Appendix E Noise Modeling Data

Appendices

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Noise and Vibration Technical Appendix

Anaheim Munical Code

6.70.010 ESTABLISHED.

Sound produced in excess of the sound pressure levels permitted herein are hereby determined to be objectionable and constitute an infringement upon the right and quiet enjoyment of property in this City.

No person shall within the City create any sound radiated for extended periods from any premises which produces a sound pressure level at any point on the property line in excess of sixty decibels (Re 0.0002 Microbar) read on the A-scale of a sound level meter. Readings shall be taken in accordance with the instrument manufacturer's instructions, using the slowest meter response.

The sound level measuring microphone shall be placed at any point on the property line, but not closer than three (3) feet from any wall and not less than three (3) feet above the ground, where the above listed maximum sound pressure level shall apply. At any point the measured level shall be the average of not less than three (3) readings taken at two (2) minute intervals. To have valid readings, the levels must be five (5) decibels or more above the levels prevailing at the same point when the sources of the alleged objectionable sound are not operating.

Sound pressure levels shall be measured with a sound level meter manufactured according to American Standard S1.4-1961 published by the American Standards Association, Inc., New York City, New York.

Traffic sounds sound created by emergency activities and sound created by governmental units or their contractors shall be exempt from the applications of this chapter. Sound created by construction or building repair of any premises within the City shall be exempt from the applications of this chapter during the hours of 7:00 a.m. to 7:00 p.m. Additional work hours may be permitted if deemed necessary by the Director of Public Works or Building Official. (Ord. 2526 § 1 (part); June 18, 1968; Ord. 3400 § 1; February 11, 1975: Ord. 6020 § 1; April 25, 2006.)

6.70.020 VIOLATIONS AND PENALTIES.

The first violation of this chapter by any person shall be punishable as an infraction in accordance with applicable provisions of the California Penal Code and the California Government Code. The second and all subsequent violations of said chapter committed by such person shall be punishable as a misdemeanor. (Ord. 5929 § 9; July 27, 2004.)

6.70.030 ENFORCEMENT.

The Code Enforcement Manager of the City of Anaheim shall enforce the provisions of this chapter. (Ord. 5812 § 25; June 11, 2002.)

6.72.010 PURPOSE.

This City Council enacts this legislation for the sole purpose of securing and promoting the public health, comfort, safety, and welfare of its citizenry. While recognizing that certain uses of sound-amplifying

equipment are protected by the constitutional rights of freedom of speech and assembly, the City Council, nevertheless, feels obligated to reasonably regulate the use of sound-amplifying equipment in order to protect the correlative constitutional rights of the citizens of this community to privacy and freedom from public nuisance of loud and raucous noise. (Ord. 4059 § 1 (part); October 9, 1979; Ord. 5941 § 1 (part); September 14, 2004.)

6.72.020 REGULATION OF AMPLIFIED SOUND.

Notwithstanding the provisions of Chapter 6.70 of this code, it shall be unlawful for any person to use or operate, or cause to be used or operated, within the City of Anaheim any sound-amplifying equipment in a fixed or movable position, or mounted upon any vehicle, except when used or operated in compliance with the following provisions:

.010 In all residential zones and within two hundred feet of any boundary thereof, no sound-amplifying equipment shall be operated or used for commercial purposes, except sound-amplifying equipment may be used for commercial purposes upon a moving vehicle between the hours of 8:00 a.m. and 8:00 p.m. to announce the presence of such vehicle in an area or location for commercial purposes; provided that such sound-amplifying equipment shall not be used during periods that the vehicle is stopped, parked or otherwise in a stationary position.

.020 In all residential zones and within two hundred feet of any boundary thereof, no sound-amplifying equipment shall be operated or used for noncommercial purposes between the hours of 8:00 p.m. and 8:00 a.m. of the following day.

.030 In all non-residential zones, except such portions thereof as may be included within two hundred feet of the boundary of any residential zone, the operation or use of sound-amplifying equipment for commercial purposes is prohibited between the hours of 9:00 p.m. and 8:00 a.m. of the following day.

.040 In all non-residential zones, except such portions thereof as may be included within two hundred feet of the boundary of any residential zone, the operation or use of sound-amplifying equipment for noncommercial purposes is prohibited between the hours of 10:00 p.m. and 7:00 a.m. of the following day.

.050 Sound emanating from sound-amplifying equipment shall not be audible to a person of normal hearing acuity within an enclosed building (other than a building within which the sound emanate) at a distance in excess of two hundred feet from the sound-amplifying equipment.

.060 In no event shall the sound-amplifying equipment be unreasonably loud, raucous, jarring or disturbing to a person of normal sensitiveness within the area of audibility, or disturb the peace or quiet of any neighborhood.

.070 It shall be unlawful for any person to operate or use any sound-amplifying equipment within, upon or adjacent to the premises of any hospital, school, or publicly owned or operated arena, stadium, convention center or auditorium, while in use, in a manner which disturbs, disrupts or interferes with the conduct of any event, business or activity of any nature then occurring within such building or premises. Nothing contained in this subsection shall be deemed to prohibit any conduct which is otherwise prohibited by California Penal Code Sections 302 or 403, or any other provision of State law. (Ord. 4059 § 1 (part); October 9, 1979; Ord. 5781 § 1; September 25, 2001; Ord. 5941 § 1 (part); September 14, 2004.)

6.72.030 DEFINITIONS.

.010 The word "person," as used herein, shall include the singular and the plural, and shall also mean and include any person, firm, corporation, association, club, partnership, society or any other form of association or organization.

.020 The words "sound-amplifying equipment," as used herein, shall mean any device for the amplification of the human voice, music or any other sound.

.030 The word "zone," as used herein, shall mean the zoning designation given to any public or private property pursuant to the provisions of Title 18 of this Code. Any public or private street, alley or other right-of-way shall be deemed to have the same zoning designation as the public or private property immediately contiguous to such street, alley or right-of-way. Where the property on each side of a street, alley or right-of-way bears a different zoning designation, each such zoning designation shall be deemed to extend to the centerline of such street, alley or right-of-way.

.040 Nothing contained in this section shall be deemed to permit or authorize any activity or sound level which is otherwise prohibited by any provision of State law.(Ord. 4059 § 1 (part); October 9, 1979; Ord. 5941 § 1 (part); September 14, 2004.)

6.72.040 EXEMPTIONS FROM CHAPTER.

The following uses of sound-amplifying equipment and activities shall be exempt from the provisions of this chapter:

.010 Vehicle sound systems, radios and similar devices located within or upon any vehicle, to the extent the sound from such devices is regulated by provisions of the Vehicle Code of the State of California.

.020 Sound-amplifying equipment when used and heard only by occupants of the premises in which the devices are located.

.030 Warning devices on authorized emergency vehicles, or horns or other warning devices on other vehicles when used for traffic safety purposes, or any other device when used by a public safety officer for official purposes.

.040 Equipment used by any duly authorized facility operator, tenant or lessee as an integral part of any event at Anaheim Stadium, Arrowhead Pond, Anaheim Convention Center, or as an integral part of any event or program at any other publicly owned or operated facility.

.050 Equipment and devices used as an integral part of any public or private institutional use lawfully permitted pursuant to Title 18 of this Code, including but not limited to, public and private educational institutions, and places of religious worship. (Ord. 5941 § 1 (part); September 14, 2004.)

6.72.050 PENALTY FOR VIOLATIONS.

The first violation of this chapter by any person occurring within any twelve-month period shall be punishable as an infraction in accordance with applicable provisions of the California Penal Code and the California Government Code. The second and all subsequent violations of this chapter by such person occurring within any twelve-month period shall be punishable as a misdemeanor. (Ord. 5941 § 1 (part); September 14, 2004.)

18.32.130 COMPATIBILITY STANDARDS FOR MIXED USE DEVELOPMENT.

The following standards are intended to ensure the compatibility of uses in a mixed-use project.
.010 Security. The residential units shall be designed to ensure the security of residents, through the provision of secured entrances and exits that are separate from the non-residential uses, and are directly accessible to parking areas. Non-residential and residential uses shall not have common entrance hallways or common balconies. These separations shall be shown on the development plan, and the separations shall be permanently maintained.

.020 Restriction on Activities. Commercial uses shall be designed and operated, and hours of operation limited, where appropriate, so that neighboring residents are not exposed to offensive noise, especially from traffic, trash collection, routine deliveries or late night activity. No use shall produce continual loading or unloading of heavy trucks at the site between the hours of 8 p.m. and 6 a.m.

.030 Noise Standards. Residential portions of the project shall be designed to limit the interior noise caused by the commercial and parking portions of the project, to a maximum of forty-five (45) decibels (db) Community Noise Equivalent Level (CNEL) on an annual basis in any habitable room with windows closed. Proper design may include, but shall not be limited to, building orientation, double or extra-strength windows, wall and ceiling insulation, and orientation and insulation of vents. Where it is necessary that windows be closed in order to achieve the required level, means shall be provided for ventilation/cooling to provide a habitable environment.

.040 Vibrations and Odors. No use, activity or process shall produce continual vibrations or noxious odors that are perceptible, without instruments, by the average person at the property lines of the site, or within the interior of residential units on the site.

.050 Lighting. Outdoor lighting associated with commercial uses shall not adversely impact surrounding residential uses, but shall provide sufficient illumination for access and security purposes. Such lighting shall not blink, flash, oscillate, or be of unusually high intensity or brightness. (Ord. 5920 § 1 (part); June 8, 2004: Ord. 6287 § 5; October 8, 2013.)

18.40.090 SOUND ATTENUATION FOR RESIDENTIAL DEVELOPMENTS.

.010 Applicability. Residential developments involving the construction of two (2) or more dwelling units, or residential subdivisions resulting in two (2) or more parcels, and located within six hundred (600) feet of any railroad, freeway, expressway, major arterial, primary arterial or secondary arterial, as designated by the Circulation Element of the General Plan, shall comply with the provisions of this section. The construction of an accessory dwelling unit such as a second unit or senior second unit as prescribed in Section 18.38.230 shall not constitute a residential development subject to the provisions of this section.

.020 Study Required. A noise level analysis shall be performed for any new residential development or subdivision to determine the projected interior and exterior noise levels within the development. The study shall include mitigation measures that would be required to comply with applicable City noise standards, as identified in this section. The study shall be provided by the applicant, at its sole expense, to the City at the time of application for development of the residential development or subdivision.

.030 Attenuation. Mitigation measures, without limitation, may include masonry walls, an earthen berm or a combination thereof. Masonry walls must comply with the requirements of Chapter 18.46 (Landscaping and Screening). The height of any proposed walls shall be determined by the approval authority based on the recommendation of a sound attenuation study prepared by a state-licensed acoustical engineer, unless a

variance is granted by the approval authority, or City Council on appeal, in accordance with the procedures established in Chapter 18.60 (Common Procedures) for the processing of variances.

.040 Single-Family Detached. Exterior noise within the private rear yard of any single family lot and/or within any common recreation areas, shall be attenuated to a maximum of sixty-five (65) dB CNEL. Interior noise levels shall be attenuated to a maximum of forty-five (45) dB CNEL, or to a level designated by the Uniform Building Code, as adopted by the City.

.050 Single-Family Attached or Multiple Family. Exterior noise within common recreation areas of any single family attached or multiple family dwelling project shall be attenuated to a maximum of sixty-five (65) dB CNEL. Interior noise levels shall be attenuated to a maximum of forty-five (45) dB CNEL, or to a level designated by the Uniform Building Code, as adopted by the City.

.060 Minor Deviations. Notwithstanding any provision of this Code to the contrary, the Planning Commission may grant a deviation from the requirements imposed by subsections .040 and .050 of this section pertaining to exterior noise levels in accordance with the procedures established in Chapter 18.60 (Common Procedures) for the processing of variances except that the findings set forth in Section 18.74.060 (Findings) of Chapter 18.74 (Variances) shall not be required and provided that before any such deviation is granted by the Planning Commission, the evidence presented shows that all of the following conditions exist:

.0601 The deviation from prescribed levels does not pertain to interior noise levels;

.0602 The deviation does not exceed five (5) dB CNEL above the prescribed levels for exterior noise; and

.0603 Measures to attenuate noise to the prescribed levels would compromise or conflict with the aesthetic value of the project.

(Ord. 6000 § 3; November 8, 2005: Ord. 6101 § 33; April 22, 2008: Ord. 6317 § 14; March 3, 2015.)

Noise Element

List of Figures

List of Tables

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INTRODUCTION

The City of Anaheim is affected by several sources of noise, including vehicular traffic, entertainment facilities, sports events, commercial and industrial activity, and periodic occurrences such as construction and aircraft travel. Excessive levels of noise can affect the physical health, psychological stability, property values, and economic productivity of Anaheim and its residents. The control of noise, therefore, is an essential component in creating a safe, compatible, and productive environment.

ACHIEVING THE VISION

The citizens of Anaheim understand the relationship between noise and their health and serenity. As a part of the visioning process that shaped this general plan update, citizens and City officials identified goals for the future relating to balancing land uses in the City, in part to minimize incompatibilities and exposure to excessive noise while providing the range of uses needed to maintain a high quality of life. These goals are reflected in the Noise Element of this General Plan.

UNDERSTANDING NOISE

Definitions

The following is a list of commonly used terms and abbreviations that may be found within this Element or when discussing the topic of noise. This is an abbreviated glossary that should be reviewed prior to reading the Element. Figure N-1, *Sources of Sound*, is presented following this glossary to illustrate the level of noise generated by common everyday occurrences. It is important to become familiar with these definitions in order to better understand information contained in the Noise Element.

- **Ambient Noise** – The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental (background) noise at a given location.

- **Intrusive Noise** – That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency and time of occurrence, and tonal or informational content.
- **dB (Decibel)** – The unit of measure that denotes the ratio between two quantities that are proportional to power; the number of decibels corresponding to the ratio of the two amounts of power is based on a logarithmic scale.
- **dBA (A-weighted decibel)** – The A-weighted decibel scale discriminates against upper and lower frequencies in a manner approximating the sensitivity of the human ear. The scale ranges from zero for the average least perceptible sound to about 130 for the average pain level.
- **L_{50}** – The A-weighted sound level that is exceeded 50% of the sample time. Alternatively, the A-weighted sound level that is exceeded 30 minutes in a 60-minute period (similarly, L_{10}, L_{25}, etc.). These values are typically used to demonstrate compliance with noise restrictions included in the City noise ordinance.
- **L_{eq} (Equivalent Energy Level)** – The average acoustic energy content of noise during the time it lasts. The L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure, no matter what time of day they occur.
- **L_{dn} (Day-Night Average Level)** – The average equivalent A-weighted sound level during a 24-hour day, obtained after the addition of 10 decibels to sound levels in the night from 10:00 p.m. to 7:00 a.m. Note: CNEL and L_{dn} represent daily levels of noise exposure averaged on an annual or daily basis, while Leq represents the equivalent energy noise exposure for a shorter time period, typically one hour. CNEL and L_{dn} are the metrics used in this document to describe annoyance due to noise and to establish land use planning criteria for noise.
- **L_{max} (Maximum Energy Level)** – The maximum sound level (dB) observed during a particular noise event. More specifically, it is the greatest root-mean-square noise value obtained over the measurement period.
- **CNEL (Community Noise Equivalent Level)** – The average equivalent A-weighted sound level during a 24-hour day, obtained after the addition of five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 decibels to sound levels in the night from 10:00 p.m. to 7:00 a.m. CNEL and L_{dn} are the metrics used in this document to describe annoyance due to noise and to establish land use planning criteria for noise.
- **Noise Contours** – Lines drawn around a noise source indicating equal levels of noise exposure.

- **Vibration** – Another community annoyance related to noise is vibration. As with noise, vibration can be described by both its amplitude and frequency. Amplitude may be characterized by displacement, velocity, and/or acceleration. Typically, particle velocity (measured in inches or millimeters per second) and/or acceleration (measured in gravities) are used to describe vibration.

  Vibration can be felt outdoors, but the perceived intensity of vibration impacts is much greater indoors, due to structural shaking. Some of the most common sources of vibration come from trains, transit vehicles, construction equipment, airplanes, and trucks. Several land uses are especially sensitive to vibration, and therefore have a lower vibration threshold. These uses include, but are not limited to, concert halls, hospitals, libraries, vibration-sensitive research or manufacturing operations, residential areas, schools, and offices.

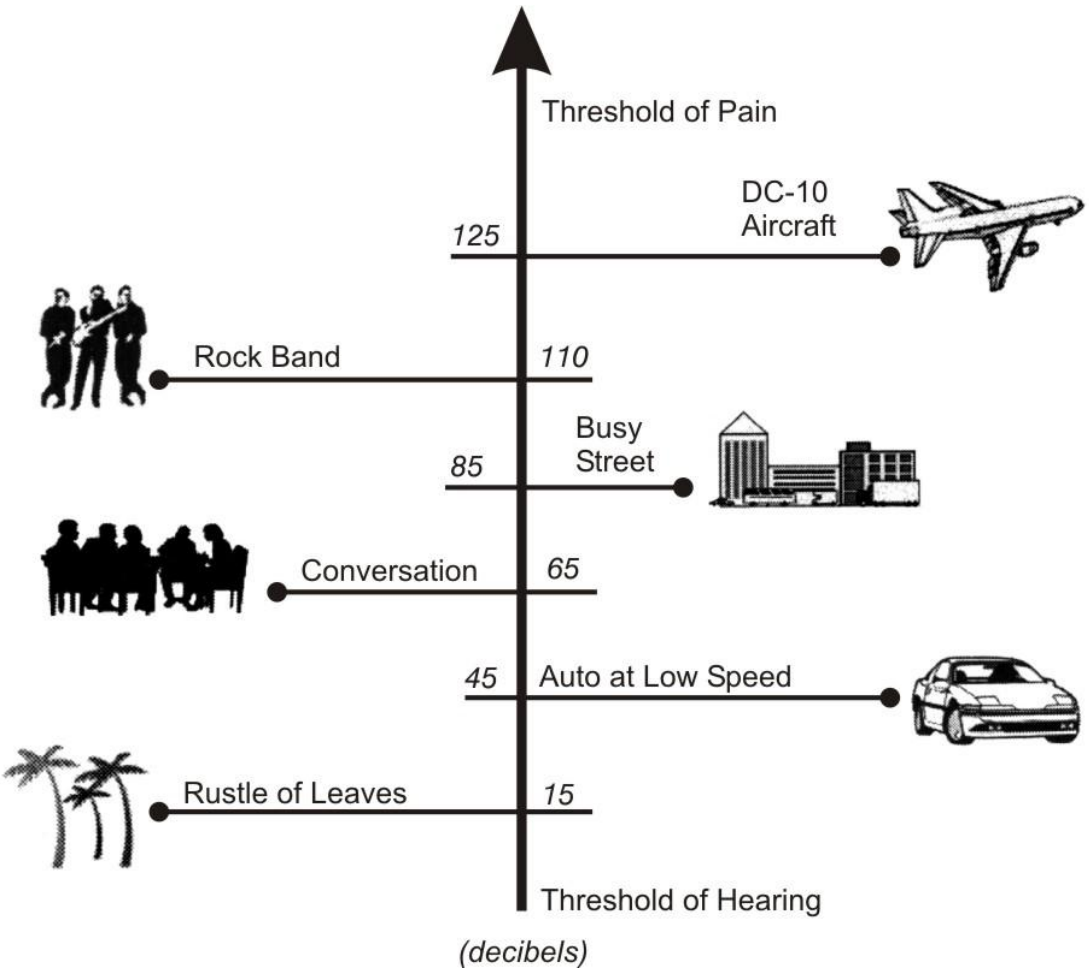


Figure N-1 Sources of Sound

RELATIONSHIP TO OTHER DOCUMENTS

The Noise Element is a comprehensive approach towards incorporating noise control in the planning process. It is a tool for achieving and maintaining environmental noise levels compatible with land use. The Noise Element identifies noise sensitive land uses and noise sources, and defines areas of noise impact. The Element establishes goals, policies, and programs to ensure that Anaheim residents will be protected from excessive noise.

Related General Plan Elements

The Noise Element is closely related to the Circulation and Land Use Elements. Transit thoroughfares such as freeways, arterial highways, and railways generate the majority of noise within the City and influence the type and intensity of development within a given area. Likewise, land uses sensitive to noise such as schools and residences are to be considered when determining land use patterns and planned mitigation measures related to noise impacts. The location and amount of such noise generators and receptors are also important considerations in the Public Services and Facilities and Green Elements. These elements address issues such as the development of educational facilities, public parks, and open space buffers.

Other Regulatory Documents

The intent of the Noise Element is to set goals to limit and reduce the effects of noise intrusion and to set acceptable noise levels for varying types of land uses. To this end, the City has the authority to set land use noise standards and place restrictions on private activities that generate excessive or intrusive noise. However, it should be recognized that the City does not have the authority to regulate all sources of noise within the City and various other agencies may supercede City authority.

Federal Highway Administration

State routes and freeways that run through the City are subject to Federal funding and, as such, are under the purview of the Federal Highway Administration (FHWA). The FHWA has developed noise standards that are typically used for Federally-funded roadway projects or projects that require either Federal or Caltrans review. These noise standards are based on Leq and L_{10} values and are included in Table N-1, *FHWA Design Noise Levels*.

TABLE N-1: FHWA DESIGN NOISE LEVELS			
Activity Category	Description of Activity Category	Design Noise Levels [1] L_{eq} (dBA)	L_{10} (dBA)
A	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. Examples include natural parks or wildlife habitat.	57 (exterior)	60 (exterior)
B	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.	67 (exterior)	70 (exterior)
C	Developed lands, properties, or activities not included in Categories A or B, above.	72 (exterior)	75 (exterior)
D	Undeveloped lands.	---	---
E	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.	52 (interior)	55 (interior)

[1] Either L_{eq} or L_{10} (but not both) design noise levels may be used on a project.

U.S. Department of Housing and Urban Development

The Department of Housing and Urban Development (HUD) issues formal requirements related specifically to standards for exterior noise levels along with policies for approving HUD-supported or assisted housing projects in high noise areas. In general, these requirements established three zones. These include:

- **65 dBA L_{dn} or less -** an **acceptable zone** where all projects could be approved,
- **Exceeding 65 dBA L_{dn} but not exceeding 75 dBA L_{dn} -** a **normally unacceptable zone** where mitigation measures would be required and each project would have to be individually evaluated for approval or denial. These measures must provide 5 dBA of attenuation above the attenuation provided by standard construction required in a 65 to 70 dBA L_{dn} area and 10 dBA of attenuation in a 70 to 75 dBA L_{dn} area, and
- **Exceeding 75 dBA L_{dn} -** an **unacceptable zone** in which projects would not, as a rule, be approved.

Federal Railroad Administration

The EPA is charged with the regulation of railroad noise under the Noise Control Act. The EPA Office of Noise Abatement and Control was closed in 1982, leaving the

enforcement of EPA regulations to the Federal Railroad Administration (FRA). Table N-2, *Summary of EPA/FRA Railroad Noise Standards*, summarizes the EPA railroad noise standards that set operating noise standards for railroad equipment and set noise limit standards for new equipment.

TABLE N-2: SUMMARY OF EPA/FRA RAILROAD NOISE STANDARDS

Noise Sources	Operating Conditions	Noise Metric[1, 2]	Measured Distance (feet)	Standard (dBA)
Non-Switcher Locomotives built on or before 12/31/79	Stationary	L_{max} (Slow)	100	73
	Idle Stationary	L_{max} (Slow)	100	93
	Non-Idle Moving	L_{max} (Fast)	100	95
Switcher Locomotives plus Non-Switcher Locomotives built after 12/31/79	Stationary	L_{max} (Slow)	100	70
	Idle Stationary	L_{max} (Slow)	100	87
	Non-Idle Moving	L_{max} (Fast)	100	90
Rail Cars	Speed $\leq$ 45 mph	L_{max} (Fast)	100	88
	Speed > 45 mph	L_{max} (Fast)	100	93
	Coupling	Adj. Avg. Max.	50	92

[1] Slow and fast exponential-time-weighting is used.
[2] Note that these values are in terms of the Lmax, and can be considerably greater than the Leq typically used in the measurement of obtrusive noise.
Source: United States Environmental Protection Agency Railroad Noise Emission Standard (40 Code of Federal Regulations Part 201).

California Department of Health Services

The California Department of Health Services (DHS) Office of Noise Control studied the correlation of noise levels and their effects on various land uses. As a result, the DHS established four categories for judging the severity of noise intrusion on specified land uses.

Figure N-2, *Land Use Compatibility for Community Noise Exposure (Exterior)*, presents a land use compatibility chart for community noise prepared by the California Office of Noise Control and adopted in this Noise Element to demonstrate land-use compatibility. While the chart is presented in terms of the L_{dn} or CNEL, the City prefers the use of the CNEL descriptor, as it is slightly more conservative (i.e., restrictive), in protecting sensitive land uses.

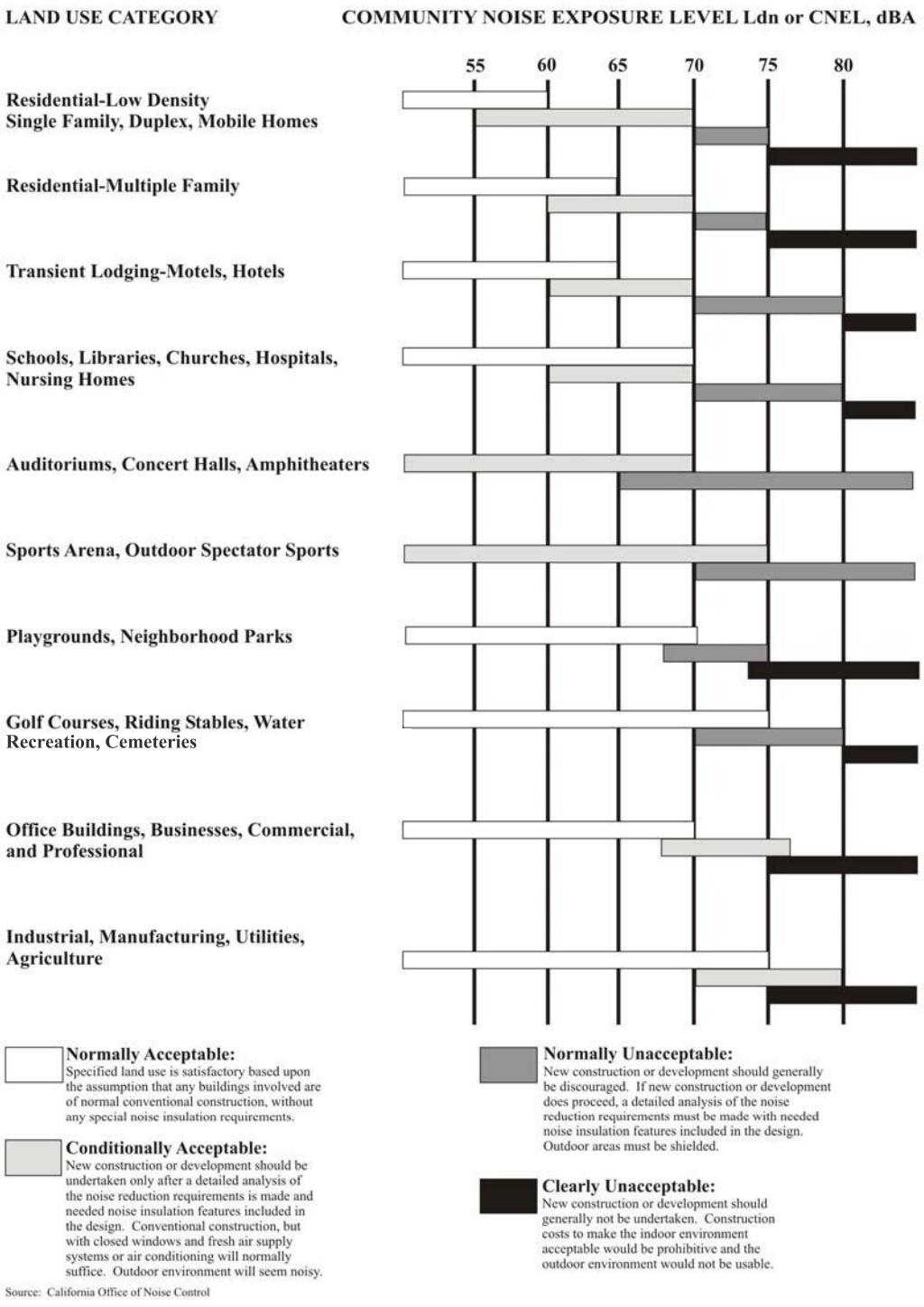


Figure N-2 Land Use Compatibility for Community Noise Exposure (Exterior)

It identifies "normally acceptable," "conditionally acceptable," "normally unacceptable," and "clearly unacceptable" exterior noise levels for various land uses. A "conditionally acceptable" designation implies new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements for each land use is made and needed noise insulation features are incorporated in the design. By comparison, a "normally acceptable" designation indicates that standard construction can occur with no special noise reduction requirements.

While this land use compatibility chart is based on a 24-hour value, the City is aware that some land uses are not occupied on a 24-hour basis, and a descriptor (such as L_{dn} or CNEL) may be overly restrictive in siting these types of sensitive land uses. Such uses may include, but are not limited to, schools, libraries, and churches. In these cases, a more appropriate standard would consider the time of occupancy of the land use. Here, the City recommends the use of a 65 dBA, 12-hour L_{eq} ($L_{eq}(12)$) that includes those hours of actual use. (If a facility is to be used in excess of 12 hours per day, the CNEL standard should be used.)

Table N-3, *State of California Interior and Exterior Noise Standards*, includes the State interior and exterior noise standards for varying land uses. It is important to note that the exterior noise levels are to be attained in "habitable" exterior areas and need not encompass the entirety of a property and that special consideration should be given in the case of infill residential development located along the City's arterial corridors or railroad lines in order to achieve an appropriate balance between providing a quality living environment and attractive project design.

TABLE N-3: STATE OF CALIFORNIA INTERIOR AND EXTERIOR NOISE STANDARDS

Land Use		CNEL (dBA)	
Categories	**Uses**	**Interior [1]**	**Exterior [2]**
Residential	Single and multiple-family, duplex	45[3]	65
	Mobile homes	----	65[4]
Commercial	Hotel, motel, transient housing	45	---
	Commercial retail, bank, restaurant	55	---
	Office building, research and development, professional offices	50	---
	Amphitheater, concert hall, auditorium, movie theater	45	---
	Gymnasium (Multipurpose)	50	---
	Sports Club	55	---
	Manufacturing, warehousing, wholesale, utilities	65	---
	Movie Theaters	45	---
Institutional/ Public	Hospital, school classrooms/playgrounds	45	65
	Church, library	45	---
Open Space	Parks	---	65

[1] Indoor environment excluding: bathrooms, kitchens, toilets, closets, and corridors

[2] Outdoor environment limited to:

- Private yard of single-family dwellings
- Multiple-family private patios or balconies accessed from within the dwelling (Balconies 6 feet deep or less are exempt)
- Mobile home parks
- Park picnic areas
- School playgrounds
- Hospital patios

[3] Noise level requirement with closed windows, mechanical ventilation or other means of natural ventilation shall be provided as per Chapter 12, Section 1205 of the Uniform Building Code.

[4] Exterior noise levels should be such that interior noise levels will not exceed 45 dBA CNEL.

City of Anaheim Noise Ordinance

The City of Anaheim has the authority to set land use noise standards and place restrictions on private activities that generate excessive or intrusive noise. The applicable standards for these activities are specified in the Anaheim Municipal Code. The Municipal Code limits sound levels for stationary sources of noise radiated for extended periods from any premises in excess of 60 decibels at the property line. Sound created by construction or building repair of any premises within the City is also exempt from the applications of the Municipal Code during the hours of 7:00 a.m. and 7:00 p.m.

Traffic sounds, sound created by emergency activities and sound created by governmental units are exempt from the applications of the Municipal Code. To this end, for land use planning, the City's Noise Element has adopted the State of California standards as included in Table N-3, *State of California Interior and Exterior Noise Standards*.

GOALS AND POLICIES

This section contains a brief discussion and detailed policy direction for noise issues within Anaheim. The first issue, Land Use Planning and Design, concerns the relationship between the design and approval of land uses and existing or potential noise sources. The second issue, Transportation Related Noise Sources, considers impacts that can be created by the operation of motor vehicles, trucks, aircraft and railways in the City. Non-Transportation Related Noise Sources, the third issue, involves noise impacts created by business or residential activities, such as air conditioning units, manufacturing activities, barking dogs, or community events. By following the policies associated with each issue, Anaheim will ensure compatible development, protect noise sensitive land uses, and minimize the effects of excessive and nuisance noise.

Land Use Planning and Design

Although the City is largely built-out, the growth in population, employment and tourist activity may generate more traffic and attract additional noise producing uses. In addition, some undeveloped and underdeveloped areas are designated for land uses that may be noise-sensitive and are located in proximity to roadways, railroads and transit facilities. For example, in some areas of the City, mixed-use and higher density residential development is encouraged in close proximity to transportation facilities to improve transit accessibility and, in turn, improve traffic efficiencies. In addition, some of these same uses are located in areas that are transitioning from potential noise-generating industrial uses to other uses. As a result, land use compatibility with noise is an important consideration in the planning and design process.

In order to identify potential mitigation to address noise abatement strategies, noise evaluations should be conducted when a proposed project places sensitive land uses and major noise generators within close proximity to each other. The City's Planning Department currently uses the project review process to identify potential noise issues

and works with developers or landowners to apply site planning and other design strategies to reduce noise impacts. A developer, for example, could take advantage of the natural shape and contours of a site to arrange buildings and other uses in a manner that would reduce and possibly eliminate noise impacts. Examples of other site and architectural techniques could include:

- Increasing the distance between noise source and receiver.
- Placing non-noise sensitive land uses such as parking lots, maintenance facilities and utility areas between the noise source and receiver, while maintaining aesthetic considerations.
- Using non-noise sensitive structures such as garages to shield noise-sensitive areas.
- Orienting buildings to shield outdoor spaces from a noise source.
- Locating bedrooms in residential developments on the side of the house facing away from major roads.

GOAL 1.1:

Protect sensitive land uses from excessive noise through diligent planning and regulation.

Policies:

1) Update City regulations to adopt Land Use Compatibility for Community Noise Exposure and California Interior and Exterior Noise Standards as appropriate.

2) Continue to enforce acceptable noise standards consistent with health and quality of life goals and employ effective techniques of noise abatement through such means as a noise ordinance, building codes, and subdivision and zoning regulations.

3) Consider the compatibility of proposed land uses with the noise environment when preparing, revising or reviewing development proposals.

4) Require mitigation where sensitive uses are to be placed along transportation routes to ensure that noise levels are minimized through appropriate means of mitigation thereby maintaining quality of life standards.

5) Encourage proper site planning and architecture to reduce noise impacts.

6) Discourage the siting of sensitive uses in areas in excess of 65 dBA CNEL without appropriate mitigation.

7) Require that site-specific noise studies be conducted by a qualified acoustic consultant utilizing acceptable methodologies while reviewing the

development of sensitive land uses or development that has the potential to impact sensitive land uses.

Transportation Related Noise Sources

Anaheim contains a number of transportation-related noise sources including freeways, arterial highways, collector roadways, helicopter, and railroad operations. These sources are the major contributors of noise in Anaheim. Cost effective strategies to reduce their influence on the community noise environment are an essential part of the Noise Element. While local government has little direct control of transportation noise at the source, as these levels are set by State and Federal agencies, the City does have some control over transportation noise that exceeds State and/or Federal standards through the enforcement of the Municipal Code.

The most effective method the City has to mitigate transportation noise is by reducing the impact of the noise onto the community through noise barriers and site design review. The effect of a noise barrier is critically dependent on the distance between the noise source and the receiver. A noise barrier effect occurs when the barrier penetrates the "line of sight" between the source and receiver; the greater the penetration or height of the barrier, the greater the noise reduction. Additional attenuation can be achieved depending upon the source of transportation related noise.

Roadways

Roadways are one of the biggest sources of noise in the City. Everyday, thousands of vehicles travel through and around Anaheim. Sound emanates from the vehicles' engines and from the tires rolling over the pavement. One way the City can control vehicle noise is through speed reduction. A change of just 5 miles per hour can change the resultant noise by approximately one to two dBA. The difference in noise associated with a reduction of 10 miles per hour could be roughly equivalent to reducing the traffic volume by one-half.

The City also has some control over traffic-generated noise through weight limitations and the designation of truck routes. Medium trucks, (i.e., those with a gross vehicle weight between 5 and 13.25 tons) produce as much acoustical energy as approximately 5 to 16 automobiles depending on the speed, with slower speeds demonstrating greater differential. Similarly, heavy trucks (i.e., those with a gross vehicle weight in excess of 13.25 tons) produce as much acoustical energy as 10 to 60 automobiles.

The City can further reduce traffic-generated noise by ensuring that street paving is maintained and bumps and dips are minimized. Poor paving causes vehicles to bounce and this bouncing exacerbates the noise due to the rattling of the vehicle. This is especially important along those routes that realize augmented volumes of truck traffic. Noise contours for the City's roadways and freeways are presented in Figure N-3, *Future*

Roadway Noise Contours, and Figure N-4, *Future Freeway and Railroad Noise Contours.* Future conditions consider sound levels given the buildout of land uses and the roadway network, but do not consider sound attenuation measures such as soundwalls.

Aircraft

The City is not located within the 65 dBA CNEL contours for any commercial or private airports, and fixed-wing aircraft are typically too high to add measurably to local noise. However, local helicopter air traffic is commonplace throughout the City. News and other helicopters (e.g., freeway traffic report helicopters) fly through the area, but do not land within the City.

Helicopter use at hospitals is considered as an emergency activity and as such, is exempt under the City Municipal Code. Fire and police helicopter use for emergency functions also fall under this exclusion. Low-flying helicopter activity, however, has been a source of noise complaints within the City, particularly in the Anaheim Colony, and indicates that the siting of future heliports, regardless of their use, must be carefully reviewed for potential noise impacts.

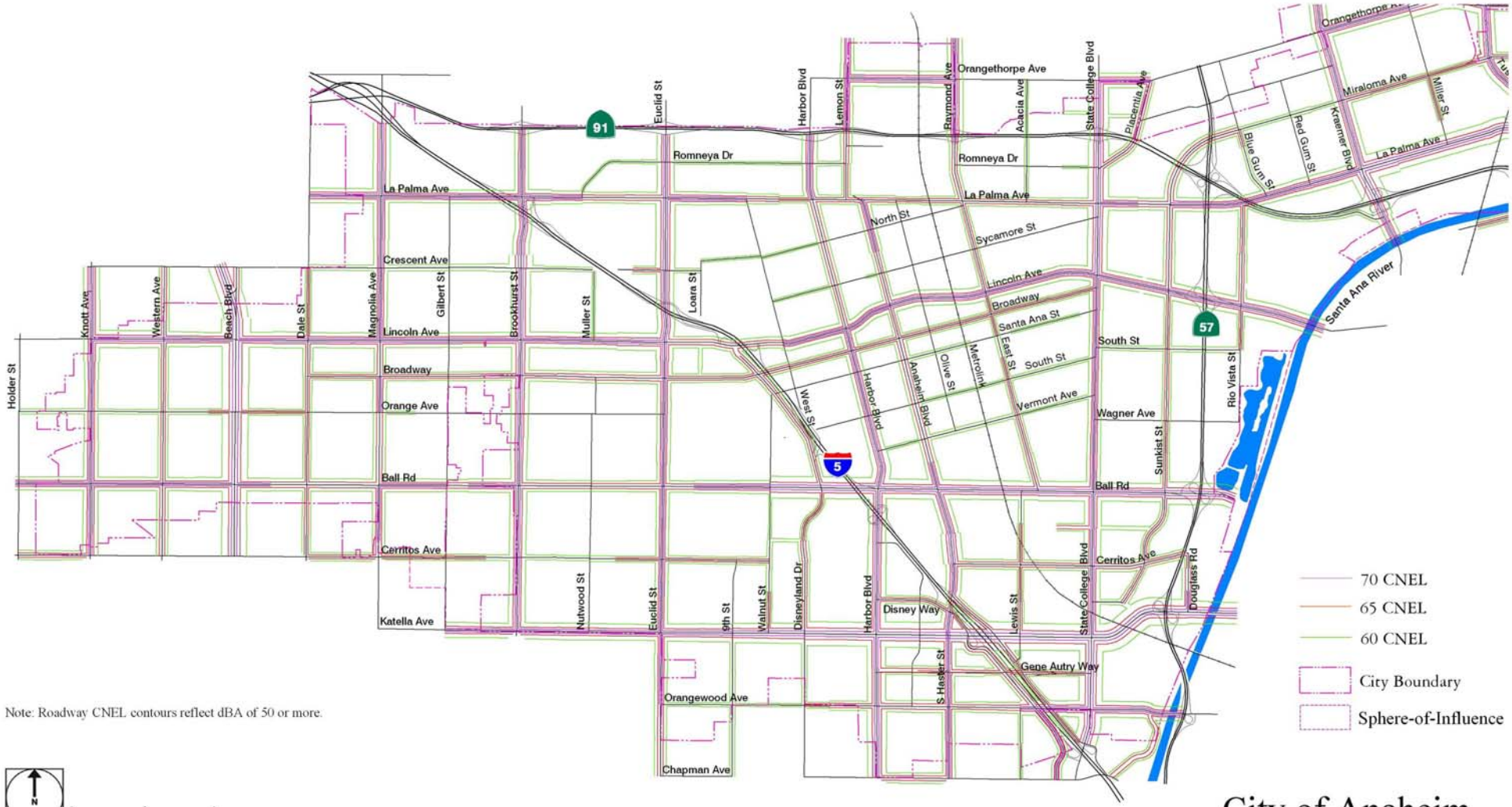
Railways

Another prevalent source of noise in the City is from railroad operations. The City contains two train stations that are used by Metrolink and Amtrak for passenger rail service. Both Metrolink and Amtrak operate out of the Anaheim Station, which is located adjacent to the Angel Stadium of Anaheim. Metrolink also stops at the Anaheim Canyon Station, which is situated near the intersection of North Tustin Avenue and the Riverside (SR-91) Freeway. In addition, the City contains two railroad freight corridors. These include the Union Pacific line located primarily along the Santa Ana (I-5) Freeway, but diverging in the southern portions of the City, and the Burlington Northern & Santa Fe (BN&SF) line located along Orangethorpe Avenue/ Esperanza Road.

Currently, daily train traffic produces noise that may disrupt activities in proximity to railroad tracks. For example, trains are required to sound their horns at all at-grade crossings. Trains may also be required to slow their speed through residential areas. These types of noise disturbances can interfere with activities conducted on noise-sensitive land uses.

Railroad noise is dependant on a number of factors including the number of operations per day, the times these operations occur, the numbers of engines and railcars, the speed, the type of rail (i.e., continuous or bolted), and whether at-grade rail crossings exist that require engineers to sound a warning horn. Noise contours for railway operations are presented in Figure N-3, *Future Roadway Noise Contours*.

Future Roadway Noise Contours



Note: Roadway CNEL contours reflect dBA of 50 or more.

N

0 .5 1 Miles

City of Anaheim

General Plan Program

Figure N-3a Page N-15

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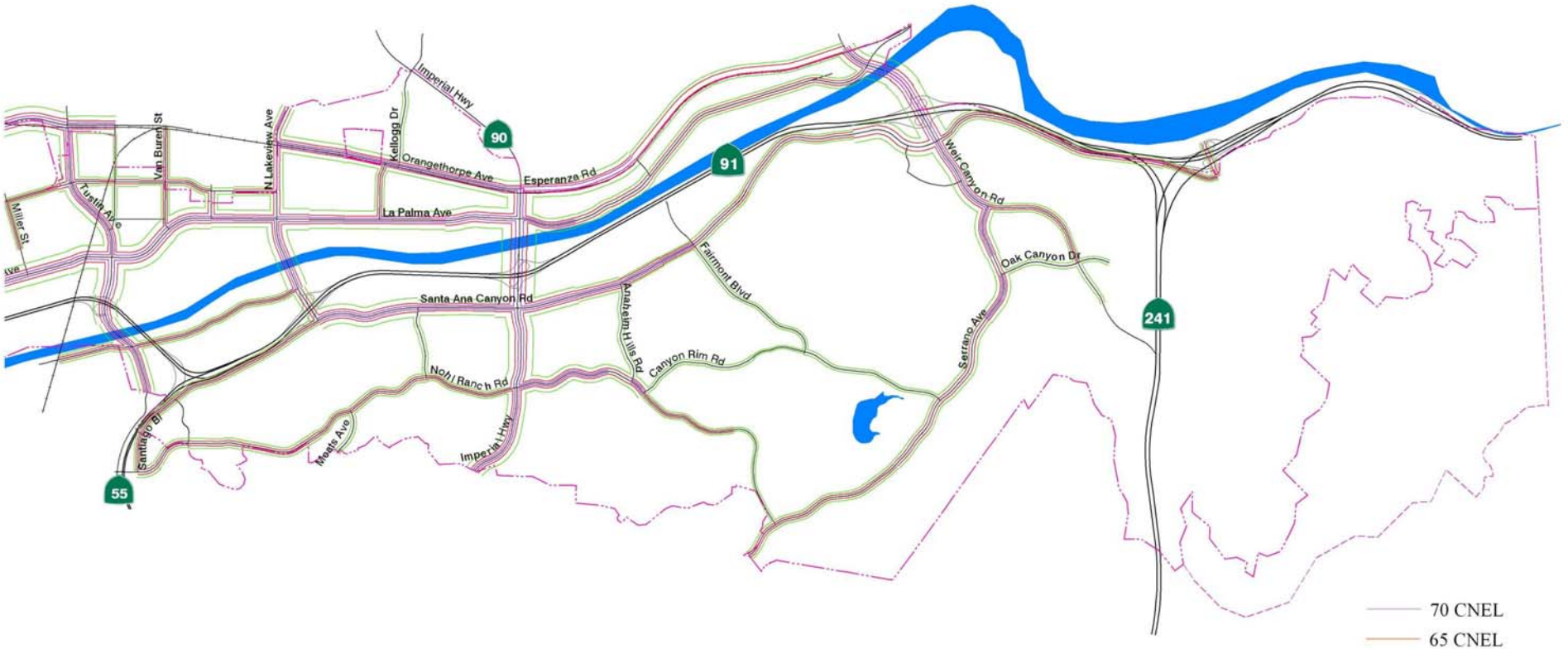
Future Roadway Noise Contours



Note: Roadway CNEL contours reflect dBA of 50 or more.

City of Anaheim

General Plan Program

Figure N-3b Page N-17

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Future Freeway and Railroad Noise Contours

Freeway Noise Contours
- 70 CNEL
- 65 CNEL
- 60 CNEL

Railroad Noise Contours
- 70 CNEL
- 65 CNEL
- 60 CNEL

City Boundary

Sphere-of-Influence

0 0.5 1 2 Miles

City of Anaheim

General Plan Program

Figure N-4 Page N-19

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Alternative Transportation

The City can also minimize traffic-generated noise by encouraging the construction and use of alternative modes of transportation such as alternative fuel vehicles, the Bus Rapid Transit (BRT) System, or transit oriented design (TOD) – the provision of higher density, mixed-use development near major rail and transit stops. Alternative transportation modes can emit less noise per passenger than their automotive counterparts and can reduce traffic congestion. Additional information on TOD and the BRT System can be found in the Green and Circulation Elements.

GOAL 2.1:

Encourage the reduction of noise from transportation-related noise sources such as motor vehicles, aircraft operations, and railroad movements.

Policies:

1) Continue to enforce the noise standards of the State Motor Vehicle Code and other State and Federal legislation pertaining to motor vehicle noise.

2) Employ noise mitigation practices, as necessary, when designing future streets and highways, and when improvements occur along existing road segments. Mitigation measures should emphasize the establishment of natural buffers or setbacks between the arterial roadways and adjoining noise-sensitive areas.

3) Require that development generating increased traffic and subsequent increases in the ambient noise level adjacent to noise-sensitive land uses provide appropriate mitigation measures.

4) Maintain roadways so that the paving is in good condition to reduce noise-generating cracks, bumps, and potholes.

5) Require sound walls, berms and landscaping along existing and future freeways and railroad rights-of-way to beautify the landscape and reduce noise, where appropriate.

6) Encourage the construction of noise barriers by the Public Utilities Commission, Southern California Regional Rail Authority, Union Pacific, Burlington Northern & Santa Fe and Amtrak where residences exist next to the track.

7) Encourage the Public Utilities Commission, Southern California Regional Rail Authority, Union Pacific, Burlington Northern & Santa Fe and Amtrak to minimize the level of noise produced by train movements and whistle noise within the City by reducing the number of nighttime operations, improving

vehicle system technology and developing improved sound barriers where residences exist next to the track.

8) Encourage the use sound-deadening matting (as opposed to wood) leading to, from and between the rails where public roads cross tracks in residential areas.

9) Require private heliports/helistops to comply with the City noise ordinances and Federal Aviation Administration standards.

10) Participate in the planning activities of County, regional and State agencies relative to the location of new airports and the assessment of their impact on the environment of the City.

11) Encourage the development of alternative transportation modes that minimize noise within residential areas.

12) Monitor proposals for future transit systems and require noise control to be considered in the selection of transportation systems that may affect the City.

13) Continue efforts to minimize the impacts from police helicopter training and emergency response activities through the potential relocation of helicopter facilities and careful consideration of flight paths.

Non-Transportation Related Noise Sources

The City currently maintains a diversity of land uses, most of which generate their own noise. Industrial facilities generate noise through various processes that involve the use of heavy equipment and machinery. However, even commercial facilities and residential units can generate noise from the use of heating, ventilating, and air conditioning (HVAC) units. Restaurants, bars, and entertainment establishments may use sound amplification equipment that operates well into the night. Residential areas are also subject to noise from the use of pool and spa pumps, landscape maintenance equipment, barking dogs, etc.

Mixed-use areas that place more sensitive residential uses alongside or above commercial uses can present their own challenges. Requiring that the commercial component meet a residential standard could make commercial operations difficult. Alternatively, applying a commercial standard to a mixed-use project could result in unacceptable noise levels at the residential portion of the structure/site. Still, mixed-use projects offer several advantages from both an air quality and transportation perspective, and should be encouraged.

The most prominent non-transportation related noise production occurs at the three major attraction venues in the City: The Anaheim Resort®, Angel Stadium of Anaheim,

and the Arrowhead Pond of Anaheim. These uses involve the use of delivery vehicles, rides and attractions, and attract thousands of people and automobiles that can create high levels of noise. Within the property lines of these uses, however, the noise levels are generally considered acceptable and appropriate to the use. Moreover, these uses employ large setbacks, parking buffers, and a variety of sound barriers to minimize noise impacts.

The noise impacts on the area surrounding Angel Stadium of Anaheim is also limited due to the industrial nature of the surrounding development. However, as The Platinum Triangle transitions into a mixed-use center and incorporates more sensitive land uses, the potential for noise conflicts may rise. Any new development, therefore, will be required to incorporate appropriate sound mitigation measures to minimize the noise impacts from and to the surrounding environment.

Another source of "non-transportation" noise comes from the operations of trucks and trains within the City. As previously mentioned, the operation of railroad trains and heavy trucks is preempted from local noise regulation while operating on public roads and dedicated rights-of-way. However, noise is also generated by operations (e.g., idling, loading, and unloading) that occur at facilities. Once on private property, these sources are no longer considered preempted and the City has authority to regulate this noise if it "spills" into adjacent areas.

Finally, construction in all land use zones can temporarily elevate noise. The City recognizes that construction is a necessity and noise control for construction needs to be carefully balanced. Still, various measures are available to reduce this noise when necessary.

GOAL 3.1:

Protect residents from the effects of "spill over" or nuisance noise emanating from the City's activity centers.

Policies:

1) Discourage new projects located in commercial or entertainment areas from exceeding stationary-source noise standards at the property line of proximate residential or commercial uses, as appropriate.

2) Prohibit new industrial uses from exceeding commercial or residential stationary-source noise standards at the most proximate land uses, as appropriate. (Industrial noise may spill over to proximate industrial uses so long as the combined noise does not exceed the appropriate industrial standards.)

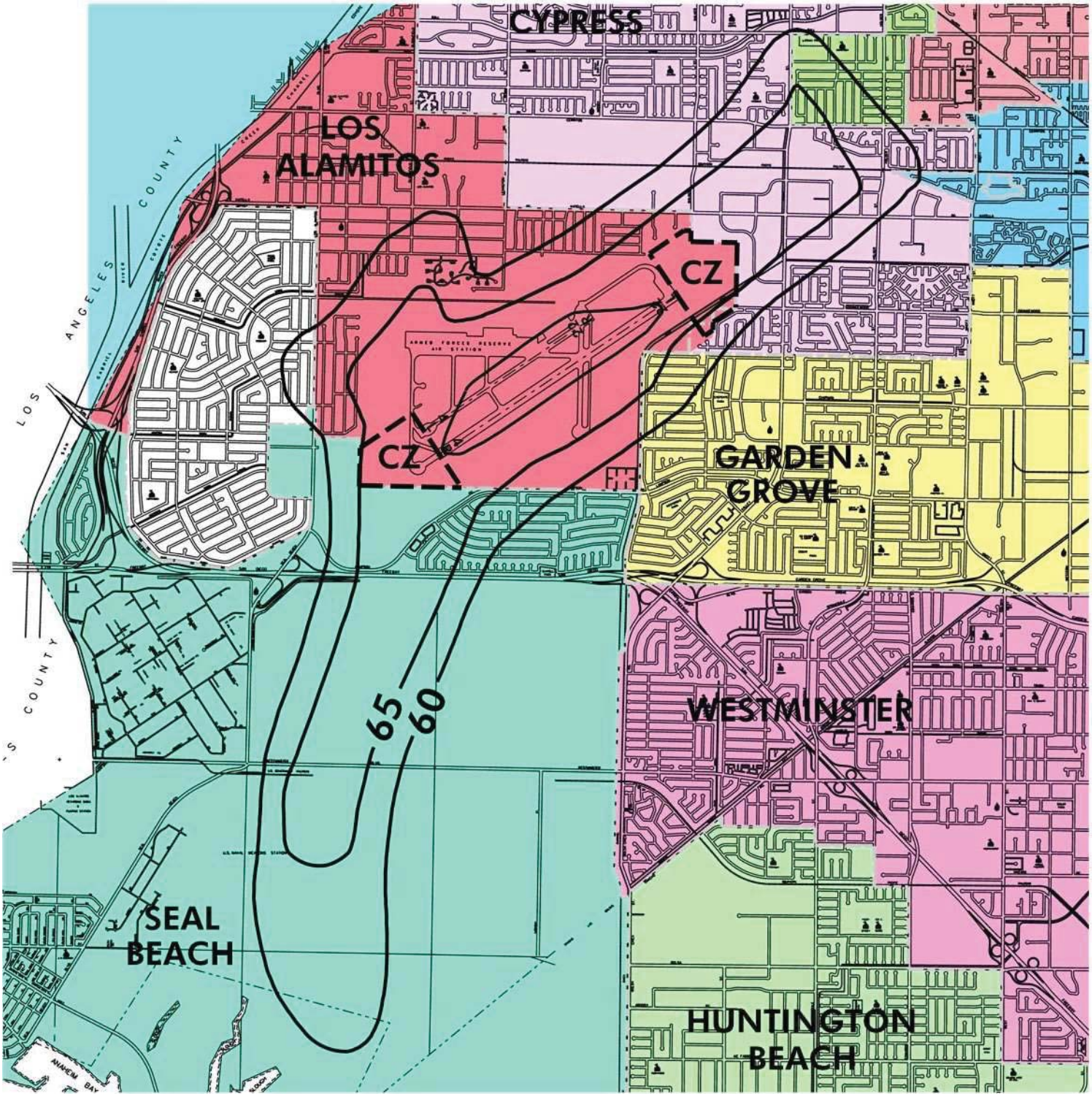
3) Enforce standards to regulate noise from construction activities. Particular emphasis shall be placed on the restriction of the hours in which work other

than emergency work may occur. Discourage construction on weekends or holidays except in the case of construction proximate to schools where these operations could disturb the classroom environment.

4) Require that construction equipment operate with mufflers and intake silencers no less effective than originally equipped.

5) Encourage the use of portable noise barriers for heavy equipment operations performed within 100 feet of existing residences or make applicant provide evidence as to why the use of such barriers is infeasible.

(Res. 2005-19, February 15, 2005)



Note: County Unincorporated areas are shown in white.

Impact Zones Exhibit D3
Joint Forces Training Base Los Alamitos

Source: Final AICUZ Study for JFTB, Los Alamitos, June 1, 1994

Scale in Feet

LEGEND

~60/65~ CNEL CONTOUR
— — — CLEAR ZONE (CZ)
—•- —•- — CITY BOUNDARIES

CERTIFICATION

Adopted by the Airport Land Use Commission for Orange County

Kari A. Rigoni, Executive Officer Date

ALUC-2007/losolipzone -07.dgn

Noise Modeling Calculation Sheets and Noise Monitoring Data Sheets
Beach Boulevard Specific Plan (COA-65)

Beach Boulevard Specific Plan Traffic Noise Increases COA-65

ROADWAY	SEGMENT	Existing ADT	Existing +P ADT	Future Base	Future + P ADT	Total Increase	Proj Contrib	Existing CNEL	Existing +P CNEL	Future Base	Future+P CNEL	Total Increase	Proj Contrib
Beach Blvd	North of Orangethorpe Avenue	38110	39850	42610	42220	4110	-390	73.0	73.2	73.5	73.5	0.4	0.0
Beach Blvd	Between SR-91 and La Palma Avenue	58440	62670	65440	65440	7000	0	74.9	75.2	75.4	75.4	0.5	0.0
Beach Blvd	Between La Palma Avenue and Crescent Avenue	49570	56470	50530	52510	2940	1980	75.4	76.0	75.5	75.7	0.3	0.2
Beach Blvd	Between Crescent Ave & Lincoln Ave	66700	80500	70800	77500	10800	6700	76.7	77.6	77.0	77.4	0.7	0.4
Beach Blvd	Between Lincoln Ave & Orange Ave	62500	71000	62500	66600	4100	4100	76.5	77.0	76.5	76.7	0.3	0.3
Beach Blvd	Between Orange Ave & Ball Rd	62500	69900	62500	63600	1100	1100	76.5	76.9	76.5	76.5	0.1	0.1
Beach Blvd	Between Ball Rd & Cerritos Ave	65200	70400	65200	66400	1200	1200	76.6	77.0	76.6	76.7	0.1	0.1
Beach Blvd	Between Cerritos Ave and Katella	62620	66110	66630	66500	3880	-130	76.5	76.7	76.7	76.7	0.3	0.0
Beach Blvd	South of Katella Avenue	63710	66640	67690	67430	3720	-260	76.5	76.7	76.8	76.8	0.2	0.0
La Palma Avenue	Between Knott Avenue and Western Avenue	29430	32990	34300	34310	4880	10	71.7	72.2	72.3	72.3	0.7	0.0
La Palma Avenue	Between Western Avenue and Beach Boulevard	30420	34830	36810	36020	5600	-790	71.8	72.4	72.7	72.6	0.7	-0.1
La Palma Avenue	Between Beach Boulevard and Stanton Avenue	21760	22300	22560	22170	410	-390	70.4	70.5	70.5	70.5	0.1	-0.1
La Palma Avenue	East of Stanton Avenue	25910	26390	27440	27970	2060	530	71.1	71.2	71.4	71.5	0.3	0.1
Lincoln Ave	Between Valley View Street and Knott Avenue	21520	22220	36330	35730	14210	-600	70.3	70.4	72.6	72.5	2.2	-0.1
Lincoln Ave	Between Western Avenue and Beach Boulevard	23330	24870	34520	33920	10590	-600	70.6	70.9	72.3	72.3	1.6	-0.1
Lincoln Ave	Between Beach Boulevard and Dale Avenue	14400	15940	21000	21970	7570	970	68.5	69.0	70.2	70.4	1.8	0.2
Lincoln Ave	Between Dale Avenue and Magnolia Avenue	14160	14850	18830	19440	5280	610	68.5	68.7	69.7	69.8	1.4	0.1
Broadway	Between Dale Avenue and Magnolia Avenue	5330	6040	5770	5770	440	0	64.2	64.7	64.5	64.5	0.3	0.0
Braodway	Between Magnolia Avenue and Gilbert Street	5790	6510	6240	6310	520	70	64.5	65.1	64.9	64.9	0.4	0.0
Orange Avenue	Between Western Avenue and Beach Boulevard	15430	18590	16150	16970	1540	820	68.8	69.6	69.0	69.2	0.4	0.2
Orange Avenue	Between Beach Boulevard and Dale Avenue	9070	11160	11160	10200	1130	-960	66.5	67.4	67.4	67.0	0.5	-0.4
Ball Road	Between Western Avenue and Beach Boulevard	26130	28800	29550	30300	4170	750	71.1	71.5	71.6	71.7	0.6	0.1
Ball Road	Between Beach Boulevard and Dale Avenue	16370	18710	21190	21700	5330	510	69.1	69.6	70.2	70.3	1.2	0.1
Cerritos Avenue	Between Western Avenue and Beach Boulevard	18080	20260	20830	20260	2180	-570	69.5	70.0	70.1	70.0	0.5	-0.1
Cerritos Avenue	Between Beach Boulevard and Dale Avenue	10520	12400	11820	12280	1760	460	67.1	67.8	67.6	67.8	0.7	0.2
Cerritos Avenue	Between Dale Avenue and Magnolia Avenue	9220	10450	9640	9640	420	0	66.5	67.1	66.7	66.7	0.2	0.0
Stanton Avenue	Between La Palma Avenue and Crescent Avenue	18980	19970	20650	21000	2020	350	69.7	69.9	70.1	70.1	0.4	0.1

Beach Boulevard Specific Plan (COA-65)

Existing No Project Conditions Traffic Noise Result Tables

#	ROADWAY	SEGMENT	DAILY TRAFFIC VOLUMES	Distance to Reciever	Noise Level (dBA)			DISTANCE TO NOISE CONTOUR (FT.)		
					Leq	Ldn	CNEL	dBA CNEL	dBA CNEL	60 dBA CNEL
1	Beach Blvd	North of Orangethorpe Avenue	38,110	50	69.5	72.4	**73**	80	172	370
2	Beach Blvd	Between SR-91 and La Palma Avenue	58,440	50	71.4	74.3	**75**	106	228	491
3	Beach Blvd	Between La Palma Avenue and Crescent Aver	49,570	50	71.9	74.8	**75**	115	249	536
4	Beach Blvd	Between Crescent Ave & Lincoln Ave	66,700	50	73.2	76.1	**77**	141	303	653
5	Beach Blvd	Between Lincoln Ave & Orange Ave	62,500	50	72.9	75.8	**76**	135	290	625
6	Beach Blvd	Between Orange Ave & Ball Rd	62,500	50	72.9	75.8	**76**	135	290	625
7	Beach Blvd	Between Ball Rd & Cerritos Ave	65,200	50	73.1	76.0	**77**	139	298	643
8	Beach Blvd	Between Cerritos Ave and Katella	62,620	50	72.9	75.8	**76**	135	291	626
9	Beach Blvd	South of Katella Avenue	63,710	50	73.0	75.9	**77**	136	294	633
10	La Palma Avenue	Between Knott Avenue and Western Avenue	29,430	50	68.2	71.1	**72**	65	139	301
11	La Palma Avenue	Between Western Avenue and Beach Bouleva	30,420	50	68.3	71.2	**72**	66	143	307
12	La Palma Avenue	Between Beach Boulevard and Stanton Avenu	21,760	50	66.9	69.7	**70**	53	114	246
13	La Palma Avenue	East of Stanton Avenue	25,910	50	67.6	70.5	**71**	59	128	276
14	Lincoln Ave	Between Valley View Street and Knott Avenue	21,520	50	66.8	69.7	**70**	52	113	243
15	Lincoln Ave	Between Western Avenue and Beach Bouleva	23,330	50	67.1	70.0	**71**	55	119	256
16	Lincoln Ave	Between Beach Boulevard and Dale Avenue	14,400	50	65.0	67.9	**69**	40	86	186
17	Lincoln Ave	Between Dale Avenue and Magnolia Avenue	14,160	50	65.0	67.8	**68**	40	85	184
18	Broadway	Between Dale Avenue and Magnolia Avenue	5,330	50	60.7	63.6	**64**	20	44	95
19	Braodway	Between Magnolia Avenue and Gilbert Street	5,790	50	61.0	63.9	**65**	22	47	100
20	Orange Avenue	Between Western Avenue and Beach Bouleva	15,430	50	65.3	68.2	**69**	42	90	193
21	Orange Avenue	Between Beach Boulevard and Dale Avenue	9,070	50	63.0	65.9	**66**	29	63	135
22	Ball Road	Between Western Avenue and Beach Bouleva	26,130	50	67.6	70.5	**71**	59	127	274
23	Ball Road	Between Beach Boulevard and Dale Avenue	16,370	50	65.5	68.4	**69**	43	93	201
24	Cerritos Avenue	Between Western Avenue and Beach Bouleva	18,080	50	66.0	68.9	**69**	46	100	214
25	Cerritos Avenue	Between Beach Boulevard and Dale Avenue	10,520	50	63.6	66.5	**67**	32	69	149
26	Cerritos Avenue	Between Dale Avenue and Magnolia Avenue	9,220	50	63.0	65.9	**67**	29	63	136
27	Stanton Avenue	Between La Palma Avenue and Crescent Aver	18,980	50	66.2	69.1	**70**	48	103	222

Beach Boulevard Specific Plan (COA-65)

Existing With Project Conditions Traffic Noise Result Tables

#	ROADWAY	SEGMENT	DAILY TRAFFIC VOLUMES	Distance to Reciever	Noise Level (dBA)			DISTANCE TO NOISE CONTOUR (FT.)		
					Leq	Ldn	CNEL	dBA CNEL	dBA CNEL	60 dBA CNEL
1	Beach Blvd	North of Orangethorpe Avenue	39,850	50	69.7	72.6	**73.2**	82	177	381
2	Beach Blvd	Between SR-91 and La Palma Avenue	62,670	50	71.7	74.6	**75.2**	111	239	515
3	Beach Blvd	Between La Palma Avenue and Crescent Aven	56,470	50	72.5	75.4	**76.0**	126	271	584
4	Beach Blvd	Between Crescent Ave & Lincoln Ave	80,500	50	74.0	76.9	**77.6**	159	343	740
5	Beach Blvd	Between Lincoln Ave & Orange Ave	71,000	50	73.5	76.4	**77.0**	147	316	681
6	Beach Blvd	Between Orange Ave & Ball Rd	69,900	50	73.4	76.3	**76.9**	145	313	674
7	Beach Blvd	Between Ball Rd & Cerritos Ave	70,400	50	73.5	76.3	**77.0**	146	314	677
8	Beach Blvd	Between Cerritos Ave and Katella	66,110	50	73.2	76.1	**76.7**	140	301	649
9	Beach Blvd	South of Katella Avenue	66,640	50	73.2	76.1	**76.7**	141	303	652
10	La Palma Avenue	Between Knott Avenue and Western Avenue	32,990	50	68.7	71.6	**72.2**	70	151	324
11	La Palma Avenue	Between Western Avenue and Beach Bouleva	34,830	50	68.9	71.8	**72.4**	72	156	336
12	La Palma Avenue	Between Beach Boulevard and Stanton Avenu	22,300	50	67.0	69.9	**70.5**	54	116	250
13	La Palma Avenue	East of Stanton Avenue	26,390	50	67.7	70.6	**71.2**	60	130	279
14	Lincoln Ave	Between Valley View Street and Knott Avenue	22,220	50	66.9	69.8	**70.4**	53	115	248
15	Lincoln Ave	Between Western Avenue and Beach Bouleva	24,870	50	67.4	70.3	**70.9**	58	124	267
16	Lincoln Ave	Between Beach Boulevard and Dale Avenue	15,940	50	65.5	68.4	**69.0**	43	92	199
17	Lincoln Ave	Between Dale Avenue and Magnolia Avenue	14,850	50	65.2	68.1	**68.7**	41	88	189
18	Broadway	Between Dale Avenue and Magnolia Avenue	6,040	50	61.2	64.1	**64.7**	22	48	103
19	Braodway	Between Magnolia Avenue and Gilbert Street	6,510	50	61.5	64.4	**65.1**	23	50	109
20	Orange Avenue	Between Western Avenue and Beach Bouleva	18,590	50	66.1	69.0	**69.6**	47	101	218
21	Orange Avenue	Between Beach Boulevard and Dale Avenue	11,160	50	63.9	66.8	**67.4**	33	72	155
22	Ball Road	Between Western Avenue and Beach Bouleva	28,800	50	68.0	70.9	**71.5**	63	136	293
23	Ball Road	Between Beach Boulevard and Dale Avenue	18,710	50	66.1	69.0	**69.6**	47	102	219
24	Cerritos Avenue	Between Western Avenue and Beach Bouleva	20,260	50	66.5	69.4	**70.0**	50	107	231
25	Cerritos Avenue	Between Beach Boulevard and Dale Avenue	12,400	50	64.3	67.2	**67.8**	36	77	167
26	Cerritos Avenue	Between Dale Avenue and Magnolia Avenue	10,450	50	63.6	66.5	**67.1**	32	69	148
27	Stanton Avenue	Between La Palma Avenue and Crescent Aven	19,970	50	66.4	69.3	**69.9**	49	106	229

Beach Boulevard Specific Plan (COA-65)

Future (2035) No Project Conditions Traffic Noise Result Tables

#	ROADWAY	SEGMENT	DAILY TRAFFIC VOLUMES	Distance to Reciever	Noise Level (dBA)			DISTANCE TO NOISE CONTOUR (FT.)		
					Leq	Ldn	CNEL	dBA CNEL	dBA CNEL	60 dBA CNEL
1	Beach Blvd	North of Orangethorpe Avenue	42,610	50	70.0	72.9	**73.5**	86	185	398
2	Beach Blvd	Between SR-91 and La Palma Avenue	65,440	50	71.9	74.8	**75.4**	114	246	530
3	Beach Blvd	Between La Palma Avenue and Crescent Aver	50,530	50	72.0	74.9	**75.5**	117	252	543
4	Beach Blvd	Between Crescent Ave & Lincoln Ave	70,800	50	73.5	76.4	**77.0**	146	315	679
5	Beach Blvd	Between Lincoln Ave & Orange Ave	62,500	50	72.9	75.8	**76.5**	135	290	625
6	Beach Blvd	Between Orange Ave & Ball Rd	62,500	50	72.9	75.8	**76.5**	135	290	625
7	Beach Blvd	Between Ball Rd & Cerritos Ave	65,200	50	73.1	76.0	**76.6**	139	298	643
8	Beach Blvd	Between Cerritos Ave and Katella	66,630	50	73.2	76.1	**76.7**	141	303	652
9	Beach Blvd	South of Katella Avenue	67,690	50	73.3	76.2	**76.8**	142	306	659
10	La Palma Avenue	Between Knott Avenue and Western Avenue	34,300	50	68.8	71.7	**72.3**	72	154	333
11	La Palma Avenue	Between Western Avenue and Beach Bouleva	36,810	50	69.1	72.0	**72.7**	75	162	349
12	La Palma Avenue	Between Beach Boulevard and Stanton Avenu	22,560	50	67.0	69.9	**70.5**	54	117	252
13	La Palma Avenue	East of Stanton Avenue	27,440	50	67.9	70.8	**71.4**	62	133	287
14	Lincoln Ave	Between Valley View Street and Knott Avenue	36,330	50	69.0	71.9	**72.6**	74	160	344
15	Lincoln Ave	Between Western Avenue and Beach Bouleva	34,520	50	68.8	71.7	**72.3**	72	154	332
16	Lincoln Ave	Between Beach Boulevard and Dale Avenue	21,000	50	66.7	69.6	**70.2**	51	111	239
17	Lincoln Ave	Between Dale Avenue and Magnolia Avenue	18,830	50	66.2	69.1	**69.7**	48	103	222
18	Broadway	Between Dale Avenue and Magnolia Avenue	5,770	50	61.0	63.9	**64.5**	22	46	100
19	Braodway	Between Magnolia Avenue and Gilbert Street	6,240	50	61.4	64.2	**64.9**	23	49	106
20	Orange Avenue	Between Western Avenue and Beach Bouleva	16,150	50	65.5	68.4	**69.0**	43	92	199
21	Orange Avenue	Between Beach Boulevard and Dale Avenue	11,160	50	63.9	66.8	**67.4**	33	72	155
22	Ball Road	Between Western Avenue and Beach Bouleva	29,550	50	68.1	71.0	**71.6**	64	138	298
23	Ball Road	Between Beach Boulevard and Dale Avenue	21,190	50	66.7	69.5	**70.2**	51	111	238
24	Cerritos Avenue	Between Western Avenue and Beach Bouleva	20,830	50	66.6	69.5	**70.1**	51	109	236
25	Cerritos Avenue	Between Beach Boulevard and Dale Avenue	11,820	50	64.1	67.0	**67.6**	35	75	162
26	Cerritos Avenue	Between Dale Avenue and Magnolia Avenue	9,640	50	63.2	66.1	**66.7**	30	65	140
27	Stanton Avenue	Between La Palma Avenue and Crescent Aver	20,650	50	66.5	69.4	**70.1**	50	109	234

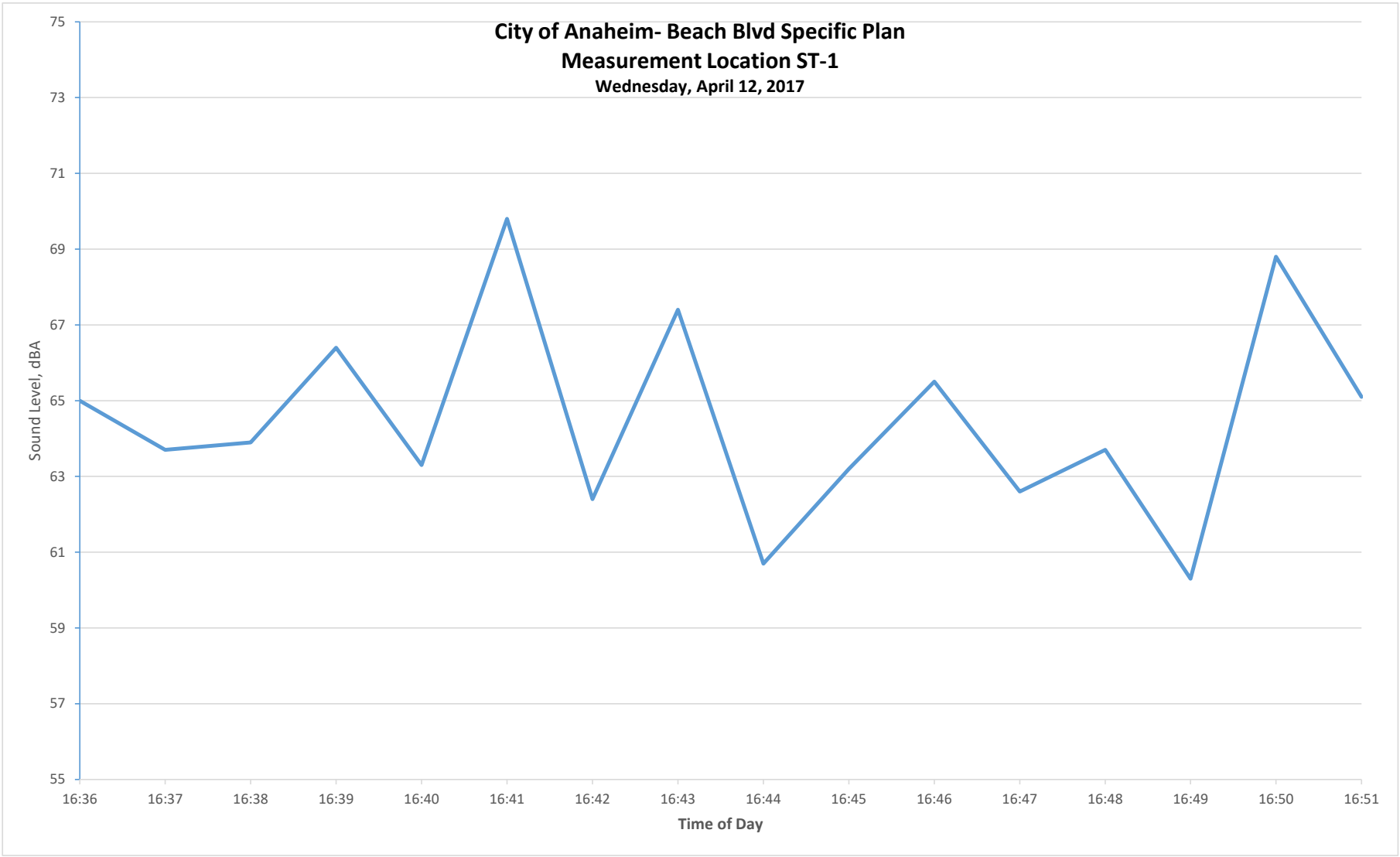
Beach Boulevard Specific Plan (COA-65)

Future (2035) With Project Conditions Traffic Noise Result Tables

#	ROADWAY	SEGMENT	DAILY TRAFFIC VOLUMES	Distance to Reciever	Noise Level (dBA)			DISTANCE TO NOISE CONTOUR (FT.)		
					Leq	Ldn	CNEL	dBA CNEL	dBA CNEL	60 dBA CNEL
1	Beach Blvd	North of Orangethorpe Avenue	42,220	50	70.0	72.8	**73.5**	85	184	396
2	Beach Blvd	Between SR-91 and La Palma Avenue	65,440	50	71.9	74.8	**75.4**	114	246	530
3	Beach Blvd	Between La Palma Avenue and Crescent Aven	52,510	50	72.2	75.1	**75.7**	120	258	557
4	Beach Blvd	Between Crescent Ave & Lincoln Ave	77,500	50	73.9	76.8	**77.4**	155	335	722
5	Beach Blvd	Between Lincoln Ave & Orange Ave	66,600	50	73.2	76.1	**76.7**	141	303	652
6	Beach Blvd	Between Orange Ave & Ball Rd	63,600	50	73.0	75.9	**76.5**	136	294	632
7	Beach Blvd	Between Ball Rd & Cerritos Ave	66,400	50	73.2	76.1	**76.7**	140	302	651
8	Beach Blvd	Between Cerritos Ave and Katella	66,500	50	73.2	76.1	**76.7**	140	302	652
9	Beach Blvd	South of Katella Avenue	67,430	50	73.3	76.2	**76.8**	142	305	658
10	La Palma Avenue	Between Knott Avenue and Western Avenue	34,310	50	68.8	71.7	**72.3**	72	155	333
11	La Palma Avenue	Between Western Avenue and Beach Bouleva	36,020	50	69.0	71.9	**72.6**	74	160	344
12	La Palma Avenue	Between Beach Boulevard and Stanton Avenu	22,170	50	66.9	69.8	**70.5**	54	115	249
13	La Palma Avenue	East of Stanton Avenue	27,970	50	67.9	70.8	**71.5**	63	135	290
14	Lincoln Ave	Between Valley View Street and Knott Avenue	35,730	50	69.0	71.9	**72.5**	73	158	340
15	Lincoln Ave	Between Western Avenue and Beach Bouleva	33,920	50	68.8	71.6	**72.3**	71	153	329
16	Lincoln Ave	Between Beach Boulevard and Dale Avenue	21,970	50	66.9	69.8	**70.4**	53	114	246
17	Lincoln Ave	Between Dale Avenue and Magnolia Avenue	19,440	50	66.3	69.2	**69.8**	49	105	227
18	Broadway	Between Dale Avenue and Magnolia Avenue	5,770	50	61.0	63.9	**64.5**	22	46	100
19	Braodway	Between Magnolia Avenue and Gilbert Street	6,310	50	61.4	64.3	**64.9**	23	49	106
20	Orange Avenue	Between Western Avenue and Beach Bouleva	16,970	50	65.7	68.6	**69.2**	44	95	206
21	Orange Avenue	Between Beach Boulevard and Dale Avenue	10,200	50	63.5	66.4	**67.0**	32	68	146
22	Ball Road	Between Western Avenue and Beach Bouleva	30,300	50	68.2	71.1	**71.7**	65	140	303
23	Ball Road	Between Beach Boulevard and Dale Avenue	21,700	50	66.8	69.7	**70.3**	52	112	242
24	Cerritos Avenue	Between Western Avenue and Beach Bouleva	20,260	50	66.5	69.4	**70.0**	50	107	231
25	Cerritos Avenue	Between Beach Boulevard and Dale Avenue	12,280	50	64.3	67.2	**67.8**	36	77	166
26	Cerritos Avenue	Between Dale Avenue and Magnolia Avenue	9,640	50	63.2	66.1	**66.7**	30	65	140
27	Stanton Avenue	Between La Palma Avenue and Crescent Aven	21,000	50	66.6	69.5	**70.1**	51	110	237

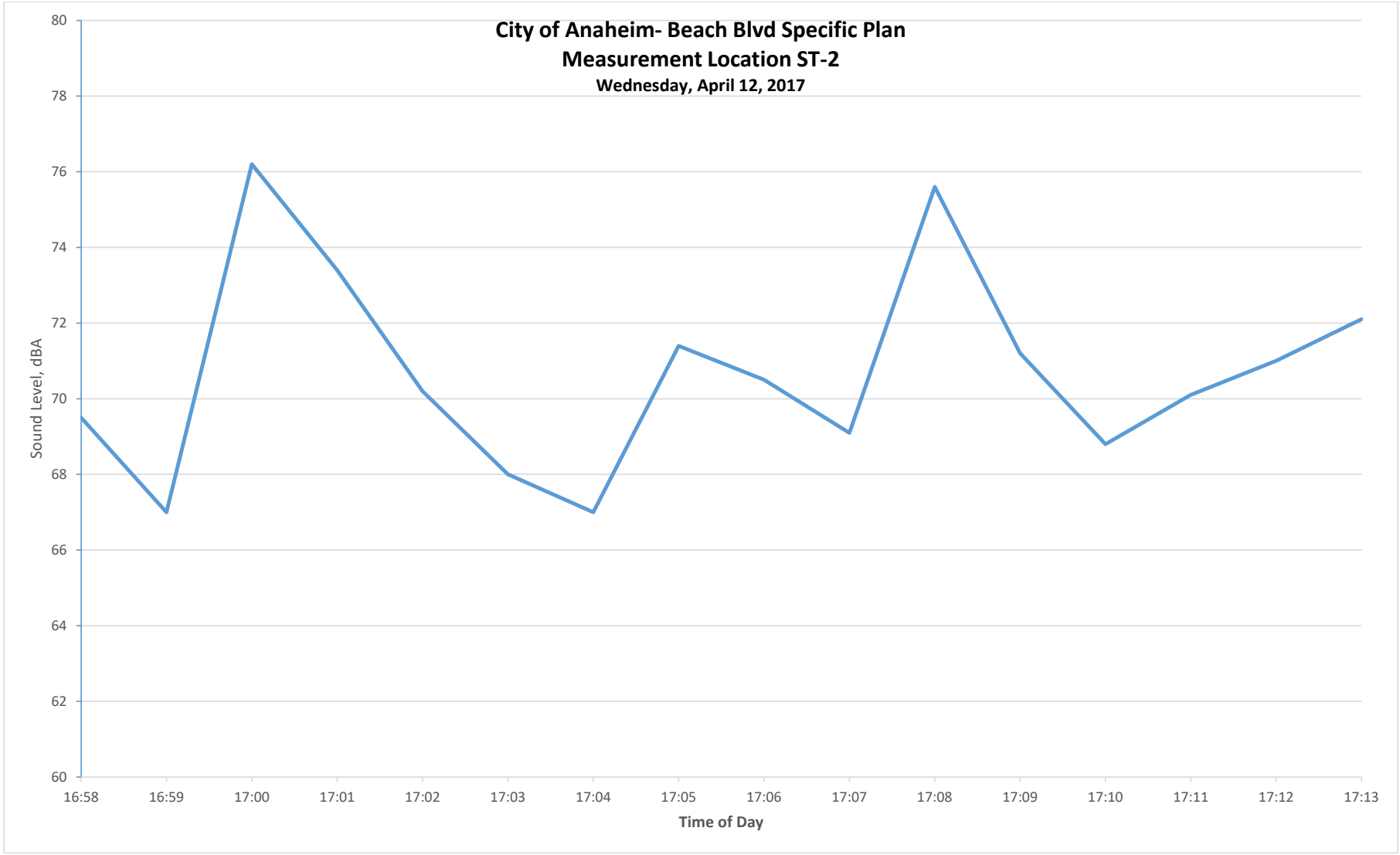
ST-1 Intervals

Date	Time	Duration	Leq	SEL	Lmax	Lmin	L(2)	L(8)	L(10)	L(25)	L(50)	L(90)
12-Apr-17	16:36:25	900	65.3	94.8	82.9	53.0	72.6	68.2	67.7	65.6	62.4	57.2



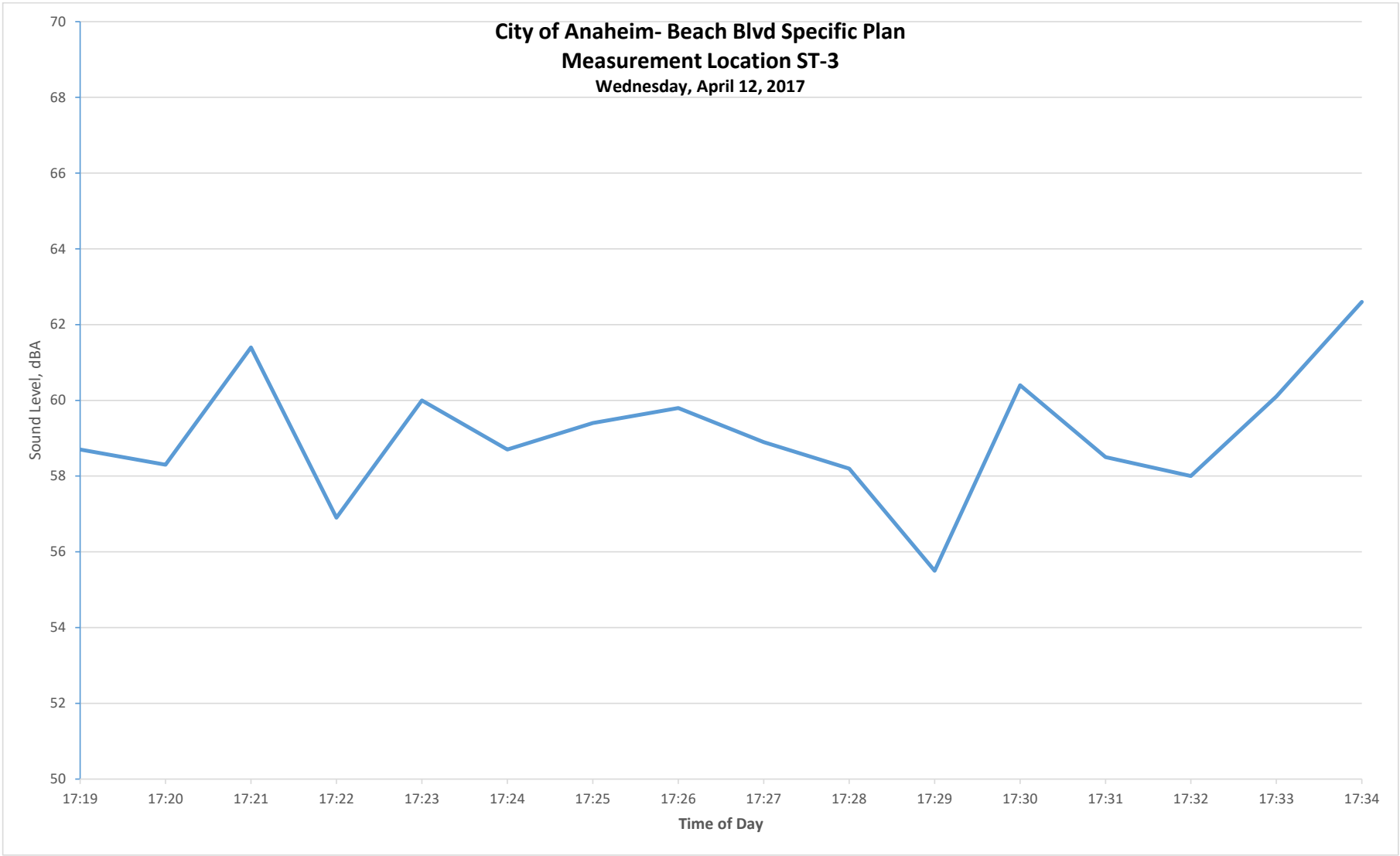
ST-2 Intervals

Date	Time	Duration	Leq	SEL	Lmax	Lmin	L(2)	L(8)	L(10)	L(25)	L(50)	L(90)
12-Apr-17	16:58:32	900	71.5	101.0	87.5	57.7	79.7	75.0	74.0	70.7	68.0	62.8



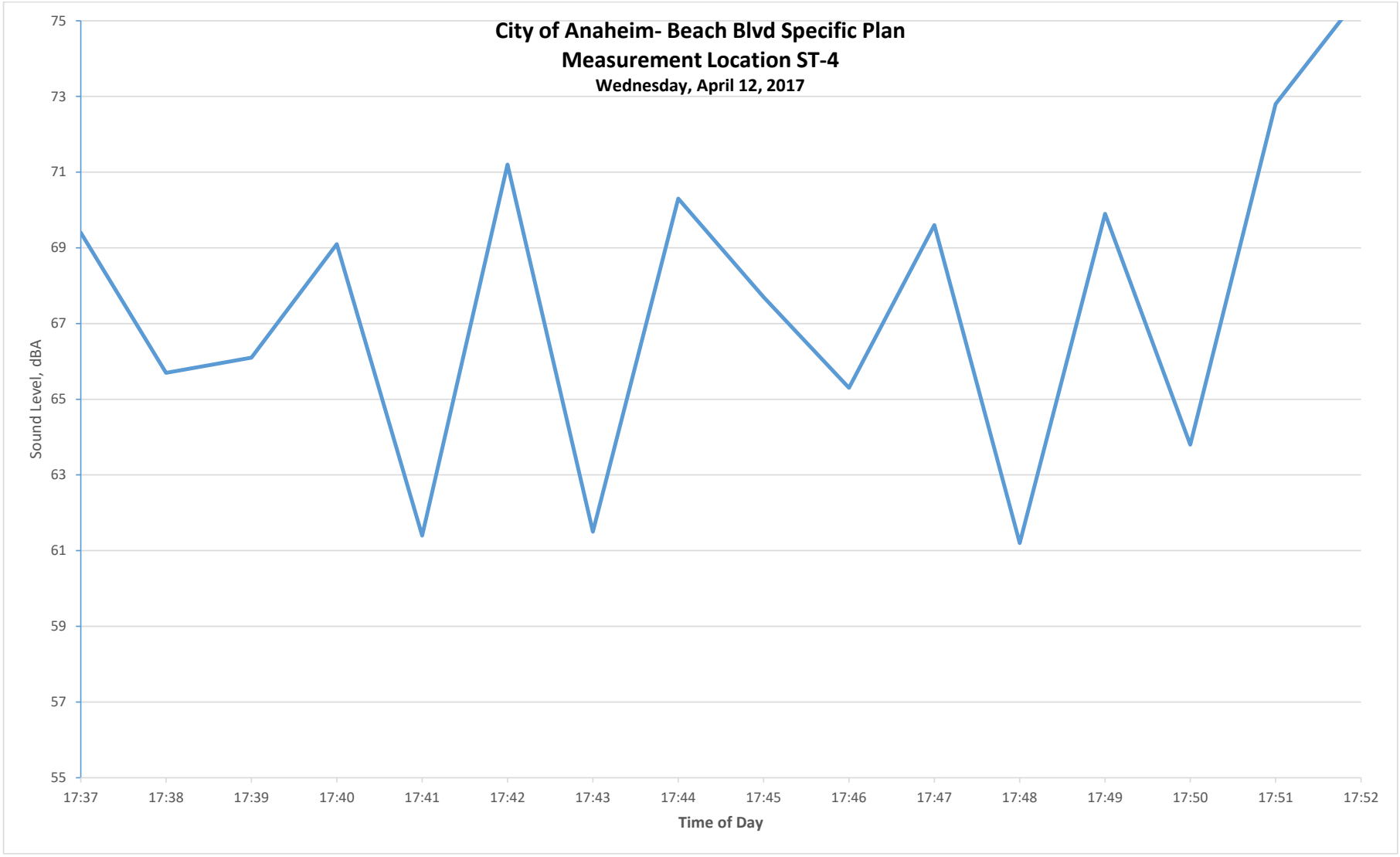
ST-3 Intervals

Date	Time	Duration	Leq	SEL	Lmax	Lmin	L(2)	L(8)	L(10)	L(25)	L(50)	L(90)
12-Apr-17	17:19:36	900	59.1	88.6	71.5	48.1	65.3	62.1	61.7	59.6	57.6	52.9



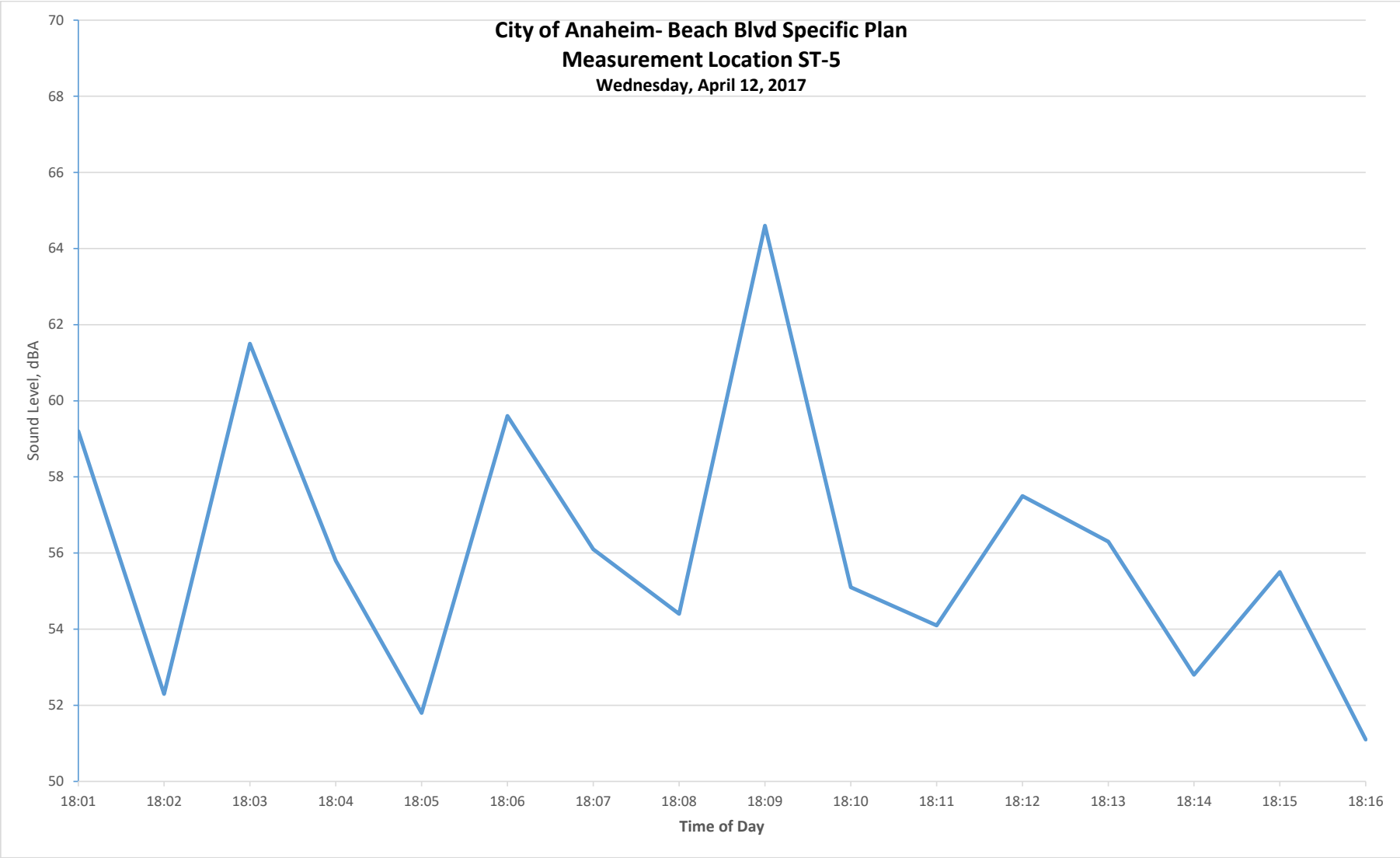
ST-4 Intervals

Date	Time	Duration	Leq	SEL	Lmax	Lmin	L(2)	L(8)	L(10)	L(25)	L(50)	L(90)
12-Apr-17	17:37:57	900	68.3	97.9	82.7	54.7	75.6	72.3	71.7	69.6	64.0	58.7



ST-5 Intervals

Date	Time	Duration	Leq	SEL	Lmax	Lmin	L(2)	L(8)	L(10)	L(25)	L(50)	L(90)
12-Apr-17	18:01:08	900	58.0	87.6	78.2	43.1	64.5	60.5	59.7	56.7	53.9	48.2



ST-6 Intervals

Date	Time	Duration	Leq	SEL	Lmax	Lmin	L(2)	L(8)	L(10)	L(25)	L(50)	L(90)
12-Apr-17	18:21:50	900	71.3	100.8	85.4	59.1	78.5	74.5	74.0	72.0	69.3	62.6