

APPENDIX H:

AC34 NEPA NOISE MODELING

Americas Cup - 210317

Generator Noise Calculation

Location: Crissy Field **EAST**

Year: 2012

Generators Proposed:

	Noise Rating per Generac Spec Sheet (weather Enclosure only)	
400 kw Twin Diesel	89 dBA @ 23 feet	794328235
144 kw diesel	81.1 dBA @ 23 feet	128824955
60 kW Diesel	80.5 dBA @ 23 feet	112201845

Composit noise level at 23 feet = 89.00 dBA @ 23 feet

Distance to nearest receptor = 700 feet

Reference Distance = 23 feet

Noise level at Receptor = 59.33 dBA

Year: 2013

Generators Proposed:

	Noise Rating per Generac Spec Sheet (weather Enclosure only)	
400 kw Twin Diesel	89 dBA @ 23 feet	794328235
144 kw diesel	81.1 dBA @ 23 feet	128824955
60 kW Diesel	80.5 dBA @ 23 feet	112201845

Composit noise level at 23 feet = 92.31 dBA @ 23 feet

Distance to nearest receptor = 100 feet

Reference Distance = 23 feet

Noise Contribution at Receptor = 79.54 dBA 89975405

Existing Noise Level at Receptor = 62.3 dBA 1698243.7

Resultant noise level at Receptor = 79.62 dBA

Number Proposed

1

0

0

Number Proposed

2

0

1

2012 Helicopter Race Condition Leq (dBA)		Ambient Leq (dBA)*	
Alcatraz West	53.6	Alcatraz West	59.0
Crissy Field Marsh	57.2	Crissy Field Marsh	57.0

2012 Helicopter Race Condition Leq (dBA) at the Receiver Locations		Ambient Leq (dBA)* at the Receiver Locations	
Alcatraz West	56.1	Alcatraz West	59.0
Crissy Field Marsh	56.8	Crissy Field Marsh	57.0

*As provided by NPS

		Difference Between Ambient and Race-Condition Sound Levels (dBA)	
Total Leq (dBA)	60.1	Alcatraz West	1.1
	60.1	Crissy Field Marsh	3.1
		Difference Between Ambient and Race-Condition Sound Levels (dBA)	
Total Leq (dBA)	60.8	Alcatraz West	1.8
	59.9	Crissy Field Marsh	2.9

Significance

> Negligible, but < Minor

> Minor, but < Moderate

Significance

> Negligible, but < Minor

> Minor, but < Moderate

AC34 Roadway Noise Analysis
Weekend Midday

Existing

MIDDAY PEAK

ROAD SEGMENT	TOTAL # VEHICLES	VEHICLE TYPE %						VEHICLE SPEED						NOISE LEVEL (dBA)			CALCULATED NOISE LEVEL (15 meters from roadway center)
		Auto	MT	HT	Auto k/h	MT k/h	HT k/h	Auto	MT	HT							
Calveno Peak	0	96	0	2	0	2	0	25	40	25	40	25	40	#NUM!	#NUM!	#####	####
from: Bay to: Van Nes Franklin	1687	96	1619.5	2	33.74	2	33.74	30	48	30	48	30	48	64.5	58.3	65.4	68.4
Lombard	886	96	850.56	2	17.72	2	17.72	25	40	25	40	25	40	59.4	54.2	61.9	64.3
Presidio	826	96	792.96	2	16.52	2	16.52	25	40	25	40	25	40	59.1	53.9	61.6	64.0
ECDelMar 25th	984	90	885.6	5	49.2	5	49.2	25	40	25	40	25	40	59.6	58.7	66.3	67.7

Existing + Alt B Peak

ROAD SEGMENT	TOTAL # VEHICLES	VEHICLE TYPE %						VEHICLE SPEED						NOISE LEVEL (dBA)			CALCULATED NOISE LEVEL (15 meters from roadway center)
		Auto	MT	HT	Auto k/h	MT k/h	HT k/h	Auto	MT	HT							
Calveno Peak	0	96	0	2	0	2	0	25	40	25	40	25	40	#NUM!	#NUM!	#####	####
from: Bay to: Van Ness Franklin	900	96	864	2	18	2	18	30	48	30	48	30	48	61.7	55.5	62.7	65.7
Lombard	1058	96	1015.7	2	21.16	2	21.16	25	40	25	40	25	40	60.2	55.0	62.7	65.1
Presidio	1209	96	1160.6	2	24.18	2	24.18	25	40	25	40	25	40	60.7	55.6	63.2	65.6
ECDelMar 25th	1351	90	1215.9	5	67.55	5	67.55	25	40	25	40	25	40	60.9	60.0	67.7	69.1

Increase

ROAD SEGMENT	Increase
Calveno Peak	
from: Beach to: Columbus Hyde	#NUM!
Bay	-2.7
Lombard	0.8
Presidio	1.7
ECDelMar 25th	1.4

Existing

MIDDAY PEAK

ROAD SEGMENT				TOTAL # VEHICLES
Calveno Peak				0
Bay	Van Ness	Franklin		1687
Lombard	Lyon	Ruger		886
Presidio	Pacific	Bway		826
ECDelMar	25th	Howard		984

VEHICLE TYPE %					
Auto	MT		HT		
%	Auto	%	MT	%	HT
96	0	2	0	2	0
96	1619.52	2	33.74	2	33.74
96	850.56	2	17.72	2	17.72
96	792.96	2	16.52	2	16.52
90	885.6	5	49.2	5	49.2

VEHICLE SPEED					
Auto	k/h	MT	k/h	HT	k/h
25	40	25	40	25	40
30	48	30	48	30	48
25	40	25	40	25	40
25	40	25	40	25	40
25	40	25	40	25	40

NOISE LEVEL (dBA)		
Auto	MT	HT
#NUM!	#NUM!	#NUM!
64.5	58.3	65.4
59.4	54.2	61.9
59.1	53.9	61.6
59.6	58.7	66.3

CALCULATED
NOISE LEVEL
(15 meters from
roadway center)

#NUM!
68.4
64.3
64.0
67.7

Existing + Alt C Peak

ROAD SEGMENT				TOTAL # VEHICLES
Calveno Peak				0
Bay	Van Ness	Franklin		830
Lombard	Lyon	Ruger		883
Presidio	Pacific	Bway		897
ECDelMar	25th	Howard		1038

VEHICLE TYPE %					
Auto	MT		HT		
%	Auto	%	MT	%	HT
96	0	2	0	2	0
96	796.8	2	16.6	2	16.6
96	847.68	2	17.66	2	17.66
96	861.12	2	17.94	2	17.94
90	934.2	5	51.9	5	51.9

VEHICLE SPEED					
Auto	k/h	MT	k/h	HT	k/h
25	40	25	40	25	40
30	48	30	48	30	48
25	40	25	40	25	40
25	40	25	40	25	40
25	40	25	40	25	40

NOISE LEVEL (dBA)		
Auto	MT	HT
#NUM!	#NUM!	#NUM!
61.4	55.2	62.3
59.4	54.2	61.9
59.5	54.3	61.9
59.8	58.9	66.6

CALCULATED
NOISE LEVEL
(15 meters from
roadway center)

#NUM!
65.3
64.3
64.3
68.0

Increase

ROAD SEGMENT				#NUM!
Calveno Peak				
Beach	Columbus	Hyde		
Bay	Van Ness	Franklin		-3.1
Lombard	Lyon	Ruger		0.0
Presidio	Pacific	Bway		0.4
ECDelMar	25th	Howard		0.2

Existing

MIDDAY PEAK

ROAD SEGMENT	TOTAL # VEHICLES
Calveno Peak	0
Bay Van Nes Franklin	1687
Lombard Lyon Ruger	886
Presidio Pacific Bway	826
ECDelMar 25th Howard	984

VEHICLE TYPE %					
Auto	MT	HT	Auto	MT	HT
%	Auto	%	MT	%	HT
96	0	2	0	2	0
96	1619.52	2	33.74	2	33.74
96	850.56	2	17.72	2	17.72
96	792.96	2	16.52	2	16.52
90	885.6	5	49.2	5	49.2

VEHICLE SPEED					
Auto	k/h	MT	k/h	HT	k/h
25	40	25	40	25	40
30	48	30	48	30	48
25	40	25	40	25	40
25	40	25	40	25	40
25	40	25	40	25	40

NOISE LEVEL (dBA)		
Auto	MT	HT
#NUM!	#NUM!	#NUM!
64.5	58.3	65.4
59.4	54.2	61.9
59.1	53.9	61.6
59.6	58.7	66.3

CALCULATED
NOISE LEVEL
(15 meters from
roadway center)

#NUM!
68.4
64.3
64.0
67.7

Existing + Alt D Peak

ROAD SEGMENT	TOTAL # VEHICLES
Calveno Peak	0
Bay Van Ness Franklin	844
Lombard Lyon Ruger	948
Presidio Pacific Bway	978
ECDelMar 25th Howard	1121

VEHICLE TYPE %					
Auto	MT	HT	Auto	MT	HT
%	Auto	%	MT	%	HT
96	0	2	0	2	0
96	810.24	2	16.88	2	16.88
96	910.08	2	18.96	2	18.96
96	938.88	2	19.56	2	19.56
90	1008.9	5	56.05	5	56.05

VEHICLE SPEED					
Auto	k/h	MT	k/h	HT	k/h
25	40	25	40	25	40
30	48	30	48	30	48
25	40	25	40	25	40
25	40	25	40	25	40
25	40	25	40	25	40

NOISE LEVEL (dBA)		
Auto	MT	HT
#NUM!	#NUM!	#NUM!
61.5	55.3	62.4
59.7	54.5	62.2
59.8	54.7	62.3
60.1	59.2	66.9

CALCULATED
NOISE LEVEL
(15 meters from
roadway center)

#NUM!
65.4
64.6
64.7
68.3

Increase

ROAD SEGMENT	#NUM!
Calveno Peak	
Beach Columbus Hyde	#NUM!
Bay Van Ness Franklin	-3.0
Lombard Lyon Ruger	0.3
Presidio Pacific Bway	0.7
ECDelMar 25th Howard	0.6

AC34 Roadway Noise Analysis
Weekday PM

Existing

Weekday PM

ROAD SEGMENT	TOTAL # VEHICLES	VEHICLE TYPE %						VEHICLE SPEED						NOISE LEVEL (dBA)			CALCULATED NOISE LEVEL (15 meters from roadway center)
		Auto	MT	HT	Auto k/h	MT k/h	HT k/h	Auto	MT	HT	Auto	MT	HT				
Calveno Peak																	
from: to:		%	Auto	%	MT	%	HT							#NUM!	#NUM!	#####	####
Beach Str Columbia Hyde	0	96	0	2	0	2	0	25	40	25	40	25	40	#NUM!	#NUM!	#####	####
Bay Van Nes Franklin	2364	96	2269.4	2	47.28	2	47.28	30	48	30	48	30	48	65.9	59.7	66.9	69.9
Lombard Lyon Ruger	1079	96	1035.8	2	21.58	2	21.58	25	40	25	40	25	40	60.3	55.1	62.7	65.1
Presidio Pacific Bway	964	96	925.44	2	19.28	2	19.28	25	40	25	40	25	40	59.8	54.6	62.3	64.6
ECDelMar 25th Howard	983	90	884.7	5	49.15	5	49.15	25	40	25	40	25	40	59.6	58.7	66.3	67.7

Existing + Alt B 2013

ROAD SEGMENT	TOTAL # VEHICLES	VEHICLE TYPE %						VEHICLE SPEED						NOISE LEVEL (dBA)			CALCULATED NOISE LEVEL (15 meters from roadway center)
		Auto	MT	HT	Auto k/h	MT k/h	HT k/h	Auto	MT	HT	Auto	MT	HT				
Calveno Peak																	
from: to:		%	Auto	%	MT	%	HT							#NUM!	#NUM!	#####	####
Beach Columbia Hyde	0	96	0	2	0	2	0	25	40	25	40	25	40	#NUM!	#NUM!	#####	####
Bay Van Nes Franklin	2424	96	2327	2	48.48	2	48.48	30	48	30	48	30	48	66.0	59.8	67.0	70.0
Lombard Lyon Ruger	1108	96	1063.7	2	22.16	2	22.16	25	40	25	40	25	40	60.4	55.2	62.9	65.3
Presidio Pacific Bway	1043	96	1001.3	2	20.86	2	20.86	25	40	25	40	25	40	60.1	54.9	62.6	65.0
ECDelMar 25th Howard	1062	90	955.8	5	53.1	5	53.1	25	40	25	40	25	40	59.9	59.0	66.7	68.1

Increase

ROAD SEGMENT	
Calveno Peak	
from: to:	#NUM!
Beach Columbia Hyde	0.1
Bay Van Nes Franklin	0.1
Lombard Lyon Ruger	0.1
Presidio Pacific Bway	0.3
ECDelMar 25th Howard	0.3

Existing

WEEKDAY PM

ROAD SEGMENT	TOTAL # VEHICLES	VEHICLE TYPE %						VEHICLE SPEED						NOISE LEVEL (dBA)			CALCULATED NOISE LEVEL 15 meters from roadway center)	
		Auto	MT	HT	Auto	MT	HT	k/h	k/h	k/h	k/h	Auto	MT	HT				
Calveno Peak																		
from: to:		%	Auto	%	MT	%	HT											
Beach Str	0	96	0	2	0	2	0	25	40	25	40	25	40	#####	#NUM!	#####	####	
Bay	2364	96	2269.4	2	47.28	2	47.28	30	48	30	48	30	48	65.9	59.7	66.9	69.9	
Lombard	1079	96	1035.8	2	21.58	2	21.58	25	40	25	40	25	40	60.3	55.1	62.7	65.1	
Presidio	964	96	925.44	2	19.28	2	19.28	25	40	25	40	25	40	59.8	54.6	62.3	64.6	
ECDelMar	983	90	884.7	5	49.15	5	49.15	25	40	25	40	25	40	59.6	58.7	66.3	67.7	

Existing + Alt C 2013

ROAD SEGMENT	TOTAL # VEHICLES	VEHICLE TYPE %						VEHICLE SPEED						NOISE LEVEL (dBA)			CALCULATED NOISE LEVEL 15 meters from roadway center)	
		Auto	MT	HT	Auto	MT	HT	k/h	k/h	k/h	k/h	Auto	MT	HT				
Calveno Peak																		
from: to:		%	Auto	%	MT	%	HT											
Beach	0	96	0	2	0	2	0	25	40	25	40	25	40	#####	#NUM!	#####	####	
Bay	2427	96	2329.9	2	48.54	2	48.54	30	48	30	48	30	48	66.1	59.8	67.0	70.0	
Lombard	1087	96	1043.5	2	21.74	2	21.74	25	40	25	40	25	40	60.3	55.1	62.8	65.2	
Presidio	984	96	944.64	2	19.68	2	19.68	25	40	25	40	25	40	59.9	54.7	62.3	64.7	
ECDelMar	1003	90	902.7	5	50.15	5	50.15	25	40	25	40	25	40	59.7	58.8	66.4	67.8	

Increase

ROAD SEGMENT	
Calveno Peak	
from: to:	
Beach	Columbus Hyde #NUM!
Bay	Van Nes Franklin 0.1
Lombard	Lyon Ruger 0.0
Presidio	Pacific Bway 0.1
ECDelMar	25th Howard 0.1

Existing

WEEKDAY PM

ROAD SEGMENT	TOTAL # VEHICLES
Calveno Peak	0
Beach Stre from: Columbus Hyde to: Franklin	2364
Bay Van Nes	1079
Lombard Lyon Ruger	964
Presidio Pacific Bway	983
ECDelMar 25th Howard	

VEHICLE TYPE %					
Auto	MT	HT	Auto	MT	HT
96	0	2	0	2	0
96	2269.44	2	47.28	2	47.28
96	1035.84	2	21.58	2	21.58
96	925.44	2	19.28	2	19.28
90	884.7	5	49.15	5	49.15

VEHICLE SPEED					
Auto	k/h	MT	k/h	HT	k/h
25	40	25	40	25	40
30	48	30	48	30	48
25	40	25	40	25	40
25	40	25	40	25	40
25	40	25	40	25	40

NOISE LEVEL (dBA)		
Auto	MT	HT
#NUM!	#NUM!	#NUM!
65.9	59.7	66.9
60.3	55.1	62.7
59.8	54.6	62.3
59.6	58.7	66.3

CALCULATED NOISE LEVEL (15 meters from roadway center)	Adjusted Noise Level (dBA)	Distance from Roadway to 65 dBA (m.)	Distance from Roadway to 65 dBA (ft)
#NUM!	40	#NUM!	#NUM!
69.9	40	65.6	46.2
65.1	40	60.9	15.5
64.6	40	60.4	13.8
67.7	40	63.5	28.1

Existing + Alt D 2013

ROAD SEGMENT	TOTAL # VEHICLES
Calveno Peak	0
Beach Stre from: Columbus Hyde to: Franklin	2431
Bay Van Nes	1096
Lombard Lyon Ruger	1004
Presidio Pacific Bway	1023
ECDelMar 25th Howard	

VEHICLE TYPE %					
Auto	MT	HT	Auto	MT	HT
96	0	2	0	2	0
96	2333.76	2	48.62	2	48.62
96	1052.16	2	21.92	2	21.92
96	963.84	2	20.08	2	20.08
90	920.7	5	51.15	5	51.15

VEHICLE SPEED					
Auto	k/h	MT	k/h	HT	k/h
25	40	25	40	25	40
30	48	30	48	30	48
25	40	25	40	25	40
25	40	25	40	25	40
25	40	25	40	25	40

NOISE LEVEL (dBA)		
Auto	MT	HT
#NUM!	#NUM!	#NUM!
66.1	59.9	67.0
60.3	55.2	62.8
59.9	54.8	62.4
59.7	58.8	66.5

CALCULATED NOISE LEVEL (15 meters from roadway center)	Adjusted Noise Level (dBA)	Distance from Roadway to 65 dBA (m.)	Distance from Roadway to 65 dBA (ft)
#NUM!	40	#NUM!	#NUM!
70.0	40	65.7	47.5
65.2	40	60.9	15.7
64.8	40	60.6	14.4
67.9	40	63.6	29.2

Increase

ROAD SEGMENT	# NUM!
Calveno Peak	
Beach Stre from: Columbus Hyde to: Franklin	0.1
Bay Van Nes	0.1
Lombard Lyon Ruger	0.2
Presidio Pacific Bway	0.2
ECDelMar 25th Howard	

