

APPENDIX F – NOISE MODEL RESULTS

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Existing Conditions

Project Number: 1A Existing Conditions
Project Name: Livermore Chick-fil-A

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
 Source of Traffic Volumes: Hexagon (2020)
 Community Noise Descriptor: L_{dn} : _____ CNEL: x

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Analysis Condition Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix		Distance from Centerline of Roadway					
						Medium Trucks	Heavy Trucks	CNEL at 100 Feet	Distance to Contour 70 CNEL	65 CNEL	60 CNEL	55 CNEL	
N. Livermore Ave.													
I-580 Underpass	4	9	11,448	40	0.5	1.8%	0.1%	60.1	-	-	101	219	
I-580 to Arroyo Plaza	4	20	21,051	40	0.5	1.8%	0.1%	62.8	-	72	155	333	
Arroyo Plaza to Las Positas Rd.	4	5	19,449	40	0.5	1.8%	0.1%	62.4	-	67	144	310	
Las Positas Rd. to Portola Ave.	5	15	21,195	30	0.5	1.8%	0.1%	59.8	-	-	97	210	

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Existing Plus Project Conditions

Project Number: 1B Background Conditions Plus Project
Project Name: Livermore Chick-fil-A

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
 Source of Traffic Volumes: Hexagon (2020)
 Community Noise Descriptor: L_{dn} : _____ CNEL: x

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Analysis Condition Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix		Distance from Centerline of Roadway				
						Medium Trucks	Heavy Trucks	CNEL at 100 Feet	Distance to Contour			
								70 CNEL	65 CNEL	60 CNEL	55 CNEL	
N. Livermore Ave.												
I-580 Underpass	4	9	11,952	40	0.5	1.8%	0.1%	60.3	-	-	104	225
I-580 to Arroyo Plaza	4	20	22,023	40	0.5	1.8%	0.1%	63.0	-	74	159	343
Arroyo Plaza to Las Positas Rd.	4	5	20,016	40	0.5	1.8%	0.1%	62.5	-	68	147	316
Las Positas Rd. to Portola Ave.	5	15	22,059	30	0.5	1.8%	0.1%	60.0	-	-	100	216

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Cumulative No Project Conditions

Project Number: 2A Cumulative Conditions
 Project Name: Livermore Chick-fil-A

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
 Source of Traffic Volumes: Hexagon (2020)
 Community Noise Descriptor: L_{dn} : _____ CNEL: x

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Analysis Condition Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix		CNEL at 100 Feet	Distance from Centerline of Roadway Distance to Contour				
						Medium Trucks	Heavy Trucks		70 CNEL	65 CNEL	60 CNEL	55 CNEL	
N. Livermore Ave.													
I-580 Underpass	4	9	17,397	40	0.5	1.8%	0.1%	61.9	-	62	134	289	
I-580 to Arroyo Plaza	4	20	27,477	40	0.5	1.8%	0.1%	64.0	-	86	185	398	
Arroyo Plaza to Las Positas Rd.	4	5	26,964	40	0.5	1.8%	0.1%	63.8	-	83	179	385	
Las Positas Rd. to Portola Ave.	5	15	29,349	30	0.5	1.8%	0.1%	61.2	-	-	121	261	

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Cumulative Plus Project Conditions

Project Number: 2B Cumulative Conditions Plus Project
Project Name: Livermore Chick-fil-A

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
 Source of Traffic Volumes: Hexagon (2020)
 Community Noise Descriptor: L_{dn} : _____ CNEL: x

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Analysis Condition Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix		Distance from Centerline of Roadway					
						Medium Trucks	Heavy Trucks	CNEL at 100 Feet	Distance to Contour 70 CNEL	65 CNEL	60 CNEL	55 CNEL	
N. Livermore Ave.													
I-580 Underpass	4	9	17,262	40	0.5	1.8%	0.1%	61.9	-	62	133	288	
I-580 to Arroyo Plaza	4	20	27,873	40	0.5	1.8%	0.1%	64.1	-	87	186	402	
Arroyo Plaza to Las Positas Ct.	4	5	26,865	40	0.5	1.8%	0.1%	63.8	-	83	178	384	
Las Positas Ct. to Portola Ave.	5	15	29,790	30	0.5	1.8%	0.1%	61.3	-	-	122	263	

ADT Volume Calculations

N. Livermore Ave.	1A		
	Peak		ADT
I-580 Underpass	1272	9	11448
I-580 to Arroyo Plaza	2339	9	21051
Arroyo Plaza to Las Positas Ct.	2161	9	19449
Las Positas Ct. to Portola Ave.	2355	9	21195

1B		
Peak		ADT
1328	9	11952
2447	9	22023
2224	9	20016
2451	9	22059

2A		
Peak		ADT
1933	9	17397
3053	9	27477
2996	9	26964
3261	9	29349

2B		
Peak		ADT
1918	9	17262
3097	9	27873
2985	9	26865
3310	9	29790

