Ararat Home Residential Care and Nursing Facility Project

Noise and Vibration Study

prepared for

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1 Project Description and Impact Summary

1.1 Introduction

This study analyzes the potential noise and vibration impacts of the proposed Ararat Home project (project) in the City of Los Angeles (City), Los Angeles County, California. The purpose of this study is to analyze the project's noise and vibration impacts related to both temporary construction activity and long-term operation of the project. Table 1 provides a summary of project impacts.

Table 1 Summary of Impacts

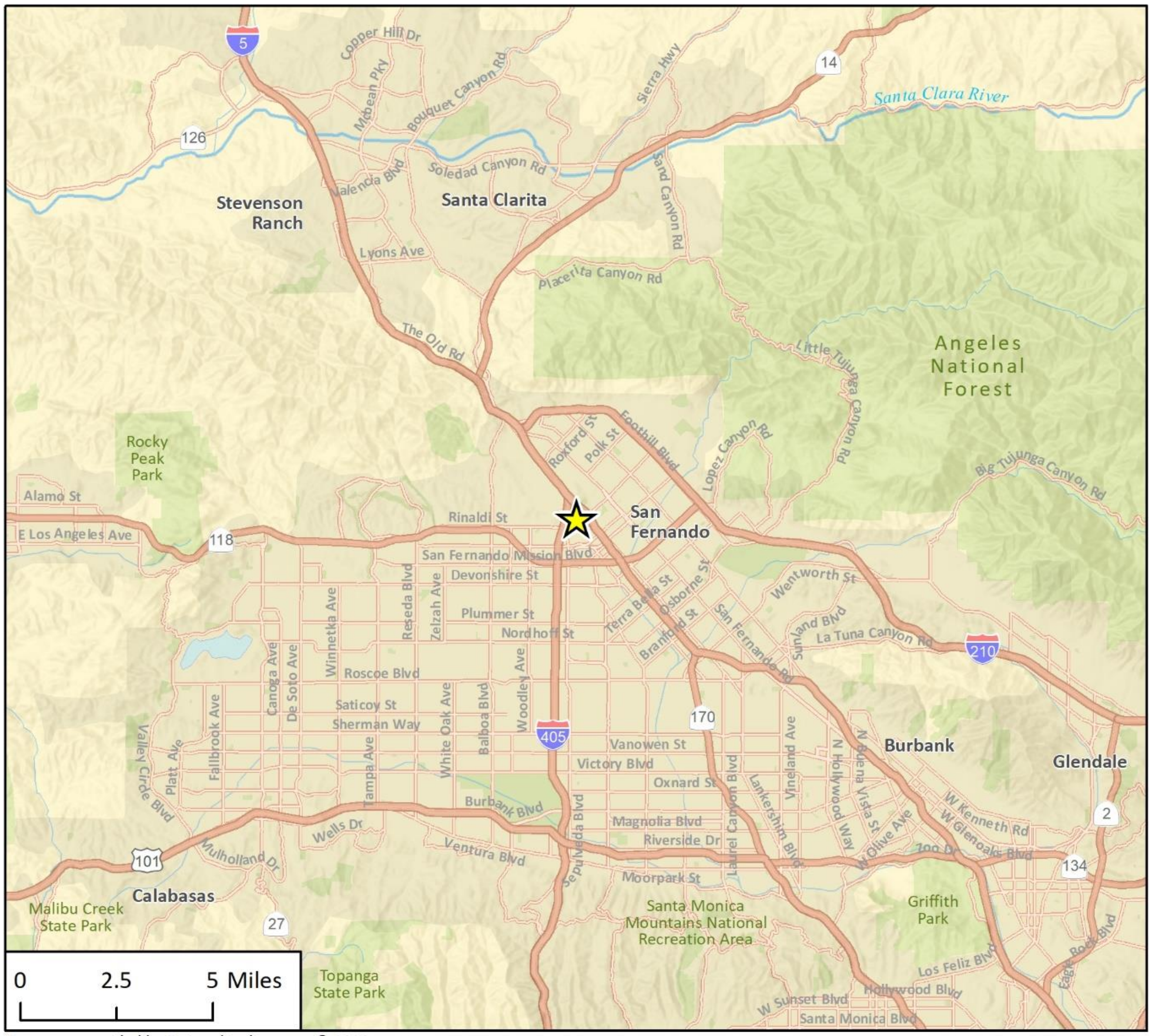
Issue	Impact	Applicable Recommendations
Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	Potentially Significant (Construction) Less than significant impact (Operation)	NOI-1 (Construction Noise Reduction) None
Would the project result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	Less than significant impact (Construction) Less than significant impact (Operation)	None
For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	No Impact	None

1.2 Project Summary

Project Location

The project site is located at 15105 Mission Hills Road in the Mission Hills of the City of Los Angeles (APNs: 2664-022-013) and is approximately 0.19 miles east of Interstate 405 (I-405), and approximately 0.21 miles west of Interstate 5 (I-5). The project site's designated land use is zoned Agricultural/Suburban. Figure 1 shows the regional location of the site, and Figure 2 shows the project site in the existing neighborhood context.

Figure 1 Regional Location



Basemap provided by Esri and its licensors © 2022.

★ Project Location

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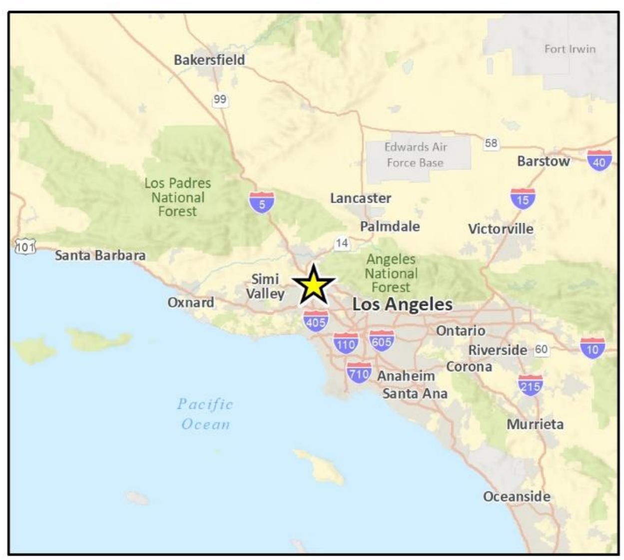
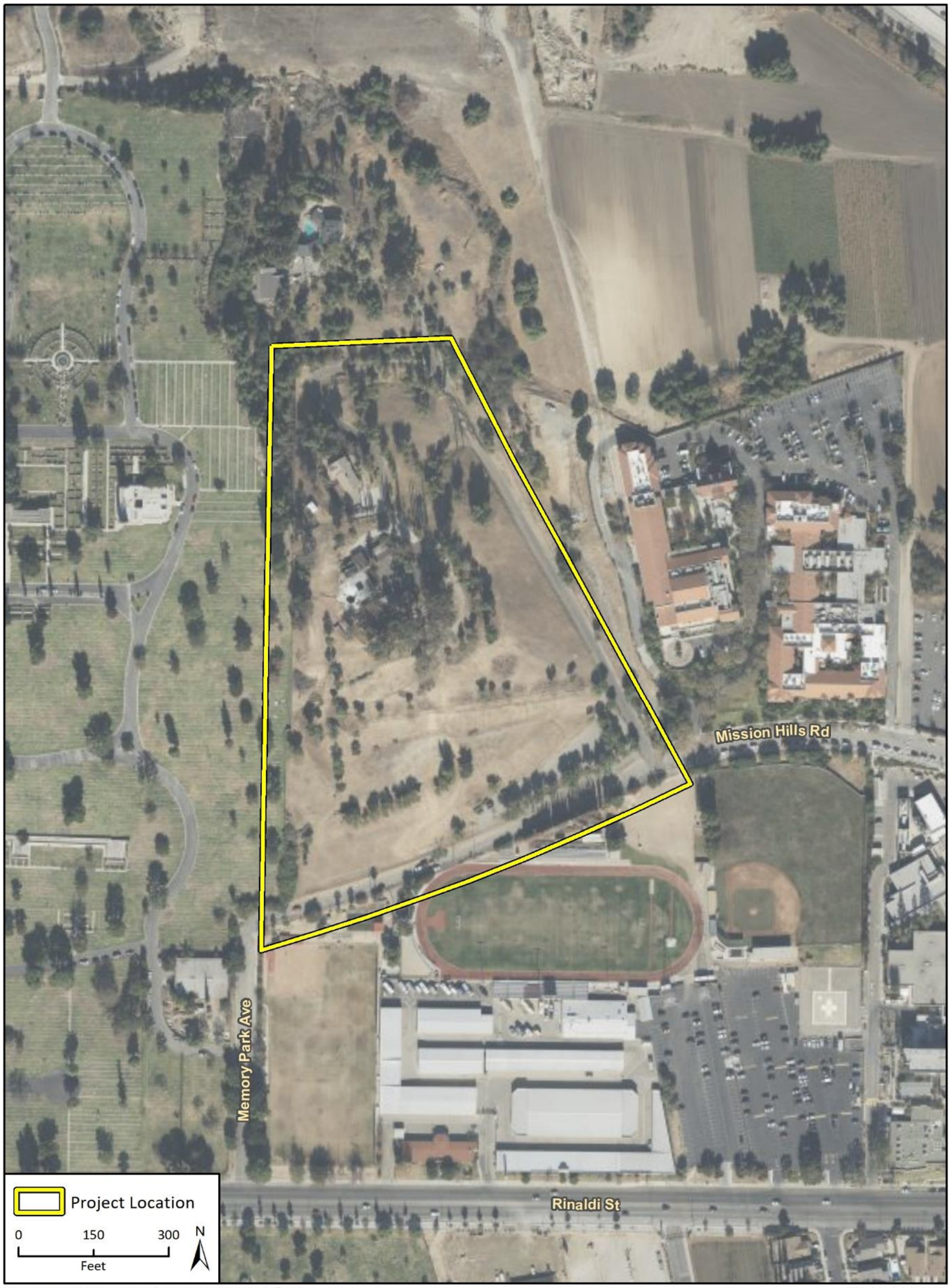


Figure 2 Project Location



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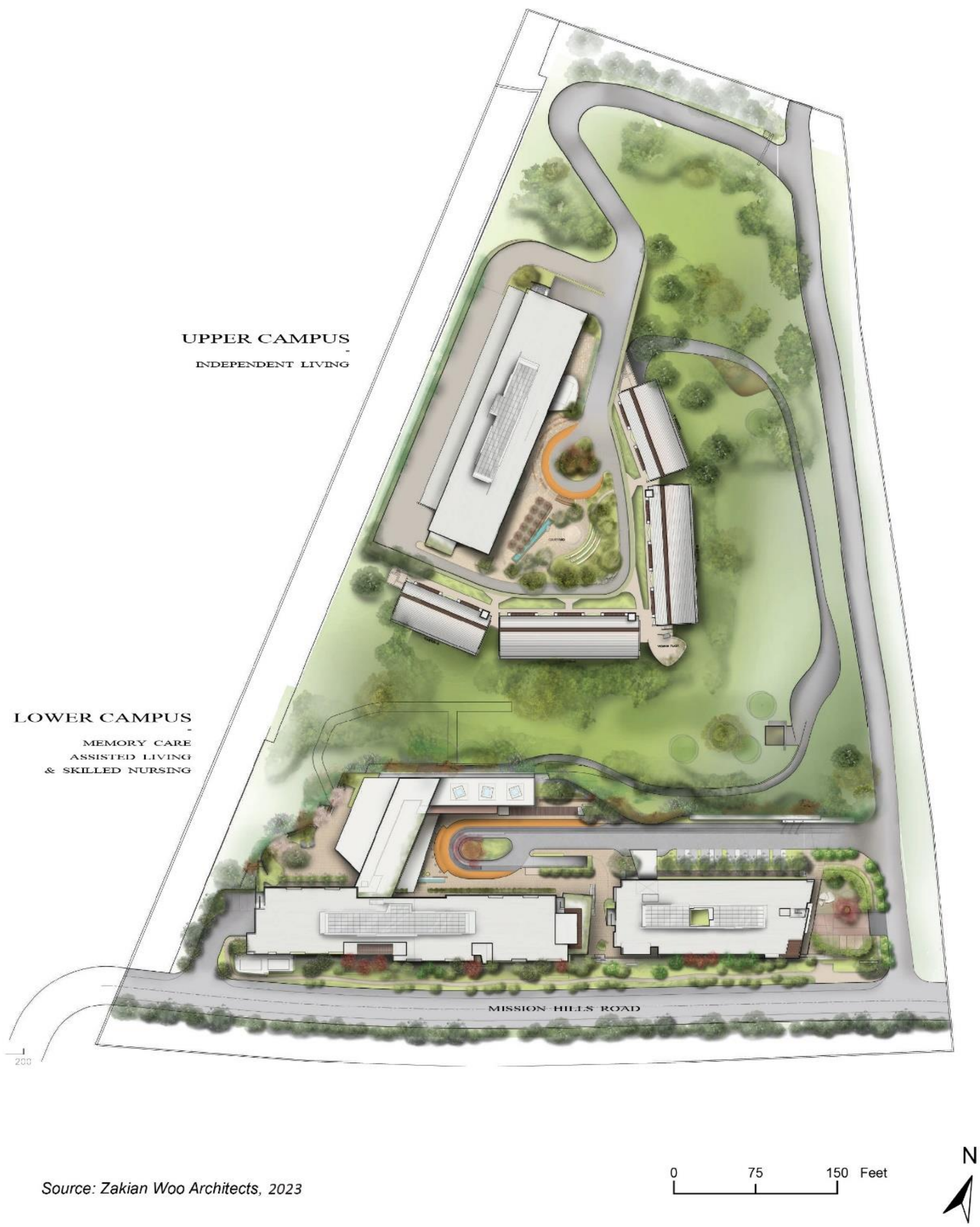
Project Description

The proposed project would be an addition to the pre-existing Ararat Nursing Home located at 15105 Mission Hills Road. The proposed project would consist of a 3-story lower campus with an underground parking garage and a 4-story upper campus with both surface parking and an underground level parking garage. The building footprint of the lower campus would be 51,000 SF for the skilled nursing facility and 96,150 SF for the assisted living (third floor) and memory care (first and second floor) facility. The skilled nursing in-patient building would provide 96 beds in 84 double rooms and 12 semi-private rooms, and the assisted living and memory care facility would provide 234 beds in 117 double rooms (39 rooms per floor). The upper campus would consist of a 61-unit apartment building and 40 townhouse units in four buildings. The building footprint of the upper campus would be 90,460 SF. In total, the proposed project would result in 101 new residential units (townhomes and apartments) and 330 new assisted living, memory care, and in-patient beds. The large unoccupied areas of the site would be used as open space and landscaped accordingly.

Figure 3 Site Plan



Source: Zakian Woo Architects, 2023

2 Background

2.1 Overview of Sound Measurement

Sound is a vibratory disturbance created by a moving or vibrating source, which is capable of being detected by the hearing organs. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired and may therefore be classified as a more specific group of sounds. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment (California Department of Transportation [Caltrans] 2013).

Noise levels are commonly measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels so that they are consistent with the human hearing response, which is most sensitive to frequencies around 4,000 Hertz and less sensitive to frequencies around and below 100 Hertz (Kinsler, et. al. 1999). Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used to measure earthquake magnitudes. A doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; dividing the energy in half would result in a 3 dB decrease (Crocker 2007).

Human perception of noise has no simple correlation with sound energy: the perception of sound is not linear in terms of dBA or in terms of sound energy. Two sources do not "sound twice as loud" as one source. It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA, increase or decrease (i.e., twice the sound energy); that a change of 5 dBA is readily perceptible (8 times the sound energy); and that an increase (or decrease) of 10 dBA sounds twice (half) as loud as what is readily perceptible (Crocker 2007).

Sound changes occur in both level and frequency spectrum as it travels from the source to the receiver. The most obvious change is the decrease in level as the distance from the source increases. The manner by which noise reduces with distance depends on factors such as the type of sources (e.g., point or line, the path the sound will travel, site conditions, and obstructions). Noise levels from a point source typically attenuate, or drop off, at a rate of 6 dBA per doubling of distance (e.g., construction, industrial machinery, ventilation units). Noise from a line source (e.g., roadway, pipeline, railroad) typically attenuates at about 3 dBA per doubling of distance (Caltrans 2013). The propagation of noise is also affected by the intervening ground, known as ground absorption. A hard site, such as a parking lot or smooth body of water, receives no additional ground attenuation and the changes in noise levels with distance (drop-off rate) result from simply the geometric spreading of the source. An additional ground attenuation value of 1.5 dBA per doubling of distance applies to a soft site (e.g., soft dirt, grass, or scattered bushes and trees) (Caltrans 2013). Noise levels may also be reduced by intervening structures; the amount of attenuation provided by this "shielding" depends on the size of the object and the frequencies of the noise levels. Natural terrain features such as hills and dense woods, and man-made features such as buildings and walls, can significantly alter noise levels. Generally, any large structure blocking the line of sight will provide at least a 5-dBA reduction in source noise levels at the receiver (Federal Highway Administration [FHWA] 2011). Structures can substantially reduce exposure to interior noise as well. The FHWA's guidelines indicate that modern building construction generally provides an exterior-to-interior noise level reduction of 20 to 35 dBA, with closed windows.

The impact of noise is not a function of loudness alone. The time of day when noise occurs, and the duration of the noise are also important factors of project noise impact. Most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors have been developed by academics and industry professionals. One of the most frequently used noise metrics is the equivalent noise level (L_{eq}); it considers both duration and sound power level. L_{eq} is defined as the single steady A-weighted level equivalent to the same amount of energy as that contained in the actual fluctuating levels over time.

Noise that occurs at night tends to be more disturbing than that occurring during the day. Community noise is usually measured using Day-Night Average Level (L_{dn}), which is the 24-hour average noise level with a +10 dBA penalty for noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. There is also the Community Noise Equivalent Level (CNEL), which is the 24-hour average noise level with a +5 dBA penalty for noise occurring from 7:00 p.m. to 10:00 p.m. and a +10 dBA penalty for noise occurring from 10:00 p.m. to 7:00 a.m. (Caltrans 2013). Noise levels described by L_{dn} and CNEL usually differ by about 1 dBA. The relationship between the peak-hour L_{eq} value and the L_{dn}/CNEL depends on the distribution of traffic during the day, evening, and night).

2.2 Vibration

Groundborne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent structures. The number of cycles per second of oscillation makes up the vibration frequency, described in terms of Hertz (Hz). The frequency of a vibrating object describes how rapidly it oscillates. The normal frequency range of most groundborne vibration that can be felt by the human body starts from a low frequency of less than 1 Hz and goes to a high of about 200 Hz (Crocker 2007).

While people have varying sensitivities to vibrations at different frequencies, in general they are most sensitive to low-frequency vibration. Vibration in buildings, such as from nearby construction activities, may cause windows, items on shelves, and pictures on walls to rattle. Vibration of building components can also take the form of an audible low-frequency rumbling noise, referred to as groundborne noise. Groundborne noise is usually only a problem when the originating vibration spectrum is dominated by frequencies in the upper end of the range (60 to 200 Hz), or when foundations or utilities, such as sewer and water pipes, physically connect the structure and the vibration source (FTA 2018). Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. However, the primary concern from vibration is that it can be intrusive and annoying to building occupants and vibration-sensitive land uses.

Vibration amplitudes are usually expressed in peak particle velocity (PPV) or root mean squared (RMS) vibration velocity. The PPV and RMS velocity are normally described in inches per second (in/sec). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used in monitoring of blasting vibration because it is related to the stresses that are experienced by buildings (Caltrans 2020).

2.3 Sensitive Receivers

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. According to the City of Los Angeles Noise Element, the following land uses are considered noise-sensitive: single-family and multi-unit dwellings, long-term care facilities (including convalescent and retirement facilities), dormitories, motels, hotels, transient lodgings and other residential uses, houses of worship, hospitals, libraries, schools, auditoriums, concert halls, outdoor theaters, nature and wildlife preserves, and parks (City of Los Angeles 1999).

Vibration-sensitive receivers, which are similar to noise-sensitive receivers, include residences and institutional uses, such as schools, churches, and hospitals. Vibration-sensitive receivers also include buildings where vibrations may interfere with vibration-sensitive equipment that is affected by vibration levels that may be well below those associated with human annoyance (e.g., recording studies or medical facilities with sensitive equipment).

As shown in Figure 2, the nearest sensitive receivers include single family residences approximately 100 feet northwest of the project boundary. Other sensitive receivers include the Eden Memorial Park located immediately adjacent west of the project site, the Ararat Home Nursing Facility located approximately 90 feet east of the project boundary along Mission Hills Road, the Bishop Alemany Softball and Soccer Field located approximately 30 feet to the south of project boundary along Mission Hills Road, and the Providence Holy Cross Medical Center approximately 400 feet to the southeast of the project boundary.

2.4 Project Noise Setting

The primary source of noise in the project site vicinity is vehicular traffic from Mission Hills Road located adjacent to the southern boundary of the project site and distant traffic noise from I-5 and I-405. To characterize ambient noise levels in the project vicinity, four 15-minute noise level measurements were conducted on July 10, 2018. Noise Measurement (NM) 1 was approximately 130 feet east from the project site at the existing Ararat Home site. NM2 was adjacent to the project site to the south along Mission Hills Road. NM3 was approximately 570 feet south of the project site along Rinaldi Street. NM4 was approximately 1,100 feet southeast of the site along Indian Hills Road. Table 2 Project Site Vicinity Noise Measurement Results

summarizes the results of the noise measurements and Figure 4 shows the approximate noise measurement locations.

Table 2 Project Site Vicinity Noise Measurement Results

Measurement Location	Measurement Location	Sample Times	Approximate Distance to Primary Noise Source	L_{eq} (dBA)	L^{min} (dBA)	L_{max} (dBA)
1	Ararat Homes, east of project site	7:35 – 7:50 a.m.	Approximately 260 feet to center of existing Ararat site	66	46	82
2	Mission Hills Road, south of project site	8:10 – 8:25 a.m.	Approximately 20 feet to centerline of Mission Hills Road	63	40	85
3	Rinaldi Street, south of project site	8:37 – 8:52 a.m.	Approximately 30 feet to centerline of Rinaldi Street	68	56	84

4	Indian Hills Road, southeast of project site	9:05 – 9:20 a.m.	Approximately 25 feet to centerline of Indian Hills Road	65	40	86

Detailed sound level measurement data are included in Appendix A.

Figure 4 Noise Measurement Locations

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Fig X Noise Measurement Locations

2.5 Regulatory Setting

City of Los Angeles Noise Element

The goals, policies, and actions contained in the City of Los Angeles General Plan Noise Element focus on establishing and applying criteria for acceptable noise levels for different land uses in order to minimize the negative impacts of noise, especially at sensitive receiver locations. In support of these goals and policies, the City's Noise Element contains a land use and noise compatibility matrix (shown in Table 3) that determines the normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable noise levels for various land uses. According to the City's noise compatibility matrix shown in Table 3 Land Use Compatibility Standards (CNEL), ambient noise up to 60 CNEL is normally acceptable and noise up to 70 CNEL is conditionally acceptable for multi-family land uses. In addition, consistent with state noise insulation standards (California Building Code Title 24), the City's Noise Element limits interior noise to a maximum of 45 CNEL in any habitable room (City of Los Angeles 1999).

Table 3 Land Use Compatibility Standards (CNEL)

Land Use	Normally Acceptable[1]	Conditionally Acceptable[2]	Normally Unacceptable[3]	Clearly Unacceptable[4]
Single-Family, Duplex, Mobile Homes	50 – 55	55 – 70	70 – 75	75+
Multi-Family	50 – 60	60 – 70	70 – 75	75+
School, Library, Church, Hospital, Nursing Home	50 – 60	60 – 70	70 – 80	80+
Transient Lodging, Motel, Hotel	50 – 60	60 – 70	70 – 75	75+
Auditorium, Concert Hall, Amphitheater	–	50 – 65	–	65+
Sports Arena, Outdoor Spectator Sports	–	50 – 70	–	70+
Playground, Neighborhood Park	50 – 65	–	65 – 75	75+
Golf Course, Riding Stable, Water Recreation, Cemetery	50 – 70	–	70 – 75	75+
Office Building, Business, Commercial, Professional	50 – 65	65 – 75	75+	–
Agriculture, Industrial, Manufacturing, Utilities	50 – 70	70 – 75	75+	–

[1] Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.
[2] Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning would normally suffice.
[3] Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
[4] Clearly Unacceptable: New construction or development should generally not be undertaken.
Source: City of Los Angeles 1999

City of Los Angeles Municipal Code

The City implements and enforces construction and operational noise regulations through the Los Angeles Municipal Code (LAMC). LAMC Section 111.03 establishes exterior noise standards, as shown in Table 4.

Table 4 City of Los Angeles Exterior Noise Standards

	Presumed Ambient Noise Levels (dB(A))[1]	
Zone	Day	Night
A1, A2, RA, RE, RS, RD, RW1, RW2, R1, R2, R3, R4, and R5	50	40
P, PB, CR, C1, C1.5, C2, C4, C5, and CM	60	55
M1, MR1, and MR2	60	55
M2 and M3	65	65

[1]Daytime levels are to be used from 7:00 a.m. to 10:00 p.m. and nighttime levels from 10:00 p.m. to 7:00 a.m.

LAMC Section 112.05 limits noise from construction equipment located within 500 feet of a residential zone to a maximum of 75 dBA between 7:00 a.m. and 10:00 p.m., as measured at a distance of 50 feet from the source, i.e. construction site, unless compliance is technically infeasible. Technical infeasibility means that noise limitations cannot be met despite the use of mufflers, shields, sound barriers, and/or other noise reduction devices or techniques during the operation of construction equipment. LAMC Section 41.40 also restricts construction activity to the hours below:

- Monday through Friday between 7:00 a.m. and 9:00 p.m.
- Saturdays and National Holidays between 8:00 a.m. and 6:00 p.m. except for individual homeowners engaged in the repair or construction of a single-family residence
- No construction on Sundays except for individual homeowners engaged in the repair or construction of a single-family residence

LAMC Section 112.02 prohibits the operation of air conditioning, refrigeration, heating, pumping, and filtering equipment associated with any residence or other structure from exceeding the ambient noise of any other occupied property by more than 5 dBA.

LAMC Section 114.03 prohibits the loading or unloading of any vehicle, operation of any dollies, carts, forklifts, or other wheeled equipment, which causes any impulsive sound, raucous or unnecessary noise within 200 feet of any residential building between 10:00 p.m. and 7:00 a.m.

3 Methodology

3.1 Construction Noise

Construction noise was estimated using the FHWA Roadway Construction Noise Model (RCNM) (FHWA 2006). RCNM predicts construction noise levels for a variety of construction operations based on empirical data and the application of acoustical propagation formulas. Using RCNM, construction noise levels were estimated at noise sensitive receivers near the project site. RCNM provides reference noise levels for standard construction equipment, with an attenuation rate of 6 dBA per doubling of distance for stationary equipment. Each phase of construction has a specific equipment mix, depending on the work to be accomplished during that phase. Each phase also has its own noise characteristics; some will have higher continuous noise levels than others.

Construction activity would result in temporary noise in the project site vicinity, exposing surrounding nearby receivers to increased noise levels, but only during certain times of a day. Construction noise would typically be higher during the heavier periods of initial construction (i.e., site preparation and grading) and would be lower during the later construction phases (i.e., building construction and paving). Typical heavy construction equipment during project grading would include dozers, loaders, graders, and dump trucks. It is assumed that diesel engines would power all construction equipment. However, construction equipment would not all operate at the same time or location. In addition, construction equipment would not be in constant use during the 8-hour operating day.

3.2 Groundborne Vibration

The project does not include any substantial vibration sources associated with operation. Vibration sources for operation would be similar to that of a typical residential development. Thus, construction activities have the greatest potential to generate ground-borne vibration affecting nearby receivers. The greatest vibratory source during construction would be a vibratory roller during the paving phase of construction. Neither blasting nor pile driving would be required for construction of the project. Construction vibration estimates are based on vibration levels reported by Caltrans and the FTA (Caltrans 2020, FTA 2018). At 25 feet, a vibratory roller would produce a vibration level of approximately 0.21 inches per second (in/sec) peak particle velocity (PPV) (FTA 2018).

Vibration limits used in this analysis to determine a potential impact from construction activities are based on information contained in Caltrans' *Transportation and Construction Vibration Guidance Manual* and the Federal Transit Administration and the FTA *Transit Noise and Vibration Impact Assessment Manual* (Caltrans 2020; FTA 2018). Maximum recommended vibration limits by the American Association of State Highway and Transportation Officials (AASHTO) are identified in Table 5.

Table 5 AASHTO Maximum Vibration Levels for Preventing Damage

Building Type	Limiting Velocity (in/sec PPV)
Historic sites or other critical locations	0.1
Residential buildings, plastered walls	0.2–0.3
Residential buildings in good repair with gypsum board walls	0.4–0.5
Engineered structures, without plaster	1.0–1.5

in./sec. = inches per second
PPV = peak particle velocity
Source: Caltrans 2020

Based on AASHTO recommendations, limiting vibration levels to below 0.2 in/sec PPV at residential structures would prevent structural damage regardless of building construction type. These limits are applicable regardless of the frequency of the source.

3.3 Operational Noise Sources

Heating, Ventilation, and Air Conditioning Units

The proposed project would have heating, ventilation, and air conditioning systems (HVAC). Mechanical equipment is anticipated to be installed on the roof of the proposed mixed-use building. HVAC equipment typically generates noise levels of 72 dBA at a distance of 3 feet and would diminish at a rate of at least 6 dBA per doubling of distance (conservatively ignoring other attenuation effects from ground and shielding effects).

Traffic Noise

Noise affecting the project site is primarily from traffic on Mission Hills Road. Project traffic noise was estimated using the project's daily trip generation estimated in the Updated Transportation Assessment (LADOT 2022). The assessment estimated daily vehicle trips at 1,181.

Land Use Compatibility

As discussed in Section 2.4, *Project Noise Setting,* and shown in Table 2, noise level measurements taken during the PM peak hour indicate ambient noise levels of approximately 66 dBA L_{eq} at the project site along Ararat Homes site (Noise Measurement 1), 63 dBA L_{eq} along Mission Hills Road (Noise Measurement 2), 68 dBA L_{eq} along Rinaldi Street (Noise Measurement 3), and 65 dBA L_{eq} along Indian Hills Road (Noise Measurement 4). Since the project site is located in an area where the main noise source is local traffic, the CNEL/Ldn is estimated to be roughly 2 dBA greater than the peak hour L_{eq} (Caltrans 2013). Accordingly, ambient 24-hour noise levels at the project site range from approximately 65 to 70 CNEL at locations closest to Mission Hills Road. According to the City's noise compatibility matrix shown in Table 3 Land Use Compatibility Standards (CNEL), ambient noise up to 60 CNEL is normally acceptable and noise up to 70 CNEL is conditionally acceptable for nursing homes. Based on existing noise levels described in Section 2.4, *Project Noise*, the project is anticipated to be within the "normally acceptable" range for nursing homes at distances further from Mission Hills Road and "conditionally acceptable" at distances closest to Mission Hills Road.

Operation of the proposed project would expose future residents to environmental noise. However, in the *California Building Industry Association v. Bay Area Air Quality Management District (2015) 62*

Cal. 4th 369, the California ruling that Supreme Court found that an agency is only required to analyze the potential impacts to future residents or users for certain schools projects, projects affected by airport noise, and projects that would exacerbate existing environmental hazards or conditions (i.e., projects that would have a significant operational impact). CEQA analysis is therefore concerned with a project's impact on the environment, rather than with the environment's impact on a project and its users or residents. Thus, bringing a new population into an area where noise currently exists is not a significant environmental impact under CEQA unless doing so would exacerbate noise conditions.

3.4 Significance Thresholds

To determine whether a project would have a significant noise impact, Appendix G of the CEQA Guidelines requires consideration of whether a project would result in:

1. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies
2. Generation of excessive groundborne vibration or groundborne noise levels
3. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels

Construction Noise

Based on LAMC Section 112.05, noise from construction equipment located within 500 feet of a residential zone should not exceed 75 dBA L_{max} between 7:00 a.m. and 10:00 p.m., as measured at a distance of 50 feet from the source, unless compliance is technically infeasible. Based on LAMC Section 41.40, construction noise would also be significant if generated outside of allowable construction hours.

On-site Operational Noise

The City has adopted noise standards in the LAMC that regulate operational noise sources in the City. The proposed project would result in a significant impact if project HVAC equipment (primary project stationary operational noise source) exceeds the LAMC standards shown in Table 4 by 5 dBA.

Off-site Traffic Noise

A project will normally have a significant effect on the environment related to noise if it will substantially increase the ambient noise levels for adjoining areas. The following thresholds of significance similar to those recommended by the Federal Aviation Administration (FAA), are used to assess traffic noise impacts at sensitive receptor locations. A significant impact would occur if traffic noise increases the existing noise environment by the following:

- Greater than 1.5 dBA for ambient noise environments of 65 dBA CNEL and higher.
- Greater than 3 dBA for ambient noise environments of 60 to 64 CNEL.
- Greater than 5 dBA for ambient noise environments of less than 60 dBA CNEL.

Construction Vibration

The City has not adopted a significance threshold to assess vibration impacts during construction and operation. Therefore, the Caltrans *Transportation and Construction Vibration Guidance Manual* (2020) is used to evaluate potential construction vibration impacts related to both potential building damage and human annoyance. Based on the Caltrans criteria described above, construction vibration impacts would be significant if vibration levels exceed 0.2 in./sec. PPV for residential structures, which is the limit where minor cosmetic (i.e., non-structural) damage may occur to residential buildings.

4 Impact Analysis

4.1 Issue 1

Issue:	Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Construction

Project construction would occur nearest to the Eden Memorial Park to the west, the Ararat Home Nursing Facility to the east, the single-family residence to the northwest, and the Bishop Alemany Softball and Soccer Field to the south. existing Ararat Homes east of the project site. Pursuant to LAMC Section 112.05, in which construction noise in a residential zone shall not exceed 75 dBA L_{max} between 7:00 a.m. and 10:00 p.m. at a distance of 50 feet, construction noise was modeled at a distance of 50 feet from the nearest residential receivers. In addition, construction activities are limited to the hours of 7:00 a.m. and 9:00 p.m. on weekdays and between the hours of 8:00 a.m. and 6:00 p.m. on Saturday pursuant to the City's Noise Ordinance Section 41.40.

Construction noise is typically loudest during activities that involve excavation and moving soil, such as site preparation and grading. A potential high-intensity construction scenario based on client provided information includes a dozer, grader and front-end loader working during grading to excavate and move soil. At a distance of 50 feet, a dozer, grader and front-end loader would generate a noise level of 85 dBA L_{max}. Therefore, construction noise could exceed the threshold of 75 dBA L_{max}. The approximate 75 dBA L_{max} noise contour for project construction is estimated at 150 feet (i.e., if construction occurs at a distance of 150 feet or greater, it would not exceed the threshold). Therefore, if construction occurs within 150 feet of sensitive receivers, noise levels from construction may exceed the City's construction noise limit.

The nearest sensitive receivers include single family residences approximately 100 feet northwest of the project boundary. Other sensitive receivers include the Eden Memorial Park located immediately adjacent west of the project site, the Ararat Homes Nursing Facility located approximately 90 feet east of the project boundary along Mission Hills Road, the Bishop Alemany Softball and Soccer Field located approximately 30 feet to the south of project boundary along Mission Hills Road. At these distances, construction noise could exceed the 75 dBA L_{max} threshold since construction activity could occur within 150 feet of these sensitive receptors if uncontrolled. Construction noise at the Providence Holy Cross Medical Center, approximately 400 feet to the southeast of the project boundary, is not estimated to exceed the 75 dBA L_{max} threshold.

Implementation of Recommendation NOI-1, construction noise reduction, would reduce construction noise to a level of less than significant.

Operation

HVAC Units

The proposed project would have heating, ventilation, and air conditioning systems (HVAC). Mechanical equipment is anticipated to be installed on the roof of the proposed buildings. HVAC equipment typically generates noise levels of 72 dBA at a distance of 3 feet and would diminish at a rate of at least 6 dBA per doubling of distance (conservatively ignoring other attenuation effects from ground and shielding effects). The nearest sensitive receptor is Eden Memorial Park, which is approximately 80 feet from the nearest proposed project building. At this distance, HVAC noise would attenuate to approximately 43 dBA or less, which would not exceed the most stringent nighttime threshold of 40 dBA (presumed ambient) by more than 5 dBA. Project HVAC noise would less at other nearby sensitive receptors, such as the residence to the north and the existing Ararat site to the east, which are further from proposed project buildings. This impact would be less than significant.

Off-site Traffic Noise

Recommendations

Implement Recommendation NOI-1 to reduce construction noise.

NOI-1 Construction Noise Reduction

The construction contractor shall prepare and submit a Construction Noise Control Plan to Los Angeles Department of City Planning or designee for review and approval prior to issuance of a grading permit. The Construction Noise Control Plan shall specify the noise reduction measures to be implemented during project construction when construction occurs within 150 feet of the nearest nearby sensitive receptors to the east, south, and north, which is the estimated distance where project construction may exceed 75 dBA L_{max}. The measures specified in the Construction Noise Control Plan shall be included on the building and grading plans and shall be implemented by the construction contractor during construction. At a minimum, the Construction Noise Control Plan shall include the following measures:

- If construction is occurring within 150 feet of the sensitive receptors to the east, south, and north, installation of 10-foot high temporary sound barriers/blankets to between construction equipment and the sensitive uses. The barriers shall be at least 1.5 pounds per square foot with no gaps from the ground to the top of the barrier. Alternately, if sound blankets are preferred, barriers shall be constructed with solid material with a density of at least 1 pound per square foot with no gaps from the ground to the top of the barrier and be lined on the construction side with acoustical blanket, curtain or equivalent absorptive material rated sound transmission class (STC) 32 or higher.
- To the extent consistent with applicable safety regulations, trucks operating with reverse motions alarms shall be outfitted with SAE J994 Class D or equivalent alarms (ambient-adjusting, or "smart alarms" that automatically adjust the alarm to 5 dBA above the ambient near the operating equipment), or switch off back-up alarms and replace with human spotters in compliance with all safety requirements and laws.
- A construction notification sign shall be posted at the job site, clearly visible to the public, that includes permitted construction days and hours, as well as the telephone numbers of the City and

the contractor's authorized representatives that are assigned to respond in the event of a noise complaint. If the authorized contractor's representative receives a complaint, that person shall investigate, take appropriate corrective action, and report the action to the City.

Plan Requirements and Timing: The Los Angeles Department of City Planning or designee shall approve the Construction Noise Control Plan prior to issuance of a grading permit. The measures specified in the Construction Noise Control Plan shall be included on the building and grading plans Sound barrier and blankets and construction notification sign shall be installed on the project site prior to initiation of ground-disturbance activities and shall be maintained throughout the duration of construction. Reverse motions alarms and upgraded silencers shall be outfitted on construction vehicles and equipment throughout the duration of construction.

Monitoring: The City shall monitor compliance with the requirements of the Construction Noise Control Plan periodically during construction and shall promptly investigate and respond to all noise complaints.

Significance After Implementation of Recommendations

Implementation of Mitigation Measure NOI-1 would include a temporary noise barrier. To estimate the sound level reduction from a temporary noise barrier, the barrier was assumed to be constructed with a solid material that has a density of at least 1.5 pounds per square foot with no gaps from the ground to the top of the barrier. With these assumptions, the estimated noise reduction from a 10-foot temporary noise barrier which would block the line-of-sight between the equipment exhaust stacks and receptors to the north and east would be 15 dBA. With this reduction, noise levels at 50 feet would be approximately 71 dBA L_{max}, which would not exceed the construction noise threshold of 75 dBA L_{max}. Therefore, construction noise impacts would be less than significant with mitigation.

4.2 Issue 2

Issue:	Would the project result in generation of excessive ground-borne vibration or ground-borne noise levels?

Construction activities known to generate excessive ground-borne vibration, such as pile driving, are not proposed during implementation of the project. The greatest anticipated source of vibration during general project construction activities may be from a vibratory roller, which may be used within 30 feet of the nearest off-site sensitive receiver to the to the south. A vibratory roller would create approximately 0.21 In/sec PPV at a distance of 25 feet (Caltrans 2013). This would equal a vibration level of approximately than 0.16 In/sec PPV. at a distance of 30 feet.[1] This would not exceed the architectural damage criterion for residential structures of 0.2 In/sec PPV. Therefore, construction vibration impacts would be less than significant.

Operation of the project would not include any substantial vibration sources. Therefore, operational vibration impacts would be less than significant.

[1] PPVEquipment = PPVRef $(25/D)^n$ (in/sec), PPVRef = reference PPV at 25 feet, D = distance to receiver ,and n = 1.5

4.3 Issue 3

Issue:	For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

The airport nearest to the project site, the Whiteman Airport, is located approximately 2.8 miles to the southeast. The project would not be located within the noise contours of the airport (Los Angeles County Airport Land Use Commission 2004). Therefore, no substantial noise exposure from airport noise would occur to construction workers, users, or employees of the project, and no impacts would occur.

5 Conclusion

Noise associated with construction of the project would be typical of that associated with construction, though could exceed the 75 dBA L_{max} threshold at 50 feet if uncontrolled. Construction noise would be mitigated through Recommendation NOI-1. With Recommendation NOI-01, noise related to project construction would not result in a significant temporary increase in noise levels.

Project construction would also result in vibration; however, based on the analysis of potential construction-related vibration, vibration levels would be below the identified threshold for potential building damage. The project does not include any substantial operational vibration sources. Therefore, the project would not expose local vibration-sensitive receivers to excessive vibration levels and vibration impacts would be less than significant.

Off-site traffic noise impacts and on-site operational noise impacts would be less than significant. Therefore, the project would result in a less than significant permanent increase in ambient noise levels due to project operation. Furthermore, the project would not expose people residing or working in the project area to excessive noise levels from aircraft noise.

6 References

California Department of Transportation (Caltrans). 2013. *Technical Noise Supplement to the Traffic Noise Analysis Protocol*. (CT-HWANP-RT-13-069.25.2) September. Available at: http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013B.pdf

______. 2017. *2017 Traffic Volumes*. Available at: https://dot.ca.gov/programs/traffic-operations/census/traffic-volumes/2017/route-280-405

______. 2020. *Transportation and Construction Vibration Guidance Manual*. Available at: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdfCrocker, Malcolm J. (Editor). 2007. *Handbook of Noise and Vibration Control Book*, ISBN: 978-0-471-39599-7, Wiley-VCH, October.

Federal Highway Administration (FHWA). 2006*. FHWA Highway Construction Noise Handbook*. (FHWAHEP-06-015; DOT-VNTSC-FHWA-06-02). Available at: https://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/.

_____. 2011. Highway Traffic Noise Analysis and Abatement Policy and Guidance. (FHWA-HEP-10-025). December.

_____. 2017. Special Report – Measurement, Prediction, and Mitigation. June.

Federal Transit Administration (FTA). 2018. *Transit Noise and Vibration Impact Assessment*. November. Available at: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf

Lawrence E. Kinsler and R. Frey, Austin and B. Coppens, Alan and V. Sanders, James. *Fundamentals of Acoustics*, 4th Edition. ISBN 0-471-84789-5. Wiley-VCH, December 1999.

Los Angeles, City of. 1999. Noise Element of the City of Los Angeles General Plan. https://planning.lacity.org/odocument/b49a8631-19b2-4477-8c7f-08b48093cddd/Noise_Element.pdf

Los Angeles, County of. 2004. Los Angeles County Airport Land Use Plan. http://planning.lacounty.gov/assets/upl/data/pd_alup.pdf

Los Angeles Department of Transportation (LADOT). 2022. Updated Transportation Assessment for the Proposed Expansion of Ararat Homes Development Located at 15151-15155 West Mission Hills Road (ZA-2021-832-ELD-ZAA-ZAD-SPR/ENV-2021-833-EAF). January 28.

_____. 2023. NavigateLA. https://navigatela.lacity.org/navigatela/

Appendix A

Noise Measurement Data

- Freq Weight : A
- Time Weight : FAST
- Level Range : 40-100
- Max dB : 82.0 - 2018/07/10 07:46:43
- Level Range : 40-100
- SEL : 95.6
- Leq : 66.1
-

No.s	Date Time	(dB)				
1	2018/07/10 07:35:31	56.9	61.4	65.9	62.3	60.4
6	2018/07/10 07:35:36	65.5	72.5	70.0	63.7	61.5
11	2018/07/10 07:35:41	64.4	67.4	67.3	66.1	66.4
16	2018/07/10 07:35:46	67.4	65.3	61.8	59.7	63.5
21	2018/07/10 07:35:51	68.8	68.9	61.8	56.2	55.6
26	2018/07/10 07:35:56	56.4	60.7	65.3	66.5	65.0
31	2018/07/10 07:36:01	63.4	65.1	63.3	62.6	62.9
36	2018/07/10 07:36:06	62.4	63.2	61.3	59.4	60.9
41	2018/07/10 07:36:11	63.5	65.7	66.4	66.8	73.8
46	2018/07/10 07:36:16	72.4	71.3	67.7	70.4	72.3
51	2018/07/10 07:36:21	76.3	71.5	66.6	70.4	70.1
56	2018/07/10 07:36:26	69.1	67.4	71.5	65.9	63.3
61	2018/07/10 07:36:31	61.6	59.3	58.5	56.6	54.9
66	2018/07/10 07:36:36	53.5	54.2	52.7	52.8	51.7
71	2018/07/10 07:36:41	50.7	50.1	51.4	50.3	51.0
76	2018/07/10 07:36:46	51.5	51.4	53.6	55.8	60.9
81	2018/07/10 07:36:51	66.8	68.7	65.4	69.9	67.3
86	2018/07/10 07:36:56	59.6	56.0	55.1	55.5	59.2
91	2018/07/10 07:37:01	64.4	66.0	62.9	58.8	58.5
96	2018/07/10 07:37:06	58.9	61.9	66.9	66.3	68.0
101	2018/07/10 07:37:11	74.4	76.4	72.3	70.4	72.3
106	2018/07/10 07:37:16	79.0	77.3	71.3	67.3	70.2
111	2018/07/10 07:37:21	71.5	70.0	67.1	73.3	67.7
116	2018/07/10 07:37:26	62.2	60.9	59.4	58.3	63.3
121	2018/07/10 07:37:31	66.7	64.3	64.0	71.3	70.5
126	2018/07/10 07:37:36	60.6	57.2	54.9	53.5	52.6
131	2018/07/10 07:37:41	52.6	51.7	51.7	51.8	53.3
136	2018/07/10 07:37:46	54.7	59.3	62.3	66.0	70.9
141	2018/07/10 07:37:51	78.2	74.1	68.2	64.8	63.5
146	2018/07/10 07:37:56	61.9	64.0	66.6	63.8	59.6
151	2018/07/10 07:38:01	57.2	57.1	57.1	56.4	56.0
156	2018/07/10 07:38:06	57.1	59.4	62.2	60.1	56.7
161	2018/07/10 07:38:11	53.1	52.3	51.6	52.0	51.9
166	2018/07/10 07:38:16	53.2	55.7	58.1	64.2	69.0
171	2018/07/10 07:38:21	71.4	73.0	66.6	60.7	56.9
176	2018/07/10 07:38:26	55.5	53.5	54.0	53.9	54.9
181	2018/07/10 07:38:31	58.6	62.5	63.3	63.3	62.3
186	2018/07/10 07:38:36	59.7	55.1	52.6	52.9	50.9
191	2018/07/10 07:38:41	50.2	50.7	50.9	52.2	55.0
196	2018/07/10 07:38:46	57.3	58.3	65.4	72.4	72.8
201	2018/07/10 07:38:51	75.6	75.2	68.2	62.1	60.5
206	2018/07/10 07:38:56	57.1	54.6	55.3	55.7	52.6
211	2018/07/10 07:39:01	53.1	55.0	58.4	59.9	59.2
216	2018/07/10 07:39:06	59.3	62.2	61.7	59.9	60.4
221	2018/07/10 07:39:11	53.4	53.8	57.8	62.9	68.0
226	2018/07/10 07:39:16	69.0	65.0	58.6	55.2	53.1
231	2018/07/10 07:39:21	54.9	58.2	61.5	61.7	59.1
236	2018/07/10 07:39:26	54.7	52.3	49.9	48.7	47.8
241	2018/07/10 07:39:31	47.6	47.7	46.8	47.8	48.9
246	2018/07/10 07:39:36	50.9	53.0	56.3	60.4	68.7
251	2018/07/10 07:39:41	70.3	65.5	62.2	58.7	55.5
256	2018/07/10 07:39:46	54.4	55.7	55.3	57.6	58.9
261	2018/07/10 07:39:51	63.5	67.8	72.8	72.7	72.4
266	2018/07/10 07:39:56	69.6	72.7	74.6	71.1	68.0
271	2018/07/10 07:40:01	73.0	74.3	72.9	74.0	69.1
276	2018/07/10 07:40:06	69.1	68.2	63.4	60.8	60.1
281	2018/07/10 07:40:11	65.9	71.4	68.7	64.1	59.5
286	2018/07/10 07:40:16	58.6	56.3	55.4	54.2	52.9
291	2018/07/10 07:40:21	51.9	51.2	51.2	50.6	49.3
296	2018/07/10 07:40:26	48.8	47.3	46.7	46.8	47.7
301	2018/07/10 07:40:31	50.0	51.2	51.5	51.9	52.8
306	2018/07/10 07:40:36	54.9	55.3	60.1	63.2	62.3
311	2018/07/10 07:40:41	60.8	61.2	65.1	69.6	72.6
316	2018/07/10 07:40:46	73.4	67.2	70.0	63.4	58.8
321	2018/07/10 07:40:51	61.4	69.2	68.3	59.8	56.2
326	2018/07/10 07:40:56	57.8	59.3	67.7	69.8	62.4
331	2018/07/10 07:41:01	57.4	56.3	55.5	54.5	54.3
336	2018/07/10 07:41:06	54.9	57.6	61.2	61.9	59.2
341	2018/07/10 07:41:11	54.6	52.9	51.8	51.1	51.6
346	2018/07/10 07:41:16	57.6	55.8	58.9	64.9	67.3
351	2018/07/10 07:41:21	63.4	58.2	56.0	54.3	57.2
356	2018/07/10 07:41:26	64.1	66.3	58.0	53.2	51.5
361	2018/07/10 07:41:31	52.8	48.3	47.4	47.4	47.1
366	2018/07/10 07:41:36	47.6	47.7	47.8	48.1	48.4
371	2018/07/10 07:41:41	48.7	49.7	50.6	54.3	56.7
376	2018/07/10 07:41:46	60.3	68.4	69.0	62.6	58.8
381	2018/07/10 07:41:51	55.4	54.5	53.9	53.8	52.6
386	2018/07/10 07:41:56	52.1	53.6	54.8	56.7	58.8
391	2018/07/10 07:42:01	61.9	66.3	65.0	65.8	70.4
396	2018/07/10 07:42:06	68.1	63.9	69.1	68.0	63.5
401	2018/07/10 07:42:11	61.1	57.2	55.7	52.6	53.5
406	2018/07/10 07:42:16	55.9	59.9	63.5	64.1	61.6
411	2018/07/10 07:42:21	57.2	54.6	52.7	50.8	49.3
416	2018/07/10 07:42:26	48.5	47.5	47.7	48.3	49.0
421	2018/07/10 07:42:31	52.0	56.4	60.3	62.8	62.4

426	2018/07/10 07:42:36	62.4	67.4	66.5	60.3	54.4
431	2018/07/10 07:42:41	52.6	53.7	56.3	59.0	62.8
436	2018/07/10 07:42:46	63.7	66.5	69.8	63.0	56.7
441	2018/07/10 07:42:51	57.3	60.8	64.1	64.8	65.1
446	2018/07/10 07:42:56	65.2	67.6	67.1	64.9	63.2
451	2018/07/10 07:43:01	65.6	65.4	69.5	75.1	69.9
456	2018/07/10 07:43:06	65.2	61.5	59.1	58.5	59.1
461	2018/07/10 07:43:11	62.0	65.5	69.1	71.1	71.3
466	2018/07/10 07:43:16	72.9	76.0	78.0	74.5	71.1
471	2018/07/10 07:43:21	67.6	65.3	63.4	63.8	59.8
476	2018/07/10 07:43:26	60.8	64.4	66.9	65.0	61.8
481	2018/07/10 07:43:31	61.4	60.6	59.8	59.3	60.5
486	2018/07/10 07:43:36	59.5	60.2	59.5	58.4	56.8
491	2018/07/10 07:43:41	56.3	55.2	58.3	56.3	56.3
496	2018/07/10 07:43:46	58.8	58.3	60.8	62.4	62.1
501	2018/07/10 07:43:51	61.9	66.8	68.0	61.2	60.8
506	2018/07/10 07:43:56	60.5	64.6	70.4	75.6	69.9
511	2018/07/10 07:44:01	67.5	61.0	57.6	55.0	54.1
516	2018/07/10 07:44:06	52.2	51.5	51.3	51.5	50.3
521	2018/07/10 07:44:11	51.7	50.4	50.3	50.3	50.9
526	2018/07/10 07:44:16	57.6	55.1	53.8	56.4	58.6
531	2018/07/10 07:44:21	61.0	64.0	65.2	71.3	70.9
536	2018/07/10 07:44:26	67.9	69.6	62.5	58.4	59.4
541	2018/07/10 07:44:31	65.1	65.4	66.1	64.3	63.6
546	2018/07/10 07:44:36	59.7	58.2	56.8	56.4	57.7
551	2018/07/10 07:44:41	61.4	63.1	59.0	54.9	53.4
556	2018/07/10 07:44:46	53.5	54.0	53.5	55.6	59.1
561	2018/07/10 07:44:51	65.3	66.4	64.0	59.9	55.7
566	2018/07/10 07:44:56	52.6	50.8	49.8	51.0	51.2
571	2018/07/10 07:45:01	52.8	53.2	49.7	51.0	50.5
576	2018/07/10 07:45:06	51.7	51.4	54.1	56.1	59.6
581	2018/07/10 07:45:11	65.8	68.9	66.8	69.4	76.0
586	2018/07/10 07:45:16	75.6	68.0	69.8	73.6	76.5
591	2018/07/10 07:45:21	78.3	76.6	69.7	69.1	70.3
596	2018/07/10 07:45:26	65.3	63.2	64.6	68.5	71.7
601	2018/07/10 07:45:31	67.2	67.8	65.1	61.5	61.2
606	2018/07/10 07:45:36	67.7	68.0	62.2	59.3	56.9
611	2018/07/10 07:45:41	54.5	52.1	51.8	51.9	53.5
616	2018/07/10 07:45:46	55.0	51.1	49.1	49.1	48.6
621	2018/07/10 07:45:51	48.3	48.2	48.2	48.8	49.0
626	2018/07/10 07:45:56	49.7	50.5	52.1	47.9	47.4
631	2018/07/10 07:46:01	48.4	49.6	47.7	48.7	50.4
636	2018/07/10 07:46:06	48.4	47.7	47.8	48.7	47.0
641	2018/07/10 07:46:11	48.1	49.0	48.9	49.2	50.7
646	2018/07/10 07:46:16	51.5	51.4	51.5	51.8	55.0
651	2018/07/10 07:46:21	59.6	64.8	65.3	63.6	66.0
656	2018/07/10 07:46:26	61.1	59.4	63.7	70.4	65.7
661	2018/07/10 07:46:31	61.2	62.9	63.8	65.7	70.8
666	2018/07/10 07:46:36	66.8	61.2	60.1	61.3	63.0
671	2018/07/10 07:46:41	66.3	77.9	79.7	71.4	64.1
676	2018/07/10 07:46:46	62.5	64.6	72.6	66.5	60.2
681	2018/07/10 07:46:51	58.5	57.2	58.2	63.6	73.1
686	2018/07/10 07:46:56	69.7	59.7	56.0	54.7	53.3
691	2018/07/10 07:47:01	51.8	51.0	49.0	49.3	49.0
696	2018/07/10 07:47:06	47.3	47.0	47.2	46.7	46.3
701	2018/07/10 07:47:11	45.5	46.8	47.1	46.2	47.0
706	2018/07/10 07:47:16	47.0	47.9	50.0	52.0	52.2
711	2018/07/10 07:47:21	54.4	56.9	62.3	69.0	66.8
716	2018/07/10 07:47:26	59.1	55.5	52.8	52.7	52.3
721	2018/07/10 07:47:31	51.4	49.6	49.3	49.3	48.7
726	2018/07/10 07:47:36	48.8	49.2	48.3	49.5	50.4
731	2018/07/10 07:47:41	51.4	52.5	57.3	63.1	66.9
736	2018/07/10 07:47:46	71.1	69.4	73.4	69.6	73.9
741	2018/07/10 07:47:51	72.1	69.2	65.4	67.5	65.7
746	2018/07/10 07:47:56	62.2	65.4	69.3	74.4	74.4
751	2018/07/10 07:48:01	73.1	67.8	65.0	64.0	63.8
756	2018/07/10 07:48:06	68.6	67.8	61.4	58.5	56.9
761	2018/07/10 07:48:11	55.9	54.9	52.8	54.2	54.2
766	2018/07/10 07:48:16	58.6	64.0	70.8	71.5	71.7
771	2018/07/10 07:48:21	70.1	62.3	59.3	55.8	54.1
776	2018/07/10 07:48:26	51.5	50.1	48.5	47.6	47.3
781	2018/07/10 07:48:31	47.3	47.5	48.6	48.7	49.0
786	2018/07/10 07:48:36	50.7	49.4	50.9	54.6	59.7
791	2018/07/10 07:48:41	66.4	70.7	71.4	74.4	66.0
796	2018/07/10 07:48:46	58.8	57.8	58.2	65.5	71.3
801	2018/07/10 07:48:51	63.9	59.3	62.1	69.9	64.5
806	2018/07/10 07:48:56	58.2	56.8	59.2	63.0	69.9
811	2018/07/10 07:49:01	67.4	68.7	72.2	72.6	72.7
816	2018/07/10 07:49:06	69.7	71.6	71.0	67.7	65.3
821	2018/07/10 07:49:11	67.6	68.4	62.3	64.5	69.9
826	2018/07/10 07:49:16	72.2	69.1	68.1	65.5	63.0
831	2018/07/10 07:49:21	58.0	57.6	58.7	60.2	62.6
836	2018/07/10 07:49:26	62.5	60.7	56.0	52.4	50.8
841	2018/07/10 07:49:31	51.5	49.3	48.8	48.4	47.9
846	2018/07/10 07:49:36	50.5	52.5	55.0	58.2	62.8
851	2018/07/10 07:49:41	66.9	66.2	61.4	56.2	54.2
856	2018/07/10 07:49:46	52.2	49.5	49.7	49.6	48.5
861	2018/07/10 07:49:51	48.0	48.5	49.9	51.2	53.8
866	2018/07/10 07:49:56	57.5	63.2	67.9	65.2	62.6
871	2018/07/10 07:50:01	68.1	71.2	68.5	66.0	71.0
876	2018/07/10 07:50:06	65.2	59.8	56.2	55.3	53.8
881	2018/07/10 07:50:11	52.7	52.6	51.7	50.8	51.1
886	2018/07/10 07:50:16	53.0	54.4	56.6	60.2	65.4
891	2018/07/10 07:50:21	72.7	69.9	62.6	57.1	55.8
896	2018/07/10 07:50:26	53.3	52.7	54.0	56.8	62.6

- Freq Weight : A
- Time Weight : FAST
- Level Range : 40-100
- Max dB : 84.8 - 2018/07/10 08:22:16
- Level Range : 40-100
- SEL : 92.3
- Leq : 62.8
-

No.s	Date Time	(dB)				
1	2018/07/10 08:10:22	48.2	47.5	49.3	58.8	56.6
6	2018/07/10 08:10:27	55.2	56.1	58.8	60.3	63.3
11	2018/07/10 08:10:32	69.6	74.3	68.5	68.8	68.9
16	2018/07/10 08:10:37	66.3	58.3	55.6	56.6	59.2
21	2018/07/10 08:10:42	58.0	60.6	61.5	59.7	57.6
26	2018/07/10 08:10:47	56.0	52.6	50.3	49.7	49.1
31	2018/07/10 08:10:52	47.2	44.3	43.1	44.0	49.4
36	2018/07/10 08:10:57	47.2	43.7	44.9	45.7	49.9
41	2018/07/10 08:11:02	46.5	45.9	46.4	46.2	45.4
46	2018/07/10 08:11:07	45.0	45.2	45.6	46.6	45.2
51	2018/07/10 08:11:12	42.9	46.3	52.1	50.0	43.6
56	2018/07/10 08:11:17	43.5	43.1	43.1	42.7	50.0
61	2018/07/10 08:11:22	44.3	43.9	43.5	43.5	43.2
66	2018/07/10 08:11:27	48.0	43.1	44.1	43.3	43.8
71	2018/07/10 08:11:32	42.9	42.9	43.5	56.4	48.4
76	2018/07/10 08:11:37	42.8	41.9	42.8	42.8	44.0
81	2018/07/10 08:11:42	42.9	42.7	41.8	40.7	44.7
86	2018/07/10 08:11:47	42.3	43.0	45.5	43.5	42.8
91	2018/07/10 08:11:52	44.0	42.4	43.9	43.2	43.9
96	2018/07/10 08:11:57	42.7	43.0	47.5	43.8	43.8
101	2018/07/10 08:12:02	44.9	44.8	42.9	44.1	44.4
106	2018/07/10 08:12:07	43.7	44.3	44.6	43.7	44.9
111	2018/07/10 08:12:12	44.6	46.1	48.3	47.1	48.1
116	2018/07/10 08:12:17	46.1	58.5	51.9	46.5	47.1
121	2018/07/10 08:12:22	44.1	45.4	43.9	43.9	44.6
126	2018/07/10 08:12:27	44.3	47.0	43.9	45.2	43.4
131	2018/07/10 08:12:32	45.2	45.1	51.6	46.4	47.3
136	2018/07/10 08:12:37	48.2	51.8	50.2	54.8	56.8
141	2018/07/10 08:12:42	58.9	61.3	64.2	72.9	74.0
146	2018/07/10 08:12:47	67.6	60.8	57.9	57.6	55.9
151	2018/07/10 08:12:52	55.2	53.5	51.4	49.4	48.5
156	2018/07/10 08:12:57	45.4	46.2	41.9	46.5	44.8
161	2018/07/10 08:13:02	43.7	57.5	48.0	52.3	54.6
166	2018/07/10 08:13:07	57.5	63.5	69.0	76.4	69.3
171	2018/07/10 08:13:12	60.1	57.3	59.3	58.0	55.8
176	2018/07/10 08:13:17	55.8	54.6	51.6	47.7	46.8
181	2018/07/10 08:13:22	48.1	49.8	49.8	45.6	44.2
186	2018/07/10 08:13:27	48.8	42.1	44.8	45.8	46.0
191	2018/07/10 08:13:32	43.1	45.5	44.4	40.4	45.8
196	2018/07/10 08:13:37	43.6	41.7	49.3	44.6	44.3
201	2018/07/10 08:13:42	42.3	43.5	45.9	44.4	44.6
206	2018/07/10 08:13:47	45.9	45.9	45.9	51.2	49.9
211	2018/07/10 08:13:52	51.2	47.7	49.2	48.6	51.7
216	2018/07/10 08:13:57	55.7	55.9	56.4	57.4	62.2
221	2018/07/10 08:14:02	66.2	68.7	63.9	60.3	64.2
226	2018/07/10 08:14:07	68.4	70.9	65.2	57.3	55.8
231	2018/07/10 08:14:12	51.9	52.7	53.7	54.7	54.9
236	2018/07/10 08:14:17	62.6	58.9	61.7	66.8	70.7
241	2018/07/10 08:14:22	66.9	58.2	53.8	53.4	52.1
246	2018/07/10 08:14:27	50.8	50.0	50.2	51.4	51.7
251	2018/07/10 08:14:32	48.9	48.9	49.5	49.3	45.9
256	2018/07/10 08:14:37	42.7	46.8	47.6	50.1	43.7
261	2018/07/10 08:14:42	43.9	47.4	45.7	53.3	47.1
266	2018/07/10 08:14:47	47.1	41.0	45.0	41.9	42.1
271	2018/07/10 08:14:52	45.7	42.2	40.4	39.5	50.2
276	2018/07/10 08:14:57	39.8	39.9	47.8	47.5	42.6
281	2018/07/10 08:15:02	41.4	46.9	48.0	46.9	51.0
286	2018/07/10 08:15:07	46.9	48.7	43.6	49.6	40.4
291	2018/07/10 08:15:12	40.4	43.0	43.6	42.7	43.0
296	2018/07/10 08:15:17	49.3	54.6	51.3	43.2	51.7
301	2018/07/10 08:15:22	54.2	47.7	45.9	51.1	52.1
306	2018/07/10 08:15:27	55.3	55.5	58.7	60.9	69.1
311	2018/07/10 08:15:32	73.9	69.5	60.7	58.1	59.7
316	2018/07/10 08:15:37	61.3	62.8	61.2	59.1	56.9
321	2018/07/10 08:15:42	53.4	52.5	49.3	48.9	47.9
326	2018/07/10 08:15:47	48.8	46.6	47.1	45.0	42.7
331	2018/07/10 08:15:52	42.4	40.7	41.8	40.1	50.0
336	2018/07/10 08:15:57	41.7	45.0	43.7	40.0	41.2
341	2018/07/10 08:16:02	45.8	40.8	45.3	40.6	41.0
346	2018/07/10 08:16:07	41.3	41.0	41.9	41.8	43.0
351	2018/07/10 08:16:12	41.7	42.5	42.4	44.0	44.3
356	2018/07/10 08:16:17	48.4	48.8	50.0	52.8	55.3
361	2018/07/10 08:16:22	59.8	65.8	70.6	66.2	56.3
366	2018/07/10 08:16:27	54.3	52.0	52.1	51.1	52.6
371	2018/07/10 08:16:32	49.7	48.1	46.9	46.9	44.9
376	2018/07/10 08:16:37	43.8	43.7	43.9	45.0	45.4
381	2018/07/10 08:16:42	46.7	46.1	46.5	48.9	46.0
386	2018/07/10 08:16:47	47.3	48.7	49.7	51.5	56.6
391	2018/07/10 08:16:52	59.8	64.2	69.4	79.2	70.7
396	2018/07/10 08:16:57	63.8	64.2	64.7	63.9	61.1
401	2018/07/10 08:17:02	60.2	57.2	59.4	62.4	60.2
406	2018/07/10 08:17:07	59.7	56.8	55.3	55.0	53.8
411	2018/07/10 08:17:12	52.5	52.4	52.9	53.5	58.6
416	2018/07/10 08:17:17	64.2	66.9	71.1	79.2	78.6
421	2018/07/10 08:17:22	66.6	61.9	61.5	62.5	59.7

426	2018/07/10	08:17:27	59.1	60.4	60.2	60.1	63.3
431	2018/07/10	08:17:32	68.4	75.7	71.7	62.0	57.9
436	2018/07/10	08:17:37	58.0	57.2	54.8	56.3	55.1
441	2018/07/10	08:17:42	53.6	53.6	52.0	49.6	48.1
446	2018/07/10	08:17:47	48.3	48.1	48.1	44.3	43.9
451	2018/07/10	08:17:52	44.7	44.9	46.7	52.3	54.3
456	2018/07/10	08:17:57	57.0	59.7	64.7	72.5	77.1
461	2018/07/10	08:18:02	71.8	62.8	57.1	55.7	55.8
466	2018/07/10	08:18:07	55.2	54.4	55.3	51.9	53.6
471	2018/07/10	08:18:12	49.1	47.4	47.3	47.9	47.9
476	2018/07/10	08:18:17	49.1	53.1	55.2	58.1	61.1
481	2018/07/10	08:18:22	65.5	71.4	73.5	70.5	61.2
486	2018/07/10	08:18:27	55.8	54.1	54.0	51.8	50.7
491	2018/07/10	08:18:32	49.9	49.4	48.3	48.2	47.1
496	2018/07/10	08:18:37	46.4	45.9	44.9	45.1	45.1
501	2018/07/10	08:18:42	44.3	44.5	45.9	45.7	46.5
506	2018/07/10	08:18:47	46.7	45.1	48.8	50.7	52.2
511	2018/07/10	08:18:52	53.9	58.6	61.8	62.1	60.2
516	2018/07/10	08:18:57	56.4	53.8	53.1	51.4	54.4
521	2018/07/10	08:19:02	56.5	57.4	59.3	59.8	59.7
526	2018/07/10	08:19:07	57.2	55.7	57.0	58.6	61.5
531	2018/07/10	08:19:12	65.1	69.1	78.5	70.9	65.1
536	2018/07/10	08:19:17	61.7	58.5	56.2	54.4	53.4
541	2018/07/10	08:19:22	53.0	49.9	50.2	55.6	49.0
546	2018/07/10	08:19:27	46.7	47.7	45.8	45.0	43.4
551	2018/07/10	08:19:32	45.3	44.2	45.0	42.1	42.8
556	2018/07/10	08:19:37	44.0	47.4	44.3	43.1	45.7
561	2018/07/10	08:19:42	45.5	46.2	50.7	47.4	45.1
566	2018/07/10	08:19:47	45.8	54.1	47.0	50.4	48.9
571	2018/07/10	08:19:52	53.9	53.4	49.6	54.6	51.2
576	2018/07/10	08:19:57	42.8	43.3	44.1	45.2	48.0
581	2018/07/10	08:20:02	44.2	48.2	50.8	55.7	51.9
586	2018/07/10	08:20:07	55.8	57.3	49.6	52.4	56.7
591	2018/07/10	08:20:12	48.3	44.8	51.4	51.6	52.6
596	2018/07/10	08:20:17	55.4	55.3	58.2	49.4	51.2
601	2018/07/10	08:20:22	49.7	47.0	53.3	55.1	55.4
606	2018/07/10	08:20:27	57.8	61.6	68.8	72.1	65.6
611	2018/07/10	08:20:32	57.7	52.4	50.7	49.6	48.5
616	2018/07/10	08:20:37	50.6	46.7	47.7	50.8	53.1
621	2018/07/10	08:20:42	51.5	51.7	54.4	53.2	52.3
626	2018/07/10	08:20:47	54.3	50.9	53.3	52.6	52.9
631	2018/07/10	08:20:52	63.5	62.6	58.9	50.1	56.4
636	2018/07/10	08:20:57	50.1	51.1	50.5	46.0	44.9
641	2018/07/10	08:21:02	49.4	47.7	43.5	41.5	49.2
646	2018/07/10	08:21:07	43.9	45.7	44.8	49.2	51.2
651	2018/07/10	08:21:12	48.6	59.5	55.9	59.2	51.7
656	2018/07/10	08:21:17	56.9	53.6	54.0	57.2	59.6
661	2018/07/10	08:21:22	57.2	57.0	55.6	56.7	55.7
666	2018/07/10	08:21:27	55.3	53.1	52.3	51.4	51.6
671	2018/07/10	08:21:32	51.1	49.6	56.0	50.7	57.0
676	2018/07/10	08:21:37	52.7	56.8	50.2	55.5	52.6
681	2018/07/10	08:21:42	45.6	45.6	48.0	51.0	52.6
686	2018/07/10	08:21:47	55.2	53.4	57.0	59.1	59.0
691	2018/07/10	08:21:52	54.9	56.8	55.3	57.1	53.0
696	2018/07/10	08:21:57	53.9	54.5	54.1	53.7	54.2
701	2018/07/10	08:22:02	52.1	51.9	51.5	55.1	54.8
706	2018/07/10	08:22:07	58.1	59.8	62.6	64.5	67.8
711	2018/07/10	08:22:12	68.9	71.0	74.6	79.2	77.1
716	2018/07/10	08:22:17	72.3	62.9	60.9	58.4	57.8
721	2018/07/10	08:22:22	57.8	55.2	57.9	59.3	55.3
726	2018/07/10	08:22:27	56.9	53.5	50.7	52.1	47.1
731	2018/07/10	08:22:32	46.5	45.9	47.1	45.9	47.7
736	2018/07/10	08:22:37	48.0	47.8	48.7	50.7	55.0
741	2018/07/10	08:22:42	55.4	55.9	59.7	61.4	67.1
746	2018/07/10	08:22:47	71.2	69.3	63.0	60.2	59.4
751	2018/07/10	08:22:52	56.9	55.0	49.0	52.2	55.3
756	2018/07/10	08:22:57	49.0	45.9	49.1	48.5	50.2
761	2018/07/10	08:23:02	56.3	48.2	51.1	57.4	65.4
766	2018/07/10	08:23:07	64.7	67.2	74.4	80.6	73.3
771	2018/07/10	08:23:12	64.7	60.9	59.3	57.6	54.2
776	2018/07/10	08:23:17	52.1	54.2	57.7	51.5	50.3
781	2018/07/10	08:23:22	48.7	47.0	48.8	48.0	50.4
786	2018/07/10	08:23:27	46.2	56.9	55.0	49.4	58.8
791	2018/07/10	08:23:32	49.8	57.2	56.4	60.6	62.9
796	2018/07/10	08:23:37	67.3	74.4	72.3	60.9	58.2
801	2018/07/10	08:23:42	57.4	56.1	55.9	56.8	54.4
806	2018/07/10	08:23:47	53.2	53.0	53.8	51.7	50.2
811	2018/07/10	08:23:52	49.4	47.3	47.6	46.6	45.8
816	2018/07/10	08:23:57	44.2	43.4	44.3	44.7	43.3
821	2018/07/10	08:24:02	47.1	43.8	46.9	50.6	50.5
826	2018/07/10	08:24:07	51.3	58.3	54.1	54.4	57.3
831	2018/07/10	08:24:12	61.9	63.3	61.6	59.3	58.4
836	2018/07/10	08:24:17	59.0	61.6	65.9	72.7	73.8
841	2018/07/10	08:24:22	63.9	59.6	58.2	59.9	58.8
846	2018/07/10	08:24:27	59.6	61.4	55.5	54.7	51.7
851	2018/07/10	08:24:32	54.0	56.0	56.0	54.3	56.4
856	2018/07/10	08:24:37	55.4	55.0	56.0	57.3	59.2
861	2018/07/10	08:24:42	62.9	64.9	66.7	61.0	58.5
866	2018/07/10	08:24:47	53.9	58.7	56.9	53.7	52.4
871	2018/07/10	08:24:52	52.8	51.4	51.6	53.3	51.3
876	2018/07/10	08:24:57	51.4	51.0	49.4	51.8	59.4
881	2018/07/10	08:25:02	50.8	48.4	48.5	45.5	45.9
886	2018/07/10	08:25:07	46.1	46.5	45.2	44.3	44.2
891	2018/07/10	08:25:12	45.1	45.9	45.7	45.7	52.4
896	2018/07/10	08:25:17	45.4	45.7	50.3	51.8	48.8

- Freq Weight : A
- Time Weight : FAST
- Level Range : 40-100
- Max dB : 83.8 - 2018/07/10 08:40:25
- Level Range : 40-100
- SEL : 97.6
- Leq : 68.1
-

No.s	Date Time	(dB)				
1	2018/07/10 08:37:59	64.2	63.1	63.1	70.2	68.0
6	2018/07/10 08:38:04	62.9	62.9	63.9	62.5	63.6
11	2018/07/10 08:38:09	64.7	62.2	62.1	60.2	59.3
16	2018/07/10 08:38:14	57.8	57.3	57.0	57.0	57.6
21	2018/07/10 08:38:19	57.5	57.2	57.4	57.1	56.7
26	2018/07/10 08:38:24	56.8	57.3	56.8	57.4	58.4
31	2018/07/10 08:38:29	59.1	58.7	61.4	61.8	65.7
36	2018/07/10 08:38:34	64.3	68.9	68.3	68.0	64.7
41	2018/07/10 08:38:39	61.7	61.0	60.6	59.4	58.9
46	2018/07/10 08:38:44	58.3	58.2	58.8	58.4	58.9
51	2018/07/10 08:38:49	60.3	61.1	61.4	63.0	62.5
56	2018/07/10 08:38:54	61.9	64.5	65.1	64.3	66.6
61	2018/07/10 08:38:59	65.4	67.0	61.8	61.7	59.8
66	2018/07/10 08:39:04	61.0	61.0	62.7	62.1	62.7
71	2018/07/10 08:39:09	69.6	70.2	69.8	69.5	70.7
76	2018/07/10 08:39:14	75.4	78.6	77.0	75.0	68.1
81	2018/07/10 08:39:19	63.7	62.6	67.0	60.0	59.0
86	2018/07/10 08:39:24	65.5	58.9	58.0	57.2	69.8
91	2018/07/10 08:39:29	59.6	57.3	57.6	57.9	58.3
96	2018/07/10 08:39:34	60.3	59.6	60.3	60.3	59.2
101	2018/07/10 08:39:39	61.6	60.2	58.9	58.9	57.7
106	2018/07/10 08:39:44	57.6	58.2	60.7	61.8	63.3
111	2018/07/10 08:39:49	63.0	61.3	61.5	63.2	66.9
116	2018/07/10 08:39:54	69.8	69.6	67.6	64.4	64.2
121	2018/07/10 08:39:59	66.4	68.8	69.3	70.3	67.8
126	2018/07/10 08:40:04	64.4	63.2	63.4	67.3	69.5
131	2018/07/10 08:40:09	69.9	66.7	63.3	62.3	62.3
136	2018/07/10 08:40:14	61.9	62.9	64.3	65.5	68.6
141	2018/07/10 08:40:19	68.1	70.6	74.5	80.3	83.1
146	2018/07/10 08:40:24	83.0	83.7	78.6	73.2	69.5
151	2018/07/10 08:40:29	69.2	67.6	67.4	67.8	71.1
156	2018/07/10 08:40:34	72.3	70.7	67.5	64.0	63.8
161	2018/07/10 08:40:39	64.1	61.9	61.7	61.3	60.6
166	2018/07/10 08:40:44	64.0	62.1	61.7	62.9	63.0
171	2018/07/10 08:40:49	63.0	65.1	63.1	65.4	62.4
176	2018/07/10 08:40:54	62.2	61.5	61.3	62.6	62.7
181	2018/07/10 08:40:59	63.3	64.7	64.3	64.1	63.9
186	2018/07/10 08:41:04	61.8	61.5	62.3	60.6	59.4
191	2018/07/10 08:41:09	62.9	60.3	62.6	69.1	71.6
196	2018/07/10 08:41:14	71.4	70.7	71.8	75.1	76.9
201	2018/07/10 08:41:19	75.7	71.9	68.7	68.8	70.8
206	2018/07/10 08:41:24	73.4	73.4	69.7	67.0	66.2
211	2018/07/10 08:41:29	64.1	63.0	63.5	66.2	71.4
216	2018/07/10 08:41:34	75.0	75.0	73.8	75.2	77.4
221	2018/07/10 08:41:39	74.5	71.4	67.5	64.9	64.4
226	2018/07/10 08:41:44	65.7	71.4	74.1	71.7	67.4
231	2018/07/10 08:41:49	65.6	63.4	61.6	61.6	62.3
236	2018/07/10 08:41:54	63.6	64.2	62.4	64.6	65.1
241	2018/07/10 08:41:59	62.2	65.2	63.3	61.6	61.3
246	2018/07/10 08:42:04	62.0	64.4	62.5	63.5	64.7
251	2018/07/10 08:42:09	69.0	69.8	68.7	65.0	65.4
256	2018/07/10 08:42:14	68.6	70.0	68.5	64.5	62.1
261	2018/07/10 08:42:19	63.5	63.4	63.5	62.3	62.0
266	2018/07/10 08:42:24	62.4	63.2	67.4	72.1	76.5
271	2018/07/10 08:42:29	77.5	74.2	70.1	65.9	64.1
276	2018/07/10 08:42:34	62.6	64.7	64.5	70.4	70.4
281	2018/07/10 08:42:39	70.9	67.6	68.5	69.4	67.5
286	2018/07/10 08:42:44	65.3	62.5	61.4	59.5	57.9
291	2018/07/10 08:42:49	57.9	57.7	58.1	59.7	65.8
296	2018/07/10 08:42:54	68.5	67.3	65.0	62.7	61.6
301	2018/07/10 08:42:59	60.4	60.9	63.4	61.7	66.6
306	2018/07/10 08:43:04	68.5	71.1	68.6	63.5	61.9
311	2018/07/10 08:43:09	60.5	61.4	61.4	61.7	60.2
316	2018/07/10 08:43:14	62.7	60.3	59.1	58.0	59.0
321	2018/07/10 08:43:19	59.3	61.0	60.2	60.8	68.8
326	2018/07/10 08:43:24	60.4	59.0	58.1	58.5	58.9
331	2018/07/10 08:43:29	58.4	59.1	59.7	60.8	68.8
336	2018/07/10 08:43:34	72.5	72.4	69.5	64.3	62.4
341	2018/07/10 08:43:39	59.9	58.6	59.0	58.6	60.6
346	2018/07/10 08:43:44	66.1	71.5	71.2	70.2	63.9
351	2018/07/10 08:43:49	63.1	63.3	66.7	68.7	67.5
356	2018/07/10 08:43:54	63.0	62.7	60.9	60.9	60.3
361	2018/07/10 08:43:59	60.3	60.7	62.1	66.5	68.7
366	2018/07/10 08:44:04	68.6	67.0	66.3	68.3	64.9
371	2018/07/10 08:44:09	66.1	67.7	67.7	72.7	77.6
376	2018/07/10 08:44:14	77.7	77.6	74.0	70.7	67.1
381	2018/07/10 08:44:19	67.8	68.5	72.5	74.4	73.5
386	2018/07/10 08:44:24	74.8	71.8	70.1	69.4	68.8
391	2018/07/10 08:44:29	69.7	68.4	71.0	69.3	66.5
396	2018/07/10 08:44:34	62.9	61.2	59.3	58.9	59.2
401	2018/07/10 08:44:39	57.7	57.6	57.3	57.1	56.7
406	2018/07/10 08:44:44	56.6	56.2	56.8	56.2	56.4
411	2018/07/10 08:44:49	56.1	56.7	57.2	57.3	57.1
416	2018/07/10 08:44:54	56.9	56.2	56.5	56.1	56.8
421	2018/07/10 08:44:59	57.6	57.6	58.3	58.9	61.0

426	2018/07/10 08:45:04	62.4	68.0	70.5	70.8	67.9
431	2018/07/10 08:45:09	65.1	61.9	60.4	60.3	58.5
436	2018/07/10 08:45:14	57.7	58.1	57.5	60.2	62.7
441	2018/07/10 08:45:19	61.5	59.5	60.6	60.7	61.1
446	2018/07/10 08:45:24	60.6	62.3	62.3	63.7	63.5
451	2018/07/10 08:45:29	63.6	65.6	64.6	65.5	65.4
456	2018/07/10 08:45:34	65.1	64.7	63.9	63.9	63.1
461	2018/07/10 08:45:39	61.5	60.1	60.5	59.9	59.4
466	2018/07/10 08:45:44	60.3	60.5	65.3	68.3	69.5
471	2018/07/10 08:45:49	67.9	65.3	62.9	65.9	69.1
476	2018/07/10 08:45:54	69.4	70.7	63.5	61.8	60.6
481	2018/07/10 08:45:59	59.7	57.7	57.6	57.5	57.6
486	2018/07/10 08:46:04	57.3	57.1	56.9	57.8	57.8
491	2018/07/10 08:46:09	57.9	58.0	58.2	59.5	60.2
496	2018/07/10 08:46:14	63.2	64.1	63.9	69.4	71.6
501	2018/07/10 08:46:19	69.8	65.2	62.8	62.2	61.3
506	2018/07/10 08:46:24	60.0	61.2	60.9	62.1	59.9
511	2018/07/10 08:46:29	63.5	62.3	63.1	66.7	68.2
516	2018/07/10 08:46:34	69.4	68.3	67.1	73.1	77.1
521	2018/07/10 08:46:39	77.3	74.0	72.4	72.5	68.8
526	2018/07/10 08:46:44	69.0	71.7	70.6	69.8	67.2
531	2018/07/10 08:46:49	68.1	65.8	66.9	67.2	67.2
536	2018/07/10 08:46:54	66.3	64.0	66.0	63.1	61.5
541	2018/07/10 08:46:59	60.9	61.0	60.2	58.8	58.5
546	2018/07/10 08:47:04	58.2	59.5	58.3	59.3	58.0
551	2018/07/10 08:47:09	57.4	58.2	59.1	58.6	58.3
556	2018/07/10 08:47:14	59.1	58.6	59.5	60.3	60.4
561	2018/07/10 08:47:19	60.8	62.4	64.6	67.4	72.0
566	2018/07/10 08:47:24	74.3	77.1	76.2	73.9	72.2
571	2018/07/10 08:47:29	69.3	65.6	63.4	62.3	60.8
576	2018/07/10 08:47:34	60.5	60.1	59.9	59.5	59.2
581	2018/07/10 08:47:39	60.7	61.9	62.8	64.6	64.7
586	2018/07/10 08:47:44	66.4	66.6	67.4	66.9	67.8
591	2018/07/10 08:47:49	64.2	62.0	61.1	61.2	59.8
596	2018/07/10 08:47:54	58.4	58.5	58.5	59.0	58.0
601	2018/07/10 08:47:59	58.8	58.5	57.9	58.5	59.5
606	2018/07/10 08:48:04	59.3	61.1	61.0	59.9	60.4
611	2018/07/10 08:48:09	61.6	60.6	60.6	61.0	62.1
616	2018/07/10 08:48:14	66.5	66.1	66.9	64.7	62.9
621	2018/07/10 08:48:19	61.7	62.9	66.0	69.9	70.8
626	2018/07/10 08:48:24	70.9	70.3	70.8	71.9	72.4
631	2018/07/10 08:48:29	75.6	76.9	75.3	73.7	70.1
636	2018/07/10 08:48:34	70.5	68.9	68.2	67.2	64.5
641	2018/07/10 08:48:39	64.6	65.5	68.2	69.1	68.7
646	2018/07/10 08:48:44	68.8	69.3	66.6	65.5	63.6
651	2018/07/10 08:48:49	62.4	61.6	60.8	60.2	60.2
656	2018/07/10 08:48:54	59.6	59.8	60.2	59.6	58.7
661	2018/07/10 08:48:59	59.7	59.6	59.7	59.3	60.3
666	2018/07/10 08:49:04	60.4	60.6	62.6	64.2	65.7
671	2018/07/10 08:49:09	65.8	65.2	63.4	62.1	60.6
676	2018/07/10 08:49:14	60.3	60.2	60.6	60.7	61.1
681	2018/07/10 08:49:19	61.5	61.1	63.4	63.4	64.5
686	2018/07/10 08:49:24	64.0	68.2	67.6	66.6	66.9
691	2018/07/10 08:49:29	64.4	66.9	64.1	62.7	61.4
696	2018/07/10 08:49:34	61.7	60.6	61.5	62.0	62.9
701	2018/07/10 08:49:39	62.4	62.8	62.4	61.2	62.5
706	2018/07/10 08:49:44	61.6	63.7	63.4	63.6	66.6
711	2018/07/10 08:49:49	68.4	72.4	73.3	71.8	74.0
716	2018/07/10 08:49:54	73.6	70.7	66.1	63.5	61.4
721	2018/07/10 08:49:59	61.0	60.9	60.3	59.7	59.2
726	2018/07/10 08:50:04	58.8	58.9	59.1	59.5	60.4
731	2018/07/10 08:50:09	60.7	62.1	63.5	64.9	63.7
736	2018/07/10 08:50:14	62.9	66.3	62.7	63.0	63.7
741	2018/07/10 08:50:19	64.9	64.6	66.1	67.3	66.4
746	2018/07/10 08:50:24	68.4	71.5	71.3	70.2	68.5
751	2018/07/10 08:50:29	64.2	63.2	62.8	61.9	60.9
756	2018/07/10 08:50:34	60.5	61.8	63.7	64.4	65.1
761	2018/07/10 08:50:39	65.0	63.2	64.0	63.8	63.3
766	2018/07/10 08:50:44	63.2	63.4	65.6	65.6	65.2
771	2018/07/10 08:50:49	65.4	64.5	65.4	64.7	65.0
776	2018/07/10 08:50:54	62.0	60.0	60.1	58.9	57.5
781	2018/07/10 08:50:59	57.0	57.6	56.7	56.8	56.3
786	2018/07/10 08:51:04	56.8	56.7	56.0	55.9	56.4
791	2018/07/10 08:51:09	55.9	55.9	56.0	56.3	56.2
796	2018/07/10 08:51:14	57.5	58.7	59.0	63.2	68.5
801	2018/07/10 08:51:19	69.2	68.3	70.4	70.7	69.2
806	2018/07/10 08:51:24	72.7	77.4	82.1	77.8	77.4
811	2018/07/10 08:51:29	74.7	72.1	69.2	66.0	64.5
816	2018/07/10 08:51:34	68.2	70.3	69.5	66.8	63.2
821	2018/07/10 08:51:39	63.8	62.5	61.2	59.7	60.2
826	2018/07/10 08:51:44	59.7	59.7	59.6	59.3	61.1
831	2018/07/10 08:51:49	62.3	65.4	62.9	63.8	62.4
836	2018/07/10 08:51:54	63.1	62.6	63.4	64.8	65.3
841	2018/07/10 08:51:59	65.1	66.7	66.3	67.6	69.5
846	2018/07/10 08:52:04	72.3	72.5	74.8	77.2	75.7
851	2018/07/10 08:52:09	72.5	69.8	67.8	66.7	66.4
856	2018/07/10 08:52:14	65.6	64.7	64.4	64.4	62.1
861	2018/07/10 08:52:19	60.7	60.6	61.7	66.2	67.4
866	2018/07/10 08:52:24	70.6	72.1	73.4	72.6	70.8
871	2018/07/10 08:52:29	70.2	68.9	68.6	68.3	67.3
876	2018/07/10 08:52:34	65.7	64.4	62.6	61.6	62.0
881	2018/07/10 08:52:39	59.8	59.6	59.0	60.8	64.7
886	2018/07/10 08:52:44	68.3	70.5	70.1	69.1	65.3
891	2018/07/10 08:52:49	65.0	66.4	66.8	66.1	63.1
896	2018/07/10 08:52:54	61.9	63.8	70.4	72.1	69.5

- Freq Weight : A
- Time Weight : FAST
- Level Range : 40-100
- Max dB : 85.6 - 2018/07/10 09:11:21
- Level Range : 40-100
- SEL : 93.7
- Leq : 64.2
-

No.s	Date Time	(dB)				
1	2018/07/10 09:05:05	48.1	50.5	57.0	68.8	56.1
6	2018/07/10 09:05:10	80.9	57.5	65.7	53.1	54.0
11	2018/07/10 09:05:15	66.9	51.5	49.9	54.4	49.3
16	2018/07/10 09:05:20	56.7	50.8	45.0	44.8	54.6
21	2018/07/10 09:05:25	52.4	44.7	43.9	43.9	50.2
26	2018/07/10 09:05:30	45.9	46.5	49.6	49.7	47.9
31	2018/07/10 09:05:35	50.8	55.3	49.3	54.3	51.3
36	2018/07/10 09:05:40	45.5	44.5	43.1	44.0	43.9
41	2018/07/10 09:05:45	49.6	48.0	43.6	45.1	43.4
46	2018/07/10 09:05:50	43.6	43.6	42.6	41.8	43.1
51	2018/07/10 09:05:55	42.8	42.6	70.6	70.6	71.2
56	2018/07/10 09:06:00	69.0	49.2	46.1	57.2	51.2
61	2018/07/10 09:06:05	52.6	56.2	59.5	62.6	65.1
66	2018/07/10 09:06:10	64.8	64.5	63.1	63.7	62.9
71	2018/07/10 09:06:15	64.2	61.8	60.3	60.4	58.3
76	2018/07/10 09:06:20	58.0	57.0	56.3	54.6	54.3
81	2018/07/10 09:06:25	54.7	55.6	55.3	53.7	51.5
86	2018/07/10 09:06:30	50.3	48.6	50.4	48.6	48.2
91	2018/07/10 09:06:35	49.1	52.9	53.4	48.7	47.7
96	2018/07/10 09:06:40	47.5	46.5	46.6	47.1	46.6
101	2018/07/10 09:06:45	45.7	46.1	45.7	53.6	50.7
106	2018/07/10 09:06:50	44.6	46.4	47.2	46.1	47.3
111	2018/07/10 09:06:55	49.3	48.7	49.5	49.1	48.6
116	2018/07/10 09:07:00	49.8	51.0	52.9	56.2	59.5
121	2018/07/10 09:07:05	63.6	67.0	66.1	69.5	74.9
126	2018/07/10 09:07:10	74.3	64.8	59.0	55.2	52.2
131	2018/07/10 09:07:15	52.1	51.5	51.3	52.4	52.9
136	2018/07/10 09:07:20	51.8	54.0	49.4	48.8	45.8
141	2018/07/10 09:07:25	45.2	44.4	45.0	45.5	46.5
146	2018/07/10 09:07:30	50.6	53.3	53.2	54.7	52.4
151	2018/07/10 09:07:35	53.8	56.1	54.7	57.6	58.4
156	2018/07/10 09:07:40	57.7	57.4	55.8	57.4	57.1
161	2018/07/10 09:07:45	57.1	57.5	58.5	56.5	55.6
166	2018/07/10 09:07:50	54.0	53.2	57.6	59.2	58.9
171	2018/07/10 09:07:55	56.7	56.5	54.5	57.8	60.3
176	2018/07/10 09:08:00	63.1	61.8	64.3	62.9	59.0
181	2018/07/10 09:08:05	60.3	57.4	53.5	50.6	57.0
186	2018/07/10 09:08:10	54.7	53.8	53.2	51.5	51.9
191	2018/07/10 09:08:15	52.8	53.4	55.0	54.6	56.6
196	2018/07/10 09:08:20	61.8	67.8	74.4	71.9	64.5
201	2018/07/10 09:08:25	61.2	56.3	52.8	51.7	48.7
206	2018/07/10 09:08:30	49.5	48.3	47.7	47.3	48.4
211	2018/07/10 09:08:35	48.3	48.7	50.4	54.8	56.0
216	2018/07/10 09:08:40	58.7	56.1	54.5	54.1	53.6
221	2018/07/10 09:08:45	49.9	52.5	51.4	53.3	57.1
226	2018/07/10 09:08:50	58.1	55.6	50.2	47.2	47.8
231	2018/07/10 09:08:55	48.8	51.8	52.1	50.5	52.2
236	2018/07/10 09:09:00	56.0	57.1	62.5	63.4	61.8
241	2018/07/10 09:09:05	58.7	59.7	55.1	52.5	51.1
246	2018/07/10 09:09:10	50.8	51.6	52.4	51.8	52.4
251	2018/07/10 09:09:15	54.5	53.3	52.6	55.2	52.9
256	2018/07/10 09:09:20	52.6	53.1	52.9	51.9	52.0
261	2018/07/10 09:09:25	53.9	51.7	50.3	49.6	53.6
266	2018/07/10 09:09:30	48.1	52.5	47.5	47.1	53.3
271	2018/07/10 09:09:35	57.1	47.9	46.7	46.6	45.8
276	2018/07/10 09:09:40	45.3	45.9	46.0	47.1	49.9
281	2018/07/10 09:09:45	49.2	51.4	49.6	50.0	51.5
286	2018/07/10 09:09:50	49.6	50.1	53.7	54.0	55.1
291	2018/07/10 09:09:55	58.6	62.6	60.9	62.4	60.1
296	2018/07/10 09:10:00	57.9	59.7	61.2	61.3	64.7
301	2018/07/10 09:10:05	65.4	65.3	66.1	68.2	72.6
306	2018/07/10 09:10:10	81.0	73.9	66.8	62.2	60.3
311	2018/07/10 09:10:15	56.1	54.5	53.2	53.7	55.6
316	2018/07/10 09:10:20	58.2	60.0	59.1	59.7	58.5
321	2018/07/10 09:10:25	55.9	57.9	56.1	52.2	49.8
326	2018/07/10 09:10:30	49.6	48.9	48.1	48.0	47.1
331	2018/07/10 09:10:35	46.5	46.9	48.5	47.8	47.7
336	2018/07/10 09:10:40	47.6	47.3	46.5	45.7	45.1
341	2018/07/10 09:10:45	45.9	45.8	46.5	46.9	47.5
346	2018/07/10 09:10:50	48.2	50.4	51.7	54.9	58.6
351	2018/07/10 09:10:55	60.9	63.4	62.0	61.1	56.9
356	2018/07/10 09:11:00	57.7	56.3	52.2	50.6	50.4
361	2018/07/10 09:11:05	50.6	55.4	57.3	61.4	60.8
366	2018/07/10 09:11:10	56.4	58.2	57.9	59.0	62.4
371	2018/07/10 09:11:15	71.3	84.1	75.2	68.1	74.0
376	2018/07/10 09:11:20	84.2	77.5	66.8	61.6	61.6
381	2018/07/10 09:11:25	56.1	53.8	51.1	49.3	49.5
386	2018/07/10 09:11:30	52.4	55.8	60.3	66.4	71.7
391	2018/07/10 09:11:35	78.4	70.0	60.5	55.5	52.4
396	2018/07/10 09:11:40	49.1	47.8	46.7	46.4	45.5
401	2018/07/10 09:11:45	48.6	46.1	45.8	47.1	47.7
406	2018/07/10 09:11:50	50.3	54.3	56.7	60.5	60.9
411	2018/07/10 09:11:55	61.3	58.6	56.1	56.4	52.7
416	2018/07/10 09:12:00	49.2	46.8	45.9	45.4	44.6
421	2018/07/10 09:12:05	44.4	44.0	43.6	43.3	43.8

426	2018/07/10 09:12:10	42.7	43.9	46.7	52.5	57.5
431	2018/07/10 09:12:15	46.3	44.9	45.0	46.1	47.0
436	2018/07/10 09:12:20	49.8	52.3	56.8	61.0	65.2
441	2018/07/10 09:12:25	65.5	65.6	61.3	62.1	58.1
446	2018/07/10 09:12:30	55.7	55.0	54.1	54.3	55.0
451	2018/07/10 09:12:35	55.0	56.0	60.5	68.2	73.9
456	2018/07/10 09:12:40	76.1	70.2	73.9	73.8	64.1
461	2018/07/10 09:12:45	59.2	54.4	53.5	54.2	52.9
466	2018/07/10 09:12:50	51.3	51.9	48.9	48.1	48.5
471	2018/07/10 09:12:55	47.1	49.9	47.3	44.1	43.9
476	2018/07/10 09:13:00	42.9	42.5	42.1	41.1	41.1
481	2018/07/10 09:13:05	41.1	42.1	42.2	41.0	40.2
486	2018/07/10 09:13:10	40.9	41.1	40.0	40.7	40.2
491	2018/07/10 09:13:15	42.0	43.5	43.0	44.4	46.3
496	2018/07/10 09:13:20	47.0	50.4	53.3	58.2	65.5
501	2018/07/10 09:13:25	71.2	78.9	70.5	63.9	61.5
506	2018/07/10 09:13:30	56.7	54.0	51.5	49.5	50.3
511	2018/07/10 09:13:35	48.0	47.4	49.6	51.0	52.3
516	2018/07/10 09:13:40	54.2	53.0	52.0	51.6	51.0
521	2018/07/10 09:13:45	48.7	50.2	47.0	48.2	48.7
526	2018/07/10 09:13:50	47.3	46.7	45.4	44.4	43.9
531	2018/07/10 09:13:55	43.6	43.9	43.3	43.6	42.6
536	2018/07/10 09:14:00	43.8	43.9	44.2	47.0	45.5
541	2018/07/10 09:14:05	43.8	44.2	44.2	45.5	48.2
546	2018/07/10 09:14:10	47.4	50.8	49.6	52.4	53.5
551	2018/07/10 09:14:15	55.2	57.5	60.4	63.8	65.5
556	2018/07/10 09:14:20	63.0	63.1	58.7	59.4	57.4
561	2018/07/10 09:14:25	57.2	56.9	57.0	56.1	56.6
566	2018/07/10 09:14:30	57.3	55.5	50.7	49.1	48.1
571	2018/07/10 09:14:35	47.5	47.0	47.8	48.1	48.6
576	2018/07/10 09:14:40	50.5	57.2	63.0	68.1	75.2
581	2018/07/10 09:14:45	72.7	65.5	62.5	60.1	57.2
586	2018/07/10 09:14:50	57.2	57.7	55.9	54.6	55.0
591	2018/07/10 09:14:55	56.2	54.5	55.8	50.1	49.2
596	2018/07/10 09:15:00	47.7	48.2	48.0	46.5	48.3
601	2018/07/10 09:15:05	47.0	47.5	45.4	44.9	44.7
606	2018/07/10 09:15:10	45.1	47.0	47.8	47.5	48.6
611	2018/07/10 09:15:15	46.0	45.7	47.2	45.9	47.0
616	2018/07/10 09:15:20	46.8	46.9	47.2	46.4	47.4
621	2018/07/10 09:15:25	46.5	48.3	50.0	52.2	54.0
626	2018/07/10 09:15:30	55.3	56.8	55.8	55.7	56.6
631	2018/07/10 09:15:35	54.9	54.0	53.8	51.7	48.4
636	2018/07/10 09:15:40	47.3	46.9	49.3	53.9	56.0
641	2018/07/10 09:15:45	55.1	58.8	61.3	62.0	60.8
646	2018/07/10 09:15:50	62.9	63.9	67.1	69.3	71.0
651	2018/07/10 09:15:55	67.5	71.0	73.1	74.6	75.0
656	2018/07/10 09:16:00	73.1	69.5	67.3	65.6	63.1
661	2018/07/10 09:16:05	62.5	62.8	62.3	63.3	62.6
666	2018/07/10 09:16:10	61.6	62.6	60.5	59.1	58.7
671	2018/07/10 09:16:15	59.2	61.1	68.1	75.2	74.6
676	2018/07/10 09:16:20	65.6	60.9	58.3	56.7	60.2
681	2018/07/10 09:16:25	71.0	79.8	76.1	65.0	56.6
686	2018/07/10 09:16:30	53.4	50.5	49.7	49.2	50.4
691	2018/07/10 09:16:35	52.1	56.9	59.9	63.4	71.6
696	2018/07/10 09:16:40	78.5	77.5	67.0	59.9	55.9
701	2018/07/10 09:16:45	55.3	53.3	53.2	53.0	58.1
706	2018/07/10 09:16:50	61.7	63.2	65.3	61.5	59.1
711	2018/07/10 09:16:55	57.2	52.8	50.1	48.0	49.5
716	2018/07/10 09:17:00	49.8	51.2	50.5	52.9	54.2
721	2018/07/10 09:17:05	56.7	57.1	58.9	59.5	62.5
726	2018/07/10 09:17:10	66.8	70.9	74.9	73.5	72.0
731	2018/07/10 09:17:15	68.5	63.7	59.9	58.5	56.9
736	2018/07/10 09:17:20	56.5	55.9	57.0	56.9	58.8
741	2018/07/10 09:17:25	55.1	55.4	56.4	56.5	57.4
746	2018/07/10 09:17:30	55.1	55.0	56.0	48.3	47.9
751	2018/07/10 09:17:35	48.1	52.6	54.6	57.1	59.2
756	2018/07/10 09:17:40	67.8	61.9	64.2	62.2	64.4
761	2018/07/10 09:17:45	62.0	59.7	61.0	63.7	63.2
766	2018/07/10 09:17:50	63.2	59.3	58.7	58.8	53.0
771	2018/07/10 09:17:55	50.9	53.3	53.6	53.6	58.0
776	2018/07/10 09:18:00	61.0	64.5	68.8	65.4	65.4
781	2018/07/10 09:18:05	61.7	62.8	58.9	56.3	53.6
786	2018/07/10 09:18:10	53.5	53.7	53.2	52.8	53.6
791	2018/07/10 09:18:15	51.8	52.3	51.5	49.9	47.9
796	2018/07/10 09:18:20	48.2	49.4	48.9	49.2	51.7
801	2018/07/10 09:18:25	48.1	48.6	50.9	51.5	51.7
806	2018/07/10 09:18:30	57.8	52.0	49.6	48.4	47.6
811	2018/07/10 09:18:35	46.4	49.0	46.6	45.7	43.5
816	2018/07/10 09:18:40	44.4	43.2	43.0	43.0	42.4
821	2018/07/10 09:18:45	44.5	45.9	43.8	43.1	44.1
826	2018/07/10 09:18:50	42.6	42.7	44.1	44.6	45.7
831	2018/07/10 09:18:55	46.8	48.9	50.7	55.0	58.9
836	2018/07/10 09:19:00	62.7	69.4	69.2	62.3	56.8
841	2018/07/10 09:19:05	54.7	52.9	53.3	53.5	55.3
846	2018/07/10 09:19:10	50.0	51.4	46.4	46.3	44.0
851	2018/07/10 09:19:15	44.6	44.6	46.4	49.5	46.3
856	2018/07/10 09:19:20	50.2	45.7	45.7	46.6	45.0
861	2018/07/10 09:19:25	44.5	47.1	47.5	48.2	51.2
866	2018/07/10 09:19:30	48.8	47.9	46.4	46.7	48.8
871	2018/07/10 09:19:35	45.6	53.6	44.3	59.4	46.9
876	2018/07/10 09:19:40	55.8	55.1	44.0	44.1	44.1
881	2018/07/10 09:19:45	43.6	44.5	44.4	42.3	45.1
886	2018/07/10 09:19:50	43.0	43.8	44.5	44.0	44.8
891	2018/07/10 09:19:55	42.2	44.4	45.4	45.0	44.1
896	2018/07/10 09:20:00	48.8	46.2	46.1	50.7	43.9