

## Appendices

### **Appendix I-b     Noise Monitoring and Modeling Data**

## Appendices

*This page intentionally left blank.*

## LOCAL NOISE STANDARDS

## ARTICLE VI. - NOISE CONTROL

## Sec. 18-308. - Declaration of policy.

In order to control unnecessary, excessive and annoying sounds emanating from areas of the city, it is hereby declared to be the policy of the city to prohibit such sounds generated from all sources as specified in this article.

It is determined that certain sound levels are detrimental to the public health, welfare and safety, and contrary to public interest.

(Ord. No. NS-1441, 1, 8-21-78)

## Sec. 18-309. - Definitions.

The following words, phrases and terms as used in this article shall have the meaning as indicated below:

*Ambient noise level* shall mean the all-encompassing noise level associated with a given environment, being a composite of sounds from all sources, excluding the alleged offensive noise, at the location and approximate time at which a comparison with the alleged offensive noise is to be made.

*Cumulative period* shall mean an additive period of time composed of individual time segments which may be continuous or interrupted.

*Decibel (dB)* shall mean a unit which denotes the ratio between two (2) quantities which are proportional to power: The number of decibels corresponding to the ratio of two (2) amounts of power is ten (10) times the logarithm to the base ten (10) of this ratio.

*Dwelling unit* shall mean a single unit providing complete, independent living facilities for one or more persons including permanent provisions for living, sleeping, eating, cooking and sanitation.

*Emergency machinery, vehicle or work* shall mean any machinery, vehicle or work used, employed or performed in an effort to protect, provide or restore safe conditions in the community or for the citizenry, or work by private or public utilities when restoring utility service.

*Fixed noise source* shall mean a stationary device which creates sounds while fixed or motionless, including, but not limited to, industrial and commercial machinery and equipment, pumps, fans, compressors, generators, air conditioners and refrigeration equipment.

*Grading* shall mean any excavating or filling of earth material, or any combination thereof, conducted at a site to prepare said site for construction or other improvements thereon.

*Impact noise* shall mean the noise produced by the collision of one mass which may be either in motion or at rest.

*Mobile noise source* shall mean any noise source other than a fixed noise source.

*Noise level* shall mean the "A" weighted sound pressure level in decibels obtained by using a sound level meter at slow response with a reference pressure of twenty (20) micronewtons per square meter. The unit of measurement shall be designated as dB (A).

*Person* shall mean a person, firm, association, copartnership, joint venture, corporation or any entity, public or private in nature.

*Residential property* shall mean a parcel of real property which is developed and used either in part or in whole for residential purposes, other than transient uses such as hotels and motels.

*Simple tone noise* shall mean a noise characterized by a predominant frequency or frequencies so that other frequencies cannot be readily distinguished.

*Sound level meter* shall mean an instrument meeting American National Standard Institute's Standard S1.4-1971 for Type 1 or Type 2 sound level meters or an instrument and the associated recording and analyzing equipment which will provide equivalent data.

*Sound pressure level* of a sound, in decibels, shall mean twenty (20) times the logarithm to the base ten (10) of the ratio of the pressure of the sound to a reference pressure, which reference pressure shall be explicitly stated.

(Ord. No. NS-1441, § 1, 8-21-78)

Sec. 18-310. - Noise level measurement criteria.

Any noise level measurements made pursuant to the provisions of this article shall be performed using a sound level meter as defined in section 18-309.

(Ord. No. NS-1441, § 1, 8-21-78)

Sec. 18-311. - Designated noise zone.

The entire City of Santa Ana is hereby designated as "Noise Zone 1."

(Ord. No. NS-1441, § 1, 8-21-78)

Sec. 18-312. - Exterior noise standards.

- (a) The following noise standards, unless otherwise specifically indicated, shall apply to all residential property within a designated noise zone:

**NOISE STANDARDS**

Noise Zone	Noise Level	Time Period
1	55 dB(A)	7:00 a.m.—10:00 p.m.
	50 dB(A)	10:00 p.m.— 7:00 a.m.

In the event the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise levels shall be reduced by five (5) dB (A).

- (b) It shall be unlawful for any person at any location within the City of Santa Ana to create any noise, or to allow

the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, when the foregoing causes the noise level, when measured on any other residential property, to exceed:

- (1) The noise standard for a cumulative period of more than thirty (30) minutes in any hour; or
  - (2) The noise standard plus five (5) dB(A) for a cumulative period of more than fifteen (15) minutes in any hour; or
  - (3) The noise standard plus ten (10) dB(A) for a cumulative period of more than five (5) minutes in any hour; or
  - (4) The noise standard plus fifteen (15) dB(A) for a cumulative period of more than one minute in any hour; or
  - (5) The noise standard plus twenty (20) dB(A) for any period of time.
- (c) In the event the ambient noise level exceeds any of the first four (4) noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

(Ord. No. NS-1441, § 1, 8-21-78)

Sec. 18-313. - Interior noise standards.

- (a) The following interior noise standards, unless otherwise specifically indicated, shall apply to all residential property within a designated noise zone:

**INTERIOR NOISE STANDARDS**

Noise Zone	Noise Level	Time Period
1	55 dB(A)	7:00 a.m.—10:00 p.m.
	45 dB(A)	10:00 p.m.—7:00 a.m.

In the event the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise levels shall be reduced by five (5) dB(A).

- (b) It shall be unlawful for any person at any location within the City of Santa Ana to create any noise, or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, when the foregoing causes the noise level, when measured within any other dwelling unit on any residential property, to exceed:
- (1) The interior noise standard for a cumulative period of more than five (5) minutes in any hour; or
  - (2) The interior noise standard plus five (5) dB(A) for a cumulative period of more than one minute in any hour; or
  - (3) The interior noise standard plus ten (10) dB(A) for any period of time.
- (c) In the event the ambient noise level exceeds either of the first two (2) noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the third noise limit category, the maximum allowable noise level under

said category shall be increased to reflect the maximum ambient noise level.

(Ord. No. NS-1441, § 1, 8-21-78)

Sec. 18-314. - Special provisions.

The following activities shall be exempted from the provisions of this article:

- (a) Activities conducted on the grounds of any public or private nursery, elementary, intermediate or secondary school or college.
- (b) Outdoor gatherings, public dances and shows, provided said events are conducted pursuant to a license issued by the City of Santa Ana.
- (c) Activities conducted on any park or playground, provided such park or playground is owned and operated by a public entity.
- (d) Any mechanical device, apparatus or equipment used, related to or connected with emergency machinery, vehicle or work.
- (e) Noise sources associated with construction, repair, remodeling, or grading of any real property, provided said activities do not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or any time on Sunday or a federal holiday.
- (f) All mechanical devices, apparatus or equipment which are utilized for the protection or salvage of agricultural crops during periods of potential or actual frost damage or other adverse weather conditions.
- (g) Mobile noise sources associated with agricultural operations, provided such operations do not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a federal holiday.
- (h) Mobile noise sources associated with agricultural pest control through pesticide application, provided that the application is made in accordance with restricted material permits issued by or regulations enforced by the agricultural commissioner.
- (i) Noise sources associated with the maintenance of real property, provided said activities take place between 7:00 a.m. and 8:00 p.m. on any day except Sunday or a federal holiday, or between the hours of 9:00 a.m. and 8:00 p.m. on Sunday or a federal holiday.
- (j) Any activity to the extent regulation thereof has been preempted by state or federal law.

(Ord. No. NS-1441, § 1, 8-21-78)

Sec. 18-315. - Schools, hospitals and churches; special provisions.

It shall be unlawful for any person to create any noise which causes the noise level at any school, hospital or church while the same is in use to exceed the noise limits as specified in section 18-312 prescribed for the assigned noise zone in which the school, hospital or church is located, or which noise level unreasonably interferes with the use of such institutions or which unreasonably disturbs or annoys patients in the hospital, provided conspicuous signs are displayed in three (3) separate locations within one-tenth ( 1/10 ) of a mile of the institution indicating the presence of a school, church or hospital.

(Ord. No. NS-1441, § 1, 8-21-78)

Sec. 18-316. - Air conditioning and refrigeration; special provisions.

During the five-year period following the effective date of this article, the noise standards enumerated in sections 18-312 and 18-313 shall be increased eight (8) dB(A) where the alleged offensive noise source is an air conditioning or refrigeration system or associated equipment which was installed prior to the effective date of this article.

(Ord. No. NS-1441, § 1, 8-21-78)

Sec. 18-317. - Noise level measurement.

The location selected for measuring exterior noise levels shall be at any point on the affected property. Interior noise measurements shall be made within the affected dwelling unit. The measurement shall be made at a point at least four (4) feet from the wall, ceiling, or floor nearest the alleged offensive noise source and may be made with the windows of the affected unit open.

(Ord. No. NS-1441, § 1, 8-21-78)

Sec. 18-318. - Manner of enforcement.

The chief of police, the Orange County health officer and their duly authorized representatives are directed to enforce the provisions of this article. The chief of police, the Orange County health officer and their duly authorized representatives are authorized, pursuant to Penal Code Section 836.5, to arrest any person without a warrant when they have reasonable cause to believe that such person has committed a misdemeanor in their presence.

No person shall interfere with, oppose or resist any authorized person charged with the enforcement of this article while such person is engaged in the performance of his duty.

(Ord. No. NS-1441, § 1, 8-21-78)

Sec. 18-319. - Variance procedure.

The owner or operator of a noise source which violates any of the provisions of this article may file an application with the Orange County health officer for a variance from the provisions thereof wherein said owner or operator shall set forth all actions taken to comply with said provisions, the reasons why immediate compliance cannot be achieved, a proposed method of achieving compliance, and a proposed time schedule for its accomplishment. Said application shall be accompanied by a fee as established by resolution of the city council. A separate application shall be filed for each noise source; provided however, that several mobile sources under common ownership, or several fixed sources on a single property may be combined into one application. Upon receipt of said application and fee, the health officer shall refer it with his recommendation thereon within thirty (30) days to the Orange County Noise Variance Board for action thereon in accordance with the provisions of applicable law.

An applicant for a variance shall remain subject to prosecution under the terms of this article until a variance is granted.

(Ord. No. NS-1441, § 1, 8-21-78)

Sec. 18-320. - Appeals.

Within fifteen (15) days following the decision of the Orange County Variance Board on an application, the applicant, the health officer, or any member of the city council, may appeal the decision to the city council by filing a notice of appeal with the secretary of the Orange County Variance Board. In the case of an appeal by the applicant for a variance, the notice of



appeal shall be accompanied by a fee to be computed by the secretary of the Orange County Variance Board on the basis of the estimated cost of preparing the materials required to be forwarded to the city council as discussed hereafter. If the actual cost of such preparation differs from the estimated cost appropriate payments shall be made either to or by the secretary of the Orange County Variance Board.

Within fifteen (15) days following receipt of a notice of appeal and the appeal fee, the secretary of the Variance Board shall forward to the city council copies of the application for variance; the recommendation of the health officer; the notice of appeal; all evidence concerning said application received by the variance board and its decision thereon. In addition, any person may file with the clerk of the city council written arguments supporting or attacking said decision and the city council may in its discretion hear oral arguments thereon. The clerk of the city council shall mail to the applicant a notice of the date set for hearing of the appeal. The notice shall be mailed at least ten (10) days prior to the hearing date.

Within sixty (60) days following its receipt of the notice of appeal, the city council shall either affirm, modify or reverse the decision, of the variance board. Such decision shall be based upon the city council's evaluation of the matters submitted to the city council in light of the powers conferred on the variance board and the factors to be considered, both as enumerated in section 18-319 and Orange County Ordinance section 4-6-13.

As part of its decision, the city council may direct the variance board to conduct further proceedings on said application. Failure of the city council to affirm, modify or reverse the decision of the variance board within said sixty-day period shall constitute an affirmance of the decision.

(Ord. No. NS-1441, § 1, 8-21-78)

#### Sec. 18-321. - Violations; misdemeanors.

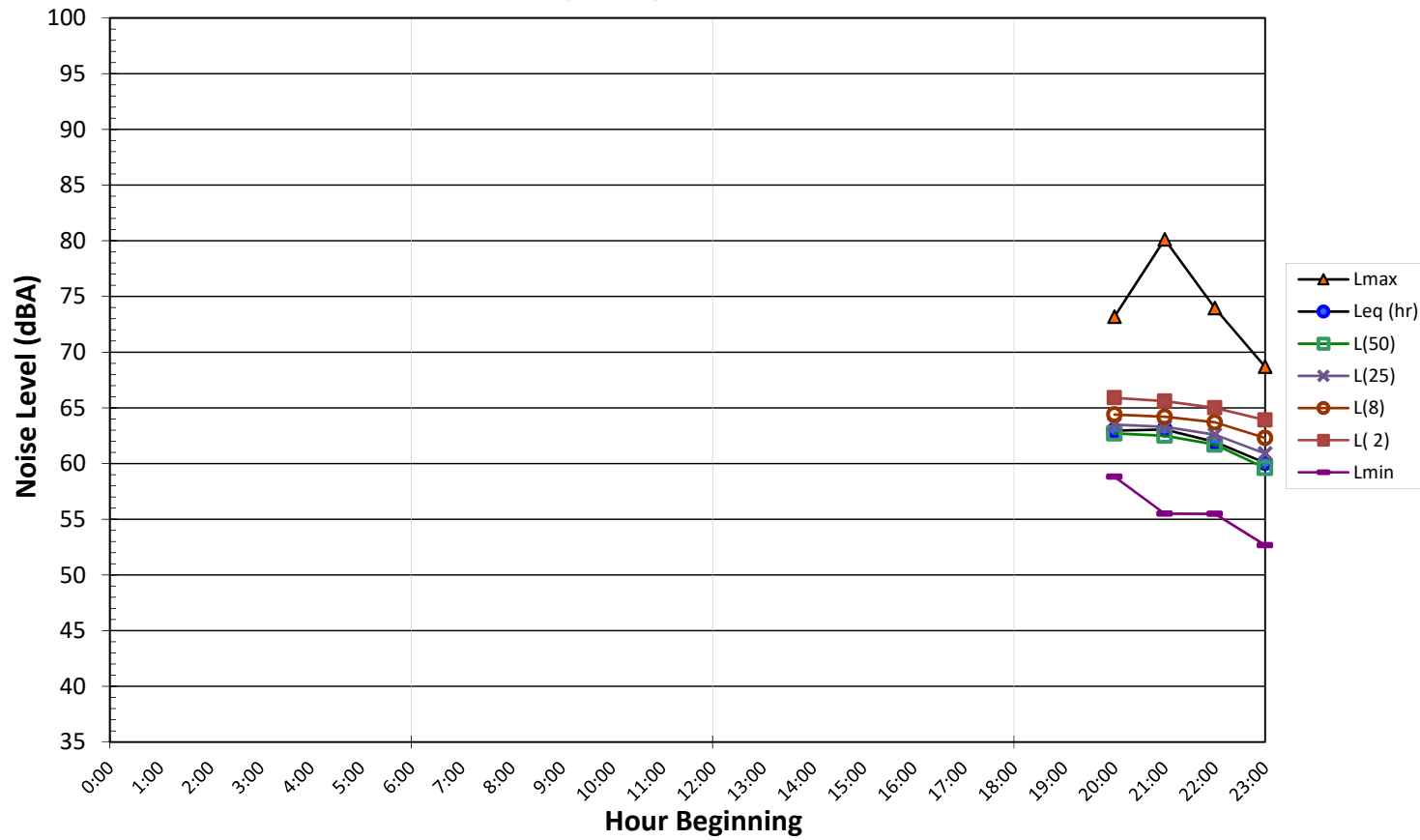
Any person violating any or the provisions of this article shall be deemed guilty of a misdemeanor. Each day such violation is committed or permitted to continue shall constitute a separate offense and shall be punishable as such. The provisions of this article shall not be construed as permitting conduct not prescribed herein and shall not affect the enforceability of any other applicable provisions of law.

(Ord. No. NS-1441, § 1, 8-21-78)

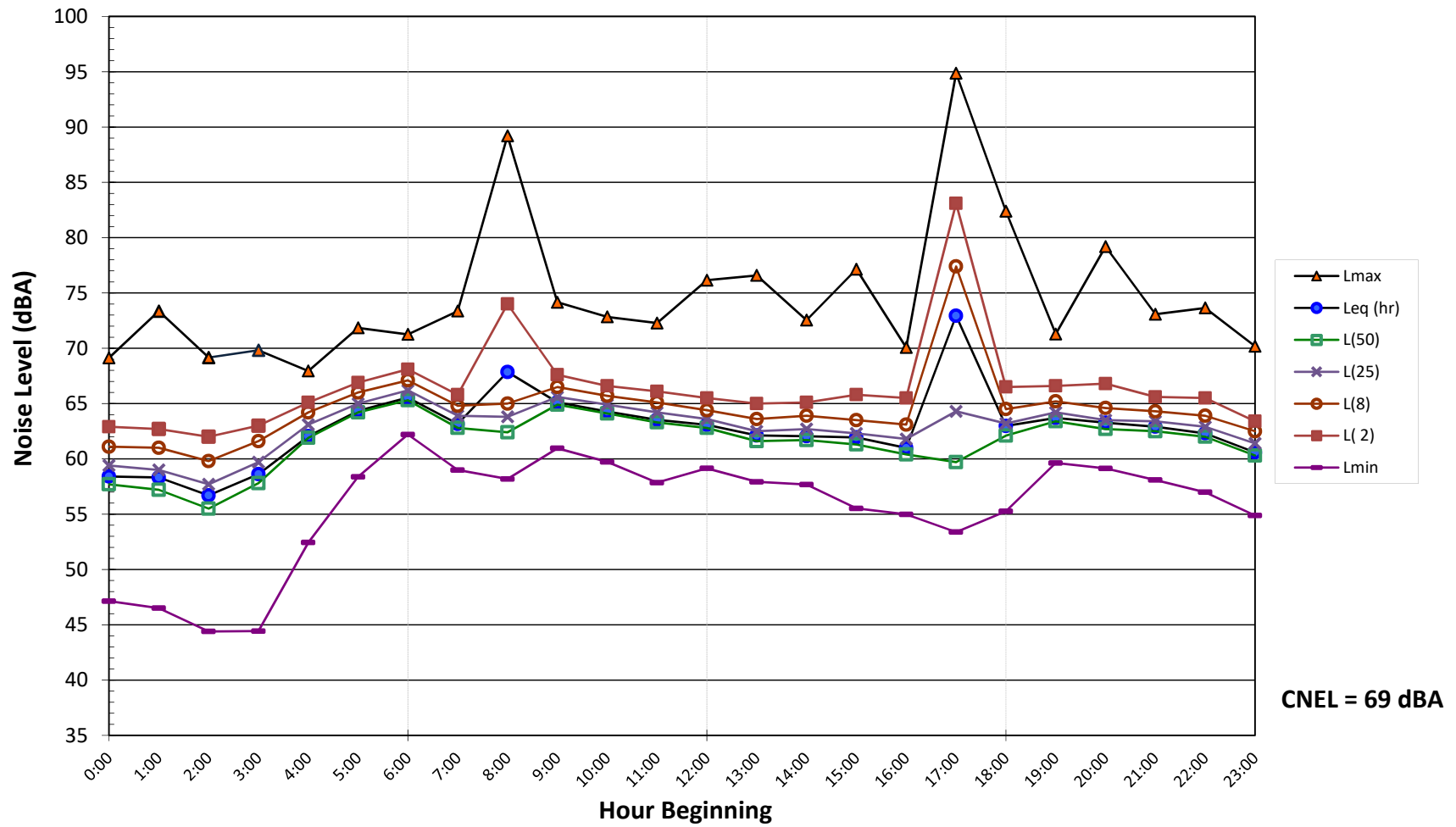
#### Secs. 18-322—18-350. - Reserved.

## AMBIENT NOISE MONITORING RESULTS

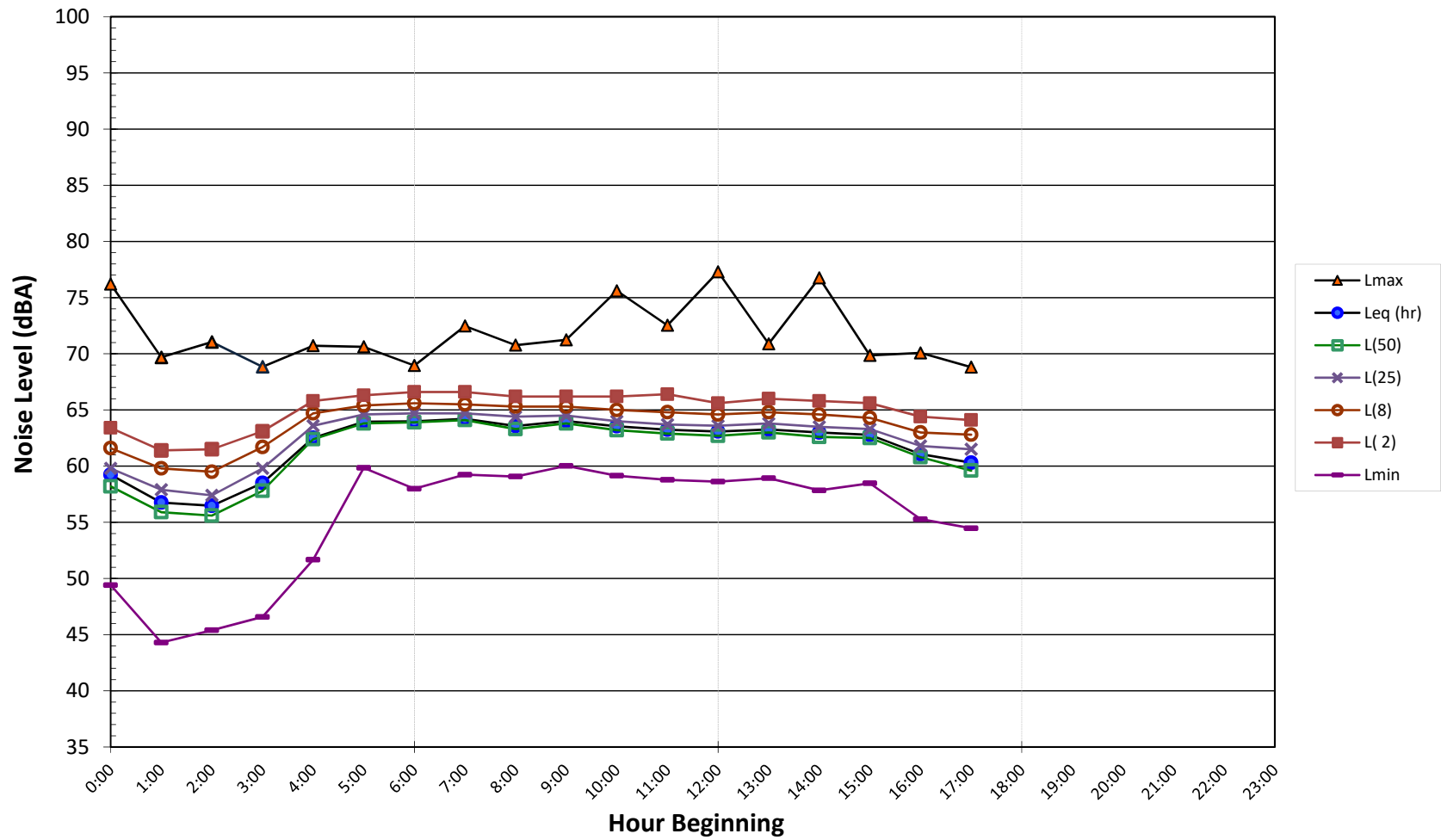
**Noise Levels at LT-1**  
**Santa Ana General Plan Update**  
**Monday, May 13, 2019**



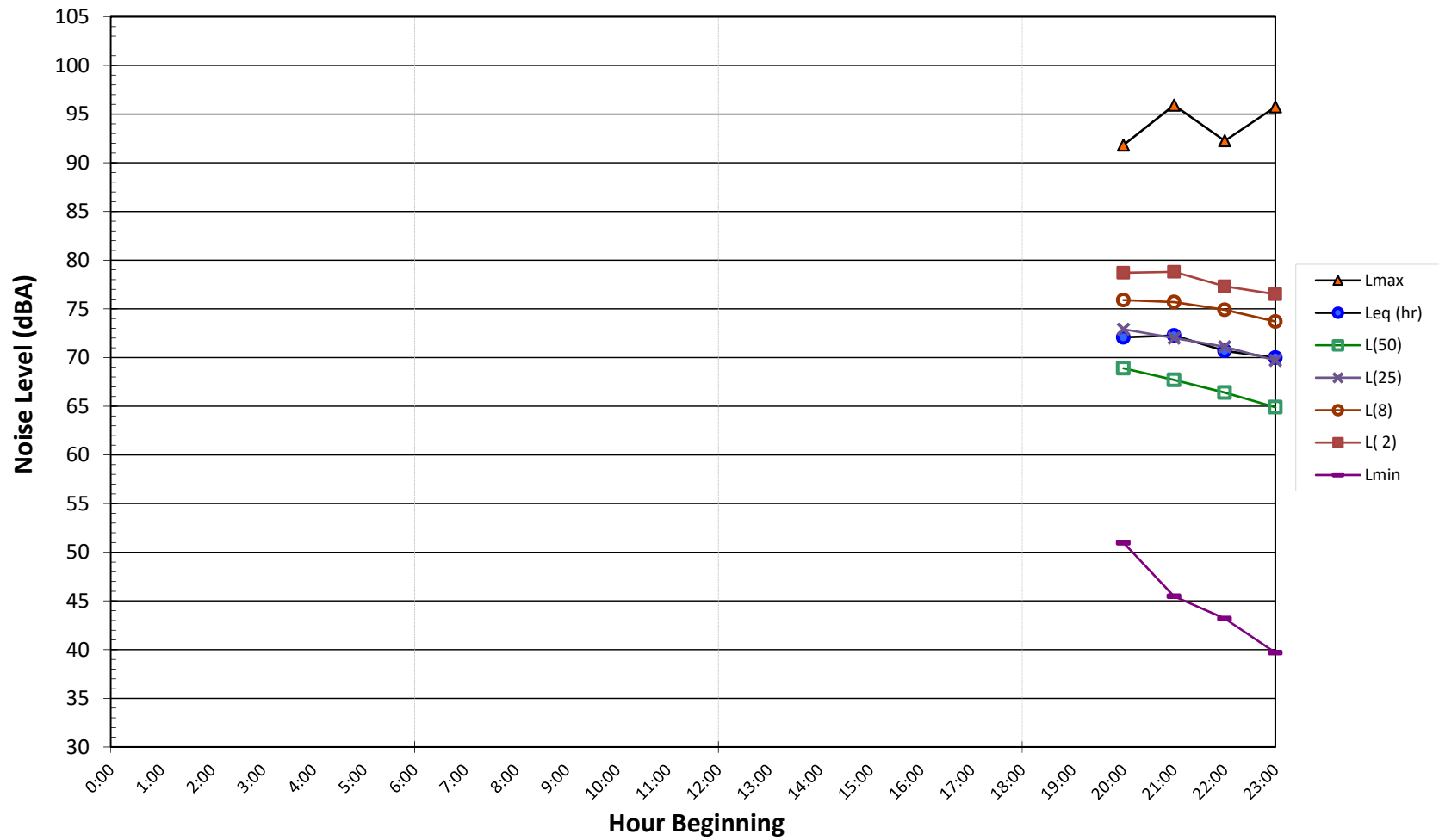
**Noise Levels LT-1**  
**Santa Ana General Plan Update**  
**Tuesday, May 14, 2019**



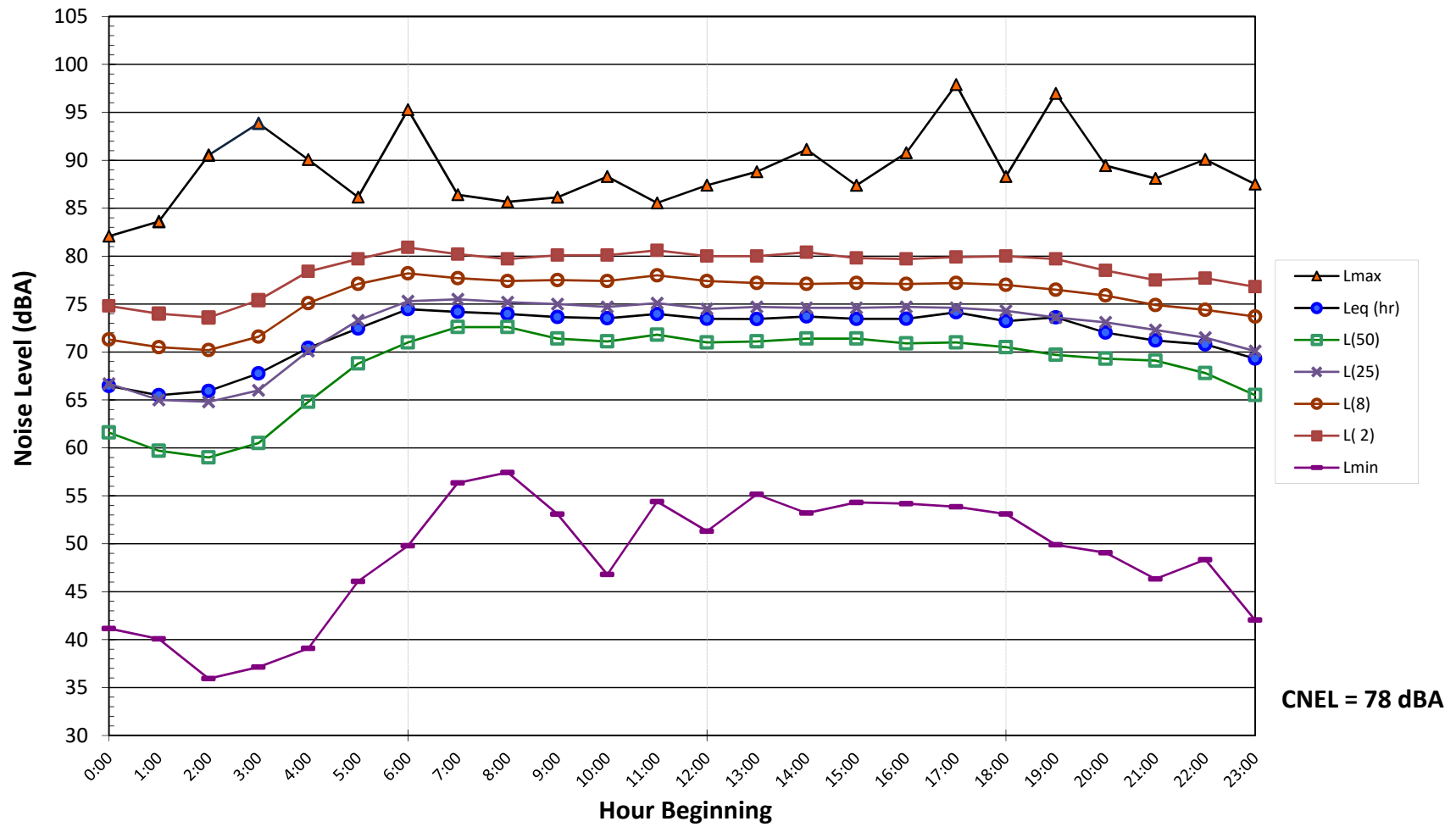
**Noise Levels LT-1**  
**Santa Ana General Plan Update**  
**Wednesday, May 15, 2019**



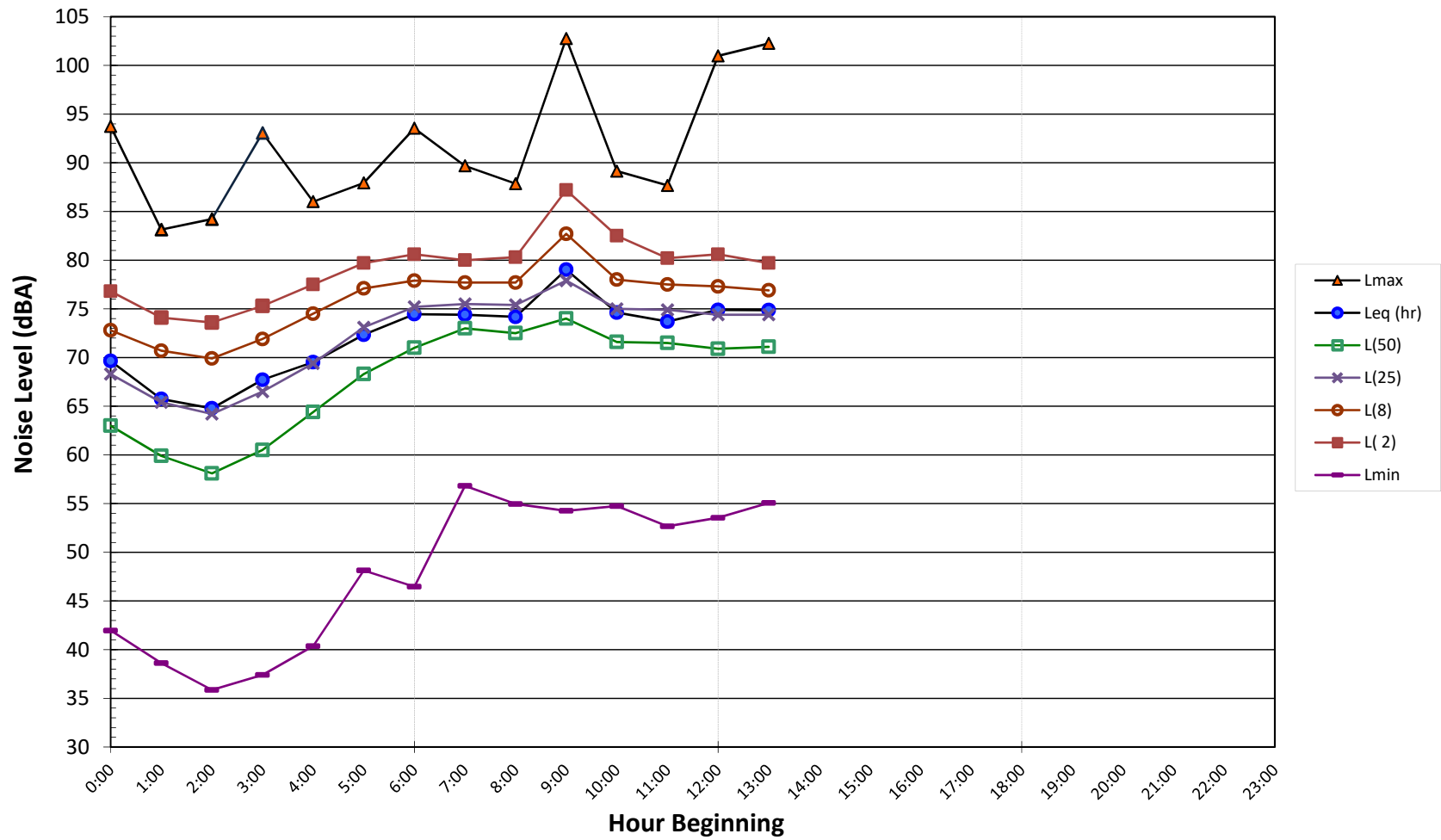
**Noise Levels at LT-2**  
**Santa Ana General Plan Update**  
**Monday, May 13, 2019**



**Noise Levels at LT-2**  
**Santa Ana General Plan Update**  
**Tuesday, May 14, 2019**

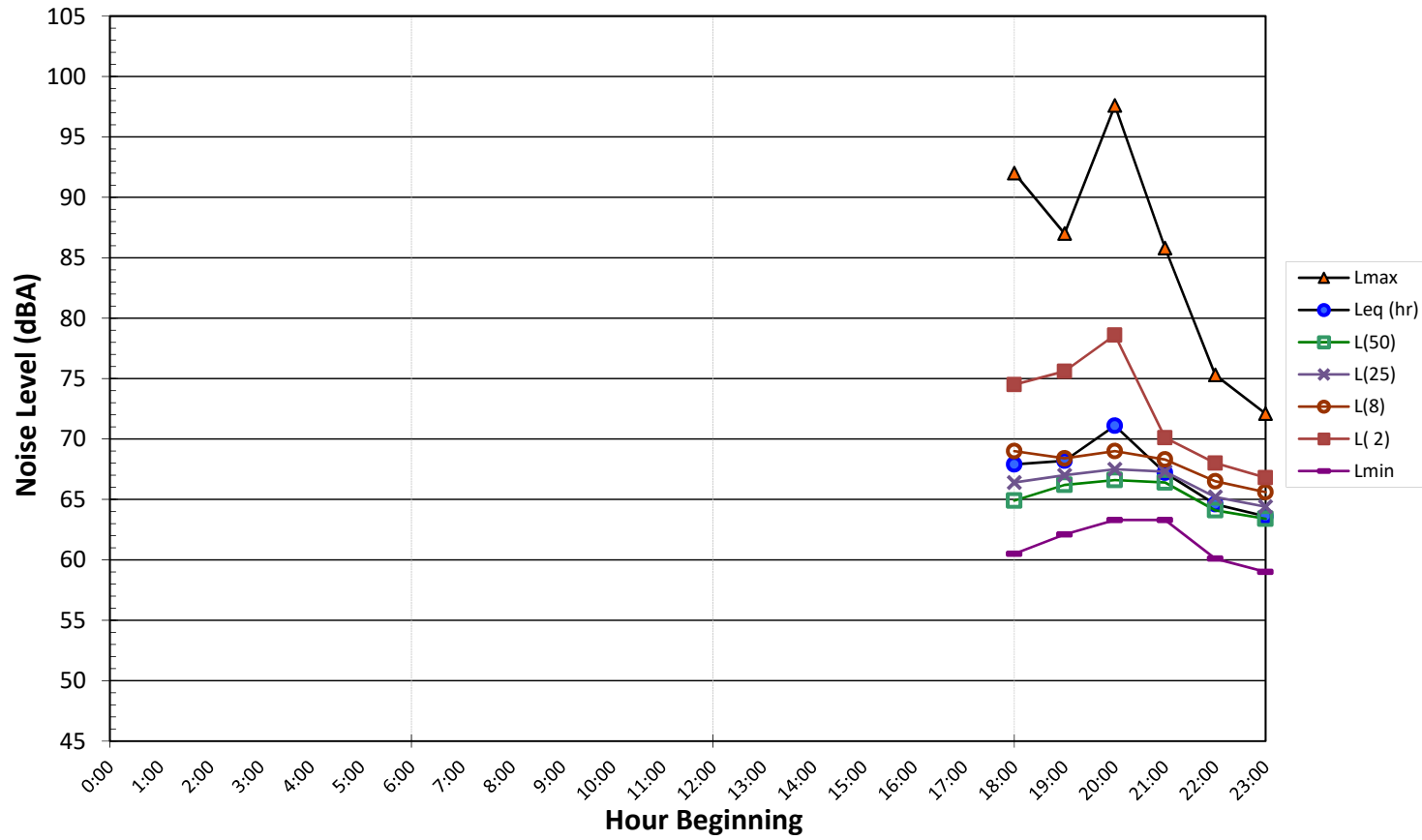


**Noise Levels at LT-2**  
**Santa Ana General Plan Update**  
**Wednesday, May 15, 2019**

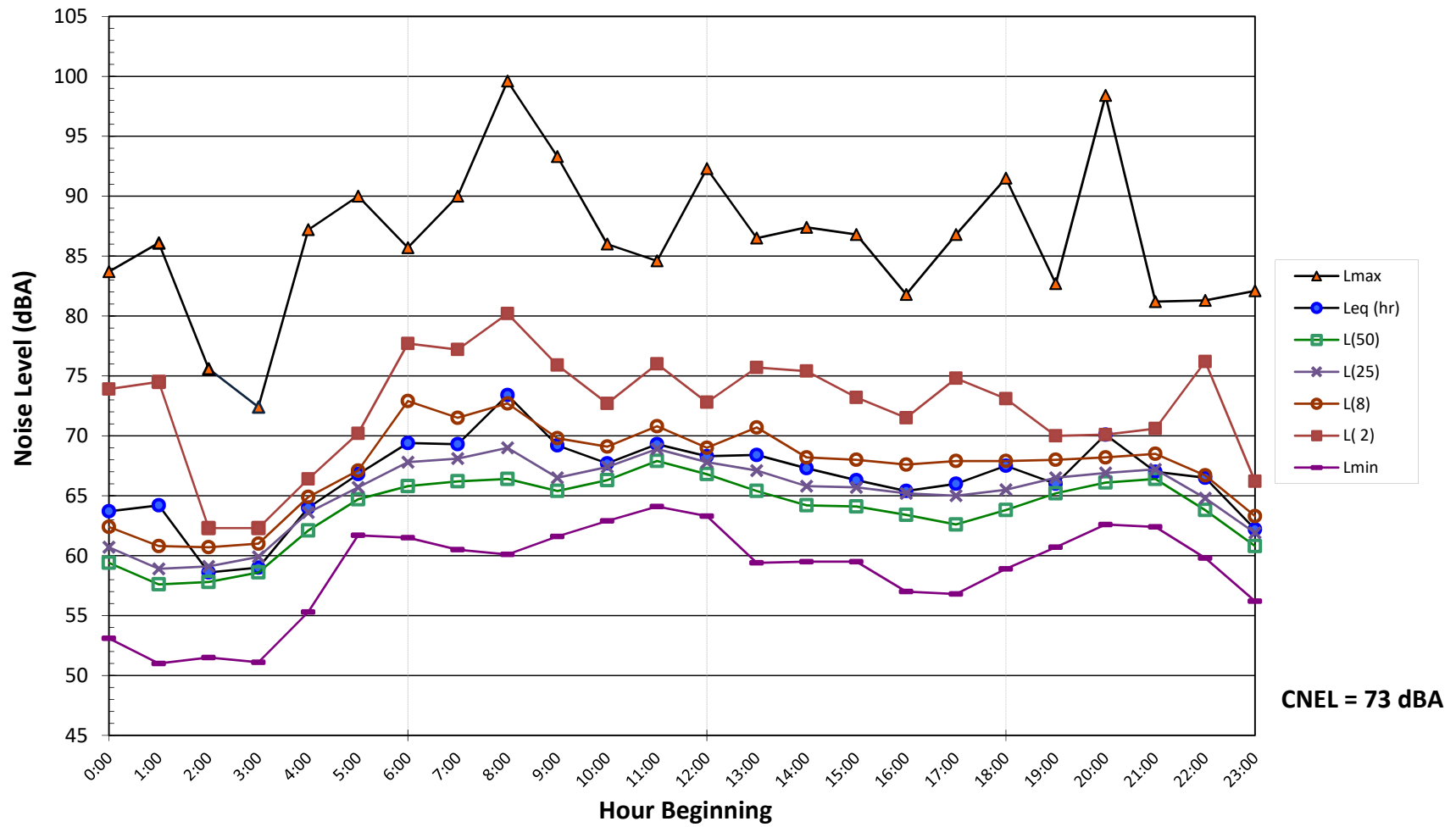




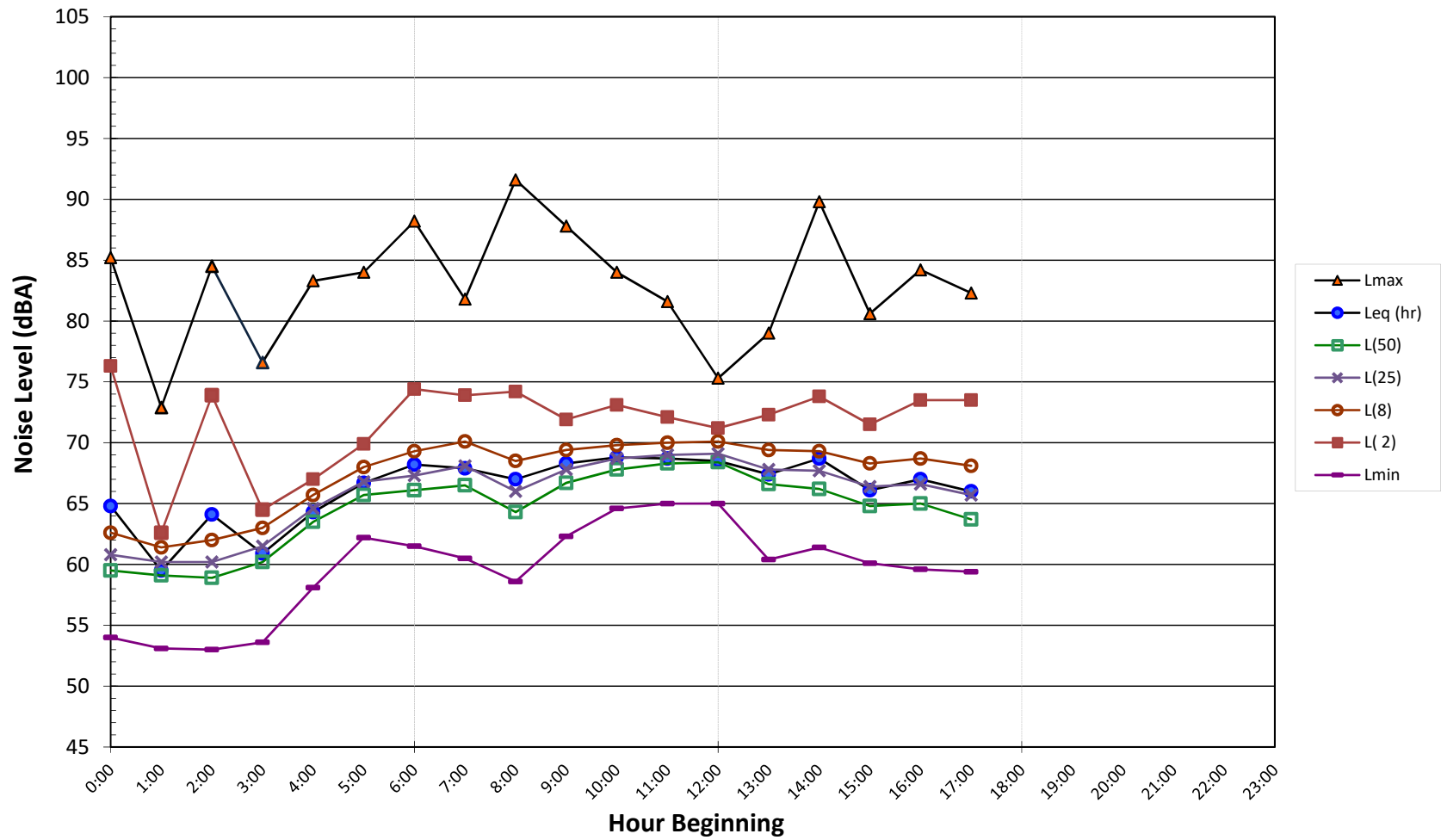
**Noise Levels at LT-3**  
**Santa Ana General Plan Update**  
**Monday, May 13, 2019**



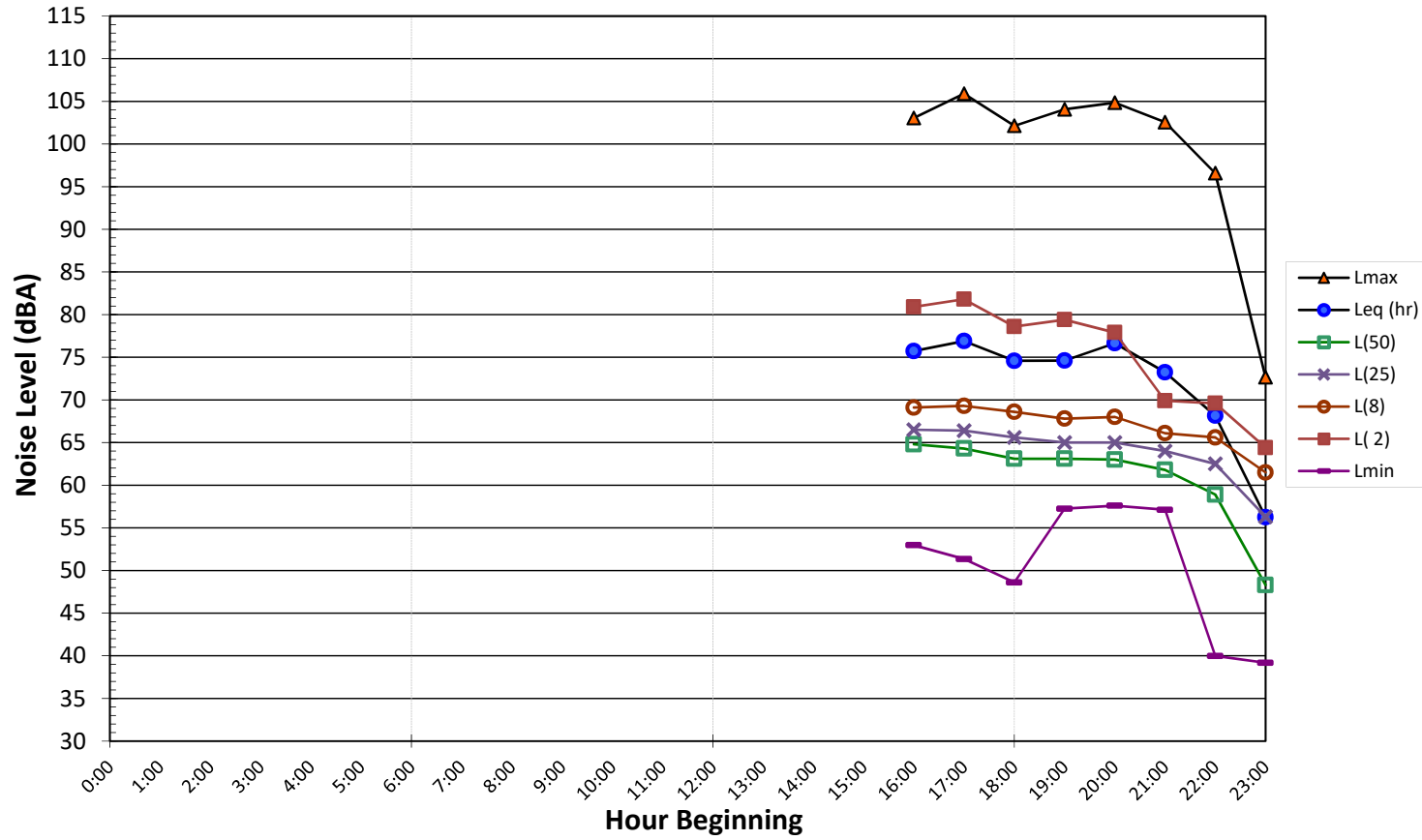
**Noise Levels at LT-3**  
**Santa Ana General Plan Update**  
**Tuesday, May 14, 2019**



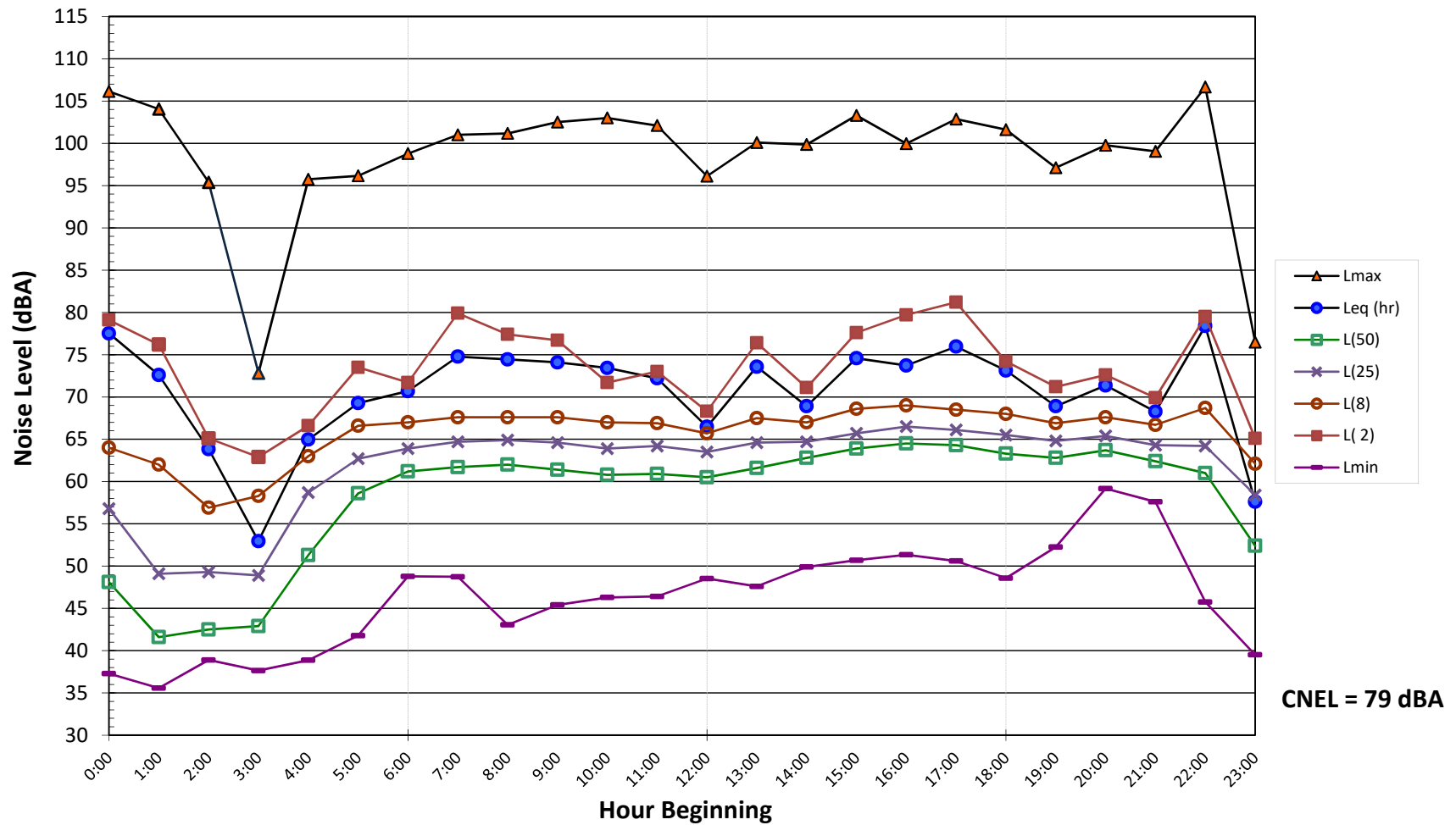
**Noise Levels at LT-3**  
**Santa Ana General Plan Update**  
**Wednesday, May 15, 2019**



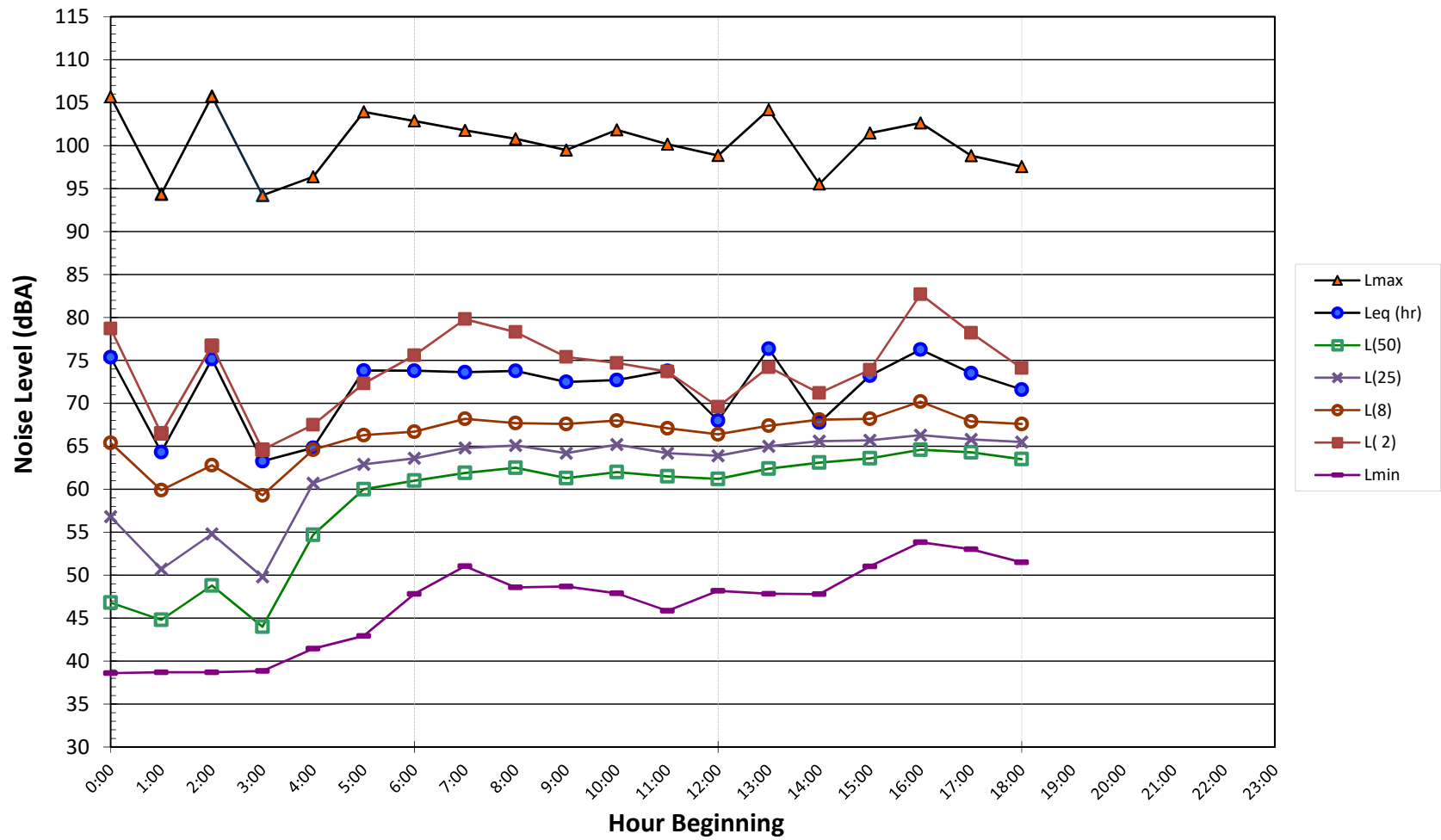
**Noise Levels at LT-4**  
**Santa Ana General Plan Update**  
**Monday, May 13, 2019**



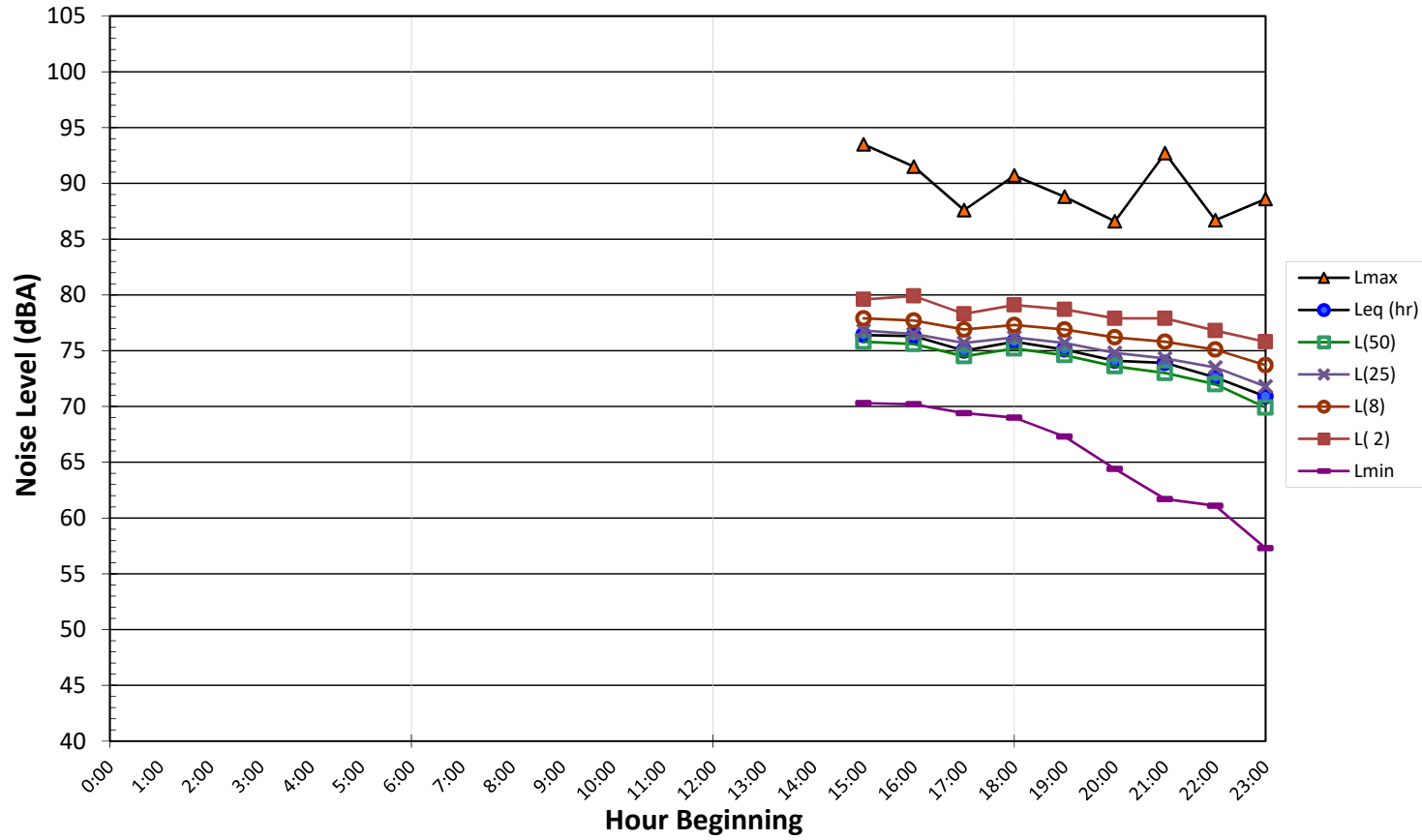
**Noise Levels at LT-4  
Santa Ana General Plan Update  
Tuesday, May 14, 2019**



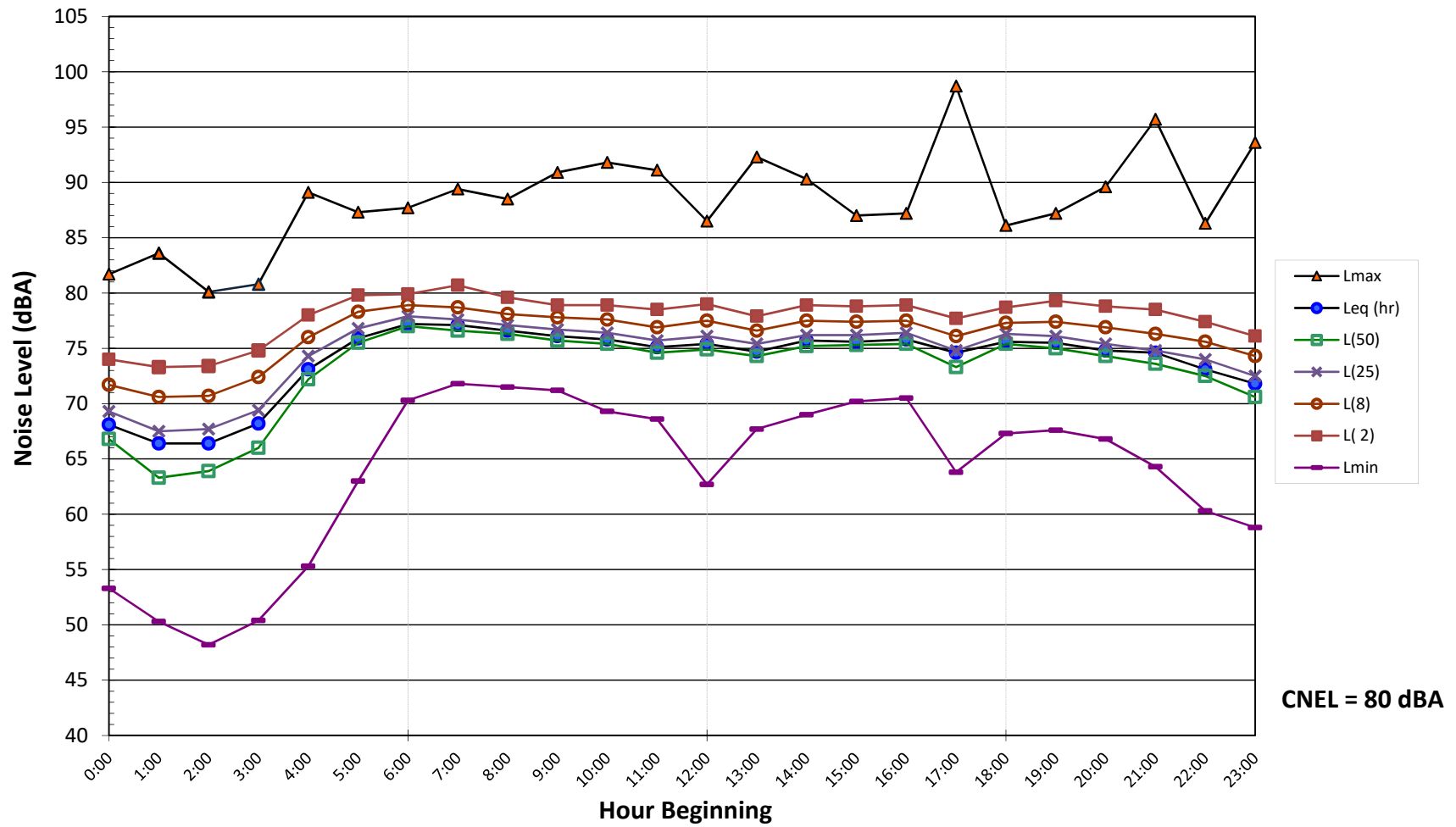
**Noise Levels at LT-4**  
**Santa Ana General Plan Update**  
**Wednesday, May 15, 2019**



**Noise Levels at LT-5**  
**Santa Ana General Plan Update**  
**Monday, May 13, 2019**

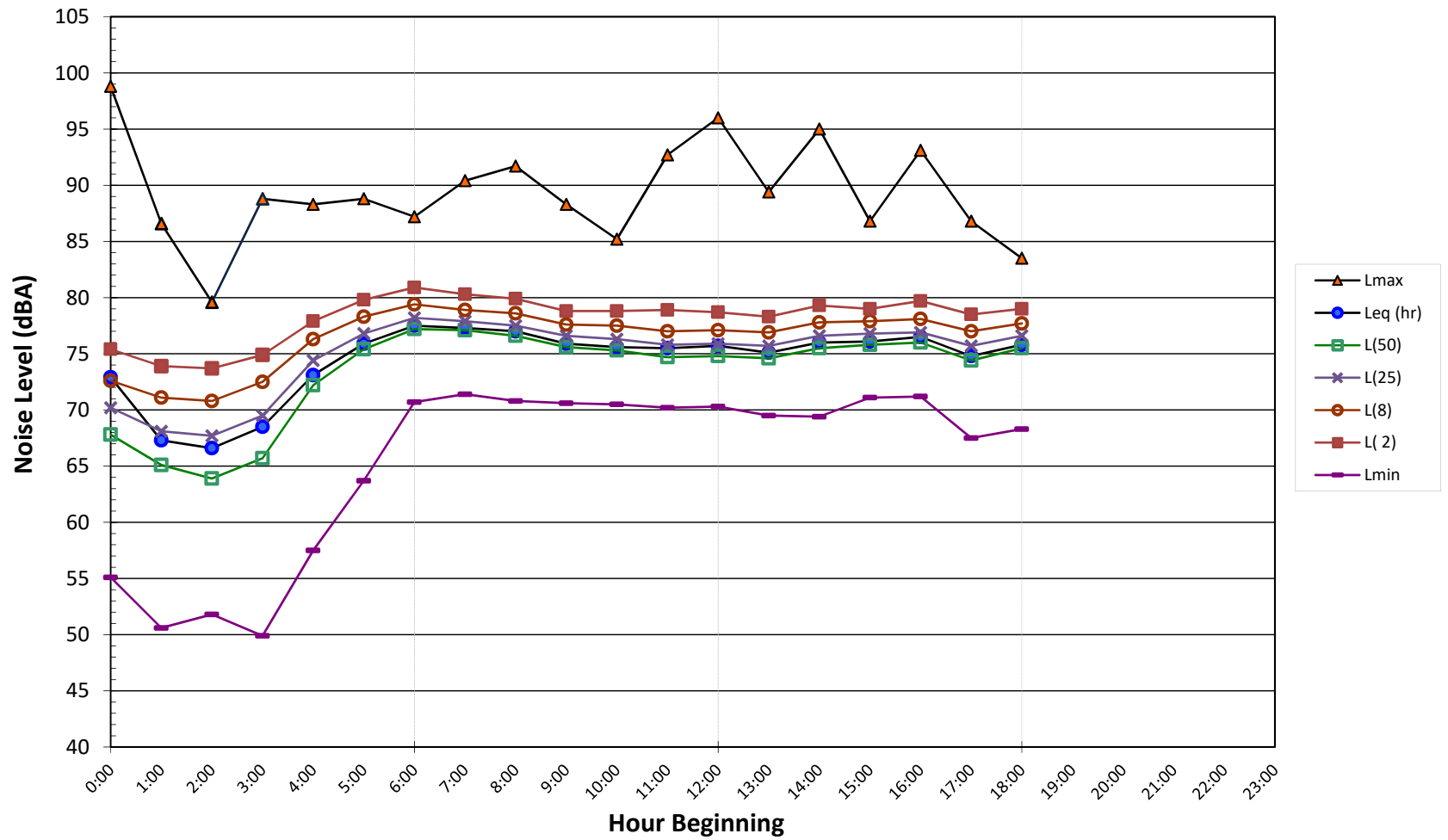


**Noise Levels at LT-5**  
**Santa Ana General Plan Update**  
**Tuesday, May 14, 2019**





**Noise Levels at LT-5**  
**Santa Ana General Plan Update**  
**Wednesday, May 15, 2019**



# TRAFFIC NOISE INCREASE CALCULATIONS

## Traffic Noise Calculator: FHWA 77-108

Project Title: SNT-20 - Existing

	Output						Inputs																Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour																				
ID	L <sub>eq</sub> 24hr	L <sub>dn</sub>	CNEL	70 dBA	65 dBA	60 dBA	Roadway	Segment	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Receiver	Ground Absorption	Lane Distance		
1	68.9	71.9	72.4	72	155	335	1st Street	Euclid Street to Ward Street	25233	40	0	94.9%	2.9%	2.2%	77%	12%	11%	6	Soft	50	0.5	68		
2	70.9	74.5	75.0	107	230	497	Euclid Street	1st Street to McFadden Avenue	40731	40	0	94.9%	2.9%	2.2%	74%	12%	14%	6	Soft	50	0.5	68		
3	70.8	73.6	74.1	94	203	437	Westminster Avenue	Harbor Boulevard to Fairview Street	30459	45	0	94.9%	2.9%	2.2%	78%	12%	10%	6	Soft	50	0.5	68		
4	72.2	76.2	76.6	138	298	642	Harbor Boulevard	Westminster Avenue/17th Street to Hazard Avenue	54137	40	0	94.9%	2.9%	2.2%	71%	12%	17%	6	Soft	50	0.5	68		
5	70.0	73.4	73.8	90	194	419	1st Street	Harbor Boulevard to Jackson	32736	40	0	94.9%	2.9%	2.2%	75%	12%	13%	6	Soft	50	0.5	68		
6	70.4	73.4	73.9	92	197	425	Edinger Avenue	Harbor Boulevard to Fairview Street	27838	45	0	94.9%	2.9%	2.2%	76%	13%	11%	6	Soft	50	0.5	68		
7	71.0	74.2	74.6	101	218	470	Warner Avenue	Harbor Boulevard to Fairview Street	31945	45	0	94.9%	2.9%	2.2%	78%	10%	12%	6	Soft	50	0.5	68		
8	67.9	71.4	71.9	67	144	310	Harbor Boulevard	Segerstrom Avenue to MacArthur Boulevard	15622	45	0	94.9%	2.9%	2.2%	74%	12%	14%	6	Soft	50	0.5	68		
9	72.2	74.8	75.5	116	250	538	Fairview Street	1st Street to Willits Street	42605	45	0	94.9%	2.9%	2.2%	77%	14%	9%	6	Soft	50	0.5	68		
10	70.5	73.6	74.1	94	203	438	1st Street	Sullivan Street to Raitt Street	36377	40	0	94.9%	2.9%	2.2%	76%	12%	12%	6	Soft	50	0.5	68		
11	72.3	76.3	76.8	142	305	658	Bristol Street	17th Street to Santa Clara Avenue	45676	45	0	94.9%	2.9%	2.2%	70%	13%	17%	4	Soft	50	0.5	44		
12	70.6	73.1	73.8	89	192	414	17th Street	College Avenue to Bristol Street	37345	40	0	94.9%	2.9%	2.2%	78%	13%	9%	6	Soft	50	0.5	68		
13	70.9	74.8	75.3	113	244	525	Bristol Street	17th Street to Washington Avenue	42005	40	0	94.9%	2.9%	2.2%	70%	14%	16%	5	Soft	50	0.5	56		
14	71.8	75.8	76.2	130	280	603	Fairview Street	Trask Avenue to 17th Street	40432	45	0	94.9%	2.9%	2.2%	71%	12%	17%	4	Soft	50	0.5	44		
15	71.1	74.7	75.2	111	239	515	Bristol Street	1st Street to Bishop Street	42663	40	0	94.9%	2.9%	2.2%	73%	13%	14%	6	Soft	50	0.5	68		
16	65.9	68.7	69.1	43	94	202	Civic Center Drive	Bristol Street to Flower Street	17589	35	0	94.9%	2.9%	2.2%	81%	9%	10%	4	Soft	50	0.5	44		
17	65.2	68.8	69.2	45	96	207	Flower Street	1st Street to Bishop Street	15622	35	0	94.9%	2.9%	2.2%	74%	12%	14%	2	Soft	50	0.5	20		
18	68.5	72.0	72.5	73	158	340	Main Street	17th Street to 20th Street	32044	35	0	94.9%	2.9%	2.2%	74%	12%	14%	4	Soft	50	0.5	44		
19	67.4	71.1	71.6	64	137	296	Main Street	Washington Street to Civic Center Drive	33489	30	0	94.9%	2.9%	2.2%	72%	13%	15%	4	Soft	50	0.5	44		
20	63.1	65.7	66.1	28	59	128	Civic Center Drive	Flower Street to Ross Street	17427	25	0	94.9%	2.9%	2.2%	83%	8%	9%	4	Soft	50	0.5	44		
21	64.0	66.8	67.3	33	71	153	Santa Ana Boulevard	Flower Street to Ross Street	14689	30	0	94.9%	2.9%	2.2%	80%	10%	10%	6	Soft	50	0.5	68		
22	71.1	74.9	75.3	113	243	525	1st Street	Main Street to Standard Avenue	42699	40	0	94.9%	2.9%	2.2%	73%	12%	15%	6	Soft	50	0.5	68		
23	68.2	71.8	72.2	70	152	326	Main Street	1st Street to Bishop Street	30125	35	0	94.9%	2.9%	2.2%	74%	12%	14%	4	Soft	50	0.5	44		
24	69.4	72.8	73.3	82	178	383	Grand Avenue	Santa Clara Avenue to Fairhaven Street	30206	40	0	94.9%	2.9%	2.2%	75%	12%	13%	4	Soft	50	0.5	44		
25	70.2	73.8	74.3	97	208	449	Grand Avenue	Santa Ana Boulevard to 4th Street	36678	40	0	94.9%	2.9%	2.2%	73%	13%	14%	4	Soft	50	0.5	44		
26	64.7	67.3	67.8	36	77	166	Santa Clara Avenue	Grand Avenue to Tustin Avenue	10585	40	0	94.9%	2.9%	2.2%	80%	11%	9%	2	Soft	50	0.5	20		
27	70.3	73.1	73.6	87	187	403	Tustin Avenue	Santa Clara Avenue to Fairhaven Street	35410	40	0	94.9%	2.9%	2.2%	80%	10%	10%	6	Soft	50	0.5	68		
28	69.7	72.2	72.8	77	166	358	17th Street	Cabrillo Park Drive to Tustin Avenue	32080	40	0	94.9%	2.9%	2.2%	79%	12%	9%	4	Soft	50	0.5	44		
29	68.9	71.4	71.9	67	144	309	Tustin Avenue	Fruit Street to 4th Street	25174	40	0	94.9%	2.9%	2.2%	82%	9%	9%	6	Soft	50	0.5	68		
30	69.4	73.1	73.5	86	186	400	1st Street	Grand Avenue to Elk Lane	28638	40	0	94.9%	2.9%	2.2%	74%	11%	15%	6	Soft	50	0.5	68		
31	68.3	71.5	71.9	67	145	312	1st Street	Cabrillo Park Drive to Tustin Avenue	22083	40	0	94.9%	2.9%	2.2%	77%	11%	12%	6	Soft	50	0.5	68		
32	71.7	75.4	75.8	122	263	566	Fairview Street	Edinger Avenue to Harvard Street	37524	45	0	94.9%	2.9%	2.2%	74%	11%	15%	6	Soft	50	0.5	68		
33	71.9	75.7	76.0	126	272	586	Fairview Street	Warner Avenue to Segerstrom Avenue	39878	45	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68		
34	69.0	71.6	72.1	69	149	320	MacArthur Boulevard	Harbor Boulevard to Fairview Street	26235	40	0	94.9%	2.9%	2.2%	81%	10%	9%	6	Soft	50	0.5	68		
35	68.1	71.4	72.0	68	147	317	Edinger Avenue	Fairview Street to Greenville Street	29115	35	0	94.9%	2.9%	2.2%	72%	15%	13%	4	Soft	50	0.5	44		
36	66.6	70.0	70.6	55	118	255	McFadden Avenue	Fairview Street to Raitt Street	20997	35	0	94.9%	2.9%	2.2%	72%	15%	13%	4	Soft	50	0.5	44		
37	69.4	71.8	72.3	71	154	331	MacArthur Boulevard	Fairview Street to Raitt Street	28809	40	0	94.9%	2.9%	2.2%	82%	10%	8%	6	Soft	50	0.5	68		
38	67.5	70.3	71.2	60	130	280	Segerstrom Avenue	Fairview Street to Raitt Street	19326	40	0	94.9%	2.9%	2.2%	68%	22%	10%	4	Soft	50	0.5	44		
39	70.3	73.9	74.4	98	210	453	Bristol Street	Edinger Avenue to Warner Avenue	37238	40	0	94.9%	2.9%	2.2%	73%	13%	14%	4	Soft	50	0.5	44		
40	70.6	74.0	74.5	100	216	466	Bristol Street	Warner Avenue to Segerstrom Avenue	38007	40	0	94.9%	2.9%	2.2%	74%	13%	13%	6	Soft	50	0.5	68		
41	71.2	74.7	75.1	110	237	510	Warner Avenue	Raitt Street to Bristol Street	34555	45	0	94.9%	2.9%	2.2%	76%	10%	14%	5	Soft	50	0.5	56		
42	70.2	73.8	74.3	97	208	449	Bristol Street	MacArthur Boulevard to Sunflower Avenue	34731	40	0	94.9%	2.9%	2.2%	73%	13%	14%	6	Soft	50	0.5	68		
43	66.5	69.7	70.1	51	110	237	Flower Street	Warner Avenue to Segerstrom Avenue	15378	40	0	94.9%	2.9%	2.2%	77%	11%	12%	4	Soft	50	0.5	44		
44	70.2	73.6	74.2	95	204	440	Edinger Avenue	Flower Street to Main Street	36534	40	0	94.9%	2.9%	2.2%	73%	14%	13%	4	Soft	50	0.5	44		
45	68.0	71.5	72.0	68	146	314	Main Street	McFadden Avenue to Edinger Avenue	28622	35	0	94.9%	2.9%	2.2%	75%	11%	14%	4	Soft	50	0.5	44		
46	67.9	71.8	72.2	70	151	325	Main Street	Edinger Avenue to Warner Avenue	27972	35	0	94.9%	2.9%	2.2%	72%	12%	16%	4	Soft	50	0.5	44		
47	69.5	73.3	73.6	87	188	406	Main Street	Warner Avenue to Dyer Road	30484	40	0	94.9%	2.9%	2.2%	75%	10%	15%	5	Soft	50	0.5	56		
48	68.2	71.6	72.0	68	146	315	Segerstrom Avenue	Bristol Street to Flower Street	22959	40	0	94.9%	2.9%	2.2%	77%	10%	13%	4	Soft	50	0.5	44		
49	70.6	73.8	74.3	97	208	448	MacArthur Boulevard	Flower Street to Main Street	37946	40	0	94.9%	2.9%	2.2%	77%	11%	12%	6	Soft	50	0.5	68		
50	69.7	72.7	73.1	80	173	372	Main Street	MacArthur Boulevard to Sunflower Avenue	23692	45	0	94.9%	2.9%	2.2%	80%	9%	11%	6	Soft	50	0.5	68		
51	68.4	71.0	71.1	59	127	273	Grand Avenue	Edinger Avenue to Warner Avenue	17735	45	0	94.9%	2.9%	2.2%	90%	1%	9%	6	Soft	50	0.5	68		
52	72.0	75.7	76.1	127	273	589	Edinger Avenue	Richie Street to Newport Avenue	40435	45	0	94.9%	2.9%	2.2%	76%	9%	15%	6	Soft	50	0.5	68		
53	69.4	72.8	73.1	80	172	372	Warner Avenue	Grand Avenue to Red Hill Avenue	22435	45	0	94.9%	2.9%	2.2%	81%	6%	13%	6	Soft	50	0.5	68		
54	69.0	72.5	72.9	78	169	363	Warner Avenue	Main Street to Standard Avenue	27391	40	0	94.9%	2.9%	2.2%	76%	10%	14%	4	Soft	50	0.5	4		

66	84.3	87.6	88.1	803	1730	3728	I-5	Newport Ave. to Red Hill Ave.	334100	60	0	94.5%	2.4%	3.1%	76%	11%	13%	6	Soft	50	0.5	68
67	83.3	86.7	87.1	692	1490	3211	I-405	Brookhurst Ave. to Euclid St.	300100	60	0	96.5%	1.7%	1.8%	76%	11%	13%	6	Soft	50	0.5	68
68	83.6	87.0	87.4	725	1562	3365	I-405	Euclid St. to Harbor Blvd.	321900	60	0	96.5%	1.7%	1.8%	76%	11%	13%	6	Soft	50	0.5	68
69	83.3	86.7	87.1	694	1494	3219	I-405	Harbor Blvd. to SR-73	301300	60	0	96.5%	1.7%	1.8%	76%	11%	13%	6	Soft	50	0.5	68
70	82.6	85.9	86.4	620	1336	2878	I-405	Bristol St. to SR-55	246400	60	0	95.7%	2.3%	2.0%	76%	11%	13%	6	Soft	50	0.5	68
71	83.3	86.6	87.1	687	1481	3191	I-405	SR-55 to MacArthur Blvd.	287700	60	0	95.7%	2.3%	2.0%	76%	11%	13%	6	Soft	50	0.5	68
72	83.4	86.8	87.3	708	1525	3286	SR-55	4th St to 17th Street	267300	60	0	93.0%	4.0%	3.0%	76%	11%	13%	6	Soft	50	0.5	68
73	84.0	87.3	87.8	765	1647	3549	SR-55	Edginer Ave. to Dyer Rd.	297300	60	0	92.8%	4.1%	3.1%	76%	11%	13%	6	Soft	50	0.5	68
74	83.2	86.6	87.0	683	1471	3169	SR-55	Dyer Rd. to MacArthur Blvd.	285700	60	0	95.3%	3.0%	1.7%	76%	11%	13%	6	Soft	50	0.5	68
75	82.3	85.6	86.1	589	1269	2734	SR-55	MacArthur Blvd. to I-405	228900	60	0	95.3%	3.0%	1.7%	76%	11%	13%	6	Soft	50	0.5	68
76	80.7	84.1	84.5	463	998	2150	SR-55	I-405 to SR-73	159700	60	0	95.3%	3.0%	1.7%	76%	11%	13%	6	Soft	50	0.5	68
77	82.3	85.6	86.1	590	1271	2738	SR-22	Euclid St. to Harbor Blvd.	223100	60	0	94.3%	4.0%	1.7%	76%	11%	13%	6	Soft	50	0.5	68
78	82.5	85.8	86.3	608	1310	2822	SR-22	The City Dr. to Bristol St.	242600	60	0	95.5%	2.9%	1.6%	76%	11%	13%	6	Soft	50	0.5	68
79	80.4	83.8	84.2	443	955	2058	SR-22	I-5 to Main St.	151100	60	0	95.5%	2.9%	1.6%	76%	11%	13%	6	Soft	50	0.5	68
80	80.1	83.4	83.9	422	908	1956	SR-22	Glassell St. to Tustin Ave.	146100	60	0	96.6%	2.0%	1.4%	76%	11%	13%	6	Soft	50	0.5	68

## Traffic Noise Calculator: FHWA 77-108

Project Title: SNT-20 - 2045 GP Buildout 80%

	Output						Inputs													Auto Inputs		
	dBA at 50 feet			Distance to CNEL Contour																		
ID	L <sub>eq</sub> 24hr	L <sub>dn</sub>	CNEL	70 dBA	65 dBA	60 dBA	Roadway	Segment	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Receiver	Ground Absorption	Lane Distance
1	67.6	71.3	71.7	64	139	299	1st Street	Euclid Street to Ward Street	18700	40	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
2	70.2	73.9	74.3	96	207	446	Euclid Street	1st Street to McFadden Avenue	34000	40	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
3	68.3	72.1	72.4	73	157	337	Westminster Avenue	Harbor Boulevard to Fairview Street	17400	45	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
4	70.4	74.1	74.5	100	216	465	Harbor Boulevard	Westminster Avenue/17th Street to Hazard Avenue	36200	40	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
5	68.5	72.2	72.6	74	160	344	1st Street	Harbor Boulevard to Jackson	23100	40	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
6	69.6	73.3	73.7	88	190	410	Edinger Avenue	Harbor Boulevard to Fairview Street	23300	45	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
7	70.1	73.8	74.2	96	206	444	Warner Avenue	Harbor Boulevard to Fairview Street	26300	45	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
8	73.5	77.2	77.6	160	345	743	Harbor Boulevard	Seegerstrom Avenue to MacArthur Boulevard	56900	45	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
9	71.8	75.5	75.9	124	266	574	Fairview Street	1st Street to Willits Street	38600	45	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
10	69.1	72.8	73.2	82	176	378	1st Street	Sullivan Street to Raitt Street	26600	40	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
11	72.1	75.8	76.2	130	280	602	Bristol Street	17th Street to Santa Clara Avenue	41500	45	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
12	69.5	73.3	73.6	87	188	405	17th Street	College Avenue to Bristol Street	29500	40	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
13	71.4	75.1	75.5	116	250	538	Bristol Street	17th Street to Washington Avenue	45100	40	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
14	72.8	76.5	76.9	143	308	665	Fairview Street	Trask Avenue to 17th Street	48100	45	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
15	71.7	75.5	75.8	122	264	569	Bristol Street	1st Street to Bishop Street	49000	40	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
16	66.1	69.8	70.2	52	111	240	Civic Center Drive	Bristol Street to Flower Street	18600	35	0	94.9%	2.9%	2.2%	75%	10%	15%	4	Soft	50	0.5	44
17	61.7	65.4	65.8	26	56	121	Flower Street	1st Street to Bishop Street	6900	35	0	94.9%	2.9%	2.2%	75%	10%	15%	2	Soft	50	0.5	20
18	70.0	73.7	74.1	94	202	435	Main Street	17th Street to 20th Street	43000	35	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
19	64.9	68.6	69.0	43	93	199	Main Street	Washington Street to Civic Center Drive	19000	30	0	94.9%	2.9%	2.2%	75%	10%	15%	4	Soft	50	0.5	44
20	60.8	64.5	64.9	23	49	106	Civic Center Drive	Flower Street to Ross Street	10200	25	0	94.9%	2.9%	2.2%	75%	10%	15%	4	Soft	50	0.5	44
21	64.1	67.8	68.2	38	82	176	Santa Ana Boulevard	Flower Street to Ross Street	15800	30	0	94.9%	2.9%	2.2%	75%	10%	15%	4	Soft	50	0.5	44
22	69.8	73.5	73.9	91	195	420	1st Street	Main Street to Standard Avenue	32900	40	0	94.9%	2.9%	2.2%	75%	10%	15%	4	Soft	50	0.5	44
23	68.3	72.0	72.4	72	155	333	Main Street	1st Street to Bishop Street	30500	35	0	94.9%	2.9%	2.2%	75%	10%	15%	4	Soft	50	0.5	44
24	69.8	73.5	73.9	90	195	420	Grand Avenue	Santa Clara Avenue to Fairhaven Street	31100	40	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
25	70.3	74.0	74.4	98	211	454	Grand Avenue	Santa Ana Boulevard to 4th Street	35000	40	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
26	63.9	67.6	68.0	37	79	170	Santa Clara Avenue	Grand Avenue to Tustin Avenue	8700	40	0	94.9%	2.9%	2.2%	75%	10%	15%	2	Soft	50	0.5	20
27	67.9	71.6	72.0	68	147	317	Tustin Avenue	Santa Clara Avenue to Fairhaven Street	20400	40	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
28	70.2	73.9	74.3	97	209	451	17th Street	Cabrillo Park Drive to Tustin Avenue	34600	40	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
29	69.3	73.0	73.4	85	182	392	Tustin Avenue	Fruit Street to 4th Street	28100	40	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
30	69.5	73.2	73.6	87	187	402	1st Street	Grand Avenue to Elk Lane	30800	40	0	94.9%	2.9%	2.2%	75%	10%	15%	4	Soft	50	0.5	44
31	66.2	70.0	70.3	53	114	245	1st Street	Cabrillo Park Drive to Tustin Avenue	14600	40	0	94.9%	2.9%	2.2%	75%	10%	15%	4	Soft	50	0.5	44
32	72.5	76.2	76.6	137	296	637	Fairview Street	Edinger Avenue to Harvard Street	45100	45	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
33	72.2	75.9	76.2	130	281	605	Fairview Street	Warner Avenue to Segerstrom Avenue	41800	45	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
34	70.0	73.7	74.1	93	201	433	MacArthur Boulevard	Harbor Boulevard to Fairview Street	32600	40	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
35	67.1	70.8	71.2	60	130	280	Edinger Avenue	Fairview Street to Greenville Street	22200	35	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
36	62.4	66.1	66.5	29	63	136	McFadden Avenue	Fairview Street to Raitt Street	8200	35	0	94.9%	2.9%	2.2%	75%	10%	15%	2	Soft	50	0.5	20
37	69.5	73.2	73.5	86	186	400	MacArthur Boulevard	Fairview Street to Raitt Street	28900	40	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
38	69.6	73.3	73.6	88	189	406	Seegerstrom Avenue	Fairview Street to Raitt Street	29600	40	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
39	72.2	75.9	76.3	132	283	610	Bristol Street	Edinger Avenue to Warner Avenue	54500	40	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
40	71.4	75.1	75.4	115	249	536	Bristol Street	Warner Avenue to Segerstrom Avenue	44800	40	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
41	69.4	73.1	73.5	86	185	398	Warner Avenue	Raitt Street to Bristol Street	22300	45	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
42	71.9	75.6	76.0	125	270	582	Bristol Street	MacArthur Boulevard to Sunflower Avenue	50800	40	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
43	69.8	73.5	73.9	91	197	424	Flower Street	Warner Avenue to Seegerstrom Avenue	33300	40	0	94.9%	2.9%	2.2%	75%	10%	15%	4	Soft	50	0.5	44
44	68.9	72.6	72.9	79	169	365	Edinger Avenue	Flower Street to Main Street	25200	40	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
45	67.8	71.5	71.9	67	144	311	Main Street	McFadden Avenue to Edinger Avenue	27500	35	0	94.9%	2.9%	2.2%	75%	10%	15%	4	Soft	50	0.5	44
46	69.3	73.1	73.4	85	183	393	Main Street	Edinger Avenue to Warner Avenue	38200	35	0	94.9%	2.9%	2.2%	75%	10%	15%	5	Soft	50	0.5	56
47	70.7	74.4	74.8	104	225	485	Main Street	Warner Avenue to Dyer Rd	38600	40	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
48	69.0	72.7	73.1	80	173	372	Seegerstrom Avenue	Bristol Street to Flower Street	25900	40	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
49	70.8	74.6	74.9	107	230	495	MacArthur Boulevard	Flower Street to Main Street	39800	40	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
50	70.6	74.3	74.7	102	220	474	Main Street	MacArthur Boulevard to Sunflower Avenue	29000	45	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
51	71.7	75.4	75.7	121	260	561	Grand Avenue	Edinger Avenue to Warner Avenue	37300	45	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
52	72.9	76.6	77.0	146	315	679	Edinger Avenue	Richie Street to Newport Avenue	49700	45	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
53	71.3	75.0	75.4	115	248	534	Warner Avenue	Grand Avenue to Red Hill Avenue	34600	45	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
54	68.6	72.3	72.7	76	164	352	Warner Avenue	Main Street to Standard Avenue	23900	40	0	94.9%	2.9%	2.2%	75%	10%	15%	6	Soft	50	0.5	68
55	64.0	67.7	68.1	37	80	173	McFadden Avenue	Newhope Street to Harbor Boulevard	8700													

66	84.8	88.5	88.9	907	1953	4208	I-5	Newport Ave. to Red Hill Ave.	375987	60	0	94.5%	2.4%	3.1%	75%	10%	15%	6	Soft	50	0.5	68
67	84.0	87.7	88.1	803	1729	3726	I-405	Brookhurst Ave. to Euclid St.	351979	60	0	96.5%	1.7%	1.8%	75%	10%	15%	6	Soft	50	0.5	68
68	84.5	88.2	88.6	862	1858	4003	I-405	Euclid St. to Harbor Blvd.	391915	60	0	96.5%	1.7%	1.8%	75%	10%	15%	6	Soft	50	0.5	68
69	84.2	87.9	88.3	831	1791	3859	I-405	Harbor Blvd. to SR-73	370931	60	0	96.5%	1.7%	1.8%	75%	10%	15%	6	Soft	50	0.5	68
70	82.5	86.2	86.6	640	1378	2968	I-405	Bristol St. to SR-55	242220	60	0	95.7%	2.3%	2.0%	75%	10%	15%	6	Soft	50	0.5	68
71	84.1	87.8	88.2	819	1766	3804	I-405	SR-55 to MacArthur Blvd.	351350	60	0	95.7%	2.3%	2.0%	75%	10%	15%	6	Soft	50	0.5	68
72	83.7	87.4	87.8	766	1650	3555	SR-55	4th St to 17th Street	282301	60	0	93.0%	4.0%	3.0%	75%	10%	15%	6	Soft	50	0.5	68
73	84.3	88.1	88.4	847	1825	3932	SR-55	Edginer Ave. to Dyer Rd.	325314	60	0	92.8%	4.1%	3.1%	75%	10%	15%	6	Soft	50	0.5	68
74	83.3	87.0	87.4	718	1547	3334	SR-55	Dyer Rd. to MacArthur Blvd.	289242	60	0	95.3%	3.0%	1.7%	75%	10%	15%	6	Soft	50	0.5	68
75	83.2	86.9	87.3	709	1527	3289	SR-55	MacArthur Blvd. to I-405	283503	60	0	95.3%	3.0%	1.7%	75%	10%	15%	6	Soft	50	0.5	68
76	80.8	84.5	84.9	489	1054	2271	SR-55	I-405 to SR-73	162679	60	0	95.3%	3.0%	1.7%	75%	10%	15%	6	Soft	50	0.5	68
77	82.3	86.0	86.4	617	1330	2866	SR-22	Euclid St. to Harbor Blvd.	224252	60	0	94.3%	4.0%	1.7%	75%	10%	15%	6	Soft	50	0.5	68
78	80.1	83.8	84.2	441	949	2045	SR-22	The City Dr. to Bristol St.	140466	60	0	95.5%	2.9%	1.6%	75%	10%	15%	6	Soft	50	0.5	68
79	81.1	84.8	85.2	515	1110	2391	SR-22	I-5 to Main St.	177513	60	0	95.5%	2.9%	1.6%	75%	10%	15%	6	Soft	50	0.5	68
80	80.2	83.9	84.3	446	961	2070	SR-22	Glassell St. to Tustin Ave.	149143	60	0	96.6%	2.0%	1.4%	75%	10%	15%	6	Soft	50	0.5	68

Roadway	Segment	Existing ADT	Future ADT	Existing Traffic Noise	Future Traffic Noise	Increase
1st Street	Euclid Street to Ward Street	25,233	18,700	72.4	71.7	-0.7
Euclid Street	1st Street to McFadden Avenue	40,731	34,000	75.0	74.3	-0.7
Westminster Avenue	Harbor Boulevard to Fairview Street	30,459	17,400	74.1	72.4	-1.7
Harbor Boulevard	Westminster Avenue/17th Street to Hazard Avenue	54,137	36,200	76.6	74.5	-2.1
1st Street	Harbor Boulevard to Jackson	32,736	23,100	73.8	72.6	-1.3
Edinger Avenue	Harbor Boulevard to Fairview Street	27,838	23,300	73.9	73.7	-0.2
Warner Avenue	Harbor Boulevard to Fairview Street	31,945	26,300	74.6	74.2	-0.4
Harbor Boulevard	Segerstrom Avenue to MacArthur Boulevard	15,622	56,900	71.9	77.6	5.7
Fairview Street	1st Street to Willits Street	42,605	38,600	75.5	75.9	0.4
1st Street	Sullivan Street to Raitt Street	36,377	26,600	74.1	73.2	-1.0
Bristol Street	17th Street to Santa Clara Avenue	45,676	41,500	76.8	76.2	-0.6
17th Street	College Avenue to Bristol Street	37,345	29,500	73.8	73.6	-0.1
Bristol Street	17th Street to Washington Avenue	42,005	45,100	75.3	75.5	0.2
Fairview Street	Trask Avenue to 17th Street	40,432	48,100	76.2	76.9	0.6
Bristol Street	1st Street to Bishop Street	42,663	49,000	75.2	75.8	0.6
Civic Center Drive	Bristol Street to Flower Street	17,589	18,600	69.1	70.2	1.1
Flower Street	1st Street to Bishop Street	15,622	6,900	69.2	65.8	-3.5
Main Street	17th Street to 20th Street	32,044	43,000	72.5	74.1	1.6
Main Street	Washington Street to Civic Center Drive	33,489	19,000	71.6	69.0	-2.6
Civic Center Drive	Flower Street to Ross Street	17,427	10,200	66.1	64.9	-1.2
Santa Ana Boulevard	Flower Street to Ross Street	14,689	15,800	67.3	68.2	0.9
1st Street	Main Street to Standard Avenue	42,699	32,900	75.3	73.9	-1.4
Main Street	1st Street to Bishop Street	30,125	30,500	72.2	72.4	0.1
Grand Avenue	Santa Clara Avenue to Fairhaven Street	30,206	31,100	73.3	73.9	0.6
Grand Avenue	Santa Ana Boulevard to 4th Street	36,678	35,000	74.3	74.4	0.1
Santa Clara Avenue	Grand Avenue to Tustin Avenue	10,585	8,700	67.8	68.0	0.1
Tustin Avenue	Santa Clara Avenue to Fairhaven Street	35,410	20,400	73.6	72.0	-1.6
17th Street	Cabrillo Park Drive to Tustin Avenue	32,080	34,600	72.8	74.3	1.5
Tustin Avenue	Fruit Street to 4th Street	25,174	28,100	71.9	73.4	1.6
1st Street	Grand Avenue to Elk Lane	28,638	30,800	73.5	73.6	0.0
1st Street	Cabrillo Park Drive to Tustin Avenue	22,083	14,600	71.9	70.3	-1.6
Fairview Street	Edinger Avenue to Harvard Street	37,524	45,100	75.8	76.6	0.8
Fairview Street	Warner Avenue to Segerstrom Avenue	39,878	41,800	76.0	76.2	0.2
MacArthur Boulevard	Harbor Boulevard to Fairview Street	26,235	32,600	72.1	74.1	2.0
Edinger Avenue	Fairview Street to Greenville Street	29,115	22,200	72.0	71.2	-0.8
McFadden Avenue	Fairview Street to Raitt Street	20,997	8,200	70.6	66.5	-4.1
MacArthur Boulevard	Fairview Street to Raitt Street	28,809	28,900	72.3	73.5	1.2
Segerstrom Avenue	Fairview Street to Raitt Street	19,326	29,600	71.2	73.6	2.4
Bristol Street	Edinger Avenue to Warner Avenue	37,238	54,500	74.4	76.3	1.9
Bristol Street	Warner Avenue to Segerstrom Avenue	38,007	44,800	74.5	75.4	0.9
Warner Avenue	Raitt Street to Bristol Street	34,555	22,300	75.1	73.5	-1.6
Bristol Street	MacArthur Boulevard to Sunflower Avenue	34,731	50,800	74.3	76.0	1.7
Flower Street	Warner Avenue to Segerstrom Avenue	15,378	33,300	70.1	73.9	3.8
Edinger Avenue	Flower Street to Main Street	36,534	25,200	74.2	72.9	-1.2
Main Street	McFadden Avenue to Edinger Avenue	28,622	27,500	72.0	71.9	-0.1
Main Street	Edinger Avenue to Warner Avenue	27,972	38,200	72.2	73.4	1.2

Main Street	Warner Avenue to Dyer Rd	30,484	38,600	73.6	74.8	1.2
Segerstrom Avenue	Bristol Street to Flower Street	22,959	25,900	72.0	73.1	1.1
MacArthur Boulevard	Flower Street to Main Street	37,946	39,800	74.3	74.9	0.6
Main Street	MacArthur Boulevard to Sunflower Avenue	23,692	29,000	73.1	74.7	1.6
Grand Avenue	Edinger Avenue to Warner Avenue	17,735	37,300	71.1	75.7	4.7
Edinger Avenue	Richie Street to Newport Avenue	40,435	49,700	76.1	77.0	0.9
Warner Avenue	Grand Avenue to Red Hill Avenue	22,435	34,600	73.1	75.4	2.4
Warner Avenue	Main Street to Standard Avenue	27,391	23,900	72.9	72.7	-0.2
McFadden Avenue	Newhope Street to Harbor Boulevard	18,495	8,700	70.7	68.1	-2.6
McFadden Avenue	Standard Avenue to Grand Avenue	20,188	8,600	70.6	66.7	-3.9
Dyer Road	Red Hill Avenue to Pullman Street	31,248	80,700	74.1	78.0	3.9
McFadden Avenue	Bristol Street to Flower Street	14,951	11,800	68.0	66.8	-1.2
Main Street	La Veta Avenue to Memory Lane	31,004	50,200	73.8	75.9	2.1
1st Street	Bristol Street to Flower Street	39,006	25,700	74.8	72.8	-2.0



# RAILROAD NOISE MODELING

# FRA Grade Crossing Noise Model

User Input	
Noise Situation (Pick from List)	1
Horn Lmax (dBA) @ 100 feet	110
Horn Location on Locomotive(Pick from List)	1
Non Train Noise Environment (pick from list)	2
Shielding (Pick from List)	2
Length of Impact Area (pick from list)	1
Existing Train Speed (mph)	50
Future Train Speed (mph)	50
Number of Existing Trains in one Direction	39
Number of Future Trains in one Direction	39
Existing Number of Day Trains (7 am to 10 p.m.)	31.5
Future Number of Day Trains (7 am to 10 p.m.)	31.5
Existing Number of Night Trains (10 p.m. to 7 am)	7.5
Future Number of Night Trains (10 p.m. to 7 am)	7.5
Existing Average Number of Cars	10.5
Future Average Number of Cars	10.5
Existing Average Number of Locomotives	1.5
Future Average Number of Locomotives	1.5

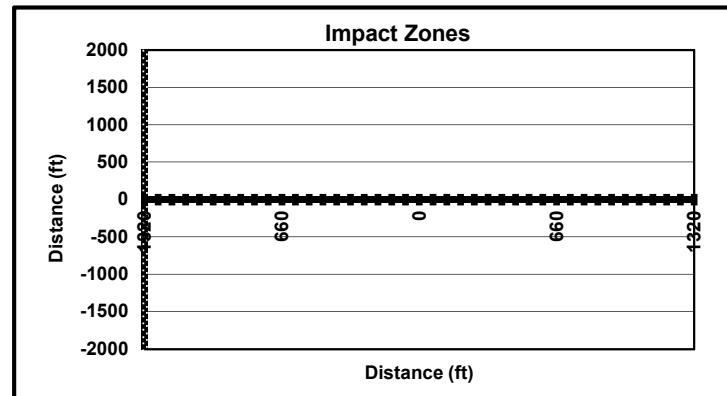
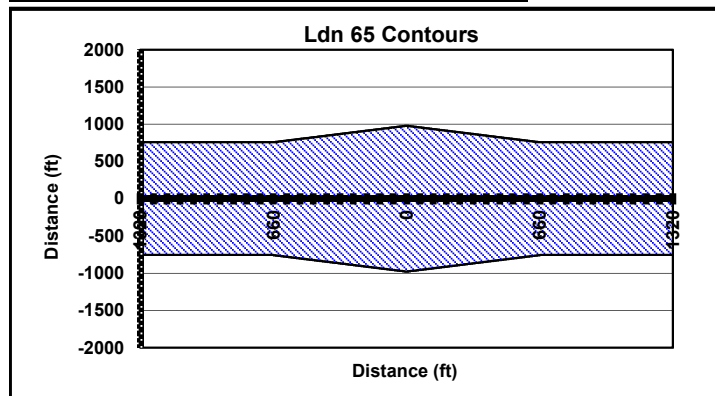
Noise Situation	
Horns Existing and Future	1
Horns in Future Only	2
No Horns Existing and Future	3
Horn Location on Locomotive	
National Average (50% front, 50% middle)	1
All Front Mounted	2
All Middle Mounted	3
User Defined	80 % front mounted horns 4
Non Train Noise Environment	
Urban	1
Suburban	2
Rural	3
User Defined Ldn =	50 dBA 4

Shielding	
Dense Urban	1
Light Urban	2
Dense Suburban	3
Light Suburban	4
Rural	5
No Shielding	6

Ldn 65 Contours Numeric Output (in feet)	
Existing 65 Ldn Contour at X-ing	978
Future 65 Ldn Contour at X-ing	978
Existing 65 Ldn Contour at 1/2 zone length	756
Future 65 Ldn Contour at 1/2 zone length	756
Zone Length	1320
1/2 Zone Length	660

Length of Impact Area	
1/4 mile	1
20 seconds	2
15 seconds	3

Impact Zones Numeric Output (in feet)	
Impact Distance at X-ing	0
Severe Impact Distance at X-ing	0
Impact Distance at 1/2 zone length	0
Severe Impact Distance at 1/2 zone length	0
Zone Length	1320
1/2 Zone Length	660



Noise Model Based on Federal Transit Administration General Transit Noise Assessment  
 Developed for Chicago Create Project  
 Copyright 2006, HMMH Inc.  
 Case: SCRRRA Orange Subdivision

RESULTS			
Noise Source	Ldn (dB)	Leq - daytime (dB)	Leq - nighttime (dB)
All Sources	65	58	59
Source 1	62	54	56
Source 2	59	51	53
Source 3	54	51	46
Source 4	51	49	44
Source 5	51	48	44
Source 6	49	46	41
Source 7	0	0	0
Source 8	0	0	0

Enter noise receiver land use category below.

LAND USE CATEGORY	
Noise receiver land use category (1, 2 or 3)	2

Enter data for up to 8 noise sources below - see reference list for source numbers.

NOISE SOURCE PARAMETERS																		
Parameter	Source 1			Source 2			Source 3			Source 4			Source 5			Source 6		
Source Num.	Freight Locomotive	9		Freight Cars	10		Commuter Diesel Locomotive	2		Commuter Rail Cars	3		Commuter Diesel Locomotive	2		Commuter Rail Cars	3	
Distance (source to receiver)	distance (ft)	210		distance (ft)	210		distance (ft)	210		distance (ft)	210		distance (ft)	210		distance (ft)	210	
Daytime Hours (7 AM - 10 PM)	speed (mph)	40		speed (mph)	40		speed (mph)	50		speed (mph)	50		speed (mph)	50		speed (mph)	50	
	trains/hour	0.267		trains/hour	0.267		trains/hour	2.6		trains/hour	2.6		trains/hour	1.333		trains/hour	1.333	
	locos/train	6		length of cars (ft) / train	3000		locos/train	1		cars/train	6		locos/train	1		cars/train	6	
Nighttime Hours (10 PM - 7 AM)	speed (mph)	40		speed (mph)	40		speed (mph)	50		speed (mph)	50		speed (mph)	50		speed (mph)	50	
	trains/hour	0.444		trains/hour	0.444		trains/hour	0.778		trains/hour	0.778		trains/hour	0.444		trains/hour	0.444	
	locos/train	6		length of cars (ft) / train	3000		locos/train	1		cars/train	6		locos/train	1		cars/train	6	
Wheel Flats?		0.00%		% of cars w/ wheel flats	0.00%			0.00%		% of cars w/ wheel flats	0.00%			0.00%		% of cars w/ wheel flats	0.00%	
Jointed Track?	Y/N	n		Y/N	n		Y/N	n		Y/N	n		Y/N	n		Y/N	n	
Embedded Track?	Y/N	n		Y/N	n		Y/N	n		Y/N	n		Y/N	n		Y/N	n	
Aerial Structure?	Y/N	n		Y/N	n		Y/N	n		Y/N	n		Y/N	n		Y/N	n	
Barrier Present?	Y/N	n		Y/N	n		Y/N	n		Y/N	n		Y/N	n		Y/N	n	
Intervening Rows of Buildings	number of rows	0		number of rows	0		number of rows	0		number of rows	0		number of rows	0		number of rows	0	

# FRA Grade Crossing Noise Model

User Input	
Noise Situation (Pick from List)	1
Horn Lmax (dBA) @ 100 feet	110
Horn Location on Locomotive(Pick from List)	1
Non Train Noise Environment (pick from list)	2
Shielding (Pick from List)	2
Length of Impact Area (pick from list)	1
Existing Train Speed (mph)	10
Future Train Speed (mph)	10
Number of Existing Trains in one Direction	2
Number of Future Trains in one Direction	2
Existing Number of Day Trains (7 am to 10 p.m.)	1.25
Future Number of Day Trains (7 am to 10 p.m.)	1.25
Existing Number of Night Trains (10 p.m. to 7 am)	0.75
Future Number of Night Trains (10 p.m. to 7 am)	0.75
Existing Average Number of Cars	15
Future Average Number of Cars	15
Existing Average Number of Locomotives	2
Future Average Number of Locomotives	2

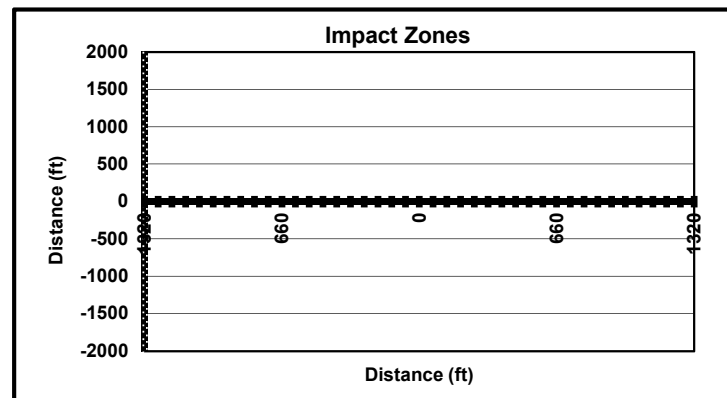
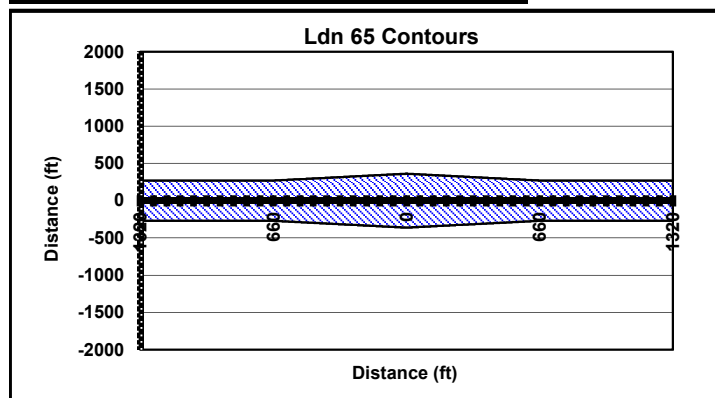
Noise Situation	
Horns Existing and Future	1
Horns in Future Only	2
No Horns Existing and Future	3
Horn Location on Locomotive	
National Average (50% front, 50% middle)	1
All Front Mounted	2
All Middle Mounted	3
User Defined	80 % front mounted horns 4
Non Train Noise Environment	
Urban	1
Suburban	2
Rural	3
User Defined Ldn =	50 dBA 4

Shielding	
Dense Urban	1
Light Urban	2
Dense Suburban	3
Light Suburban	4
Rural	5
No Shielding	6

Length of Impact Area	
1/4 mile	1
20 seconds	2
15 seconds	3

Ldn 65 Contours Numeric Output (in feet)	
Existing 65 Ldn Contour at X-ing	361
Future 65 Ldn Contour at X-ing	361
Existing 65 Ldn Contour at 1/2 zone length	269
Future 65 Ldn Contour at 1/2 zone length	269
Zone Length	1320
1/2 Zone Length	660

Impact Zones Numeric Output (in feet)	
Impact Distance at X-ing	0
Severe Impact Distance at X-ing	0
Impact Distance at 1/2 zone length	0
Severe Impact Distance at 1/2 zone length	0
Zone Length	1320
1/2 Zone Length	660



Noise Model

Noise Model Based on Federal Transit Administration General Transit Noise Assessment  
 Developed for Chicago Create Project  
 Copyright 2006, HMMH Inc.

Case:

UP Santa Ana Industrial Lead

RESULTS			
Noise Source	Ldn (dB)	Leq - daytime (dB)	Leq - nighttime (dB)
All Sources	65	57	59
Source 1	64	56	58
Source 2	58	49	52
Source 3	0	0	0
Source 4	0	0	0
Source 5	0	0	0
Source 6	0	0	0
Source 7	0	0	0
Source 8	0	0	0

Enter noise receiver land use category below.

LAND USE CATEGORY	
Noise receiver land use category (1, 2 or 3)	2

Enter data for up to 8 noise sources below - see reference list for source numbers.

NOISE SOURCE PARAMETERS					
Parameter	Source 1		Source 2		Source 3
Source Num.	Freight Locomotive	9	Freight Cars	10	
Distance (source to receiver)	distance (ft)	30	distance (ft)	30	
Daytime Hours (7 AM - 10 PM)	speed (mph)	10	speed (mph)	10	
	trains/hour	0.133	trains/hour	0.133	
	locos/train	2	length of cars (ft) / train	900	
Nighttime Hours (10 PM - 7 AM)	speed (mph)	10	speed (mph)	10	
	trains/hour	0.222	trains/hour	0.222	
	locos/train	2	length of cars (ft) / train	900	
Wheel Flats?		0.00%	% of cars w/ wheel flats	0.00%	
Jointed Track?	Y/N	n	Y/N	n	
Embedded Track?	Y/N	n	Y/N	n	
Aerial Structure?	Y/N	n	Y/N	n	
Barrier Present?	Y/N	n	Y/N	n	
Intervening Rows of Buildings	number of rows	0	number of rows	0	

Noise Model Based on Federal Transit Administration General Transit Noise Assessment  
 Developed for Chicago Create Project  
 Copyright 2006, HMMH Inc.  
 Case: 2045 BNSF Irvine Industrial Lead

RESULTS			
Noise Source	Ldn (dB)	Leq - daytime (dB)	Leq - nighttime (dB)
All Sources	65	57	59
Source 1	64	56	58
Source 2	57	49	51
Source 3	0	0	0
Source 4	0	0	0
Source 5	0	0	0
Source 6	0	0	0
Source 7	0	0	0
Source 8	0	0	0

Enter noise receiver land use category below

LAND USE CATEGORY	
Noise receiver land use category (1, 2 or 3)	2

Enter data for up to 8 noise sources below - see reference list for source numbers

NOISE SOURCE PARAMETERS					
Parameter	Source 1		Source 2		Source 3
Source Num.	Freight Locomotive	9	Freight Cars	10	
Distance (source to receiver)	distance (ft)	20	distance (ft)	20	
Daytime Hours (7 AM - 10 PM)	speed (mph)	10	speed (mph)	10	
	trains/hour	0.067	trains/hour	0.067	
	locos/train	2	length of cars (ft) / train	900	
Nighttime Hours (10 PM - 7 AM)	speed (mph)	10	speed (mph)	10	
	trains/hour	0.111	trains/hour	0.111	
	locos/train	2	length of cars (ft) / train	900	
Wheel Flats?		0.00%	% of cars w/ wheel flats	0.00%	
Jointed Track?	Y/N	n	Y/N	n	
Embedded Track?	Y/N	n	Y/N	n	
Aerial Structure?	Y/N	n	Y/N	n	
Barrier Present?	Y/N	n	Y/N	n	
Intervening Rows of Buildings	number of rows	0	number of rows	0	

# FRA Grade Crossing Noise Model

User Input	
Noise Situation (Pick from List)	1
Horn Lmax (dBA) @ 100 feet	110
Horn Location on Locomotive(Pick from List)	1
Non Train Noise Environment (pick from list)	2
Shielding (Pick from List)	2
Length of Impact Area (pick from list)	1
Existing Train Speed (mph)	10
Future Train Speed (mph)	10
Number of Existing Trains in one Direction	1
Number of Future Trains in one Direction	1
Existing Number of Day Trains (7 am to 10 p.m.)	0.625
Future Number of Day Trains (7 am to 10 p.m.)	0.625
Existing Number of Night Trains (10 p.m. to 7 am)	0.375
Future Number of Night Trains (10 p.m. to 7 am)	0.375
Existing Average Number of Cars	15
Future Average Number of Cars	15
Existing Average Number of Locomotives	2
Future Average Number of Locomotives	2

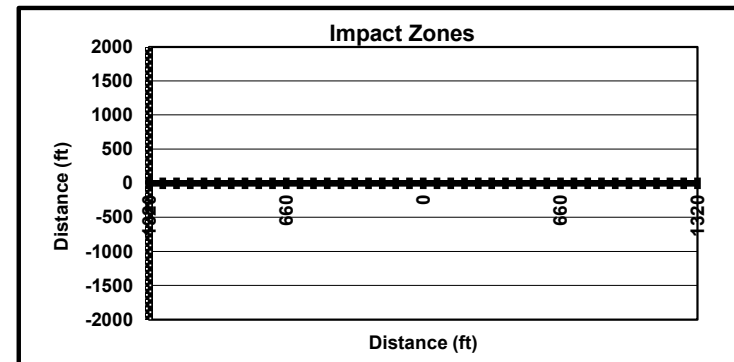
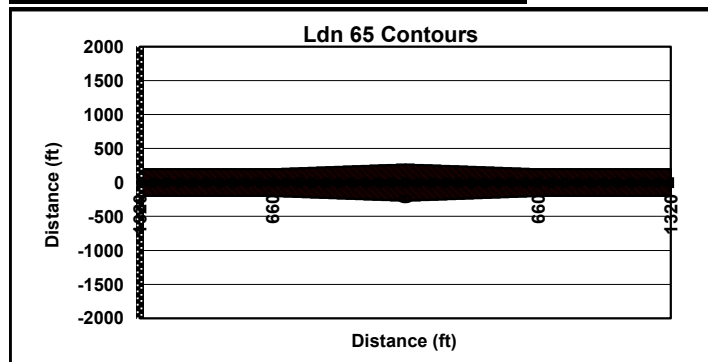
Noise Situation	
Horns Existing and Future	1
Horns in Future Only	2
No Horns Existing and Future	3
Horn Location on Locomotive	
National Average (50% front, 50% middle)	1
All Front Mounted	2
All Middle Mounted	3
User Defined	80 % front mounted horns 4
Non Train Noise Environment	
Urban	1
Suburban	2
Rural	3
User Defined Ldn =	50 dBA 4

Shielding	
Dense Urban	1
Light Urban	2
Dense Suburban	3
Light Suburban	4
Rural	5
No Shielding	6

Length of Impact Area	
1/4 mile	1
20 seconds	2
15 seconds	3

Ldn 65 Contours Numeric Output (in feet)	
Existing 65 Ldn Contour at X-ing	266
Future 65 Ldn Contour at X-ing	266
Existing 65 Ldn Contour at 1/2 zone length	195
Future 65 Ldn Contour at 1/2 zone length	195
Zone Length	1320
1/2 Zone Length	660

Impact Zones Numeric Output (in feet)	
Impact Distance at X-ing	0
Severe Impact Distance at X-ing	0
Impact Distance at 1/2 zone length	0
Severe Impact Distance at 1/2 zone length	0
Zone Length	1320
1/2 Zone Length	660



# FRA Grade Crossing Noise Model

User Input	
Noise Situation (Pick from List)	1
Horn Lmax (dBA) @ 100 feet	110
Horn Location on Locomotive(Pick from List)	1
Non Train Noise Environment (pick from list)	2
Shielding (Pick from List)	2
Length of Impact Area (pick from list)	1
Existing Train Speed (mph)	50
Future Train Speed (mph)	50
Number of Existing Trains in one Direction	39
Number of Future Trains in one Direction	52.5
Existing Number of Day Trains (7 am to 10 p.m.)	31.5
Future Number of Day Trains (7 am to 10 p.m.)	40
Existing Number of Night Trains (10 p.m. to 7 am)	7.5
Future Number of Night Trains (10 p.m. to 7 am)	12
Existing Average Number of Cars	10.5
Future Average Number of Cars	8.5
Existing Average Number of Locomotives	1.5
Future Average Number of Locomotives	1.3

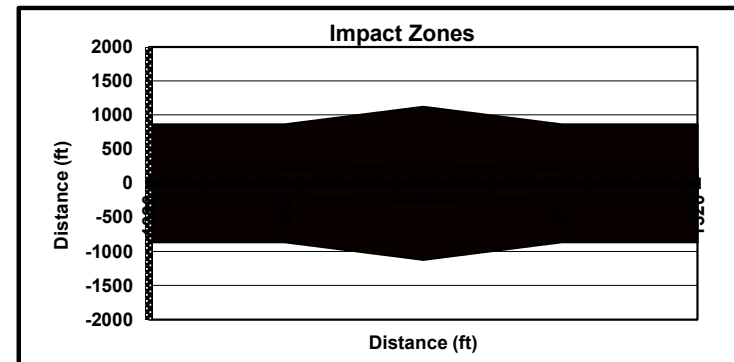
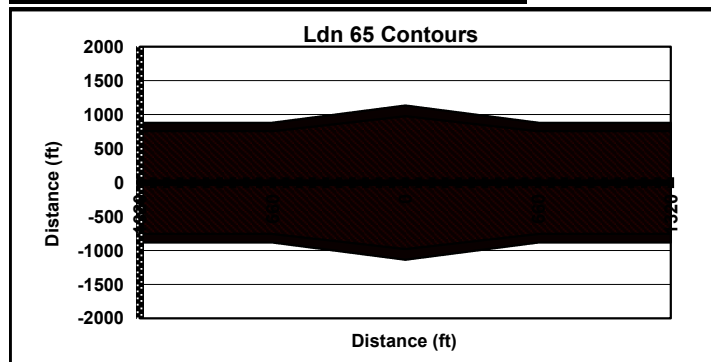
Noise Situation	
Horns Existing and Future	1
Horns in Future Only	2
No Horns Existing and Future	3
Horn Location on Locomotive	
National Average (50% front, 50% middle)	1
All Front Mounted	2
All Middle Mounted	3
User Defined	80 % front mounted horns 4
Non Train Noise Environment	
Urban	1
Suburban	2
Rural	3
User Defined Ldn =	50 dBA 4

Shielding	
Dense Urban	1
Light Urban	2
Dense Suburban	3
Light Suburban	4
Rural	5
No Shielding	6

Length of Impact Area	
1/4 mile	1
20 seconds	2
15 seconds	3

Ldn 65 Contours Numeric Output (in feet)	
Existing 65 Ldn Contour at X-ing	978
Future 65 Ldn Contour at X-ing	1136
Existing 65 Ldn Contour at 1/2 zone length	756
Future 65 Ldn Contour at 1/2 zone length	882
Zone Length	1320
1/2 Zone Length	660

Impact Zones Numeric Output (in feet)	
Impact Distance at X-ing	1120
Severe Impact Distance at X-ing	274
Impact Distance at 1/2 zone length	865
Severe Impact Distance at 1/2 zone length	199
Zone Length	1320
1/2 Zone Length	660





Noise Model Based on Federal Transit Administration General Transit Noise Assessment  
 Developed for Chicago Create Project  
 Copyright 2006, HMMH Inc.  
 Case: 2045 SCRRRA Orange Subdivision

RESULTS			
Noise Source	Ldn (dB)	Leq - daytime (dB)	Leq - nighttime (dB)
All Sources	65	59	59
Source 1	62	54	56
Source 2	59	51	53
Source 3	55	52	47
Source 4	53	50	45
Source 5	55	49	48
Source 6	52	47	46
Source 7	0	0	0
Source 8	0	0	0

Enter noise receiver land use category below

LAND USE CATEGORY	
Noise receiver land use category (1, 2 or 3)	2

Enter data for up to 8 noise sources below - see reference list for source numbers

NOISE SOURCE PARAMETERS										
Parameter	Source 1		Source 2		Source 3		Source 4		Source 5	
Source Num.	Freight Locomotive	9	Freight Cars	10	Commuter Diesel Locomotive	2	Commuter Rail Cars	3	Commuter Diesel Locomotive	2
Distance (source to receiver)	distance (ft)	220	distance (ft)	220	distance (ft)	220	distance (ft)	220	distance (ft)	220
Daytime Hours (7 AM - 10 PM)	speed (mph)	40	speed (mph)	40	speed (mph)	50	speed (mph)	50	speed (mph)	50
	trains/hour	0.267	trains/hour	0.267	trains/hour	3.533	trains/hour	3.533	trains/hour	1.6
Nighttime Hours (10 PM - 7 AM)	loco/train	6	length of cars (ft) / train	3000	loco/train	1	cars/train	6	loco/train	1
	speed (mph)	40	speed (mph)	40	speed (mph)	50	speed (mph)	50	speed (mph)	50
	trains/hour	0.444	trains/hour	0.444	trains/hour	1.111	trains/hour	1.111	trains/hour	1.333
	loco/train	6	length of cars (ft) / train	3000	loco/train	1	cars/train	6	loco/train	1
Wheel Flats?		0.00%	% of cars w/ wheel flats	0.00%		0.00%	% of cars w/ wheel flats	0.00%		0.00%
Jointed Track?	Y/N	n	Y/N	n	Y/N	n	Y/N	n	Y/N	n
Embedded Track?	Y/N	n	Y/N	n	Y/N	n	Y/N	n	Y/N	n
Aerial Structure?	Y/N	n	Y/N	n	Y/N	n	Y/N	n	Y/N	n
Barrier Present?	Y/N	n	Y/N	n	Y/N	n	Y/N	n	Y/N	n
Intervening Rows of Buildings	number of rows	0	number of rows	0	number of rows	0	number of rows	0	number of rows	0

# FRA Grade Crossing Noise Model

User Input	
Noise Situation (Pick from List)	1
Horn Lmax (dBA) @ 100 feet	110
Horn Location on Locomotive(Pick from List)	1
Non Train Noise Environment (pick from list)	2
Shielding (Pick from List)	2
Length of Impact Area (pick from list)	1
Existing Train Speed (mph)	10
Future Train Speed (mph)	10
Number of Existing Trains in one Direction	2
Number of Future Trains in one Direction	2
Existing Number of Day Trains (7 am to 10 p.m.)	1.25
Future Number of Day Trains (7 am to 10 p.m.)	1.25
Existing Number of Night Trains (10 p.m. to 7 am)	0.75
Future Number of Night Trains (10 p.m. to 7 am)	0.75
Existing Average Number of Cars	15
Future Average Number of Cars	15
Existing Average Number of Locomotives	2
Future Average Number of Locomotives	2

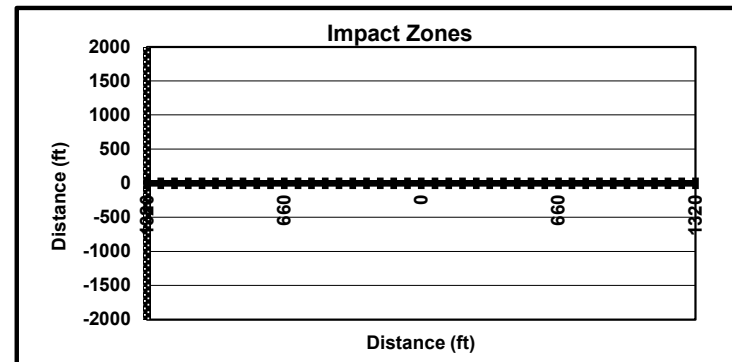
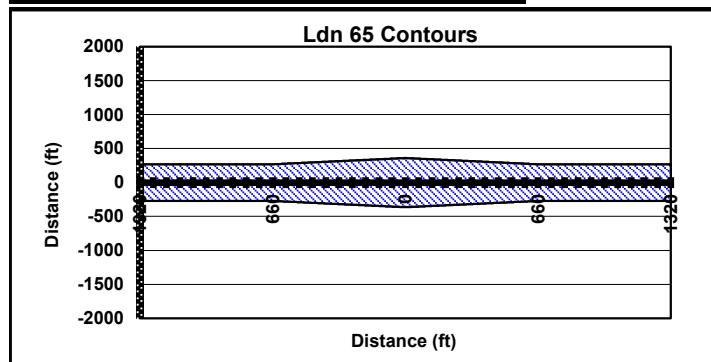
Noise Situation	
Horns Existing and Future	1
Horns in Future Only	2
No Horns Existing and Future	3
Horn Location on Locomotive	
National Average (50% front, 50% middle)	1
All Front Mounted	2
All Middle Mounted	3
User Defined	80 % front mounted horns 4
Non Train Noise Environment	
Urban	1
Suburban	2
Rural	3
User Defined Ldn =	50 dBA 4

Shielding	
Dense Urban	1
Light Urban	2
Dense Suburban	3
Light Suburban	4
Rural	5
No Shielding	6

Length of Impact Area	
1/4 mile	1
20 seconds	2
15 seconds	3

Ldn 65 Contours Numeric Output (in feet)	
Existing 65 Ldn Contour at X-ing	361
Future 65 Ldn Contour at X-ing	361
Existing 65 Ldn Contour at 1/2 zone length	269
Future 65 Ldn Contour at 1/2 zone length	269
Zone Length	1320
1/2 Zone Length	660

Impact Zones Numeric Output (in feet)	
Impact Distance at X-ing	0
Severe Impact Distance at X-ing	0
Impact Distance at 1/2 zone length	0
Severe Impact Distance at 1/2 zone length	0
Zone Length	1320
1/2 Zone Length	660



Noise Model Based on Federal Transit Administration General Transit Noise Assessment  
 Developed for Chicago Create Project  
 Copyright 2006, HMMH Inc.  
 Case: 2045 UP Santa Ana Industrial Lead

RESULTS			
Noise Source	Ldn (dB)	Leq - daytime (dB)	Leq - nighttime (dB)
All Sources	65	57	59
Source 1	64	56	58
Source 2	58	49	52
Source 3	0	0	0
Source 4	0	0	0
Source 5	0	0	0
Source 6	0	0	0
Source 7	0	0	0
Source 8	0	0	0

Enter noise receiver land use category below

LAND USE CATEGORY	
Noise receiver land use category (1, 2 or 3)	2

Enter data for up to 8 noise sources below - see reference list for source numbers

NOISE SOURCE PARAMETERS					
Parameter	Source 1		Source 2		Source 3
Source Num.	Freight Locomotive	9	Freight Cars	10	
Distance (source to receiver)	distance (ft)	30	distance (ft)	30	
Daytime Hours (7 AM - 10 PM)	speed (mph)	10	speed (mph)	10	
	trains/hour	0.133	trains/hour	0.133	
	locos/train	2	length of cars (ft) / train	900	
Nighttime Hours (10 PM - 7 AM)	speed (mph)	10	speed (mph)	10	
	trains/hour	0.222	trains/hour	0.222	
	locos/train	2	length of cars (ft) / train	900	
Wheel Flats?		0.00%	% of cars w/ wheel flats	0.00%	
Jointed Track?	Y/N	n	Y/N	n	
Embedded Track?	Y/N	n	Y/N	n	
Aerial Structure?	Y/N	n	Y/N	n	
Barrier Present?	Y/N	n	Y/N	n	
Intervening Rows of Buildings	number of rows	0	number of rows	0	