

APPENDIX A

Noise Appendix

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL



(modified for CNEL)

PROJECT:	Crown Castle San Mateo County	JN:	7841
ROADWAY:	Highway 1	DATE:	19-Dec-2013
LOCATION:	50 Feet from Centerline	BY:	J. Leech

ADT	<u>5500</u>	PK HR VOL	550
SPEED	55		
PK HR %	10		
DIST CTL	50		
DIST N/F	52	(M=76,P=52,S=36,C=12)	
DIST WALL	0	AUTO SLE DISTANCE	42.7
DIST W/OB	50	MED TRUCK SLE DIST	42.8
HTH WALL	0.0	HVY TRUCK SLE DIST	43.5
HTH OBS	0.0		
AMBIENT	45.0		
ROADWAY VIEW:			
LF ANGLE	-10		
RT ANGLE	10		
DF ANGLE	20		

SITE CONDITIONS: (10=HARD SITE, 15=SOFT SITE)

AUTOM	15.0		
MED TR	15.0		
HVY TR	15.0		
BARRIER	0	(0=WALL,1=BERM)	

ELEVATIONS:

PAD	0.0	AUTOMOBILES =	0.00
ROAD	0.0	MEDIUM TRUCKS=	2.30
		HEAVY TRUCKS =	8.01
GRADE:	0.0 %	GRADE ADJUSTM=	0.0 (TO HEAVY TRUCKS)

VEHICLE DISTRIBUTION:

	<u>DAY</u>	<u>EVE</u>	<u>NIGHT</u>	<u>DAILY</u>
AUTOMOBILES	0.770	0.127	0.096	0.9360
MEDIUM TRUCKS	0.874	0.051	0.075	0.0370
HEAVY TRUCKS	0.891	0.028	0.081	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	<u>LEQ PK HR</u>	<u>LEQ DAY</u>	<u>LEQ EVE</u>	<u>LEQ NIGHT</u>	<u>CNEL</u>
AUTOMOBILES	63.4	61.5	59.7	53.7	62.9
MEDIUM TRUCKS	60.0	58.6	52.3	49.2	58.7
HEAVY TRUCKS	61.8	60.5	51.6	51.3	60.5
VEHICULAR NOISE	66.7	65.1	60.9	56.6	65.8

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	<u>LEQ PK HR</u>	<u>LEQ DAY</u>	<u>LEQ EVE</u>	<u>LEQ NIGHT</u>	<u>CNEL</u>
VEHICULAR NOISE	65.5	63.9	59.7	55.3	64.6

AMBIENT:

	<u>W/O AMBIENT</u>	<u>W/ AMBIENT</u>
LEQ PK HR WITHOUT TOPO OR BARRIER	66.7	66.8
LEQ PK HR WITH TOPO OR BARRIER	65.6	***** 65.7
CNEL WITHOUT TOPO AND BARRIER	65.8	65.9
CNEL WITH TOPO AND BARRIER	64.6	***** 64.6

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 12/21/2013

Case Description:

		---- Receptor #1 ----		
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
50 Ft Representative Residence	Residential	55	50	45

		Equipment					
		Impact	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Description	Device	No	20		74.7	50	0
Man Lift		No	40		74.3	50	0
Flat Bed Truck							

		Results		
		Calculated (dBA)		
		Day		
Equipment		*Lmax	Leq	Lmax
Man Lift		74.7	67.7	N/A
Flat Bed Truck		74.3	70.3	N/A
	Total	74.7	72.2	N/A

*Calculated Lmax is the Loudest value.

		---- Receptor #2 ----		
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
90 Ft Representative Residence	Residential	55	50	45

		Equipment					
		Impact	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Description	Device	No	20		74.7	90	0
Man Lift		No	40		74.3	90	0
Flat Bed Truck							

		Results		
		Calculated (dBA)		
		Day		
Equipment		*Lmax	Leq	Lmax
Man Lift		69.6	62.6	N/A
Flat Bed Truck		69.1	65.2	N/A
	Total	69.6	67.1	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
135 Ft Representative Residence	Residential	55	50	45

Description	Impact Device	Usage(%)	Equipment			Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	
Man Lift	No	20		74.7	135	0
Flat Bed Truck	No	40		74.3	135	0

Results

Equipment	Calculated (dBA)		
	*Lmax	Leq	Day Lmax
Man Lift	66.1	59.1	N/A
Flat Bed Truck	65.6	61.6	N/A
Total	66.1	63.6	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
250 Ft Rep. Residence	Residential	50	50	45

Description	Impact Device	Usage(%)	Equipment			Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	
Man Lift	No	20		74.7	250	0
Flat Bed Truck	No	40		74.3	250	0

Results

Equipment	Calculated (dBA)		
	*Lmax	Leq	Day Lmax
Man Lift	60.7	53.7	N/A
Flat Bed Truck	60.3	56.3	N/A
Total	60.7	58.2	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #5 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
400 Ft. Rep. Residence	Residential	50	50	45

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Man Lift	No	20		74.7	400	0
Flat Bed Truck	No	40		74.3	400	0

		Results		
		Calculated (dBA)		
Equipment		Day		
		*Lmax	Leq	Lmax
Man Lift		56.6	49.6	N/A
Flat Bed Truck		56.2	52.2	N/A
	Total	56.6	54.1	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #6 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
500 Ft. Rep. Residence	Residential	50	50	45

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Man Lift	No	20		74.7	500	0
Flat Bed Truck	No	40		74.3	500	0

		Results		
		Calculated (dBA)		
Equipment		Day		
		*Lmax	Leq	Lmax
Man Lift		54.7	47.7	N/A
Flat Bed Truck		54.3	50.3	N/A
	Total	54.7	52.2	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 12/21/2013
 Case Description: Crown Castle San Mateo - Trenching/Buried Cable

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
135 Ft. Representative Res.	Residential	65	61	57

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40	80.7	135	0	
Dump Truck	No	40	76.5	135	0	
Flat Bed Truck	No	40	74.3	135	0	
Compactor (ground)	No	20	83.2	135	0	

Results

Equipment	Calculated (dBA)		Day
	*Lmax	Leq	Lmax
Excavator	72.1	68.1	N/A
Dump Truck	67.8	63.8	N/A
Flat Bed Truck	65.6	61.6	N/A
Compactor (ground)	74.6	67.6	N/A
Total	74.6	72.1	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
500 Ft. Representative Res.	Residential	59	55	51

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40	80.7	500	0	
Dump Truck	No	40	76.5	500	0	
Flat Bed Truck	No	40	74.3	500	0	
Compactor (ground)	No	20	83.2	500	0	

Results

Calculated (dBA)

Day

Equipment	*Lmax	Leq	Lmax
Excavator	60.7	56.7	N/A
Dump Truck	56.5	52.5	N/A
Flat Bed Truck	54.3	50.3	N/A
Compactor (ground)	63.2	56.2	N/A
Total	63.2	60.7	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
900 Ft. Representative Res.	Residential	56	52	48

Description	Impact Device	Usage(%)	Equipment			Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	
Excavator	No	40		80.7	900	0
Dump Truck	No	40		76.5	900	0
Flat Bed Truck	No	40		74.3	900	0
Compactor (ground)	No	20		83.2	900	0

Results

Equipment	Calculated (dBA)		Day
	*Lmax	Leq	Lmax
Excavator	55.6	51.6	N/A
Dump Truck	51.3	47.4	N/A
Flat Bed Truck	49.1	45.2	N/A
Compactor (ground)	58.1	51.1	N/A
Total	58.1	55.6	N/A

*Calculated Lmax is the Loudest value.