Comprehensive Technical Exhibit
Application for Construction Permit
K269FB - Sausalito, California
IHR Educational Broadcasting
January, 2012

Application for Construction Permit

The following engineering statement and attached exhibits have been prepared for **IHR Educational Broadcasting** ("IHR"), licensee of FM translator station K269FB at Daly City, California, and are in support of their application for construction permit to modify that facility.[1]

Under this application, IHR seeks to relocate the translator from the currently licensed location in San Francisco, California, north of the Golden Gate to a site in the vicinity of Sausalito, California. As part of the relocation of the translator, IHR also seeks a change in the community of license from the current Daly City, California to the proposed Sausalito, California. The facility currently serves as a fill-in translator for AM station KSFB at San Francisco, California.[2] No change in the primary station is proposed.

From the new site, the proposed facility would operate with a maximum ERP of 25 Watts at a center of radiation of 10.7 meters above ground level. The supporting structure that would be utilized is a tower with an overall height above ground of 30.5 meters. Registration of this existing tower is not required. Exhibit E-1 depicts the resulting 60-dBu service contour from this set of parameters, and demonstrates that this contour would be wholly contained within both the 2.0 mV/m daytime service contour of KSFB and a 25-mile radius centered on the KSFB transmitter site.

Exhibit E-2 is a tabular based allocation study for the proposed facility. This table demonstrates that the proposed facility would have no prohibited contour overlap with any other

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[1] The Facility ID for K269FB at Sausalito, California (Daly City) is 147348.
[2] The Facility ID for KSFB at San Francisco, California is 6369.

proposed or existing facility except KIOI(FM) and KUZX(FM), both at San Francisco, California.

Exhibit E-3 provides a graphical representation of the associated contours.

Although the proposed facility would have normally prohibited contour overlap with KUZX, KIOI, and KUZX-FM2, it is not predicted to result in interference to any of these three facilities.[3] The proposed facility would be located at the same site utilized by KUZX. The effective radiated power of KUZX is 33 kW, while the proposed ERP for K269FB is 25 Watts. The difference in the ERP for the two facilities is in excess of 30 dB. Based on the proximity of these two facilities and the disparity in their effective radiated power values, no interference to the facility would result.

In the case of KUZX-FM2, any interference to that facility would be limited to areas inside the 54-dBu service contour where the signal strength of the proposed facility is at least 40 dB greater than the booster. As indicated in Exhibit E-4, the signal strength of the booster in proximity to the proposed K269FB site is predicted to be approximately 58 dBu. Thus, any interference that would occur would be within a signal strength of approximately 98 dBu from K269FB. However, the primary facility for KUZX-FM2, KUZX(FM), is located at the site that would be utilized by K269FB. This facility, co-channel with the booster, will interfere with the booster at a much lower signal level.

For illustrative purposes, the 98 dBu interfering contour for KUZX is plotted in red on Exhibit E-4. As indicated, this contour takes in a very broad area around the K269FB site. It can therefore be logically inferred from this exhibit, that there is already existing interference to KUZX-FM2 from its main signal over a much wider area than could potentially be caused by K269FB. Thus, any

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[3] The Facility ID for KUZX, KIOI, and KUZX-FM2, all at San Francisco, California, is 65486, 34930, and 137626 respectively.

potential interference from K269FB to KUZX-FM2 is moot as a result of pre-existing conditions, which it is respectfully submitted is one of the "other factors" alluded to in Section 74.1204 of the Commission's Rules.

KIOI is located at a greater distance from the proposed site, and must be treated more rigorously. Exhibit E-5 illustrates that the predicted signal strength for KIOI in proximity to the proposed K269FB site. As illustrated, the 83-dBu service contour from KIOI is located beyond the K269FB site. So, for the purposes of this study it will be assumed that 83 dBu is the signal level necessary for consideration.

This assumption can be made because the interfering field strength for K269FB, which would be 40 dBu greater than the desired field strength, would be 123 dBu. The distance to this field strength is extremely limited given the low effective radiated power. In fact, the distance would be so limited that the calculation of the location of this field strength may occur is better suited to be performed by free space methodologies.

The power density for the proposed facility at a field strength of 123 dBu is given by the following equation:

$$S = \frac{E^2}{Z_0} = \frac{(1.4125)^2}{377} = 0.00037468 \qquad \text{Eq. 1}$$

In this equation, S represents the calculated power density in Watts per square meter, E is the electric field intensity, which for 123 dBu is 1.4125 Volts per meter, and Z_0 is the characteristic impedance of free space of 377 Ohms.

The power density is also given by:

$$S = \frac{P}{4\pi R^2}$$

Where S is in the same units, P is the power in Watts (25 in this case), and R is the
distance. Rearranging the terms in the equation, it can be solved for the distance to the desired
power density as follows:

$$R^2 = \frac{P}{4\pi S}$$

The results of these calculations for depression angles of 0 degrees to 90 degrees are
tabulated in Exhibit E-6. The relative field values at the indicated depression angles were taken
from manufacturer's data for the Scala antenna. As indicated on the form pages, the composite
array is directional in the horizontal plane. The values indicated in this table are based on a
relative field in the horizontal plane of 1.0. This tabulation therefore represents an absolute worst-
case scenario for the facility.

As indicated in the tabulation, areas where the field strength from the proposed translator is
123 dBu or higher are confined to elevations of 3.69 meters (12.1 feet) above ground level. The
horizontal distance from the antenna would be limited to 19.39 meters or less. Thus any predicted
interference would be, in a worst-case scenario, confined to a cylindrical 3-dimensional surface
having a 19.39 meter radius and 3.69 meter height.

The subsequent satellite image depicts a circle with a radius of 19.39 meters centered on
the supporting structure. As indicated, the only structure within this circle is the transmitter building
in which the translator would be located. In addition to the translator, several other facilities,

including broadcast stations, are located at this facility. The facility is a low-density building, thus there would be no resident population in the above described cylindrical surface. Indeed, the only persons that would be present in the potential interference area are those that would be there as a consequence of their work in a highly transient fashion. Zero population can therefore be assumed to be affected by K269FB.
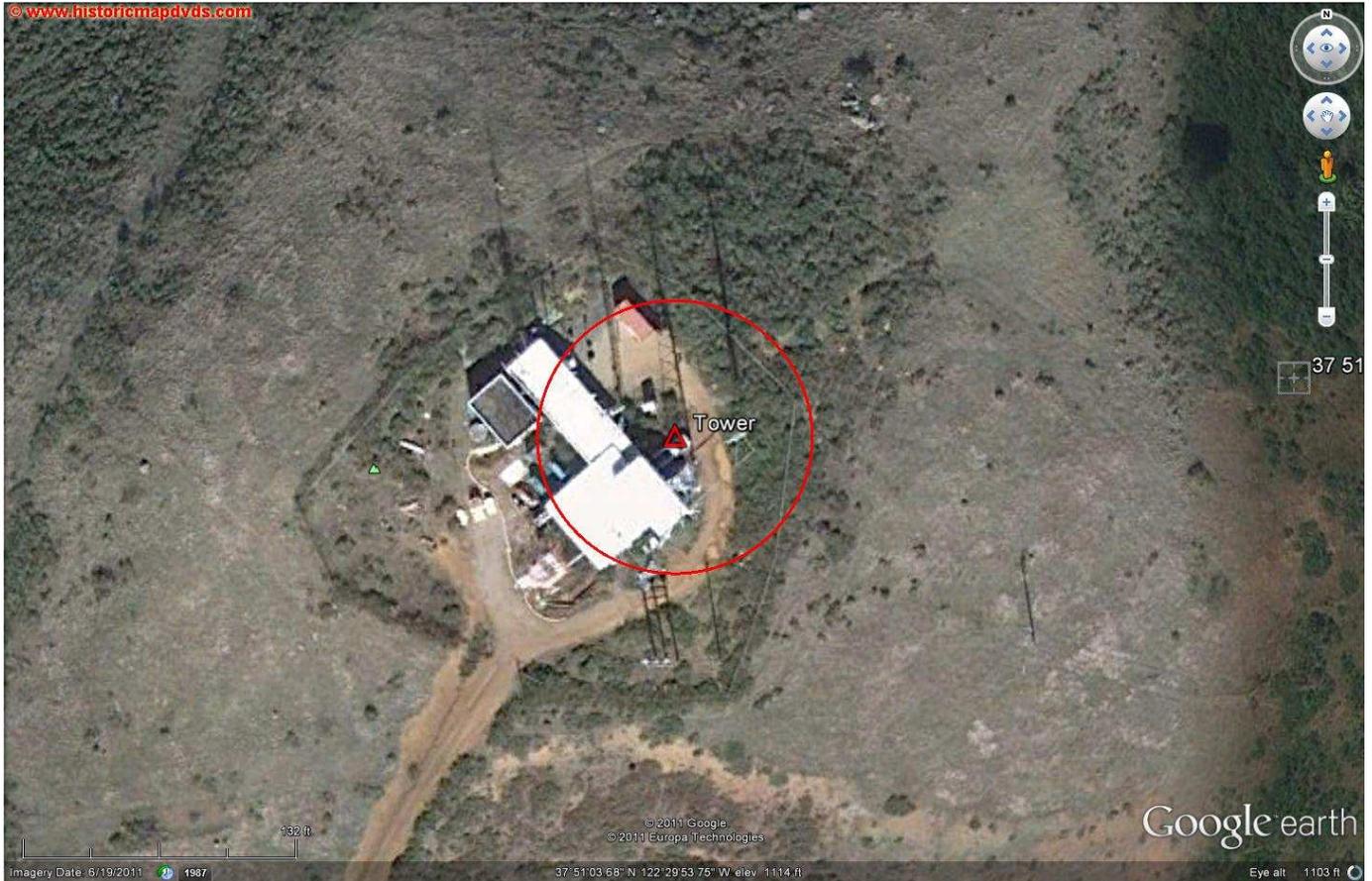
Exhibit E-7 depicts the licensed 60-dBu service contour for K269FB along with the proposed K269FB service contour. As indicated on this map, the two contours would not overlap each other. Under the provisions of Section 74.1233(a)(1) of the Commission's Rules, this application would therefore be considered a major change. IHR respectfully requests a waiver of Section 74.1233(a)(1) of the Commission's Rules in this instance. It is believed that the proposed waiver would be consistent with, and similar to previous waivers of this section. As will be subsequently

demonstrated in this engineering statement, the nature of the waiver request by IHR is similar to

the waiver of Section 74.1233(e)(2) recently granted to The Cromwell Group, Inc. of Illinois in

BPFT-20101025ABR.[4] IHR respectfully requests similar treatment for this waiver request.

The proposed relocation of K269FB would be mutually exclusive with the licensed K269FB

facility. Exhibit E-8 illustrates the contour based allocation study between the two facilities. As this

map demonstrates, there would be contour overlap between the proposed 40 dBu F(50,10)

interference contour and the licensed 60 dBu F(50,50) service contour. Similarly, there would be

overlap between the licensed 40 dBu F(50,10) interference contour and the proposed 60 dBu

F(50,50) service contour. Because of this mutual exclusivity, the proposal would qualify as a minor

change under the less restrictive full-service processing rules.

Historically the Commission has waived, in other cases, provisions of its rules to consider a

major change as a minor change. In such cases, the strict application of the Commission's Rules

is not consistent with the public interest. One example would be in the genre of the minor change

rules for FM stations. Mutual exclusivity between an existing and proposed FM facility is not

required for the policy of permitting non-adjacent channel changes in for FM facilities when there is

a demonstration that another equivalent channel is available for other parties. Similarly, the

Commission has also waived its adjacent channel change rules for displacement of FM translator

facilities.

It should also be noted that the proposal does not preclude future LPFM operations in the

area. K269FB is already a licensed facility, thus, no LPFM facility in the vicinity would be

permissible due to contour overlap with K269FB or with other full power facilities in the region.

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[4] See the letter to Mr. John F. Garziglia, Esq. in DA 11-1495 released September 2, 2011.

Similarly, the channels on the intermediate frequency split would not be available due to the existence of full-power NCE facilities in the vicinity.

Finally, IHR does not have a history of serial hops to relocate translators. K269FB has been modified once since the original construction permit was acquired in 2007. The sole purpose of this relocation, and associated waiver request, is to provide fill-in coverage for KSFB north of the Golden Gate area. This area is quite rocky with declivitous terrain in the vicinity. As a result, the nighttime coverage of KSFB greatly suffers due to local environmental conditions. This proposed relocation, and associated waiver, will allow for those residents in the Sausalito and Tiburon areas to receive KSFB programming with a higher quality signal than they currently are able to receive.

The construction of the proposed facility would not constitute a significant environmental impact. The addition of the antenna array to the existing tower will not increase the existing environmental impact already present at the site. The facility also will not constitute an RF exposure hazard.

If the assumption were made that all radiation emanating from the antenna is directed at the ground, then by the equations in Appendix A of OET bulletin 65, the predicted power density from the facility would be no greater than 22.3 μW/cm^2 at 2 meters above ground level. In reality, however, the actual power density will be considerably less than this value. The areas of interest will lie between depression angles of 45 degrees and 90 degrees from the antenna. At these locations, the relative field from the antenna array is 0.423 or less resulting in an ERP in those directions of 4.5 Watts or less.

Plugging this value back into the Appendix A equations, it is determined that the maximum expected power density at the site from the proposed facility is less than 5 μW/cm^2. This is less than 5% of the standard, thus the facility is not considered to be a significant contributor to the power density levels at the site, and would not result in a hazard to persons.

IHR will coordinate with all other present and future users of the site to ensure workers and personnel are not exposed to levels of non-ionizing radiation in excess of the applicable safety standards. Such coordination will include, but is not necessarily limited to a reduction in power or cessation of operation as necessary.

The preceding statement and attached exhibits have been prepared by me, or under my direction, and are true and accurate to the best of my belief and knowledge.

Above signature is digitized copy of actual signature
License Expires November 30, 2013
Jeremy D. Ruck, PE
January 5, 2012

K269FB.X
Latitude: 37-51-04 N
Longitude: 122-29-50 W
ERP: 0.025 kW
Channel: 269
Frequency: 101.7 MHz
AMSL Height: 350.3 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model: None

D.L. Markley & Associates, Inc.

KSFB 2.0 mV/m
Daytime Contour

Proposed K269FB
60 dBu Contour

25-mile Radius
on KSFB Transmitter

Exhibit E-1
Service Contour Comparison
K269FB - Sausalito, California
IHR Educational Broadcasting
January, 2012

Scale 1:1,000,000

				km
0	10	20	30	
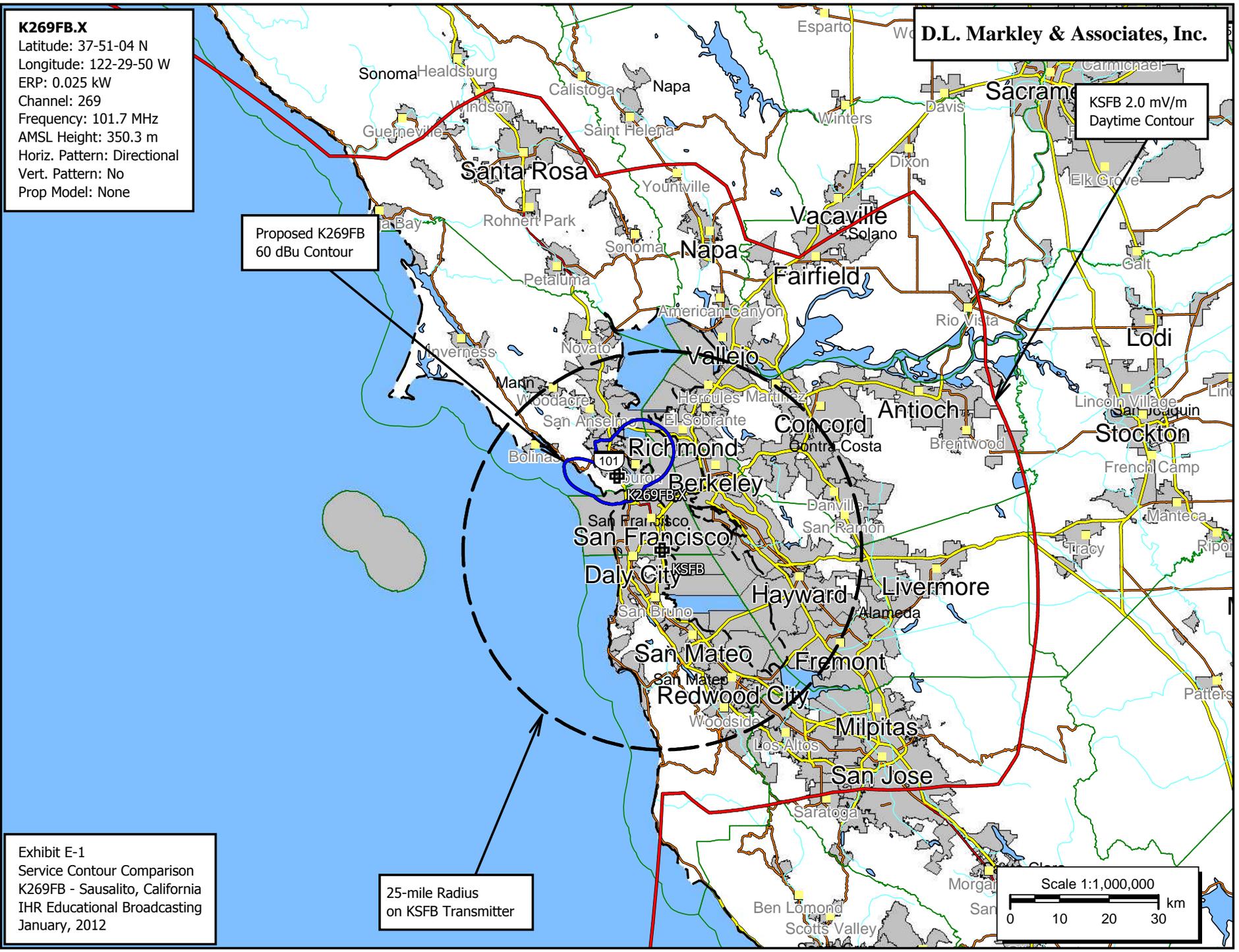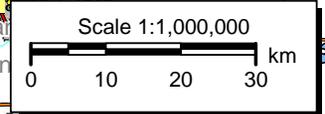
Exhibit E-2 - Tabular Allocation Study
K269FB - Sausalito, California

REFERENCE	CH# 269D - 101.7 MHz, Pwr= 0.025 kW DA, HAAT= 306.6 M, COR= 350.3 M	DISPLAY DATES
37 51 04.0 N.	Average Protected F(50-50)= 12.83 km	DATA 01-04-12
122 29 50.0 W.	Standard Directional	SEARCH 01-05-12

CH CITY	CALL	TYPE ANT STATE	AZI <--	DIST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap	*OUT* in km)
271B San Francisco	KUZX	LIC _CX CA	217.9 37.9	0.0 BMLH20030711ACC	37 51 03.0 122 29 51.0	33.000 319	8.0 386	80.1 Entercom San Francisco Lic	-14.1*	-80.2*
267B San Francisco	KIOI	LIC DCN CA	163.5 343.5	18.7 BLH6225	37 41 24.0 122 26 13.0	125.000 354	6.7 418	72.9 Amfm Broadcasting Licenses	6.7	-54.4*
269A Livermore	KKIQ	LIC _CN CA	110.9 291.4	79.0 BMLH19900130KA	37 35 42.0 121 39 42.0	4.500 116	119.8 631	48.4 Kkiq, Inc.	-46.8*	8.0
269B1 Santa Rosa	KHTH	LIC ZCN CA	348.9 168.8	74.4 BLH19920818KG	38 30 31.0 122 39 41.0	2.200 332	93.4 546	40.6 Maverick Media Of Santa Ro	-26.5*	3.4
269D Daly City	K269FB	LIC DH_ CA	148.7 328.7	17.5 BLFT20100715AGJ	37 42 59.0 122 23 37.0	0.013 81	16.7 116	5.2 Ihr Educational Broadcasti	-4.9	-8.6
269D Petaluma	KHTH-FM1	LIC DCN CA	350.9 170.9	54.1 BLFTB19930712TD	38 19 56.0 122 35 42.0	0.045 400	50.8 579	14.5 Maverick Media Of Santa Ro	-4.4	13.2
271D San Francisco	KUZX-FM2	LIC DV_ CA	86.0 266.4	51.1 BLFTB20060209AAG	37 52 54.0 121 55 05.0	1.000 1122	1.5 	46.8 Entercom San Francisco Lic	39.8	4.1
269D Hayward	KKIQ-FM1	LIC DV_ CA	119.2 299.4	44.5 BLFTB20010828ABE	37 39 19.0 122 03 22.0	0.850 203	34.1 	10.3 Kkiq, Inc.	4.5	12.0
267D Walnut Creek	KIOI-FM1	LIC DVN CA	74.5 254.7	34.2 BLFTB19990225UC	37 55 57.0 122 07 20.0	0.150 300	0.0 427	3.6 Amfm Broadcasting Licenses	22.6	30.3
269D Tracy	KKIQ-FM2	LIC DCN CA	94.1 274.8	100.4 BLFTB19930614TA	37 46 52.0 121 21 37.0	1.200 85	49.6 101	14.4 Kkiq, Inc.	42.3	56.9
267D Pleasanton	KIOI-FM2	LIC DVN CA	113.0 293.4	54.2 BLFTB19990225UB	37 39 34.0 121 55 54.0	0.900 543	0.2 	9.6 Amfm Broadcasting Licenses	48.1	44.5

Terrain database is NGDC 30 SEC , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM
Contour distances are on direct line to and from reference station. Reference zone= East Zone 2A, Co to 3rd adjacent.
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)
"*"affixed to 'IN' or 'OUT' values = site inside protected contour.

K269FB.X
BLFT20100715AGJ
Latitude: 37-51-04 N
Longitude: 122-29-50 W
ERP: 0.025 kW
Channel: 269
Frequency: 101.7 MHz
AMSL Height: 350.3 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model: None

D.L. Markley & Associates, Inc.

	60 dBu F(50,50) Contour
	57 dBu F(50,50) Contour
	54 dBu F(50,50) Contour
	40 dBu F(50,10) Contour
	37 dBu F(50,10) Contour
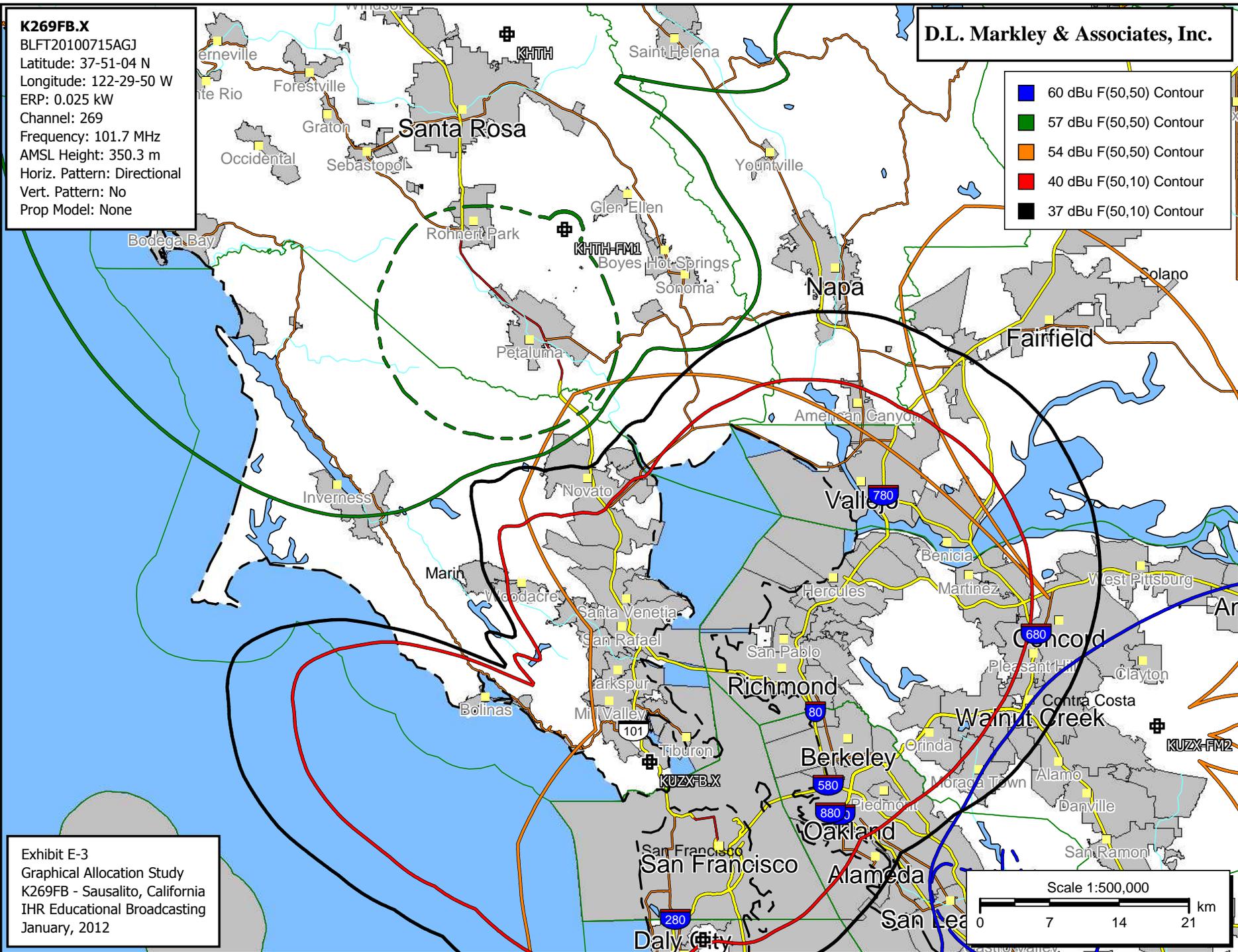
Exhibit E-3
Graphical Allocation Study
K269FB - Sausalito, California
IHR Educational Broadcasting
January, 2012

Scale 1:500,000

0   7   14   21   km
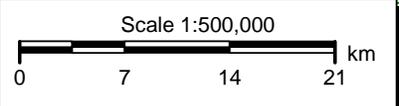
D.L. Markley & Associates, Inc.

KUZX 98 dBu
Interference Contour

Larkspur

Corte Madera

Mill Valley

101

Tiburon

KUZX-FM2
58 dBu Contour

Sausalito

KUZXFB.X

K269FB and KUZX
Transmitter Site

80

Scale 1:100,000

0   1   2   3   km

Exhibit E-4
Contour Illustration
K269FB - Sausalito, California
IHR Educational Broadcasting
January, 2012

San Francisco   San Franci
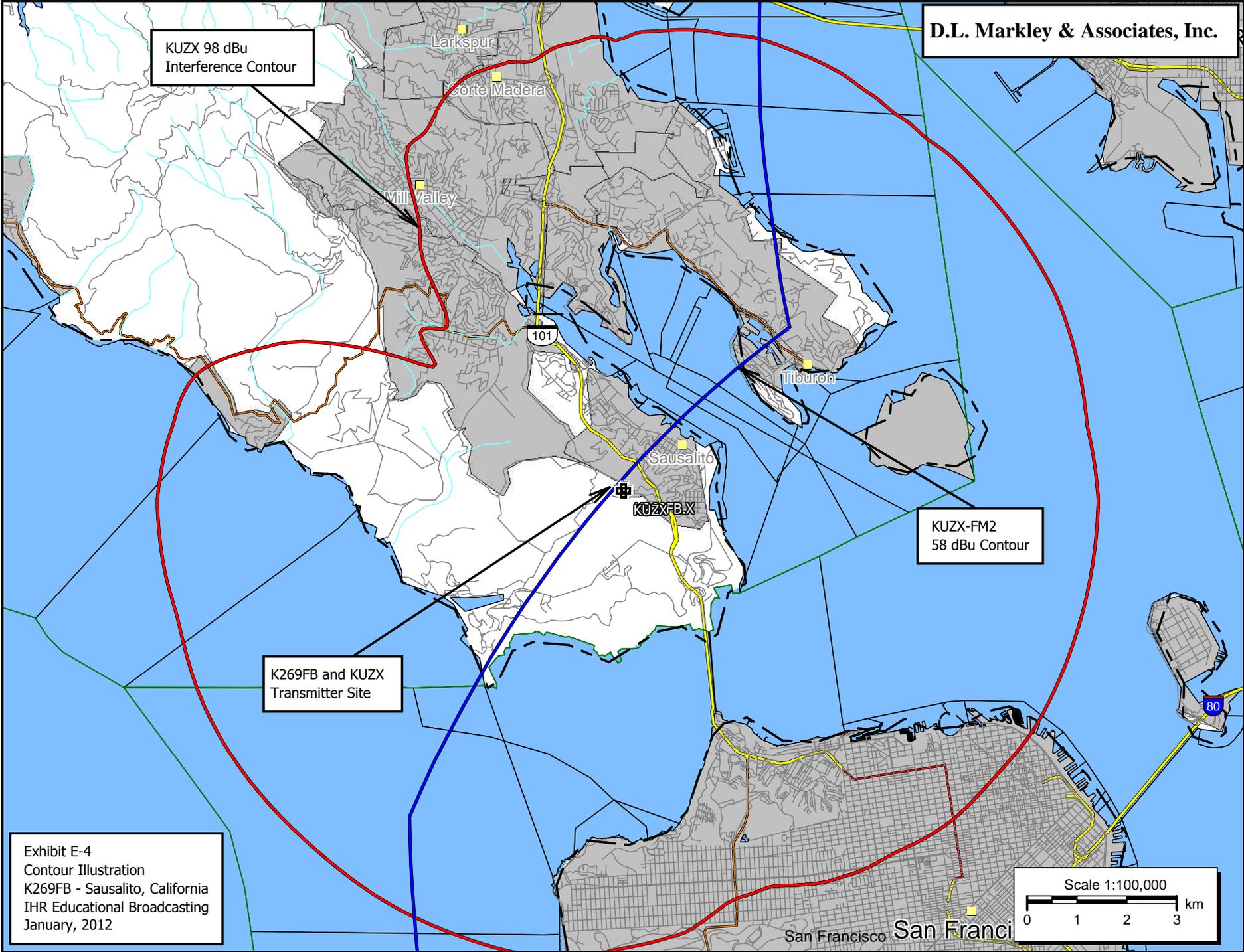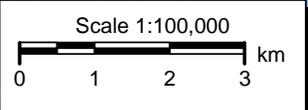
KIOI
BLH6225
Latitude: 37-41-24 N
Longitude: 122-26-13 W
ERP: 125.00 kW
Channel: 267
Frequency: 101.3 MHz
AMSL Height: 418.0 m
Elevation: 370.0 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model: None

K269FB.X
Latitude: 37-51-04 N
Longitude: 122-29-50 W
ERP: 0.025 kW
Channel: 269
Frequency: 101.7 MHz
AMSL Height: 350.3 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model: None

Proposed K269FB
Transmitter Site

KIOI 83 dBu
Service Contour

KIOI Transmitter
Site Location

D.L. Markley & Associates, Inc.

Exhibit E-5
Interference Study
K269FB - Sausalito, California
IHR Educational Broadcasting
January, 2012

Scale 1:200,000

0   2   4   6   km

Exhibit E-6 - Summary of Power Density Calculations								
Facility: K269FB								
COR:		10.7	m AGL				Z0 (Ohms)	377
ERP:		25	Watts				**ALL distances meters**	
Antenna:	CA5-FM/CP/RM							
FS Contour:		123	dBu					
E Field Strength:		1.4125	V/m					
Power Density:	0.0052924730	W/m^2						
Dep.			ERP in	Radius	Field Strength	Radius	Radius	Radius
θ	Erel	Prel	Watts	Squared	Radius	Vert. Dist.	AGL	Horiz. Dist.
0	1.000	1.000	25.00	375.899	19.39	0.00	10.70	19.39
1	0.996	0.992	24.80	372.898	19.31	0.34	10.36	19.31
2	0.993	0.986	24.65	370.655	19.25	0.67	10.03	19.24
3	0.989	0.978	24.45	367.675	19.17	1.00	9.70	19.15
4	0.986	0.972	24.30	365.448	19.12	1.33	9.37	19.07
5	0.982	0.964	24.11	362.489	19.04	1.66	9.04	18.97
6	0.976	0.953	23.81	358.073	18.92	1.98	8.72	18.82
7	0.970	0.941	23.52	353.684	18.81	2.29	8.41	18.67
8	0.964	0.929	23.23	349.322	18.69	2.60	8.10	18.51
9	0.958	0.918	22.94	344.987	18.57	2.91	7.79	18.35
10	0.952	0.906	22.66	340.679	18.46	3.21	7.49	18.18
11	0.945	0.893	22.33	335.687	18.32	3.50	7.20	17.99
12	0.937	0.878	21.95	330.028	18.17	3.78	6.92	17.77
13	0.930	0.865	21.62	325.115	18.03	4.06	6.64	17.57
14	0.922	0.850	21.25	319.546	17.88	4.32	6.38	17.34
15	0.915	0.837	20.93	314.712	17.74	4.59	6.11	17.14
16	0.905	0.819	20.48	307.871	17.55	4.84	5.86	16.87
17	0.895	0.801	20.03	301.105	17.35	5.07	5.63	16.59
18	0.885	0.783	19.58	294.414	17.16	5.30	5.40	16.32
19	0.876	0.767	19.18	288.456	16.98	5.53	5.17	16.06
20	0.866	0.750	18.75	281.908	16.79	5.74	4.96	15.78
21	0.852	0.726	18.15	272.867	16.52	5.92	4.78	15.42
22	0.838	0.702	17.56	263.973	16.25	6.09	4.61	15.06
23	0.824	0.679	16.97	255.227	15.98	6.24	4.46	14.71
24	0.810	0.656	16.40	246.628	15.70	6.39	4.31	14.35
25	0.796	0.634	15.84	238.176	15.43	6.52	4.18	13.99
26	0.780	0.608	15.21	228.697	15.12	6.63	4.07	13.59
27	0.765	0.585	14.63	219.986	14.83	6.73	3.97	13.22
28	0.749	0.561	14.03	210.880	14.52	6.82	3.88	12.82
29	0.734	0.539	13.47	202.518	14.23	6.90	3.80	12.45
30	0.718	0.516	12.89	193.785	13.92	6.96	3.74	12.06
31	0.700	0.490	12.25	184.191	13.57	6.99	3.71	11.63
32	0.682	0.465	11.63	174.840	13.22	7.01	3.69	11.21
33	0.664	0.441	11.02	165.732	12.87	7.01	3.69	10.80
34	0.646	0.417	10.43	156.869	12.52	7.00	3.70	10.38
35	0.628	0.394	9.86	148.249	12.18	6.98	3.72	9.97
36	0.608	0.370	9.24	138.956	11.79	6.93	3.77	9.54
37	0.588	0.346	8.64	129.965	11.40	6.86	3.84	9.10
38	0.568	0.323	8.07	121.274	11.01	6.78	3.92	8.68

Exhibit E-6 - Summary of Power Density Calculations								
Facility: K269FB								
COR:		10.7	m AGL				Z0 (Ohms)	377
ERP:		25	Watts				**ALL distances meters**	
Antenna:	CA5-FM/CP/RM							
FS Contour:		123	dBu					
E Field Strength:		1.4125	V/m					
Power Density:		0.0052924730	W/m^2					
Dep.			ERP in	Radius	Field Strength	Radius	Radius	Radius
θ	Erel	Prel	Watts	Squared	Radius	Vert. Dist.	AGL	Horiz. Dist.
39	0.548	0.300	7.51	112.884	10.62	6.69	4.01	8.26
40	0.528	0.279	6.97	104.795	10.24	6.58	4.12	7.84
41	0.507	0.257	6.43	96.625	9.83	6.45	4.25	7.42
42	0.486	0.236	5.90	88.786	9.42	6.30	4.40	7.00
43	0.465	0.216	5.41	81.279	9.02	6.15	4.55	6.59
44	0.444	0.197	4.93	74.103	8.61	5.98	4.72	6.19
45	0.423	0.179	4.47	67.259	8.20	5.80	4.90	5.80
46	0.405	0.164	4.10	61.657	7.85	5.65	5.05	5.45
47	0.386	0.149	3.72	56.007	7.48	5.47	5.23	5.10
48	0.367	0.135	3.37	50.629	7.12	5.29	5.41	4.76
49	0.348	0.121	3.03	45.523	6.75	5.09	5.61	4.43
50	0.329	0.108	2.71	40.688	6.38	4.89	5.81	4.10
51	0.313	0.098	2.45	36.826	6.07	4.72	5.98	3.82
52	0.296	0.088	2.19	32.935	5.74	4.52	6.18	3.53
53	0.280	0.078	1.96	29.471	5.43	4.34	6.36	3.27
54	0.263	0.069	1.73	26.001	5.10	4.13	6.57	3.00
55	0.247	0.061	1.53	22.933	4.79	3.92	6.78	2.75
56	0.235	0.055	1.38	20.759	4.56	3.78	6.92	2.55
57	0.224	0.050	1.25	18.861	4.34	3.64	7.06	2.37
58	0.213	0.045	1.13	17.054	4.13	3.50	7.20	2.19
59	0.201	0.040	1.01	15.187	3.90	3.34	7.36	2.01
60	0.190	0.036	0.90	13.570	3.68	3.19	7.51	1.84
61	0.180	0.032	0.81	12.179	3.49	3.05	7.65	1.69
62	0.171	0.029	0.73	10.992	3.32	2.93	7.77	1.56
63	0.161	0.026	0.65	9.744	3.12	2.78	7.92	1.42
64	0.151	0.023	0.57	8.571	2.93	2.63	8.07	1.28
65	0.142	0.020	0.50	7.580	2.75	2.50	8.20	1.16
66	0.140	0.020	0.49	7.368	2.71	2.48	8.22	1.10
67	0.139	0.019	0.48	7.263	2.69	2.48	8.22	1.05
68	0.137	0.019	0.47	7.055	2.66	2.46	8.24	1.00
69	0.136	0.018	0.46	6.953	2.64	2.46	8.24	0.94
70	0.134	0.018	0.45	6.750	2.60	2.44	8.26	0.89
71	0.134	0.018	0.45	6.750	2.60	2.46	8.24	0.85
72	0.134	0.018	0.45	6.750	2.60	2.47	8.23	0.80
73	0.135	0.018	0.46	6.851	2.62	2.50	8.20	0.77
74	0.135	0.018	0.46	6.851	2.62	2.52	8.18	0.72
75	0.135	0.018	0.46	6.851	2.62	2.53	8.17	0.68
76	0.136	0.018	0.46	6.953	2.64	2.56	8.14	0.64
77	0.138	0.019	0.48	7.159	2.68	2.61	8.09	0.60

| Exhibit E-6 - Summary of Power Density Calculations								
Facility:	K269FB							
COR:		10.7	m AGL				Z0 (Ohms)	377
ERP:		25	Watts				**ALL distances meters**	
Antenna:	CA5-FM/CP/RM							
FS Contour:		123	dBu					
E Field Strength:		1.4125	V/m					
Power Density:		0.0052924730	W/m^2					
Dep.			ERP in	Radius	Field Strength	Radius	Radius	Radius
θ	Erel	Prel	Watts	Squared	Radius	Vert. Dist.	AGL	Horiz. Dist.
78	0.139	0.019	0.48	7.263	2.69	2.64	8.06	0.56
79	0.140	0.020	0.49	7.368	2.71	2.66	8.04	0.52
80	0.142	0.020	0.50	7.580	2.75	2.71	7.99	0.48
81	0.143	0.020	0.51	7.687	2.77	2.74	7.96	0.43
82	0.145	0.021	0.53	7.903	2.81	2.78	7.92	0.39
83	0.147	0.022	0.54	8.123	2.85	2.83	7.87	0.35
84	0.148	0.022	0.55	8.234	2.87	2.85	7.85	0.30
85	0.150	0.023	0.56	8.458	2.91	2.90	7.80	0.25
86	0.151	0.023	0.57	8.571	2.93	2.92	7.78	0.20
87	0.153	0.023	0.59	8.799	2.97	2.96	7.74	0.16
88	0.154	0.024	0.59	8.915	2.99	2.98	7.72	0.10
89	0.156	0.024	0.61	9.148	3.02	3.02	7.68	0.05
90	0.157	0.025	0.62	9.266	3.04	3.04	7.66	0.00

K269FB
BLFT20100715AGJ
Latitude: 37-42-59 N
Longitude: 122-23-37 W
ERP: 0.013 kW
Channel: 269
Frequency: 101.7 MHz
AMSL Height: 116.0 m
Elevation: 107.0 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model: None

K269FB.X
Latitude: 37-51-04 N
Longitude: 122-29-50 W
ERP: 0.025 kW
Channel: 269
Frequency: 101.7 MHz
AMSL Height: 350.3 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model: None

D.L. Markley & Associates, Inc.

Proposed K269FB 60 dBu Service Contour
Licensed K269FB 60 dBu Service Contour
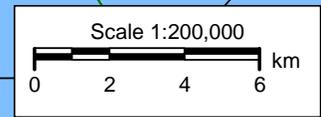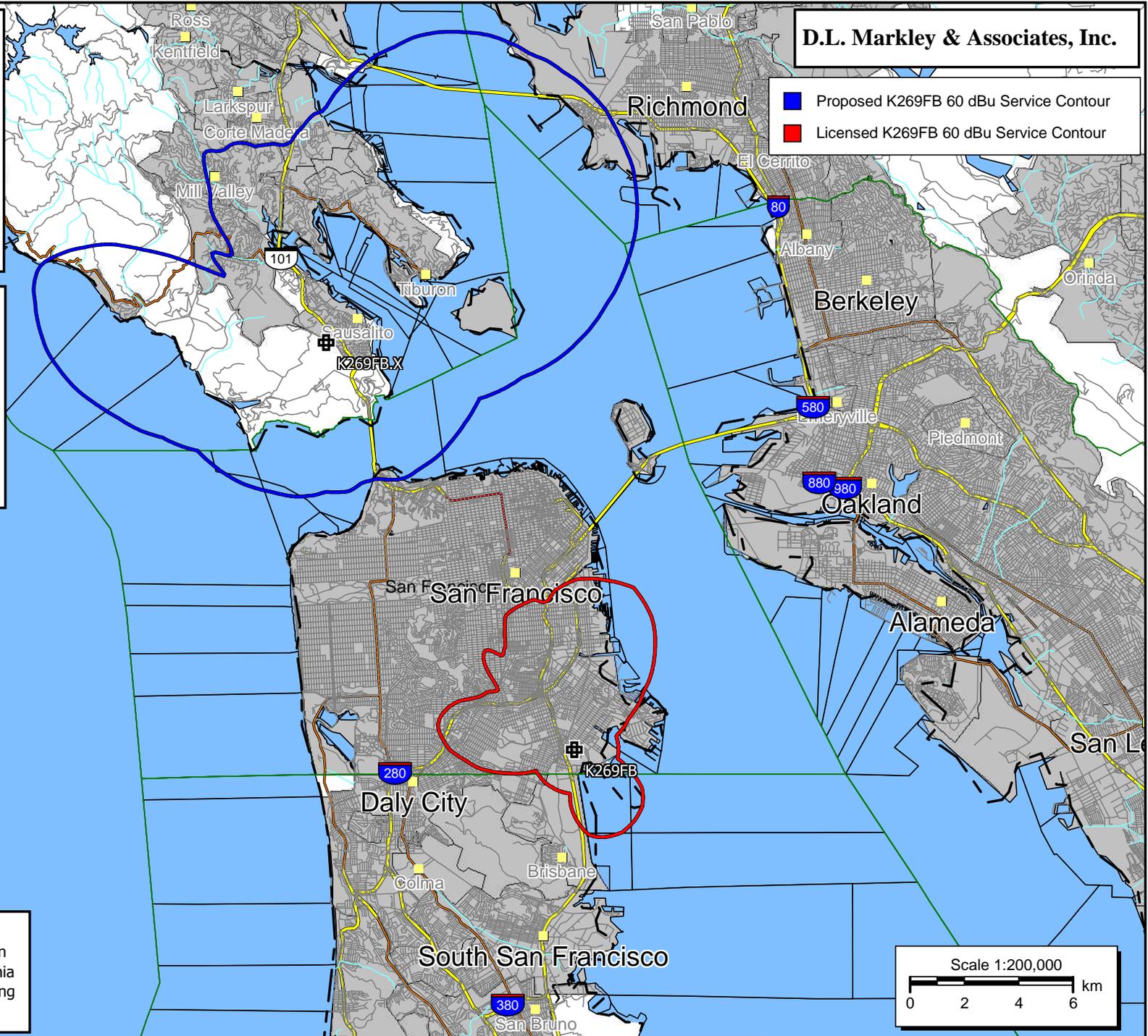
Exhibit E-7
Service Contour Comparison
K269FB - Sausalito, California
IHR Educational Broadcasting
January, 2012

Scale 1:200,000

0   2   4   6   km

K269FB
BLFT20100715AGJ
Latitude: 37-42-59 N
Longitude: 122-23-37 W
ERP: 0.013 kW
Channel: 269
Frequency: 101.7 MHz
AMSL Height: 116.0 m
Elevation: 107.0 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model: None

K269FB.X
Latitude: 37-51-04 N
Longitude: 122-29-50 W
ERP: 0.025 kW
Channel: 269
Frequency: 101.7 MHz
AMSL Height: 350.3 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model: None

D.L. Markley & Associates, Inc.
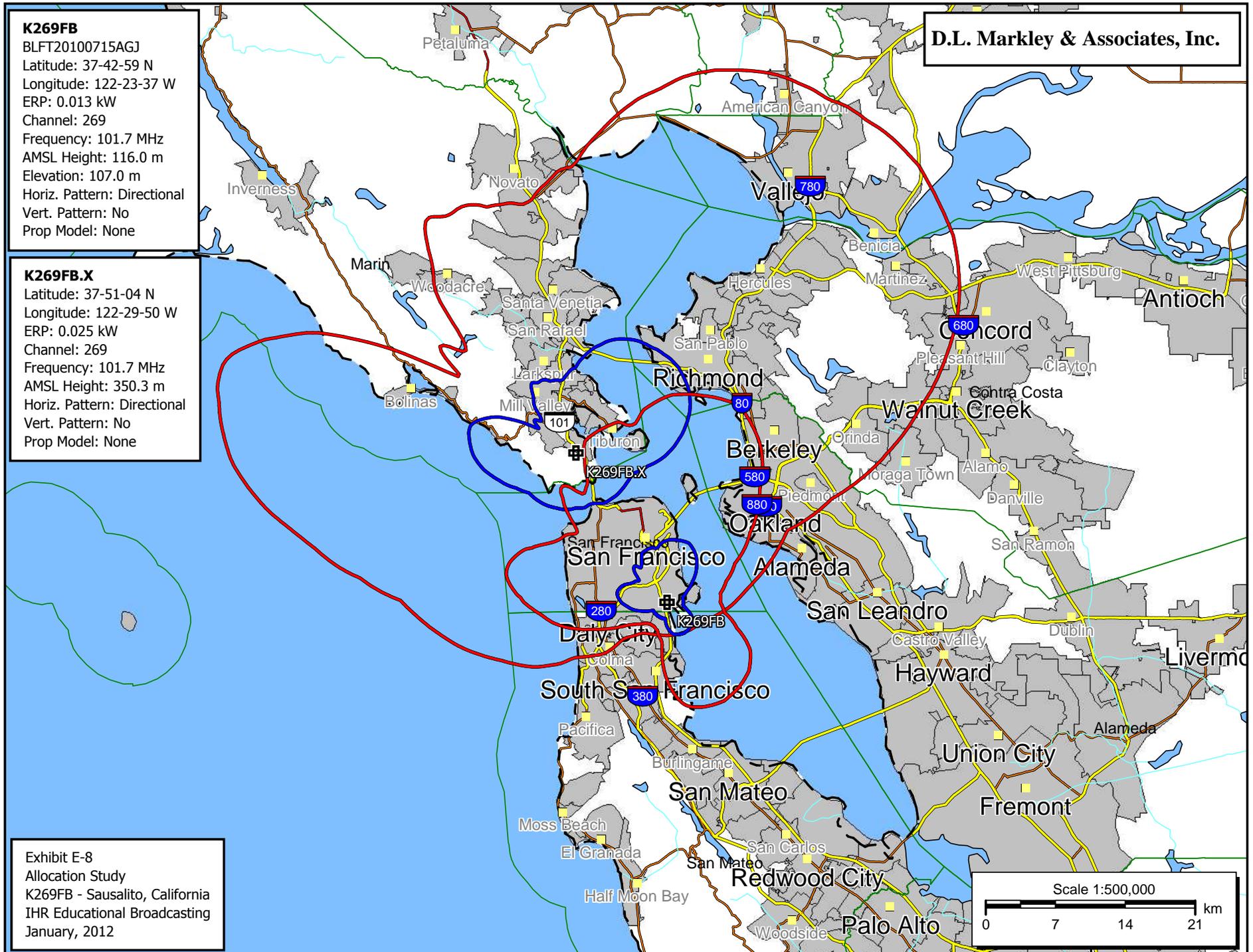
Exhibit E-8
Allocation Study
K269FB - Sausalito, California
IHR Educational Broadcasting
January, 2012

Scale 1:500,000

km
0   7   14   21