELES CA	39.8	31
256	B	KGGI	RIVERSIDE CA	153.6	121
256	D	K256BS	PALMDALE CA	77.3	44
256	B	KXFM	SANTA MARIA CA	160.5	121
256	L1	KFEP-LP	LOS ANGELES CA	39.8	31
256	L1	KTPC-LP	VENICE CA	30.2	31
256	L1	KWSV-LP	SIMI VALLEY CA	29.5	31

See next page...

KBUU is in an isolated area with mountains directly to the north and terrain towards the east. REC has conducted extensive on the ground studies of KBUU-LP's coverage and despite the contour overlap with another LPFM station (KTPC-LP), there is no actual interference between these two stations. There is also no interference between KBUU-LP and KWSV-LP located to the north of KBUU-LP due to two ranges of intervening terrain.

LP250 for KBUU-LP would be able to help provide better penetration into the canyons, which are very prone to seasonal brush fires.

KBUU-LP does not overlap any full-service facilities or FM translators.



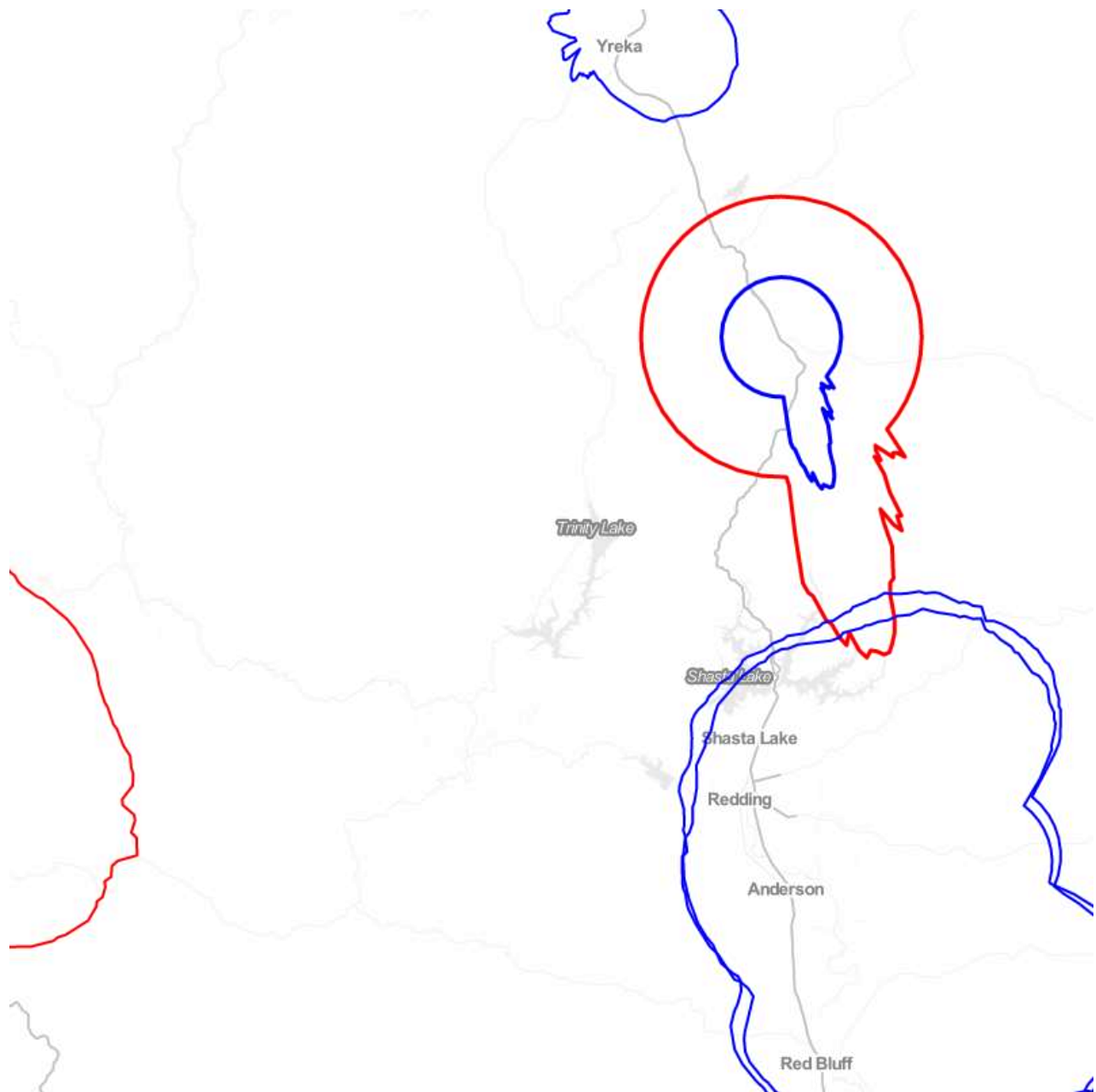
KRYZ-LP (195075)

MARIPOSA CA

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
252	A	KWNN	TURLOCK CA	78.5	58
252	B1	KZLA	RIVERDALE CA	96.7	77
253	B	KUFX	SAN JOSE CA	178.2	121
253	B	KRXQ	SACRAMENTO CA	163.4	121
253	L1	KOLS-LP	OAKHURST CA	32.2	31
254	A	KLOQ-FM	WINTON CA	62.5	58

KRYZ-LP is intentionally operating at reduced power, not due to a second-adjacent channel waiver. The only overlap is with KOLS-LP, another Foothill Effect LPFM station that will also be able to upgrade. No full-service or FM translator overlaps.

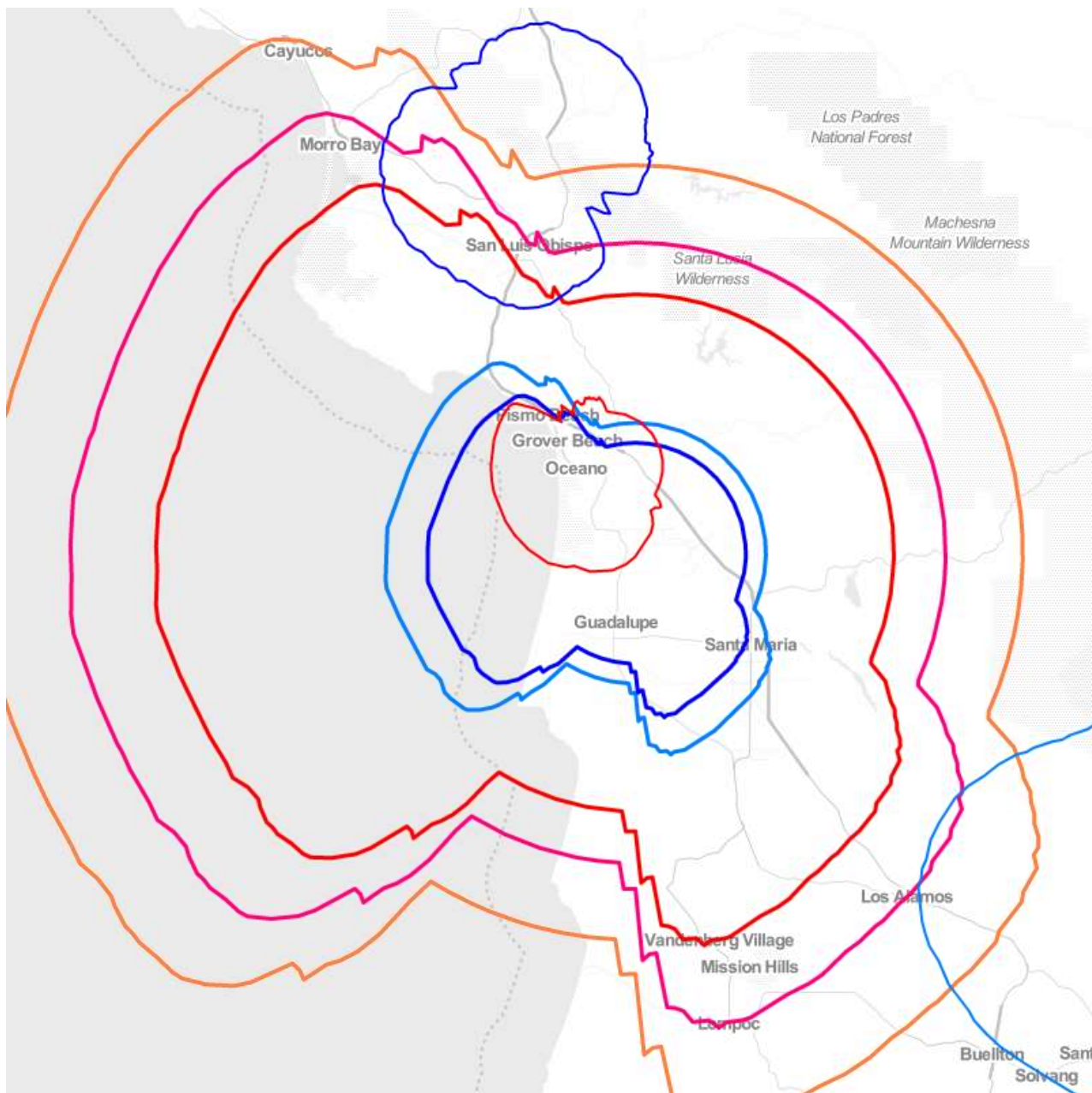


KMSJ-LP (124869)

MT. SHASTA CA

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
231	C1	KLGE	HYDESVILLE CA	188.7	116
232	D	K232BH	YREKA CA	60	30
232	C3	KRBN	MANTON CA	95.6	69
232	C3	KRBN	MANTON CA	94.9	69



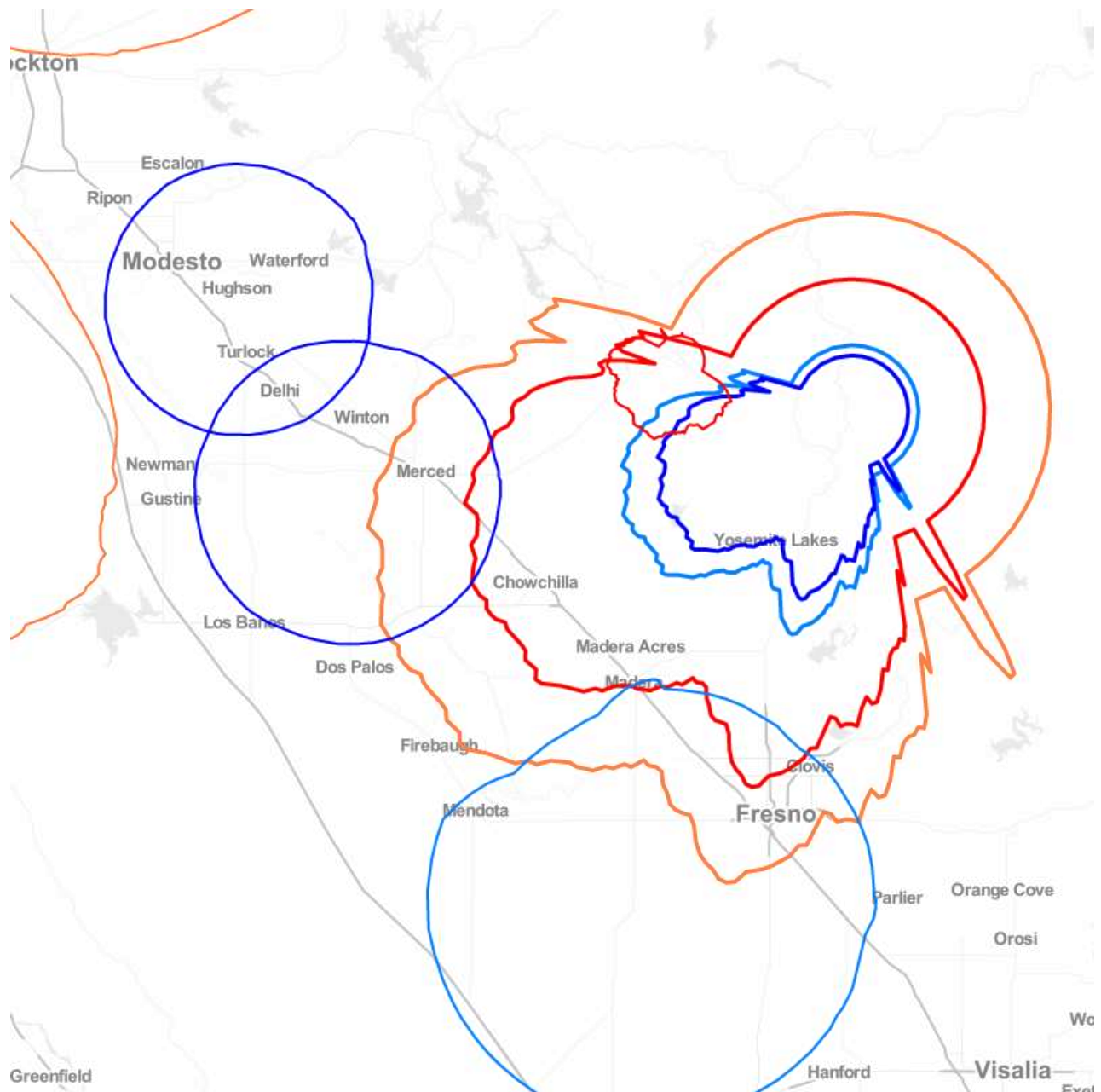
KTGY-LP (195319)

NIPOMO CA

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
299	D	K299BE	SAN LUIS OBISPO CA	38.1	23
299	B1	KIST-FM	CARPINTERIA CA	86.8	77
300	B1	KSEA	GREENFIELD CA	170	93
300	L1	KYXZ-LP	ARROYO GRANDE CA	8.4	0
300	B	KUZZ-FM	BAKERSFIELD CA	171	121

Overlapped LPFM, KYXZ-LP is in a time share agreement with KTGY-LP. These two stations do not simultaneously operate. KTGY-LP does not overlap any full-service FM or FM Translators.



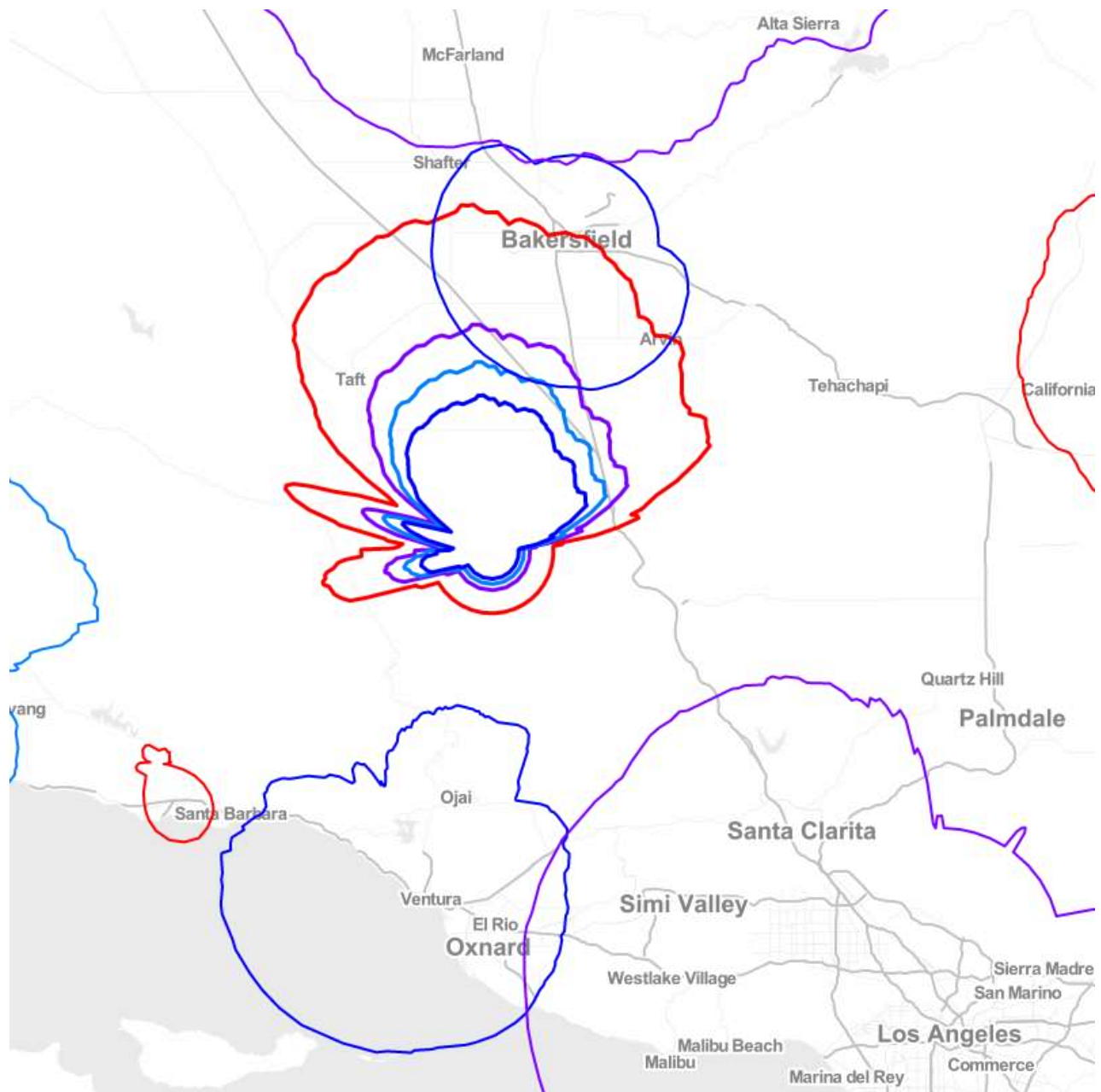
KOLS-LP (192537)

OAKHURST CA

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
252	A	KWNN	TURLOCK CA	110.6	58
252	B1	KZLA	RIVERDALE CA	93.7	77
253	B	KUFX	SAN JOSE CA	207.7	121
253	B	KRXQ	SACRAMENTO CA	190.2	121
253	L1	KRYZ-LP	MARIPOSA CA	32.2	31
254	A	KLOQ-FM	WINTON CA	90.3	58

See KRYZ-LP, Mariposa, CA for details on the overlap. KOLS-LP does not overlap any full-service FM or FM Translator stations.

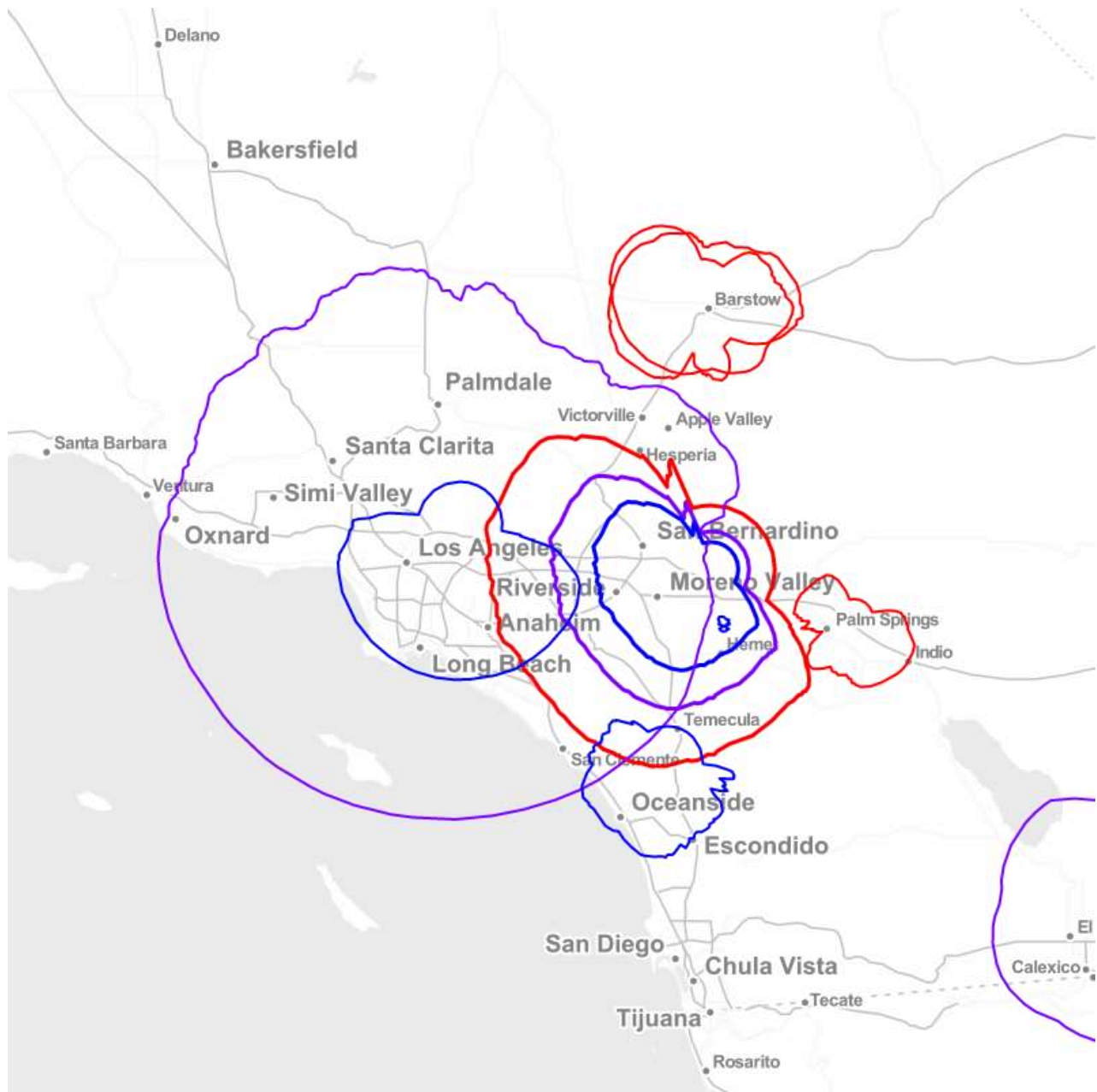


KCPK-LP (192696)

PINE MOUNTAIN CLUB CA

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
294	B1	KSMY	LOMPOC CA	117.5	77
294	B	KJUG-FM	TULARE CA	156.2	99
294	B	KROQ-FM	PASADENA CA	111.1	99
295	D	K295AH	GOLETA CA	73.5	37
295	A	KMVE	CALIFORNIA CITY CA	135.2	72
296	A	KCWR	BAKERSFIELD CA	59	58
296	A	KSSC	VENTURA CA	58.2	58



KQRS-LP (197037)

REDLANDS CA

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
296	D	K296HB	HEMET CA	21.6	17
296	A	KSSD	FALLBROOK CA	73.5	58
296	A	KSSE	ARCADIA CA	95.1	58
297	D	K297BO	PALM SPRINGS CA	56.5	44
297	A	KIXW-FM	LENWOOD CA	104.4	72
297	A	KIXW-FM	LENWOOD CA	91.7	72
298	B	KXO-FM	EL CENTRO CA	192.4	99
298	B	KLVE	LOS ANGELES CA	99.8	99

See next page...

At LP100, KWRS-LP overlaps both super-power KLVE and translator K296HB.

The peak distance to the LPFM service contour at LP100 is 22.953 kilometers. This is the third largest peak in the country.

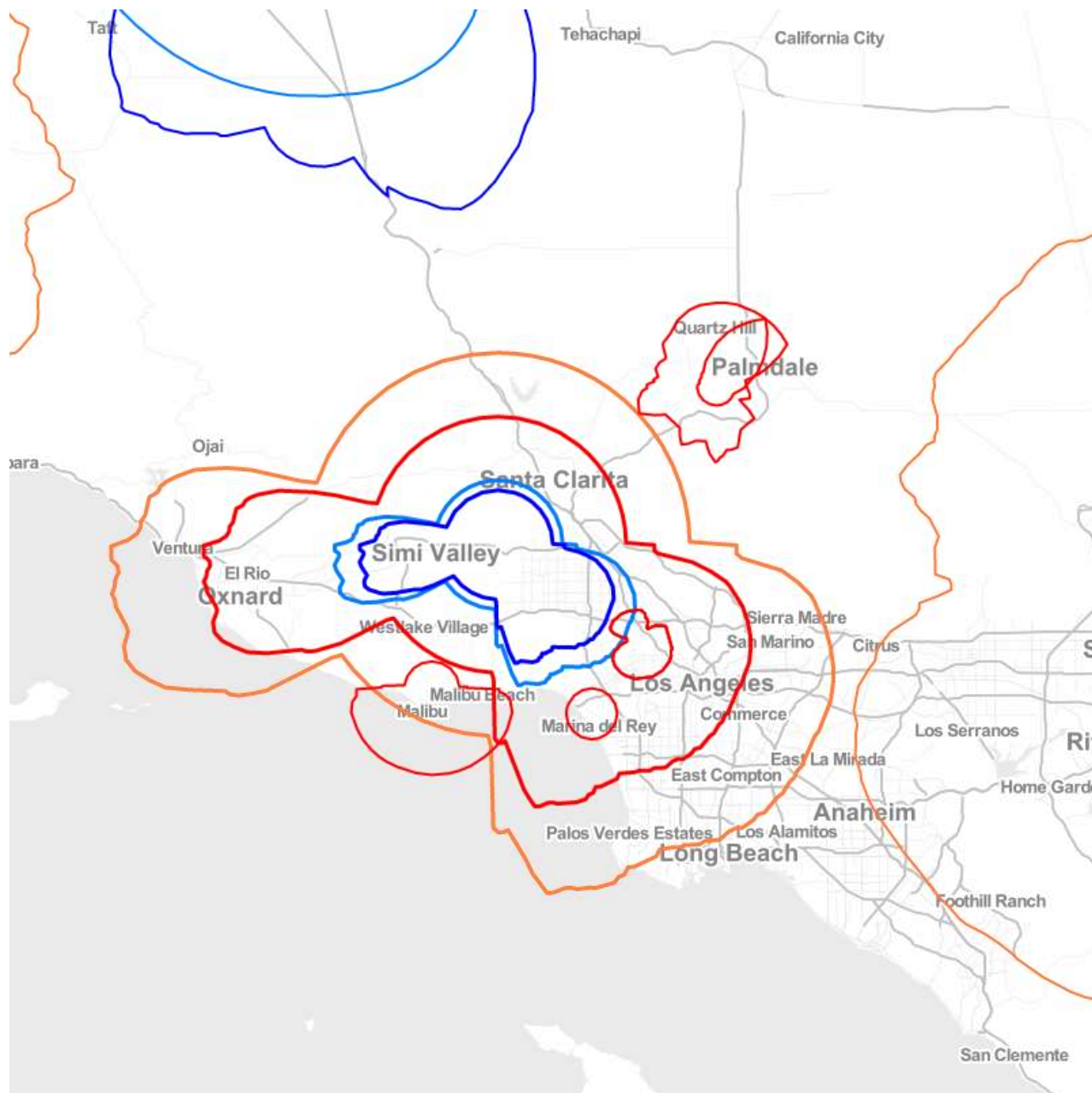
K296HB was filed subsequent to KWRS-LP and had voluntarily come inside of KWRS-LP's interfering contour.

For KLVE, even if they were considered at their class maximum power (0.83 kW), there would still be overlap.

We note that for both KWRS-LP as well as KQLH-LP, there is a considerable amount of rolling terrain that further attenuates the signals to the west, despite strong field strengths to the northwest.

This may be one of those very few situations where we would be concerned that an LP250 upgrade will result in interference to KLVE. We are currently not aware of any at this time.

Based on REC's recommendation, this station would likely not be able to upgrade.



KWSV-LP (197314)

SIMI VALLEY CA

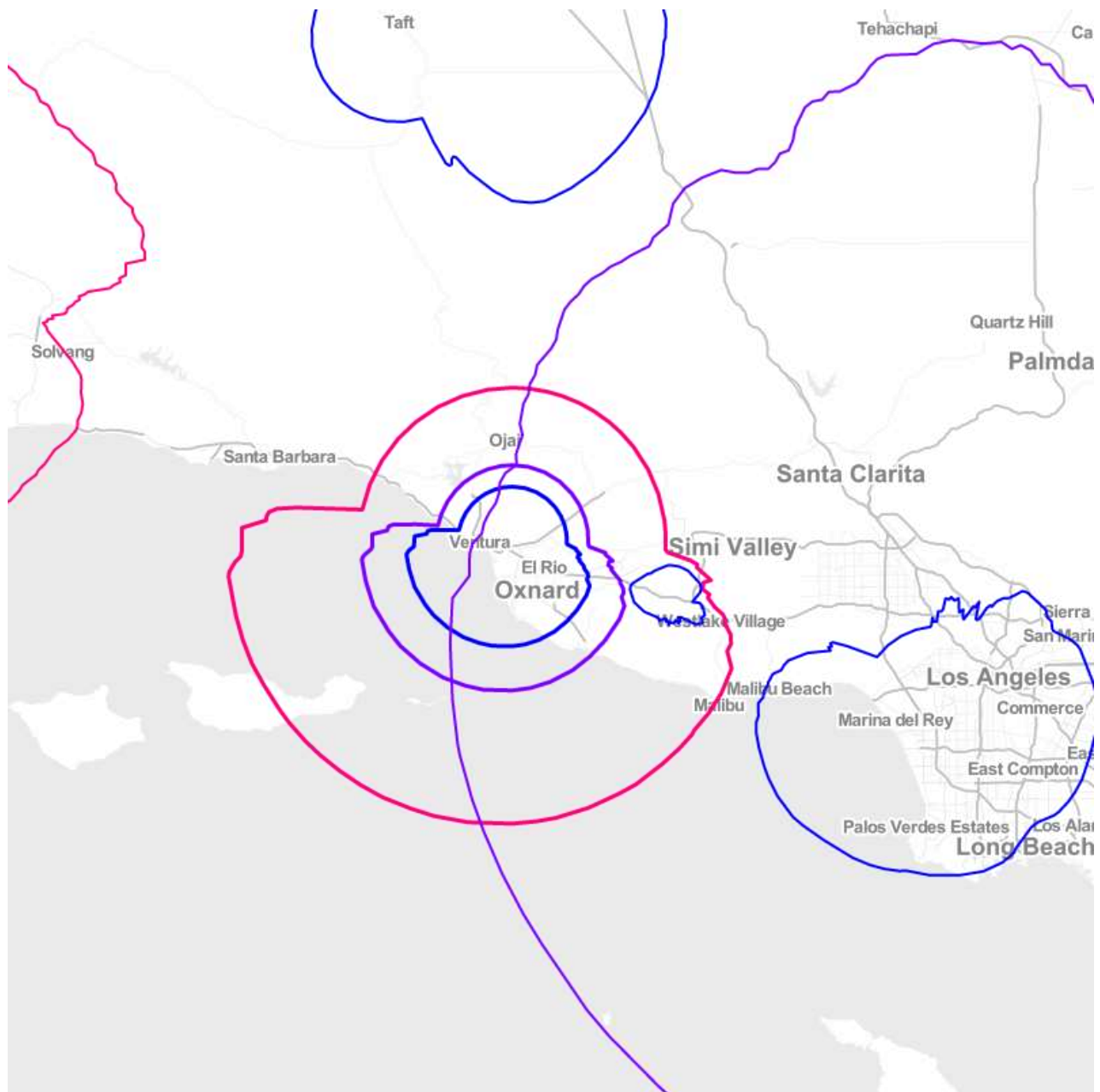
Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
255	A	KHHT	METTLER CA	87.2	58
256	L1	KLDB-LP	LOS ANGELES CA	31.5	31
256	L1	KBUU-LP	MALIBU CA	29.5	31
256	D	K256BS	PALMDALE CA	49.9	44
256	L1	KZUT-LP	LOS ANGELES CA	31.5	31
256	B	KGGI	RIVERSIDE CA	139.6	121
256	D	K256BS	PALMDALE CA	50.2	44
256	B	KXFM	SANTA MARIA CA	156.8	121
256	L1	KFEP-LP	LOS ANGELES CA	31.5	31
256	L1	KTPC-LP	VENICE CA	35.9	31
257	B1	KKBB	BAKERSFIELD CA	134.8	77

KWSV-LP overlaps LPFM stations KZUT-LP, KFEP-LP and KLDB-LP (all operating time share from a common location) as well as KTCP-LP (also a part of that time share). Due to intervening terrain, KWSV-LP is not heard directly in the area where those stations are. KWSV-LP does operate a booster to cover the eastern portion of its service contour. KWSV-LP's main station and booster are terrestrially shielded from KTCP-LP.

KWSV-LP overlaps LPFM station KBUU-LP mainly over water. There is significant terrestrial shielding between KWSV-LP and KBUU-LP.

KWSV-LP does not overlap any full-service FM or FM Translator stations.



KPPQ-LP (195141)

VENTURA CA

Facilities considered:

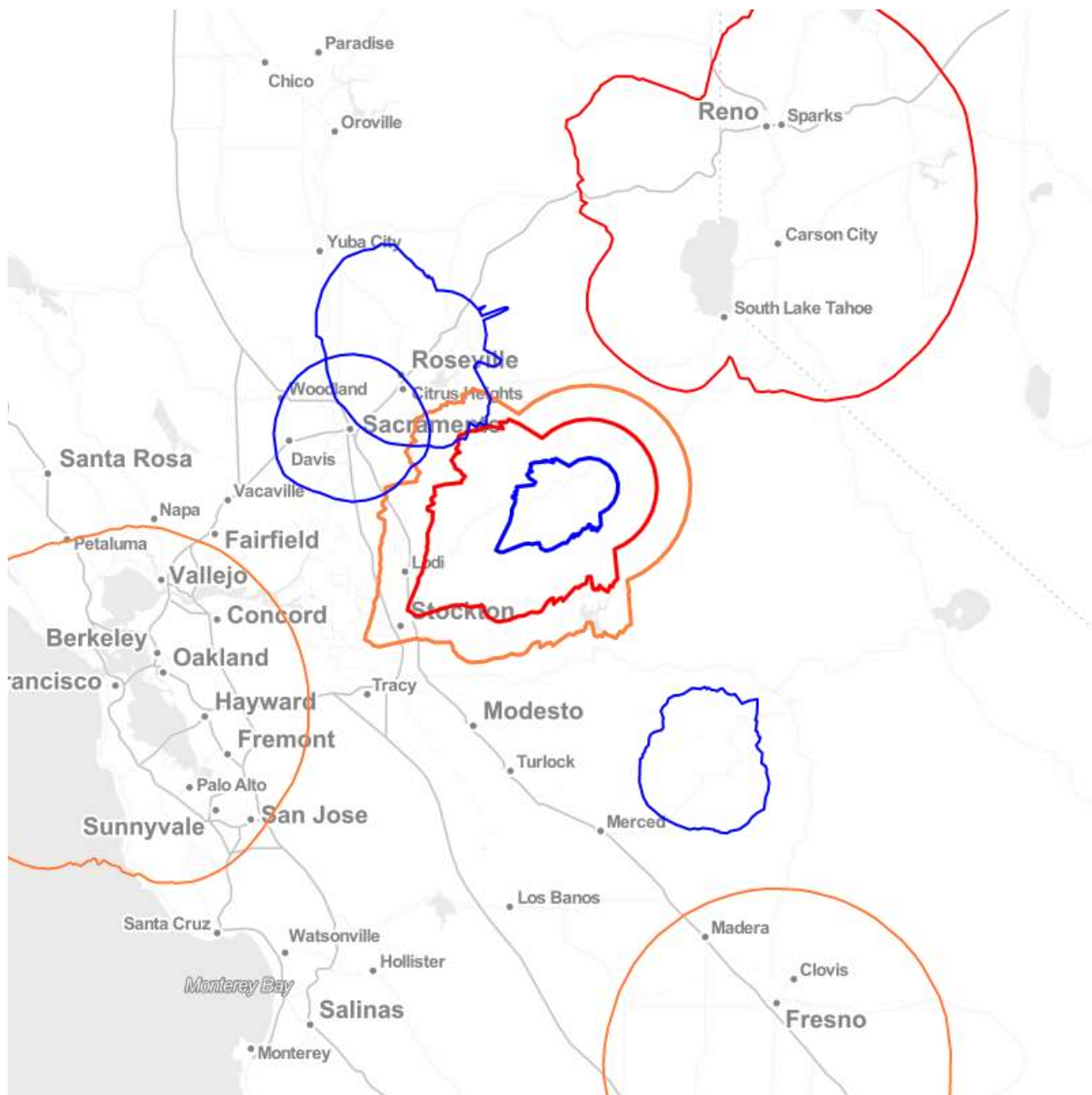
Channel	Class	Call	Location	Distance	LP250 Dist Req
280	A	KRCD	INGLEWOOD CA	84.9	58
280	A	KBDS	TAFT CA	95.6	58
280	D	K280DT	THOUSAND OAKS, ETC. CA	32.2	17
281	B1	KBOX	LOMPOC CA	123.2	93
282	B	KBIG	LOS ANGELES CA	107	99

See next page...

KPPQ-LP is first-adjacent channel overlapped with super-power KBIG.

Reception of KBIG in Ventura and Oxnard is mainly blocked by intervening terrain and the location is outside of the Los Angeles/Orange County market.

Using KBIG's *1962 Order* class maximum power of 0.8 kW, the 48 dBu interfering contour of KPPQ-LP does not overlap the 54 dBu service contour of KBIG.

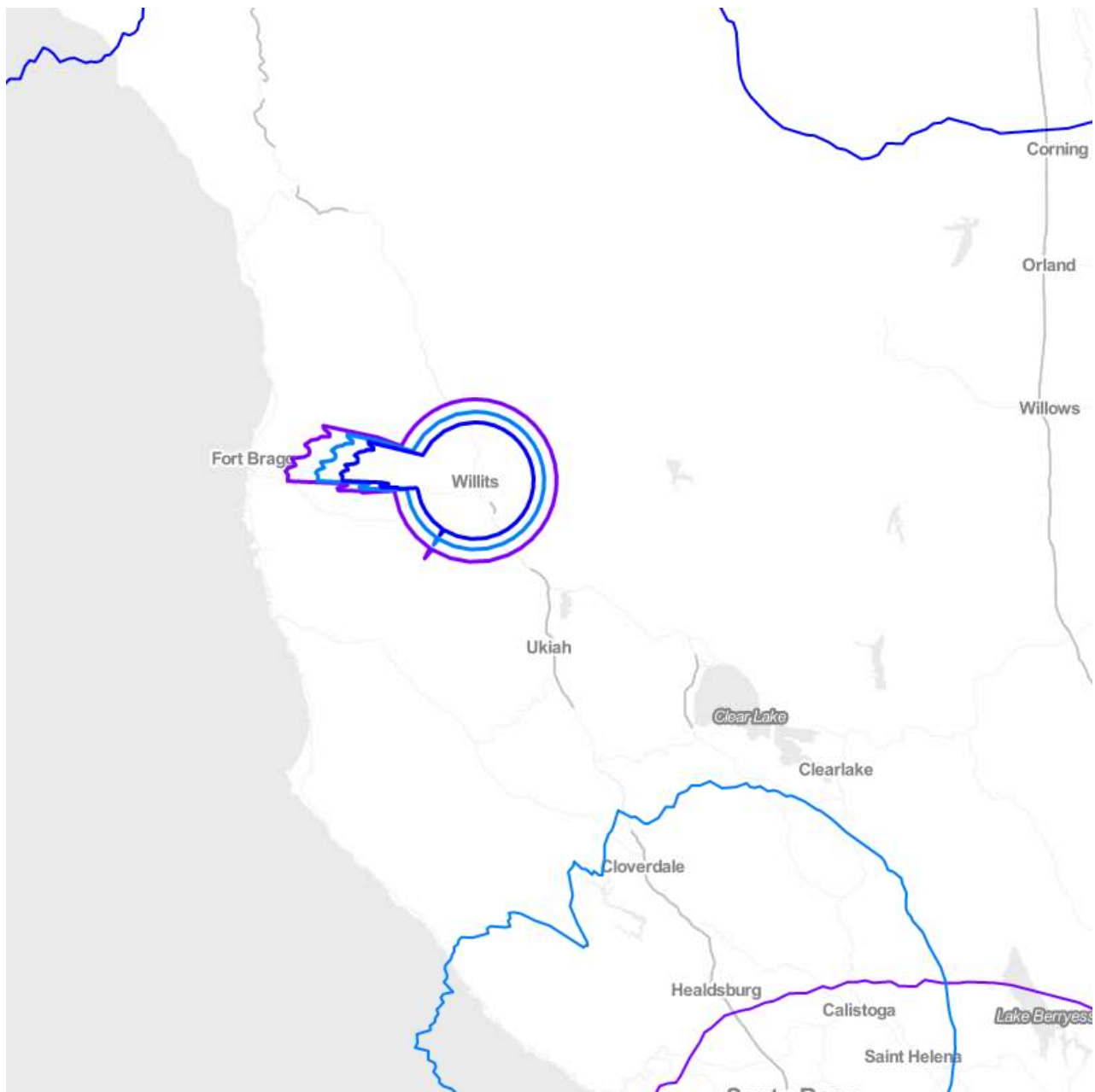


KQBM-LP (193635)

WEST POINT CA

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
278	A	KHHM	SACRAMENTO CA	85.1	58
279	B	KFBT	HANFORD CA	216	121
279	C1	KODS	CARNELIAN BAY CA	115.6	116
279	B	KOSF	SAN FRANCISCO CA	185.1	121
280	A	KKFS	LINCOLN CA	74.2	58
280	A	KDJK	MARIPOSA CA	105.8	58

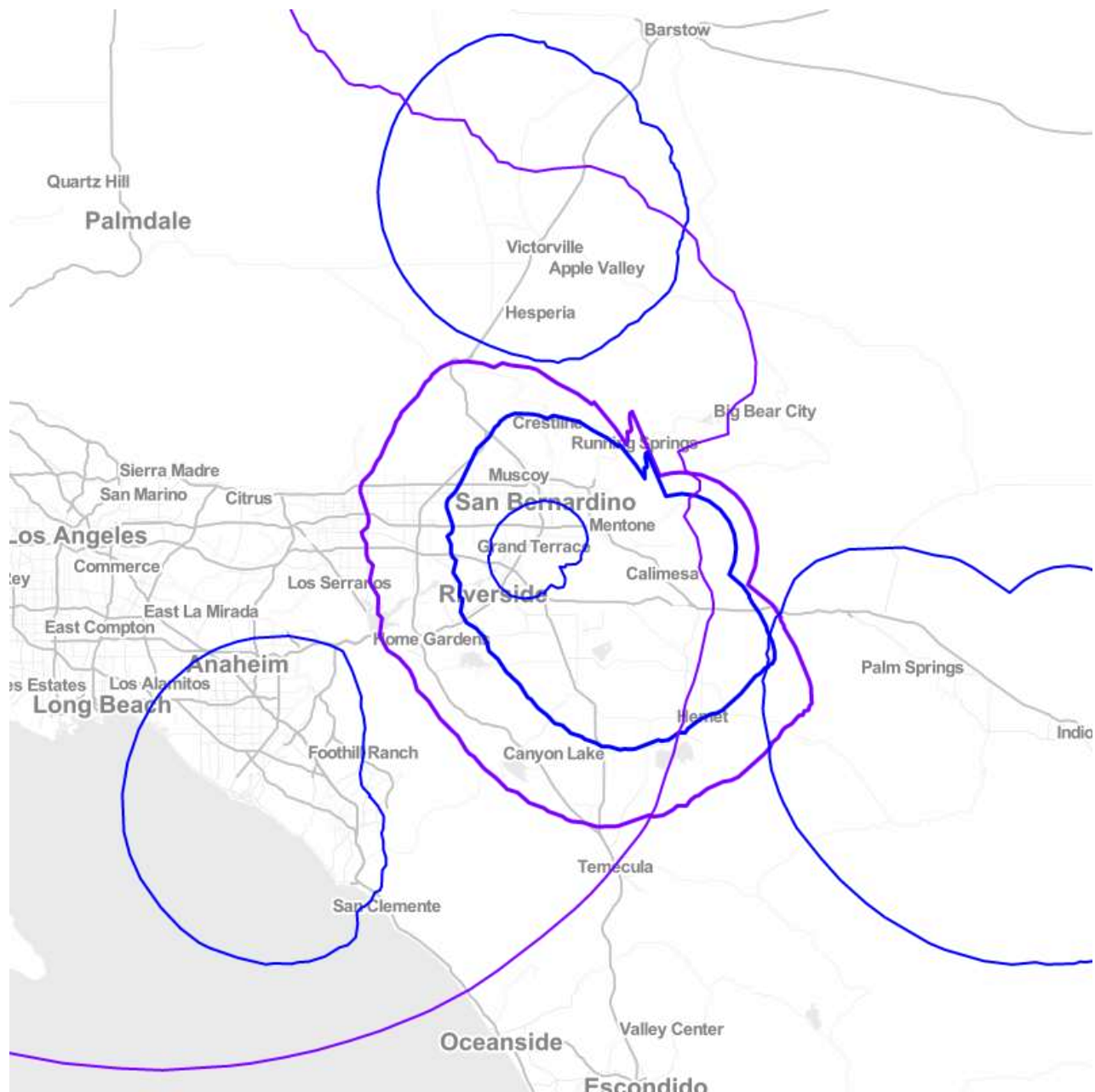


KLLG-LP (197092)

WILLITS CA

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
249	B1	KVRV	MONTE RIO CA	102.4	77
249	C1	KJNY	FERNDAL CA	144.9	102
251	C	KVIP-FM	REDDING CA	155.4	122
251	B	KISQ	SAN FRANCISCO CA	188.5	99



KQLH-LP (195813)

YUCAIPA CA

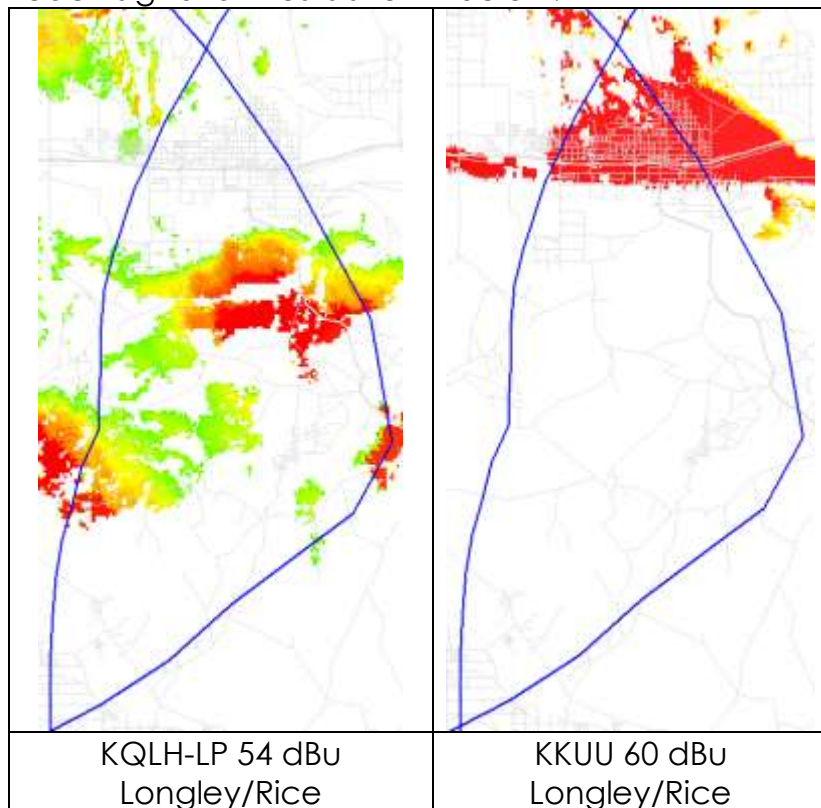
Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
222	B	KRRL	LOS ANGELES CA	99.6	99
224	A	KYZA	ADELANTO CA	69.5	58
224	D	K224DK	FONTANA CA	26.1	23
224	A	KYLA	FOUNTAIN VALLEY CA	87.5	58
224	A	KKUU	INDIO CA	74.7	58

See next page...

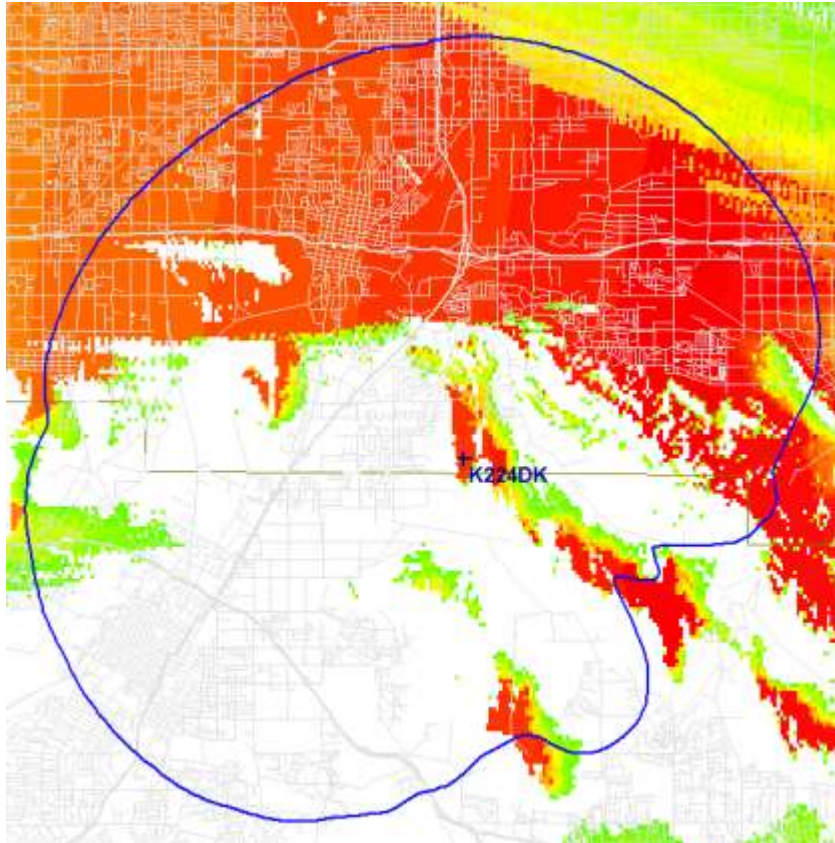
KQLH-LP would overlap FM Translator K224DK, super-power KRRL and have a small overlap with KKUU. All overlap is on first-adjacent channels. KQLH-LP has a peak LP100 contour of 23.039 kilometers, the second longest in the country. KQLH-LP was the subject of the opposition by Educational Media Foundation due to concern regarding their K224DK translator.

KKUU is a Foothill Effect Class A station and within the overlap with KQLH-LP does put a signal into a small portion of a mountain pass for Interstate 10 including the town of Cabazon. Because of intervening terrain, KQLH-LP is blocked from the Cabazon area. Therefore, the two stations do not cause first-adjacent channel interference with each other. The uniquely different parts of the contour where each signal arrives is shown below:



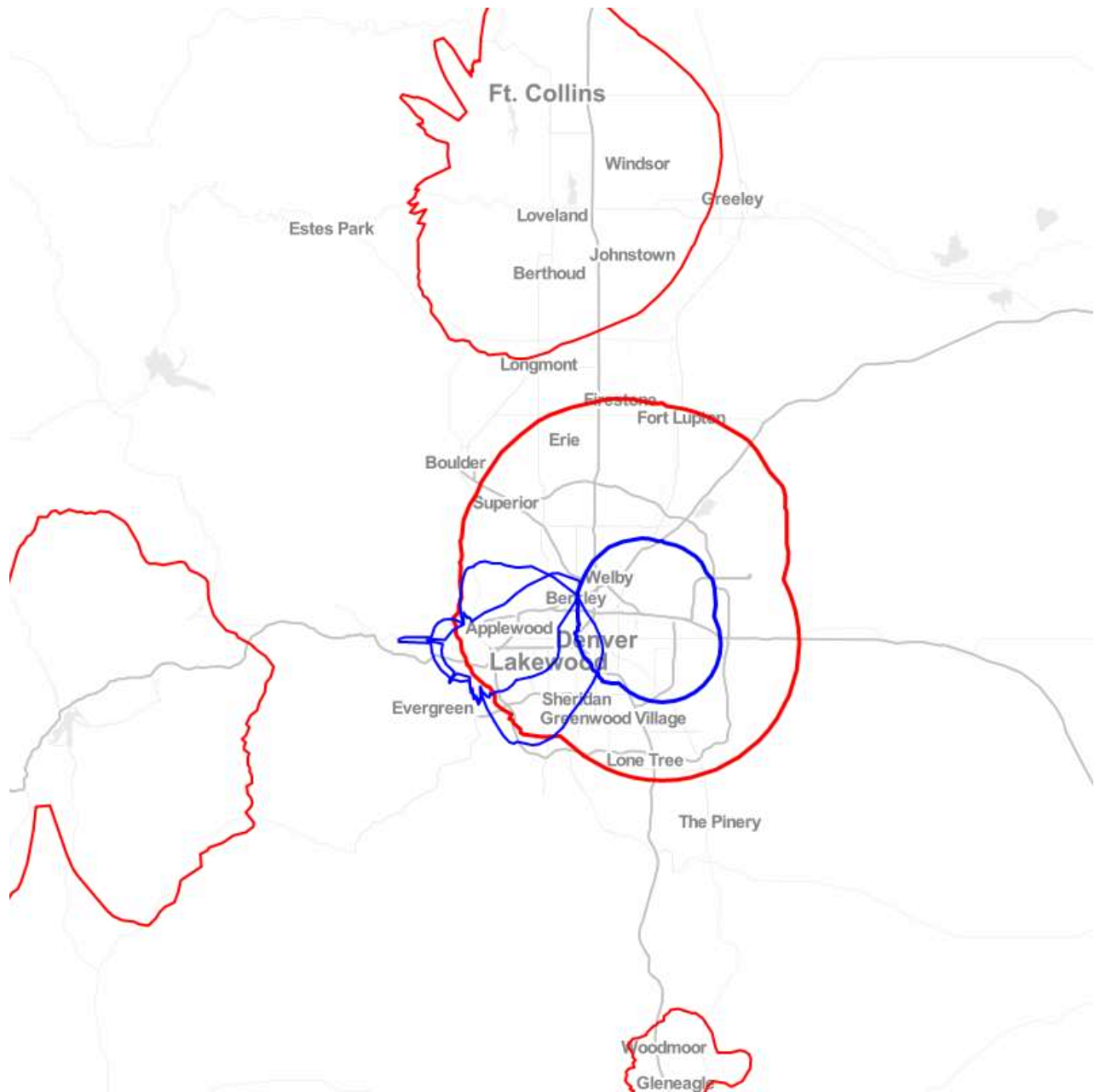
KRRL is a super-power Class B station that is currently overlapped with KQLH-LP as an LP100. Even at their 1962 *Order* class maximum of 0.88 kW, the overlap remains at LP250.

K224DK is mostly overlapped from KQLH-LP at LP100 and would be fully overlapped at LP250. While KQLH-LP has received no other interference complaints regarding reception of K224DK (other than EMF raising this concern in multiple proceedings), a Longley/Rice study does show significant area in the northern part of the K224DK contour where KQLH-LP is predicted to place a 54 dB field strength.



In the *Petition for Rulemaking*, REC acknowledged that KQLH-LP would be a station that could frustrate interference at the LP250 level. To that extent, we agree with EMF's concern.

Based on REC's new recommendation for the few stations with extremely large service contours in a particular direction, KQLH-LP would not be able to upgrade.



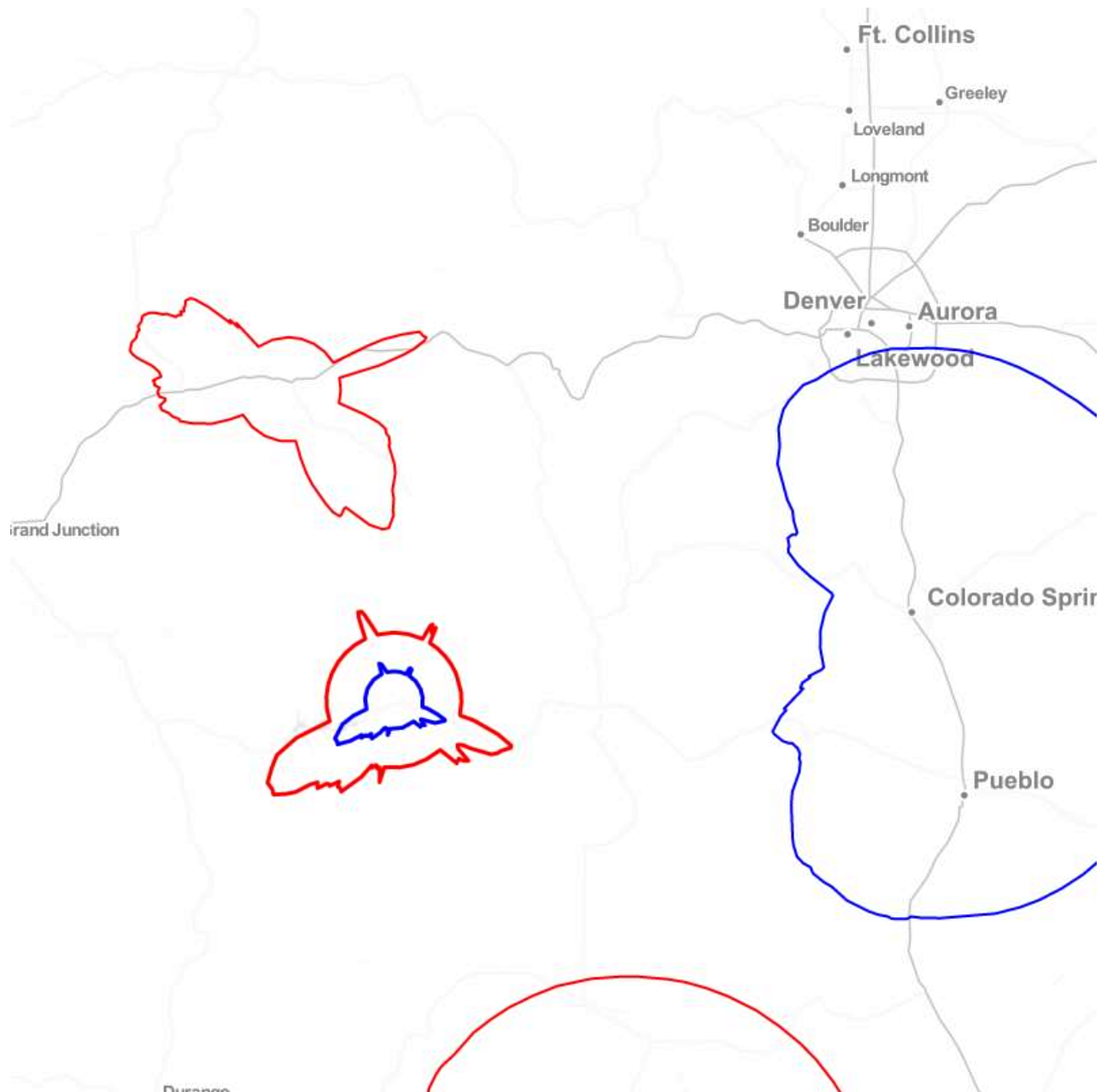
KETO-LP (192127)

AURORA CO

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
229	D	K229BS	LAKEWOOD CO	33	30
230	A	KCWA	LOVELAND CO	89.1	72
230	D	K230BO	MONUMENT CO	74	44
230	A	KYSL	FRISCO CO	110.3	72
231	D	K231BQ	GOLDEN CO	33.1	30

At LP250, there would be a small amount of overlap that would impact 210 persons. (This overlap figure is based on FCC30 data used in the ComStudy 2 software where the size of the overlapping contours varies from the GLOBE30 data used by the FCC Contour API).

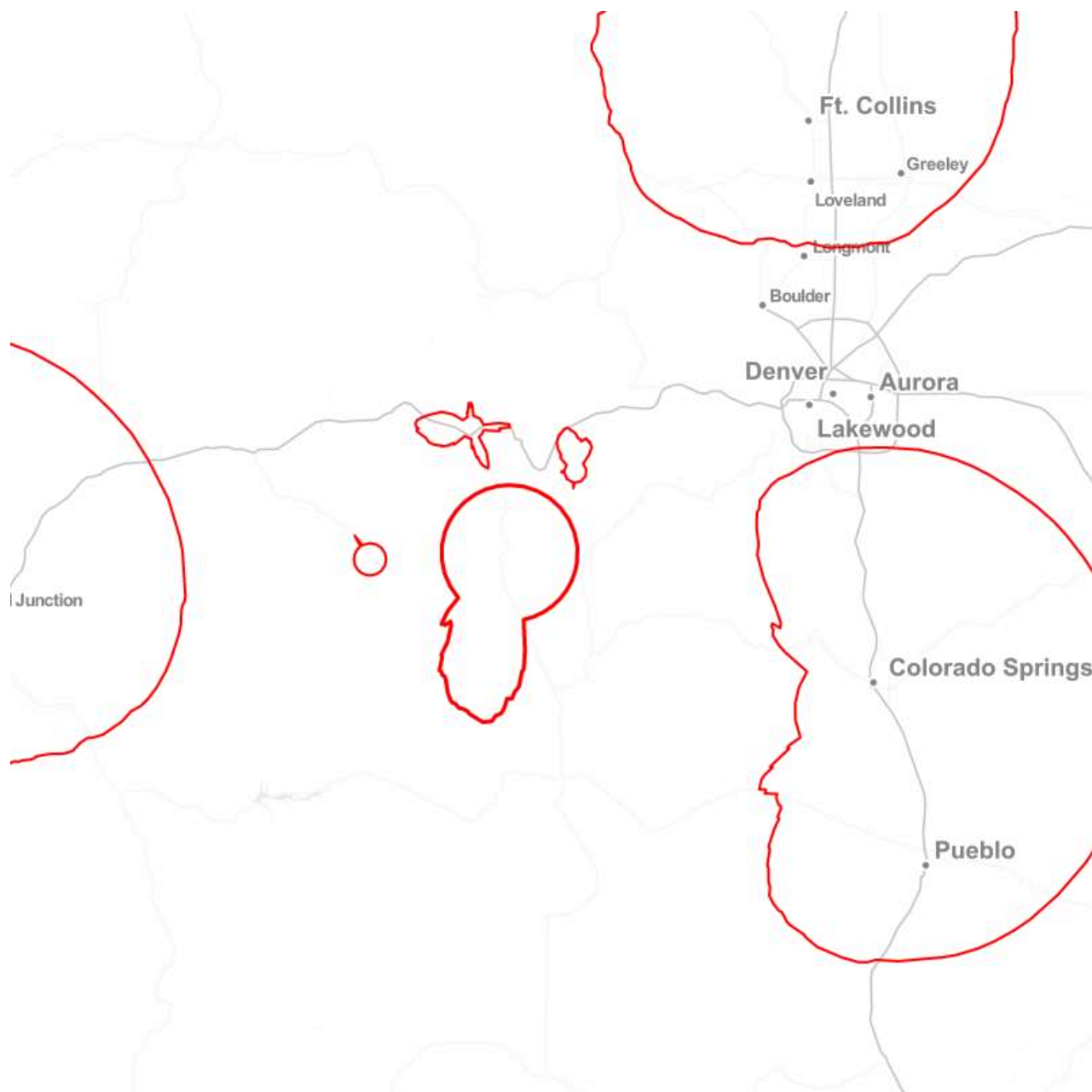


KGUS-LP (131690)

GUNNISON CO

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
255	C	KKMG	PUEBLO CO	180	122
256	C	KXMT	TAOS NM	204.7	136
256	C3	KMTS	GLENWOOD SPRINGS CO	114.5	83

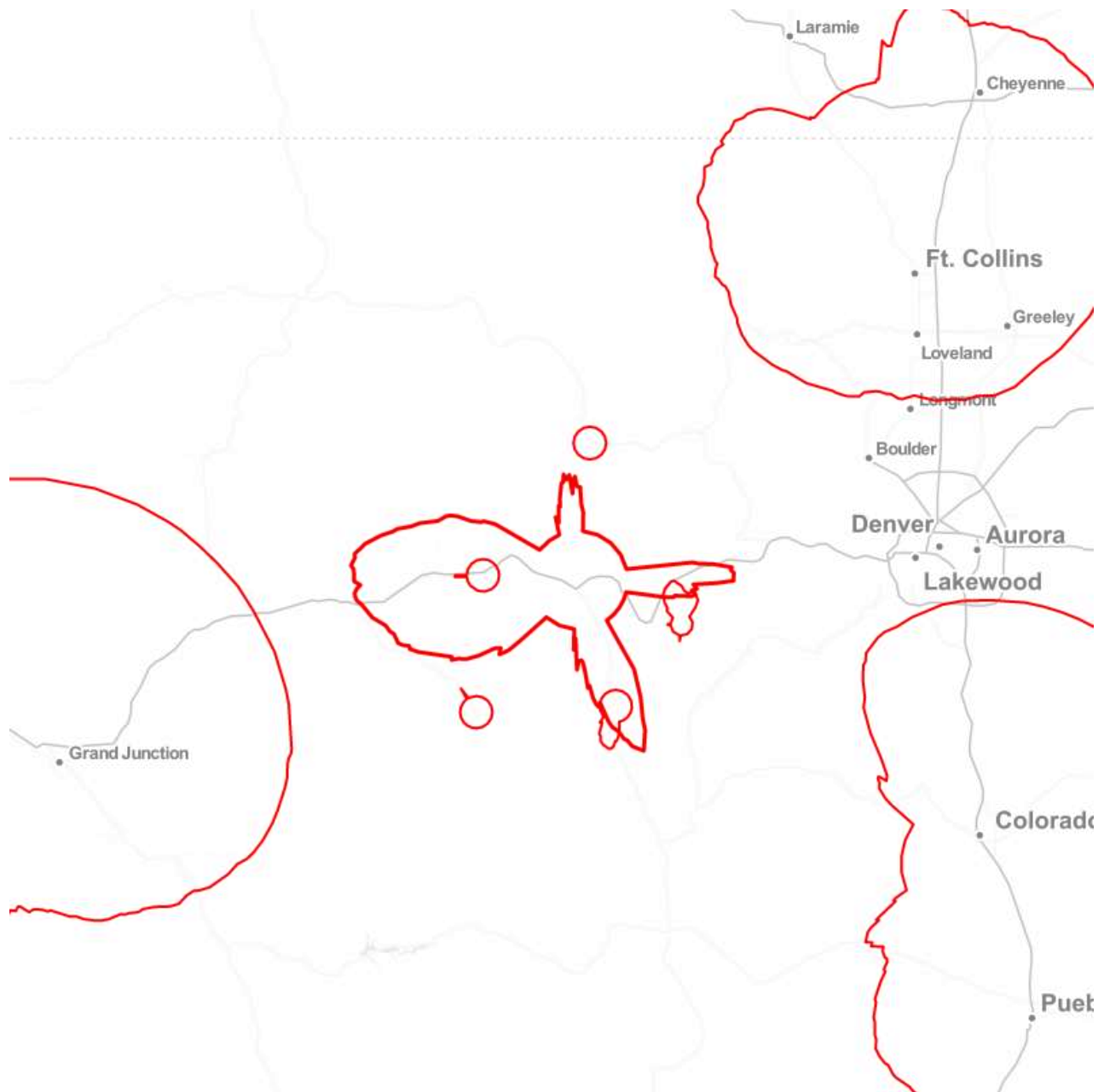


KLEV-LP (131652)

LEADVILLE CO

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
300	C	KBKL	GRAND JUNCTION CO	212.9	136
300	L1	KLNK-LP	MINTURN CO	45.6	31
300	C1	KBPI	FORT COLLINS CO	206.2	116
300	L1	KASP-LP	ASPEN CO	48.9	31
300	D	K300AE	BRECKENRIDGE CO	36.5	31
300	C0	KBPL	PUEBLO CO	135.8	127



KLNK-LP (131946)

MINTURN CO

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
300	L1	KLEV-LP	LEADVILLE CO	45.6	31
300	C	KBKL	GRAND JUNCTION CO	208.2	136
300	L1	KEAE-LP	EAGLE CO	33.3	31
300	C1	KBPI	FORT COLLINS CO	175.7	116
300	L1	KASP-LP	ASPEN CO	58.1	31
300	D	K300AE	BRECKENRIDGE CO	39	31
300	L1	KRLG-LP	KREMMLING CO	47.5	31
300	C0	KBPL	PUEBLO CO	168.8	127

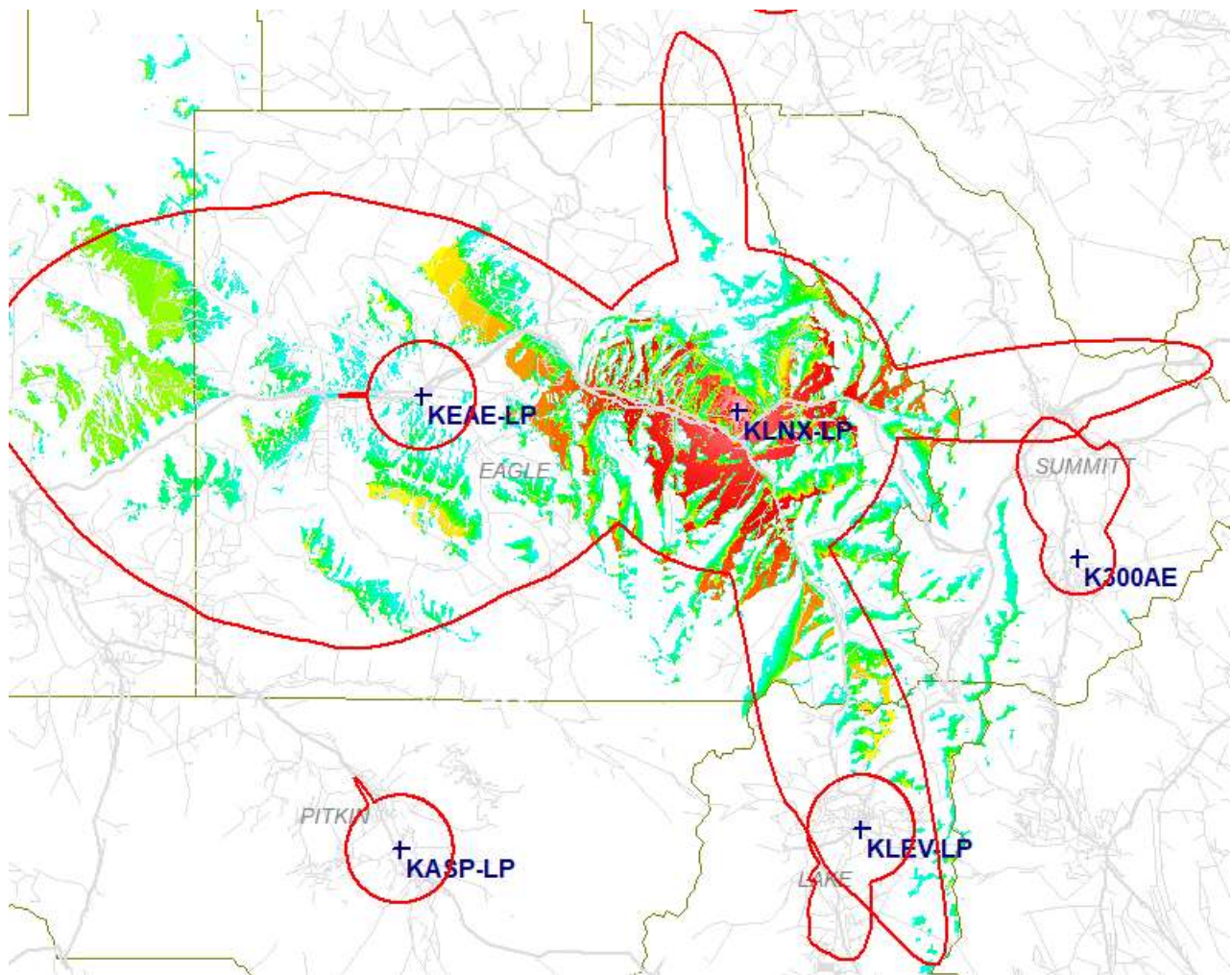
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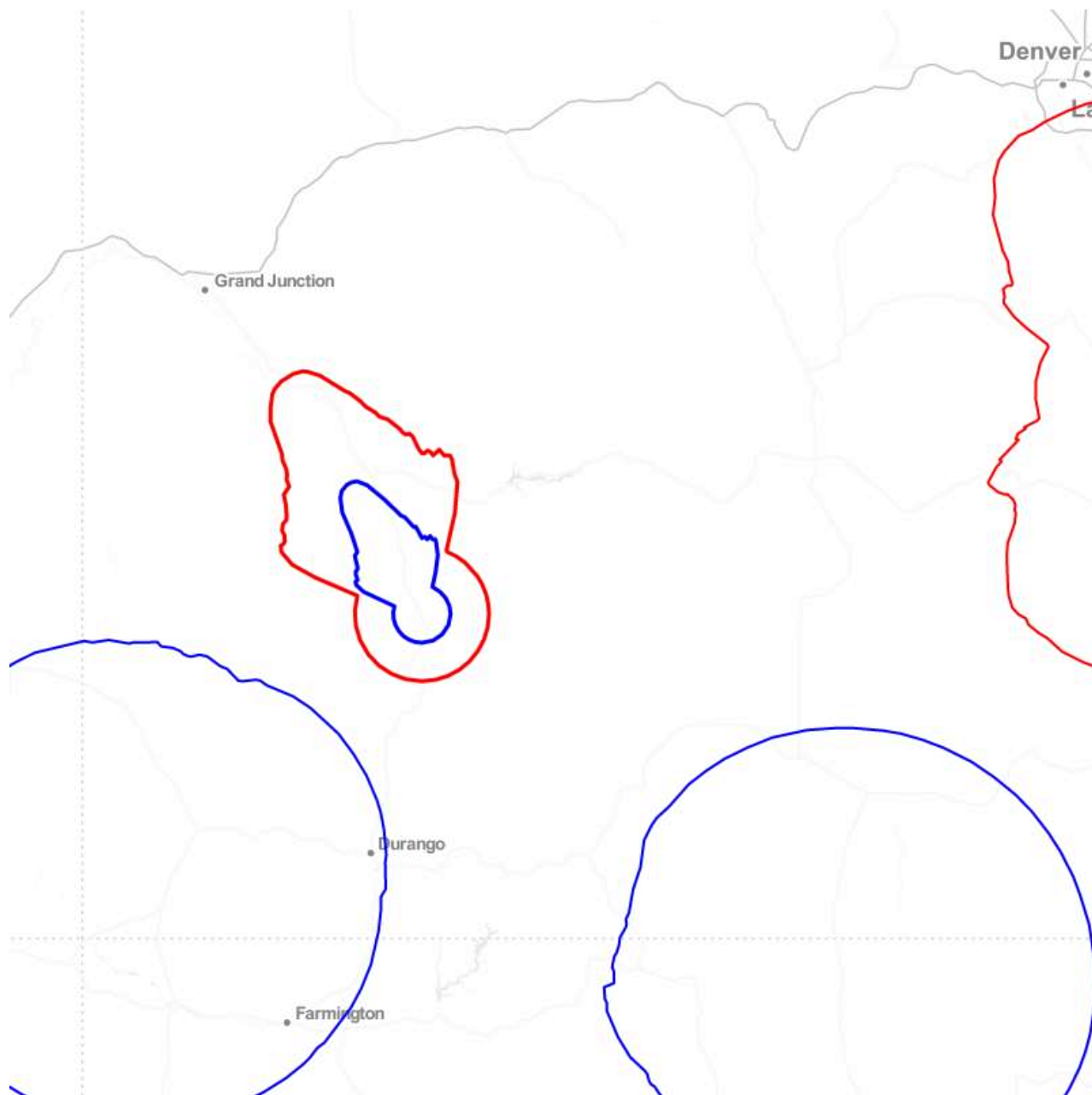
KLNK-LP is located in the Rocky Mountain Range. KLNK has overlap with LPFM stations KEGE-LP and KLEV-LP, both traveler's information stations operated by the State of Colorado and is also overlapped with FM Translator K300AE.

Due to the intervening terrain of the Rocky Mountains, the KLNK-LP signal, even at LP250 level (0.075 kW ERP) is very limited in reach. Based on Longley/Rice, KLNK-LP would place 40 dBu field strength over a population of 40 people in the KEGE-LP service contour.

KLNK-LP signal does not place a 40 dBu field strength in the service contours of KLEV-LP nor K300AE.

At LP250, KLNK-LP would not place any interference into any full-service FM or FM Translator station's service contour.





KURA-LP (131909)

OURAY CO

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
254	C	KRTZ	CORTEZ CO	135.3	122
255	C	KKMG	PUEBLO CO	257.8	136
256	C	KXMT	TAOS NM	197.2	122

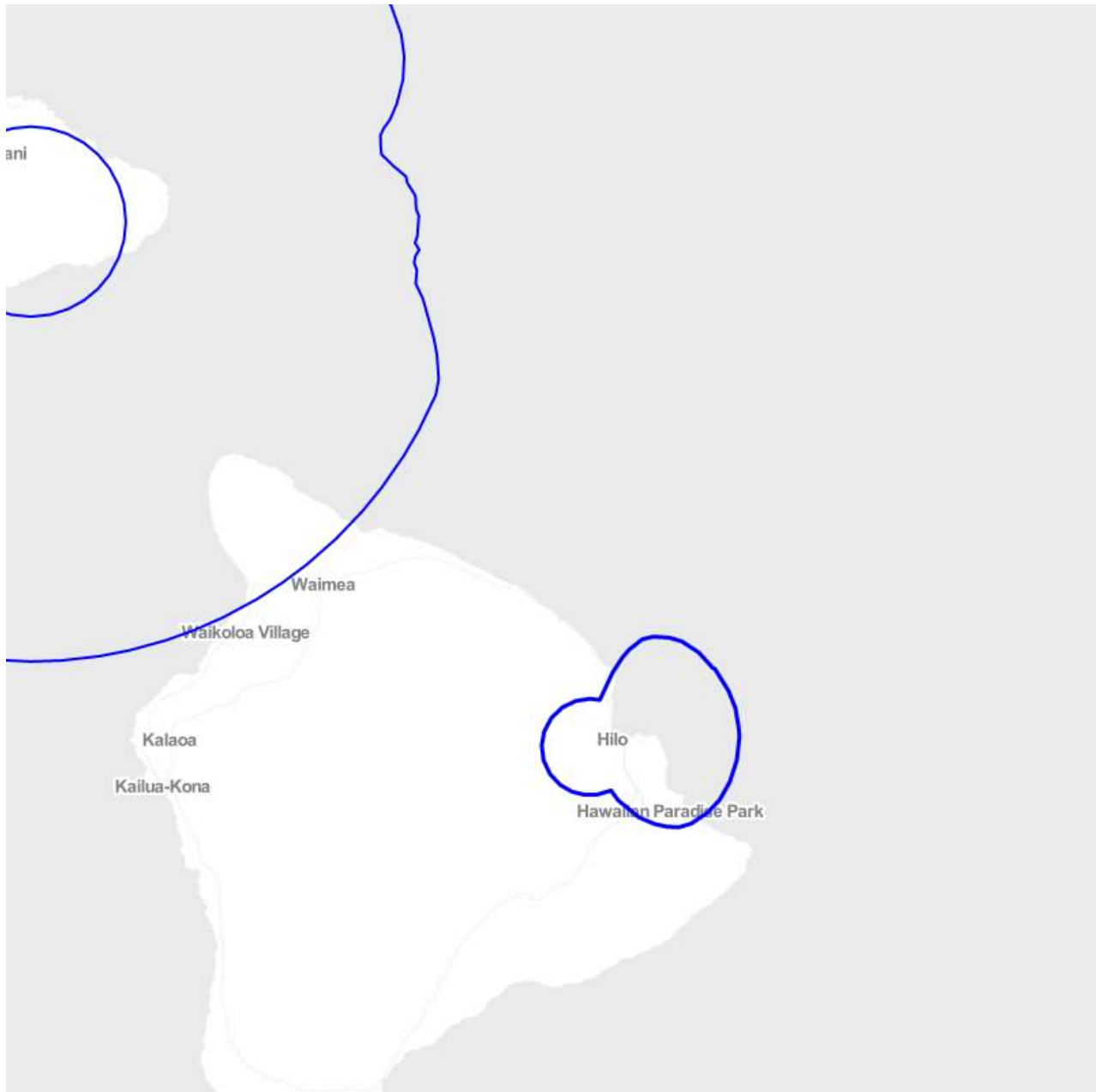


KNKR-LP (192387)

HAWAII

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
240	C2	KPVS	HILO HI	87.6	82
240	C1	KKHI	KAUNAKAKAI HI	129.9	102
242	C	KRTR-FM	KAILUA HI	233.8	122



KIHL-LP (132082)

HILO HI

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
280	C	KNUQ	PAAUILO HI	161	122
280	C	KNUQ	PAAUILO HI	160.6	122

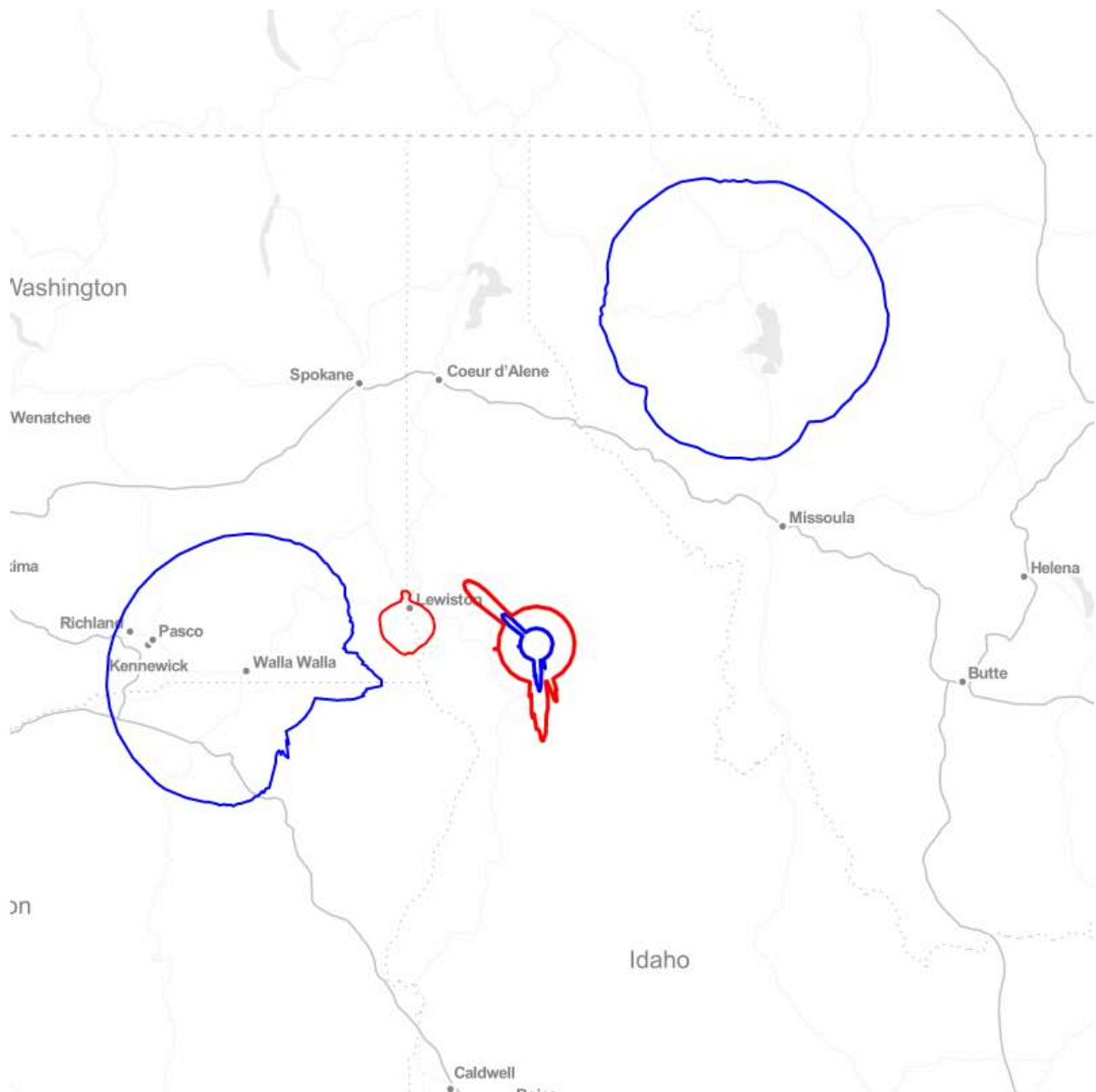


KFIP-LP (197667)

KAILUA-KONA HI

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
298	C2	KHEI-FM	KIHEI HI	131.6	82

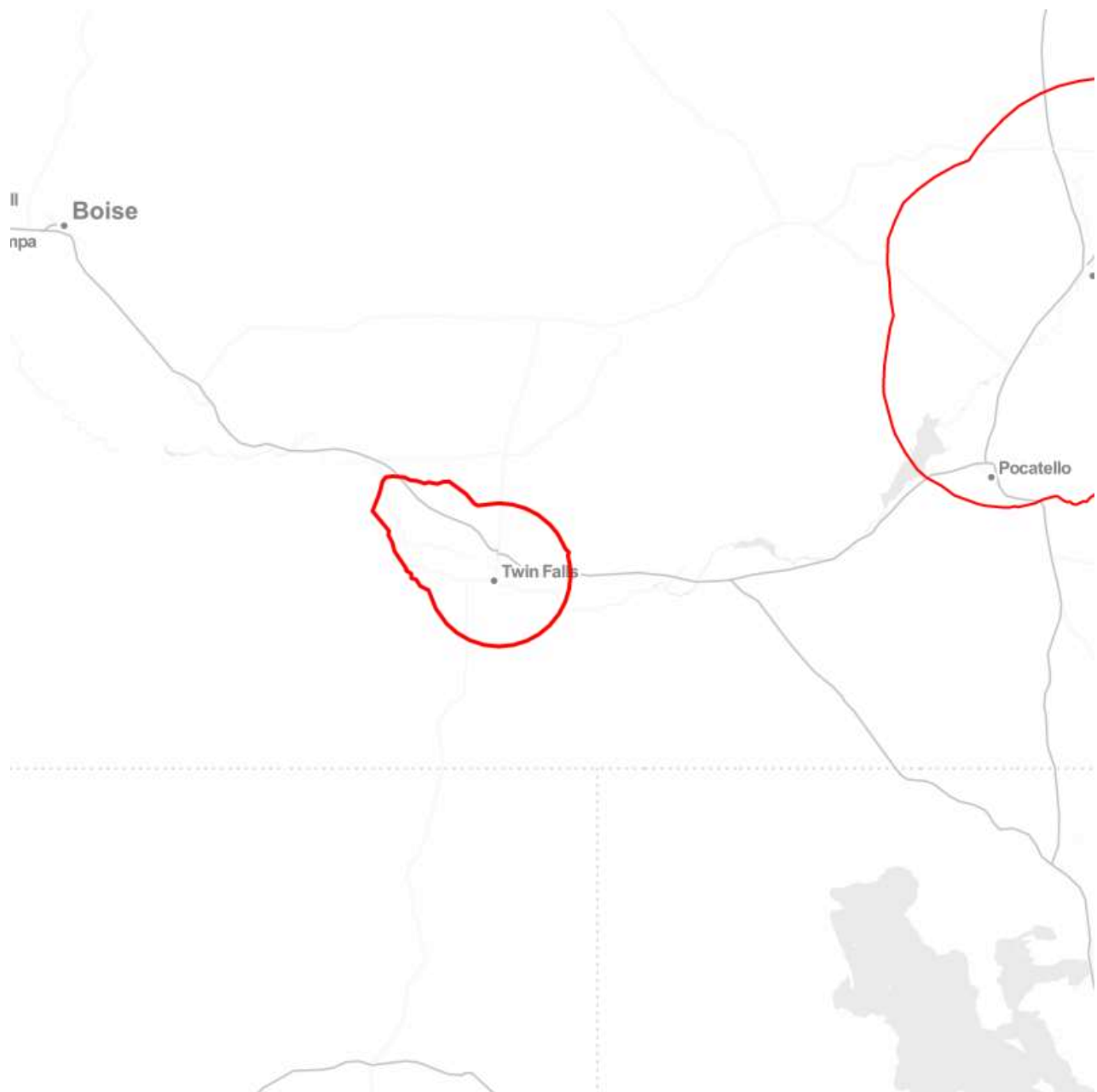


KMEI-LP (132207)

KAMIAH ID

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
246	C0	KXRX	WALLA WALLA WA	170.5	114
246	C	KALS	KALISPELL MT	235.1	122
247	D	K247AW	LEWISTON ID	85.8	44

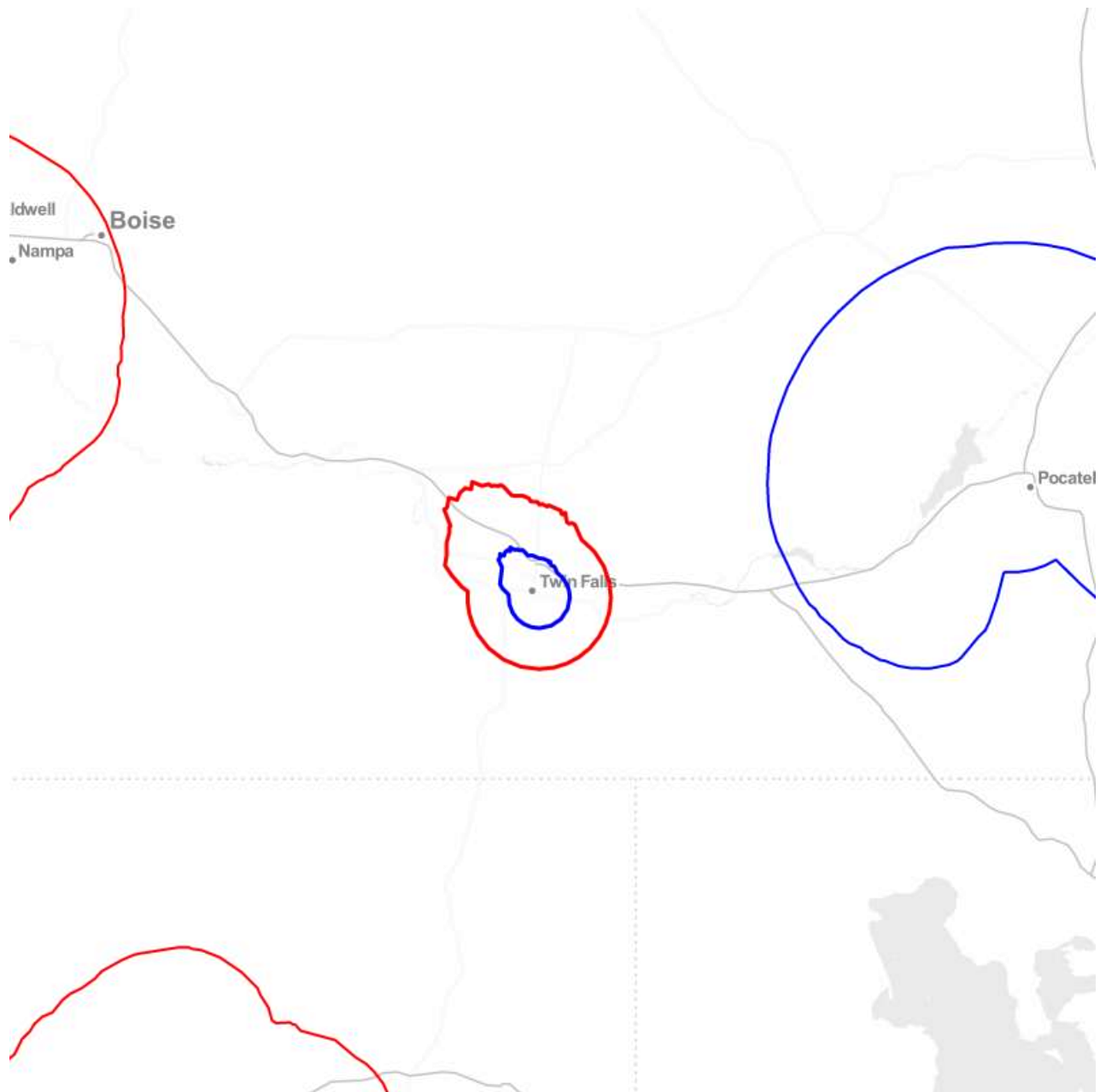


KAGF-LP (126205)

TWIN FALLS ID

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
288	C1	KTHK	IDAHO FALLS ID	216.3	116

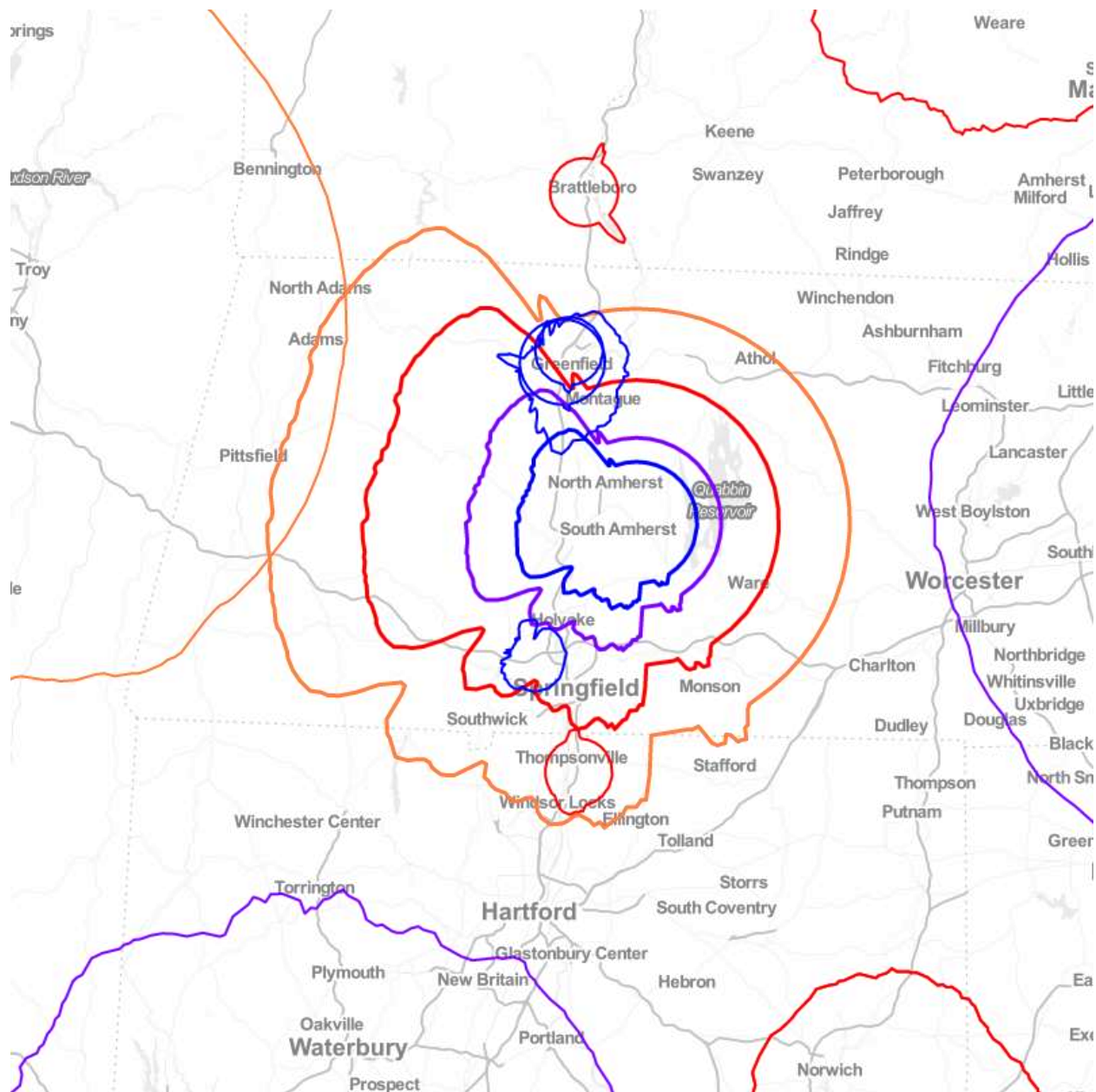


KDKI-LP (192885)

TWIN FALLS ID

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
280	C	KCNU	SILVER CITY ID	242.3	136
280	C1	KBGZ	SPRING CREEK NV	215.3	116
281	C1	KORR	AMERICAN FALLS ID	160.8	102



WAIY-LP (196208)

BELCHERTOWN MA

Facilities considered:

Channel	Class	Call	Location	Distance	LP250 Dist Req
298	D	W298CA	GREENFIELD MA	29.4	17
298	D	W298CA	GREENFIELD MA	28.7	23
299	B	WGNA-FM	ALBANY NY	129.8	121
299	A	WWRX	NORTH STONINGTON CT	108.2	72
299	L1	WACC-LP	ENFIELD CT	42.8	31
299	A	WTPL	HILLSBORO NH	105.1	72
299	A	WWRX	BRADFORD RI	108.2	72
299	L1	WVEW-LP	BRATTLEBORO VT	55.5	31
300	L1	WLHZ-LP	SPRINGFIELD MA	28.6	17
300	C	WVPS	BURLINGTON VT	243.5	122
300	B	WXKS-FM	MEDFORD MA	114.1	99
300	L1	WMCB-LP	GREENFIELD MA	30.6	17
300	B	WEBE	WESTPORT CT	132.9	99

WAIY-LP has overlap with WGNA-FM and FM Translator construction permit W298CA.

In respect to WGNA-FM, a Longley/Rice study shows that within the area where there is contour overlap and WAIY-LP is predicted to place a 34 dB or stronger field strength, there is zero population.

For W298CA, the contour overlap includes 1,857 persons. A U/D ratio study for the overlap area shows that in certain areas W298CA would favor over WAIY-LP, but in some areas WAIY-LP would favor over W298CA.

Foothill Effect LPFM data continued in Part 2.