

Appendix 5
Noise Technical Memorandum



Memorandum

Date:	September 7, 2016
Prepared For:	Tania Sheyner and Devyani Jain, San Francisco Planning Department
From:	Elizabeth Scott, Noise Specialist Erin Efner, Project Manager
Subject:	Seawall Lot 337 and Pier 48 Mixed-Use Project EIR Noise Survey Methods and Results

Introduction

This memorandum discusses the existing noise environment in the vicinity of the proposed Seawall Lot 337 and Pier 48 Mixed-Use Project (project), detailing the procedures utilized to conduct noise measurements in the project area and presenting the results of these measurements. Refer to Figure 1 for the Project location, and Figure 2 for the Project site plan.

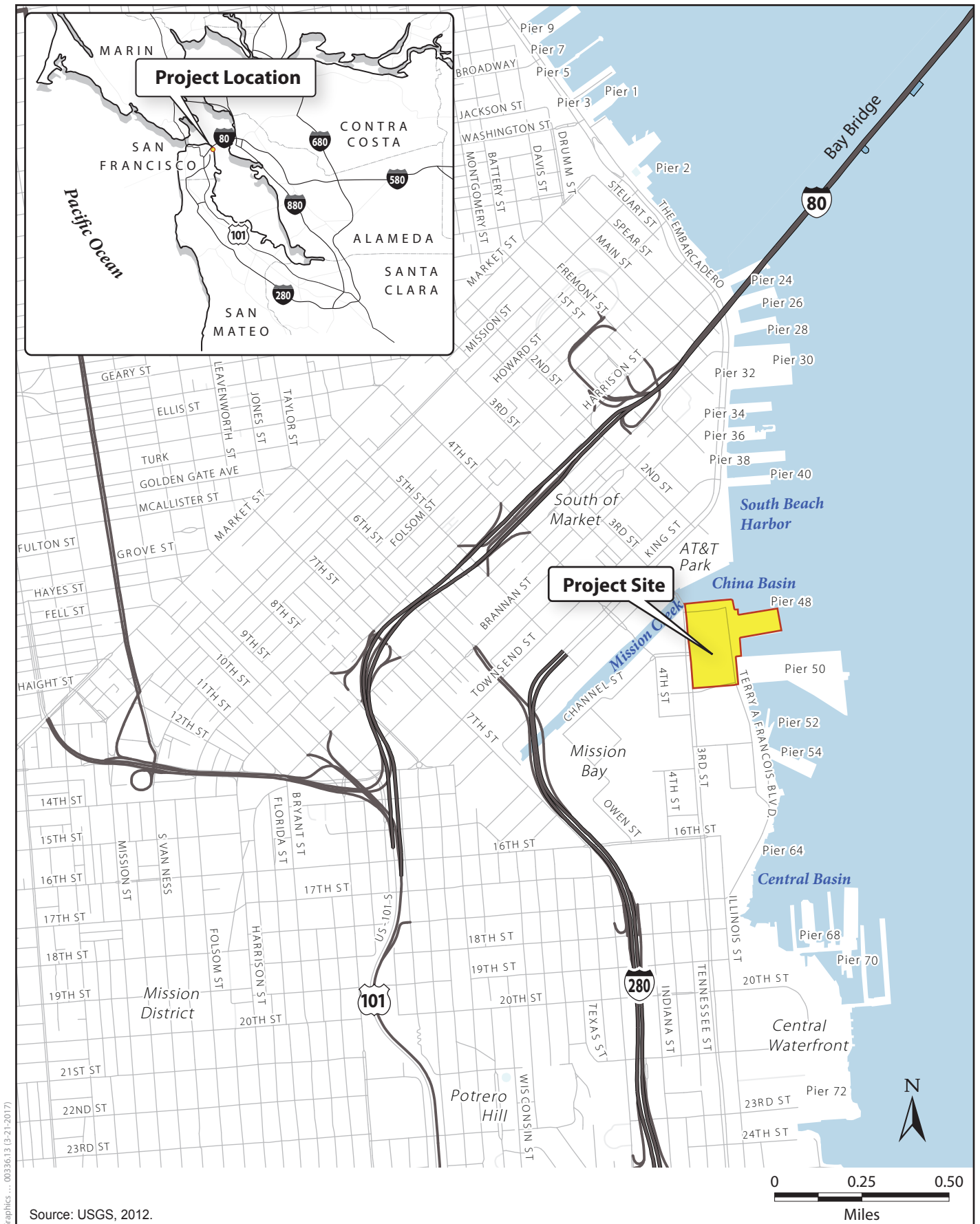
Existing Noise Levels

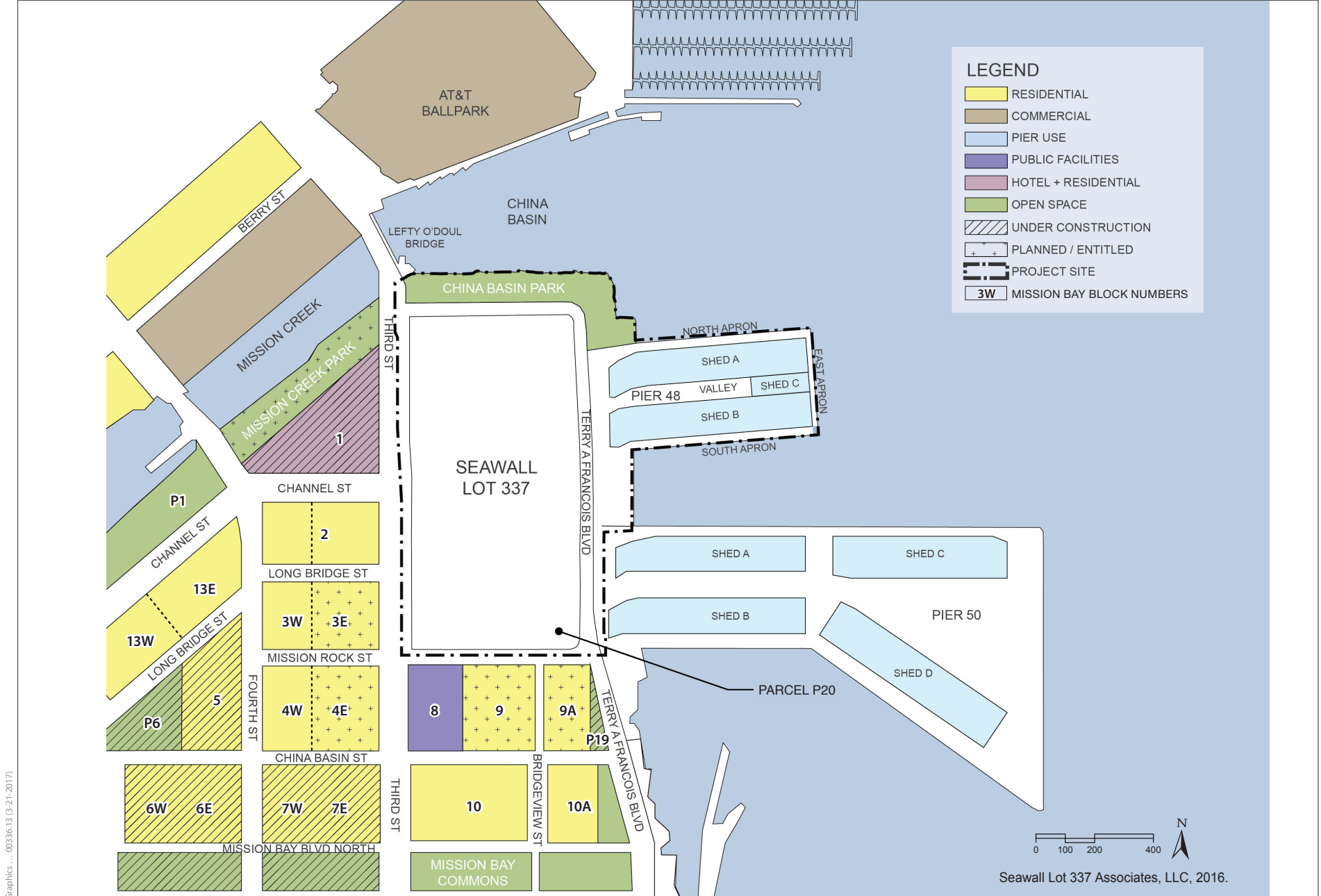
The existing ambient noise environment in the Project vicinity is characterized by vehicular traffic on Third Street but is also influenced by Muni buses and light rail trains, construction activities on adjacent parcels, and events at AT&T Park. Muni vehicles on the KT: K-Ingleside/T-Third Street line pass by the Project Site on Third Street approximately 266 times per weekday,¹ which results in friction noise (i.e., noise from wheels on rails) and noise from warning horns.

At the Project Site, construction noise is experienced due to heavy-duty vehicles currently operating at surrounding parcels (such as the parcel to the west of the project site, west of 3rd Street and north of Channel Street). Such noise is ongoing due to the development in the Mission Bay area. Noise at AT&T Park is generated by large cheering crowds and loudspeaker usage when baseball games or other events are occurring. Noise levels from all of these sources were captured in the 24-hour measurements conducted for the Project, the results of which are presented below, under the Noise Measurement Survey Methodology section.

The San Francisco Department of Public Health (DPH) has developed a transportation noise map of the city, based on modeled baseline traffic volumes derived from the San Francisco County Transportation Authority Travel Demand Model and the Federal Highway Administration (FHWA)

¹ Transit511.org. 2015. Schedules and *Route Maps – KT Line*. Available: <<http://transit.511.org/schedules/index.aspx#m1=S&m2=rail&cid=SF>>. Accessed: November 6, 2015.





Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
Case No. 2013.0208E

Figure 2
Project Site and Surrounding Land Uses

Traffic Noise Model.² The DPH map indicates the modeled L_{dn} noise on each street in the city. As shown on the map, the Project Site experiences L_{dn} noise from transportation sources in the 55 to 59 range in areas that are farthest from Third Street; L_{dn} noise is in the 70 to 74 range near Third Street.³

Noise Sensitive Land Uses

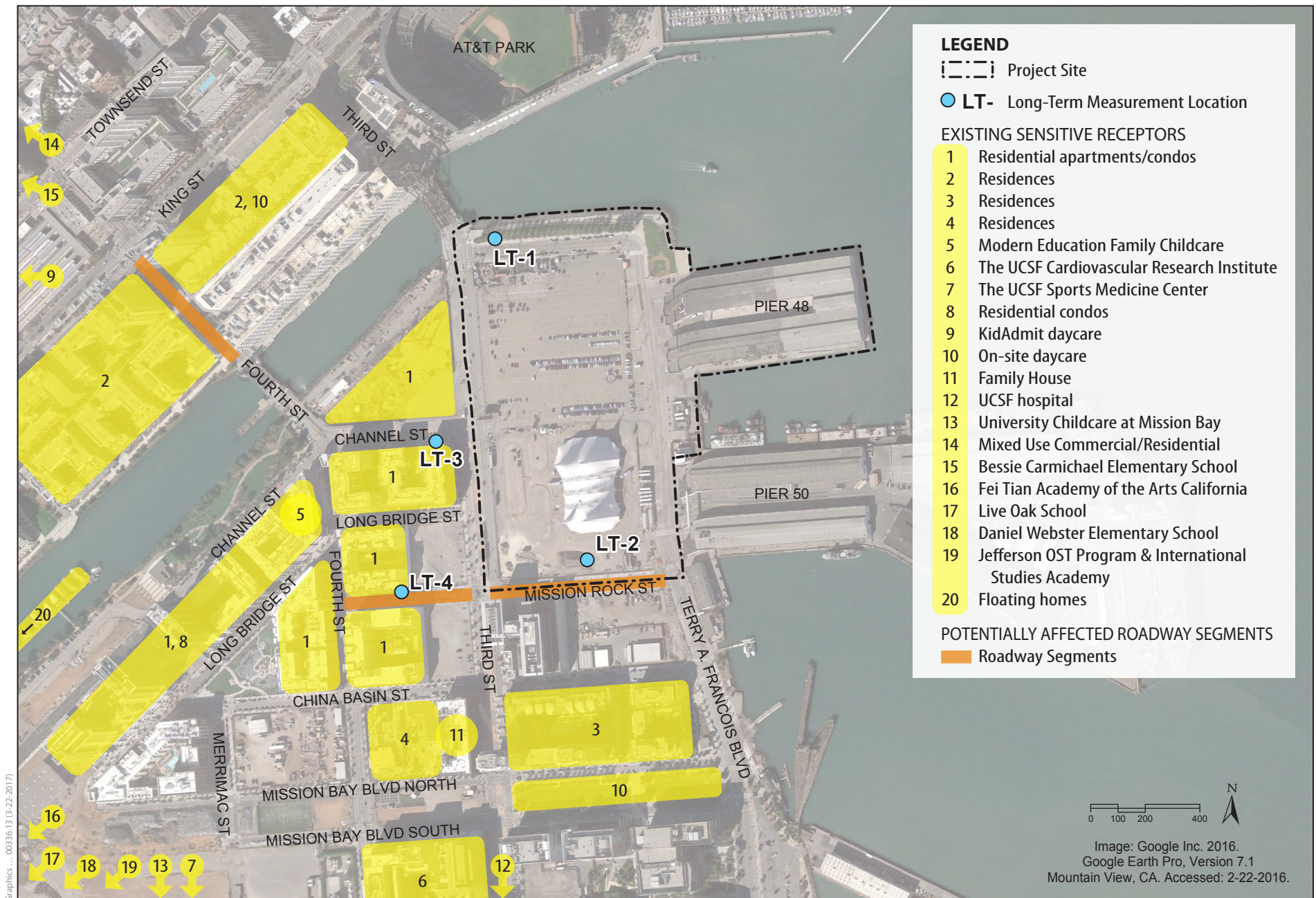
Noise-sensitive land uses are generally defined as locations where people reside or areas where unwanted sound could adversely affect the use of the land. Noise-sensitive land uses typically include single- and multi-family residential areas, health care facilities, lodging facilities, and schools. Existing noise-sensitive land uses in the Project vicinity are shown in Table 1 and illustrated in Figure 3.

Table 1. Existing Noise-Sensitive Land Uses in the Project Vicinity

Land Use	Distance from Project Site	Location
Existing Sensitive Receptors		
1. Residential uses	100 to 250 feet to the west	Mission Bay Block Nos. 1, 2, 3W, 4W, 5, 11, 12E/W
2. Residential uses	650 feet to the west	Mission Bay Block Nos. N3A-1, N3A-2, N3A-3, N4A-1, N4A-2, N4A-3
3. Residential uses	400 feet to the south	Mission Bay Block Nos. 10, 10A.
4. Residential uses	500 feet to the southwest	Mission Bay Block No. 7W
5. Modern Family Education Childcare	600 feet to the west	Mission Bay Block No. 13E
6. University of California, San Francisco (UCSF) Cardiovascular Research Institute	900 feet to the south	Mission Bay Block Nos. 17AB, 17C
7. Residences and onsite day care	400 feet to the northwest	Mission Bay Block No. N2-2
8. Family house	450 feet to the southwest	Mission Bay Block No. 7E
9. Mercy housing/residential condos	600 feet and 880 feet west	Mission Bay Block Nos. 13E/W

² San Francisco Department of Public Health. No date. *San Francisco Response to Noise Problems*. Available: <<https://www.sfdph.org/dph/EH/Noise/noiseresponse.asp>>. Accessed: March 9, 2016.

³ San Francisco Department of Public Health. 2008. *Transportation Noise Map 2008*. Available: <<https://www.sfdph.org/dph/files/EHSdocs/ehsNoise/TransitNoiseMap.pdf>>. Accessed: March 9, 2016.



Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
 Case No. 2013.0208E

Figure 3
Noise Measurement Locations

In addition to the existing noise-sensitive land uses listed in Table 1, future development in the Mission Bay area in both the near- and long-term will result in new noise-sensitive land uses being located in the Project vicinity. Residential development on lots west and southwest of the Project Site could result in residences being located adjacent to the site—at a closest distance of approximately 100 feet from the Project Site.

Noise Measurement Survey Methodology

To quantify existing ambient noise levels in the Project area, long-term, multi-day ambient noise measurements were conducted between August 27 and September 1, 2015, at four locations on and around the Project Site. Meters were secured to poles or trees at each location at approximately 10 feet above ground level. Measurement locations were selected to capture 24-hour noise levels in areas that are sensitive to noise throughout the day, such as residences.

Long-term monitoring was conducted using a Piccolo Integrating SLM. This is a Type 2 instrument, as defined in ANSI specification S1.4-1984 and International Electrotechnical Commission (IEC) publications 804 and 651. The long-term measurement locations are identified in Figure 3. Photographs of each installed long-term meter are included in Appendix A.

Because of ongoing construction in the immediate vicinity of the Project Site, the weekday noise levels shown in the table below are most likely elevated relative to normal ambient noise levels when construction is not occurring. Pile driving at the parcel immediately to the west of the project site (100 feet away, west of 3rd Street and north of Channel Street [the proposed Block 1 and SOMA Hotel]) was occurring during the weekday noise measurements, resulting in high levels of noise. Because pile driving would be occurring for several months, it was not possible to conduct the noise survey during daytime hours without the inclusion of the noise from pile driving. As a result, L_{dn} levels measured during the week most likely represent a worst-case scenario with respect to existing noise at the Project Site because pile driving and other construction activities will not continue indefinitely. Traffic noise on roadways surrounding the Project Site, primarily Third Street, was also a main contributor to the ambient noise environment. In addition, noise from the Muni KT line was present throughout the Project Site during the noise survey.

Noise Measurement Survey Results

To assess average 24-hour noise levels (with the inclusion of noise from baseball games), long-term, multi-day measurements were conducted to be consistent with land use compatibility standards, which are specified in terms of L_{dn} . These long-term measurements help to characterize the overall noise environment in the project area from noise sources such as baseball games at AT&T Park, traffic, public transportation and pedestrians.

Note that during the measurement period (i.e., August 27 to September 1, 2015), baseball games occurred on the following dates at the following times:

- Friday, August 28, 2015, at 7:15 p.m.
- Saturday, August 29, 2015, at 1:05 p.m.
- Sunday, August 30, 2015, at 1:05 p.m.

Table 2 summarizes the results of the noise measurement survey, and the complete dataset of measured noise levels are included in Appendix A.

Table 2. Noise Level Measurements at Selected Locations on and around the Project Site

Site	Site Description	Primary Noise Sources	Measured Noise Levels by Date											
			Fri. 8/28 ^a			Sat. 8/29 ^b			Sun. 8/30 ^c			Mon. 8/31 ^d		
			24-hour (L _{dn}) Noise	L _{max} (dBA)	L _{min} (dBA)	24-hour (L _{dn}) Noise	L _{max} (dBA)	L _{min} (dBA)	24-hour (L _{dn}) Noise	L _{max} (dBA)	L _{min} (dBA)	24-hour (L _{dn}) Noise	L _{max} (dBA)	L _{min} (dBA)
LT-1	China Basin Park	<ul style="list-style-type: none"> Pile driving and other construction noise on weekdays Vehicle traffic on Third Street and Terry A. Francois Boulevard Noise during baseball games on Friday, Saturday, and Sunday 	76.0	98.6	77.5	78.5	100.4	69.8	74.4	99.6	70.8	74.3	102.4	73.1
LT-2	South Side of Project Site	<ul style="list-style-type: none"> Pile driving and other construction noise on weekdays Vehicle traffic on Third Street and Mission Rock Street Vehicles and crowd noise in Parking Lot A Fire engine noise from San Francisco Fire Station No. 4 Light rail noise 	65.6	84.1	67.0	63.9	88.9	64.0	64.6	84.3	66.0	66.9	89.7	65.1
LT-3	In front of the Channel Mission Bay Apartments on Channel Street	<ul style="list-style-type: none"> Pile driving and other construction noise on weekdays Vehicle traffic on Third Street and Channel Street Light rail noise 	79.3	105.8	78.5	74.2	103.6	77.1	73.0	99.9	78.7	83.4	105.4	81.9
LT-4	In front of the Strata Apartments on Mission Rock Street	<ul style="list-style-type: none"> Pile driving and other construction noise on weekdays Vehicle traffic on Third Street and Mission Rock Street 	68.6	97.2	71.0	65.7	88.9	70.4	64.0	97.0	69.4	66.9	91.8	72.4

Notes: Noise measurements collected by ICF International. For the complete dataset of measured noise levels, please refer to Appendix 4.F-1.

^a A baseball game occurred on this day at 7:15 p.m., during the 24-hour measurement.

^b A baseball game occurred on this day at 1:05 p.m., during the 24-hour measurement.

^c A baseball game occurred on this day at 1:05 p.m., during the 24-hour measurement.

^d No baseball game occurred during the measurement on this day.

Note that while some concerts occur at AT&T Park, there are only a few (~2-3) per year; as such, these events are not considered to substantively contribute to the background noise levels in the project vicinity (as compared to the frequently occurring baseball games).

As shown in Table 2, average (L_{dn}) noise levels in the vicinity of the Project range from approximately 64 dBA Ldn to 84 dBA Ldn, depending on location and on what nearby activities (construction, baseball games, etc.) occurred during the measurement.

Figures 4 through 7 show the 24-hour data from each site graphically, and depict the variance in noise levels that occur through the day at each measurement location.

Figure 4. LT-1 24-hour Noise Data

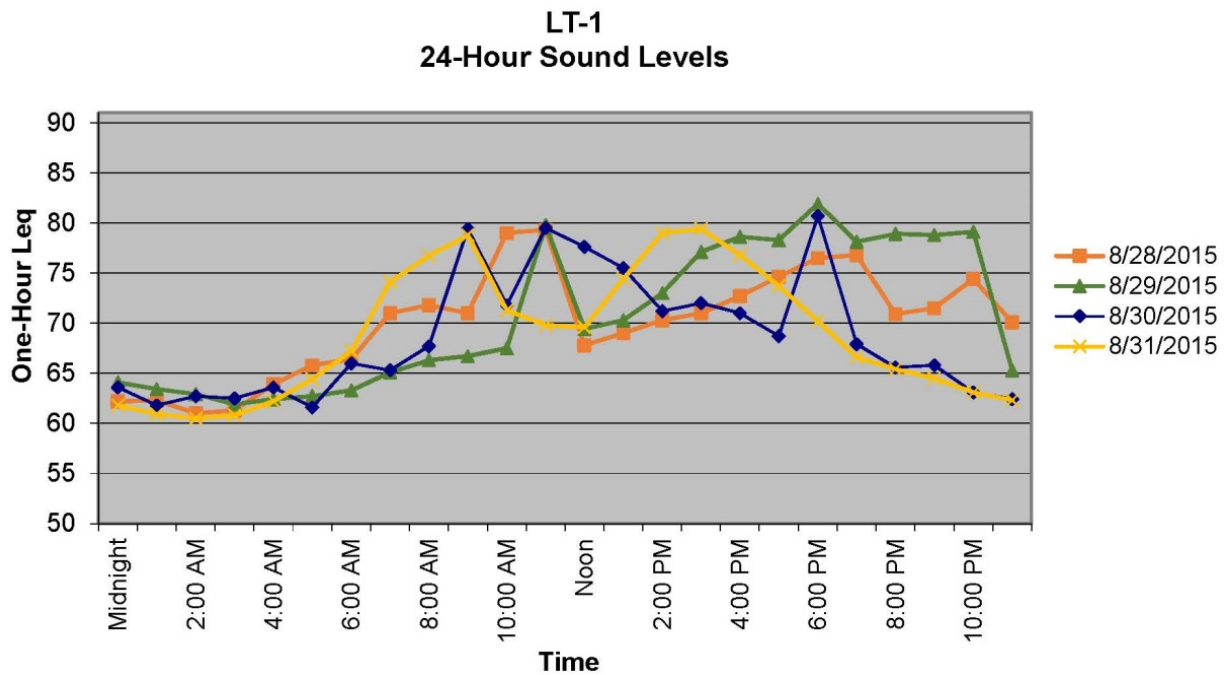


Figure 5. LT-2 24-hour Noise Data

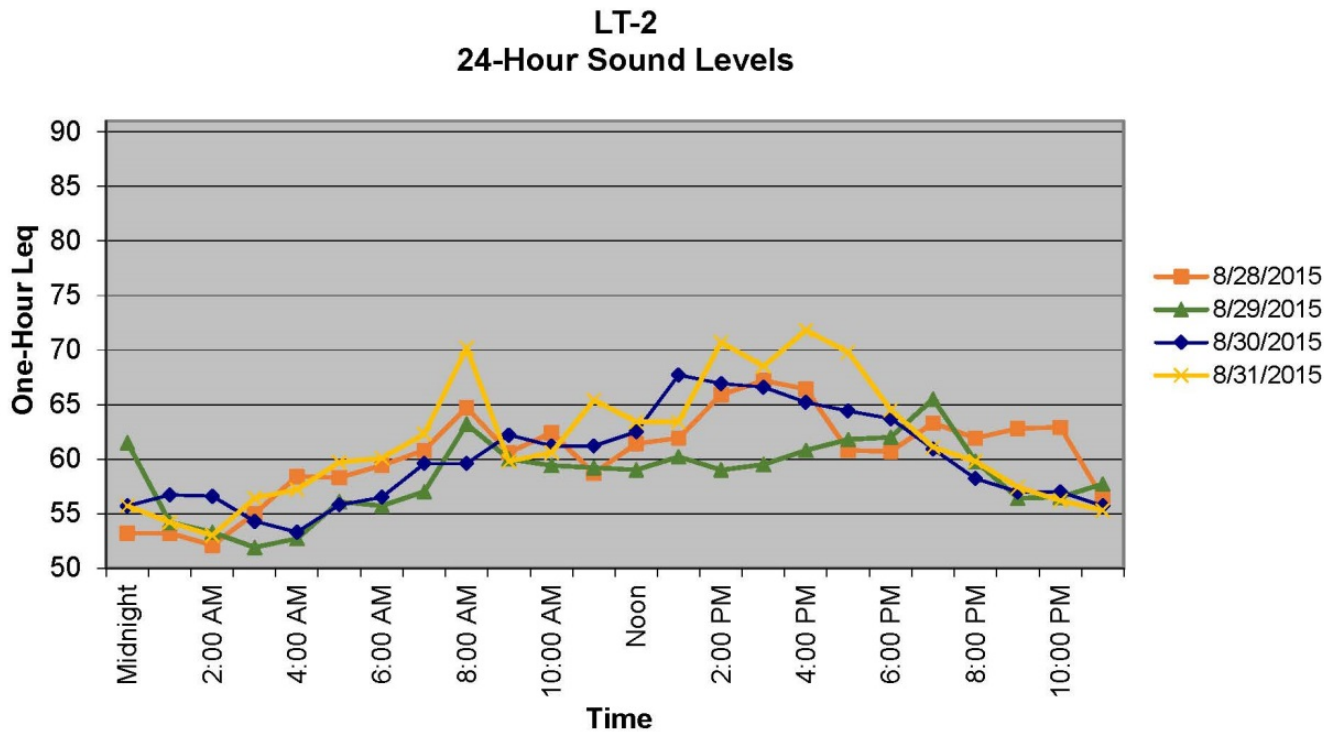


Figure 6. LT-3 24-hour Noise Data

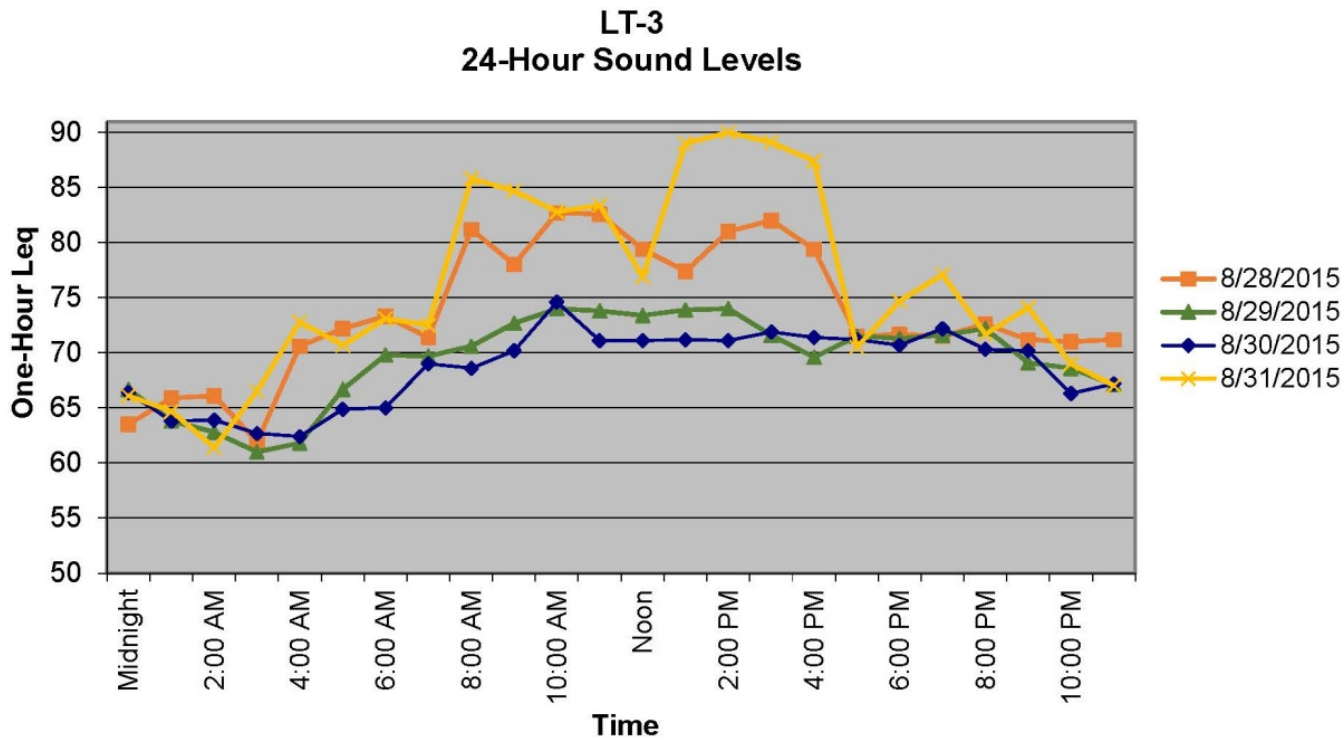
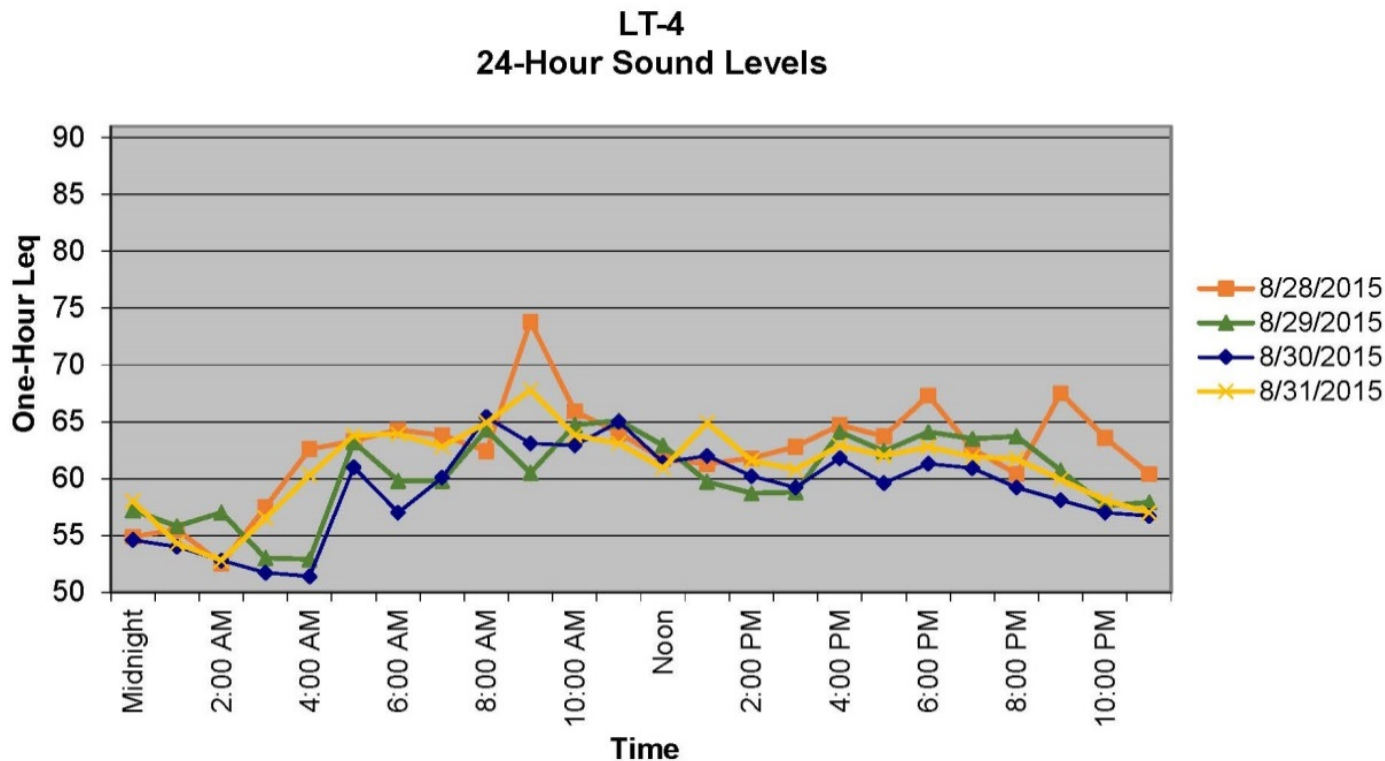


Figure 7. LT-4 24-hour Noise Data



As seen in Figures 4 through 7, measurements LT-1 and LT-3, located closer to both AT&T Park and to the current construction and pile driving activities occurring north of Channel Street and west of 3rd Street, had higher average noise levels than LT-2 and LT-4 which are located further away from this active construction area and further away from AT&T Park.

An analysis of how the project would affect the noise environment is discussed in Section 4.F, *Noise*, of the Draft EIR.