

NOISE AND VIBRATION IMPACT ANALYSIS

**2411 GLASSELL STREET PROJECT
ORANGE, CALIFORNIA**



September 2025

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September 2025

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LIST OF ABBREVIATIONS AND ACRONYMS

ADT	average daily traffic
APN	Assessor's Parcel Number
CALGreen Code	California Green Building Standards Code
Caltrans	California Department of Transportation
Caltrans Manual	California Department of Transportation <i>and Construction Vibration Guidance Manual</i>
CEQA	California Environmental Quality Act
City	City of Orange
CNEL	Community Noise Equivalent Level
dB	decibel(s)
dBA	A-weighted decibel(s)
EPA	United States Environmental Protection Agency
ft	foot/feet
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
HVAC	heating, ventilation, and air conditioning
in/sec	inches per second
L _{dn}	day-night average noise level
L _{eq}	equivalent continuous sound level
L _{max}	maximum instantaneous sound level
Noise Element	City of Orange General Plan Noise Element
JWA	John Wayne International Airport
PPV	peak particle velocity
project	2411 Glassell Street Project
RMS	root-mean-square

SPL	sound pressure level
sq ft	square foot/feet
V	root-mean-square velocity amplitude
V _{ref}	reference velocity amplitude

INTRODUCTION

This noise and vibration impact analysis has been prepared to evaluate the potential noise and vibration impacts and reduction measures associated with the 2411 Glassell Street Project (project) in Orange, California. This report is intended to satisfy the City of Orange (City) requirements for a project-specific noise impact analysis by examining the impacts of the project site and evaluating noise reduction measures that the project may require.

PROJECT LOCATION AND DESCRIPTION

The project site is located within the northwestern portion of the City of Orange, Orange County, California. The address of the project site is 2411 North Glassell Street, which is at the southeast corner of the intersection of Glassell Street and Fletcher Avenue. The project site includes two parcels, identified as Assessor's Parcel Numbers (APN) 374-381-01 and 374-381-02, which encompass 12.1 net acres. The existing site contains three 2-story concrete tilt-up office buildings, totaling 191,127 square feet (SF) in a circular building campus layout.

The northern driveway on Glassell Street is located approximately 160 feet south of the Glassell Street and Fletcher Avenue intersection, while the southern driveway on Glassell Street is located approximately 450 feet south of the Glassell Street and Fletcher Avenue intersection.

The proposed industrial building would be single-story plus mezzanine and approximately 45 feet in height and contain approximately 298,988 SF of industrial warehouse and manufacturing uses.

The proposed building has been designed to accommodate two different use configurations depending on the needs of future tenants. The building would be setback approximately 88 feet from Glassell Street and 18 feet from Fletcher Avenue. Option 1 (proposed Project) would include approximately 171,188 SF of warehouse space on the ground floor, 109,000 SF of manufacturing space on the ground floor, 9,400 SF of office space on the ground floor, and 9,400 SF of additional office space on the mezzanine level.

Option 2 would have the same building footprint as Option 1 but would total 298,918 SF. Option 2 would include 260,118 SF of warehouse space on the ground floor, 20,000 SF of manufacturing space on the ground floor, 9,400 SF of office space on the ground floor, and 9,400 SF of additional office space on the mezzanine level.

The Project's preferred configuration would be the 109,000 SF of manufacturing use (i.e. Option 1), which duly represents the most conservative analysis since manufacturing use is generally more intensive of use than warehouse use in terms of trip generation and air quality impacts. Any differences in potential environmental impacts between the proposed Project and Option 2 are identified throughout the analysis below.

Construction activities for the proposed project would occur over one phase and would include demolition, site preparation, grading, building construction, paving, and architectural coating. Demolition activities are expected to generate approximately 2,600 tons of debris. The project is expected to result in the import of approximately 2,200 cubic yards of soil during the grading phase.

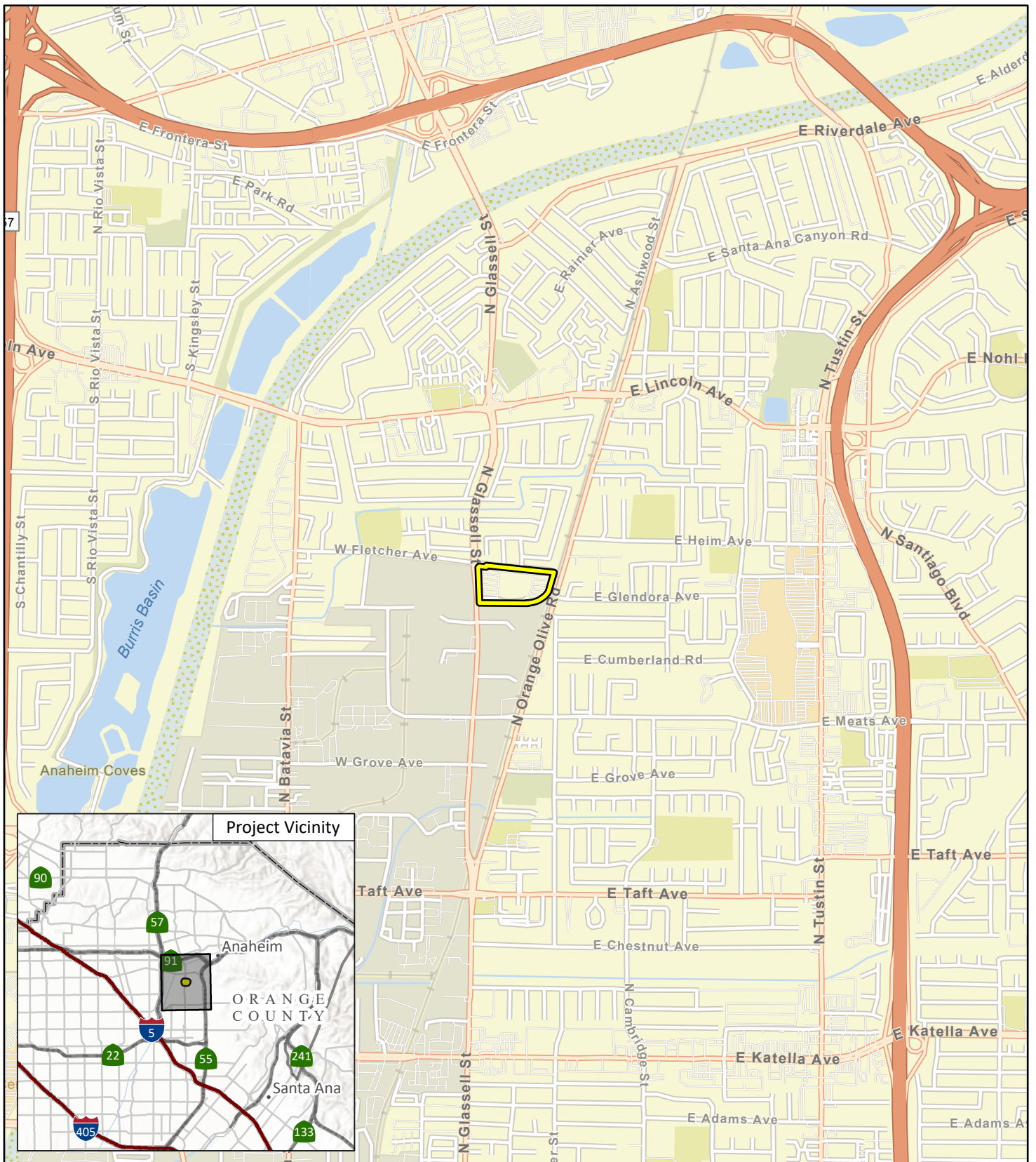
Construction is expected to occur six days per week for 10 hours per day, over a duration of 17 months. Construction would occur within the hours allowed by the City of Orange Municipal Code Section 8.24.050, which states that construction shall occur only between the hours of 7:00 a.m. and 8:00 p.m. Monday through Saturday, and from 9:00 a.m. to 8:00 p.m. on Sundays and federal holidays.

The project would be operated as an industrial building with manufacturing and warehouse uses. Cold storage is not proposed. Typical operational characteristics would include employees traveling to and from the site and trucks arriving at the site to load and unload cargo. Operations are anticipated to be 24 hours a day, 7 days a week. It is assumed that the proposed project would be operational by the year 2027.

EXISTING LAND USES IN THE PROJECT AREA

The project site is surrounded primarily by industrial and residential uses. The areas adjacent to the project site include the following uses:

- **North:** Fletcher Avenue followed by single family residences.
- **East:** Existing BNSF railroad and North Orange Olive Road followed by single family residences.
- **South:** Former railroad spur followed by warehouses and offices; and
- **West:** Glassell Street followed by industrial and commercial businesses.



 Project Location

FIGURE 1

LSA



0 1000 2000
FEET

SOURCE: Esri Street Map 2025

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2411 Glassell Street Project
Project Location

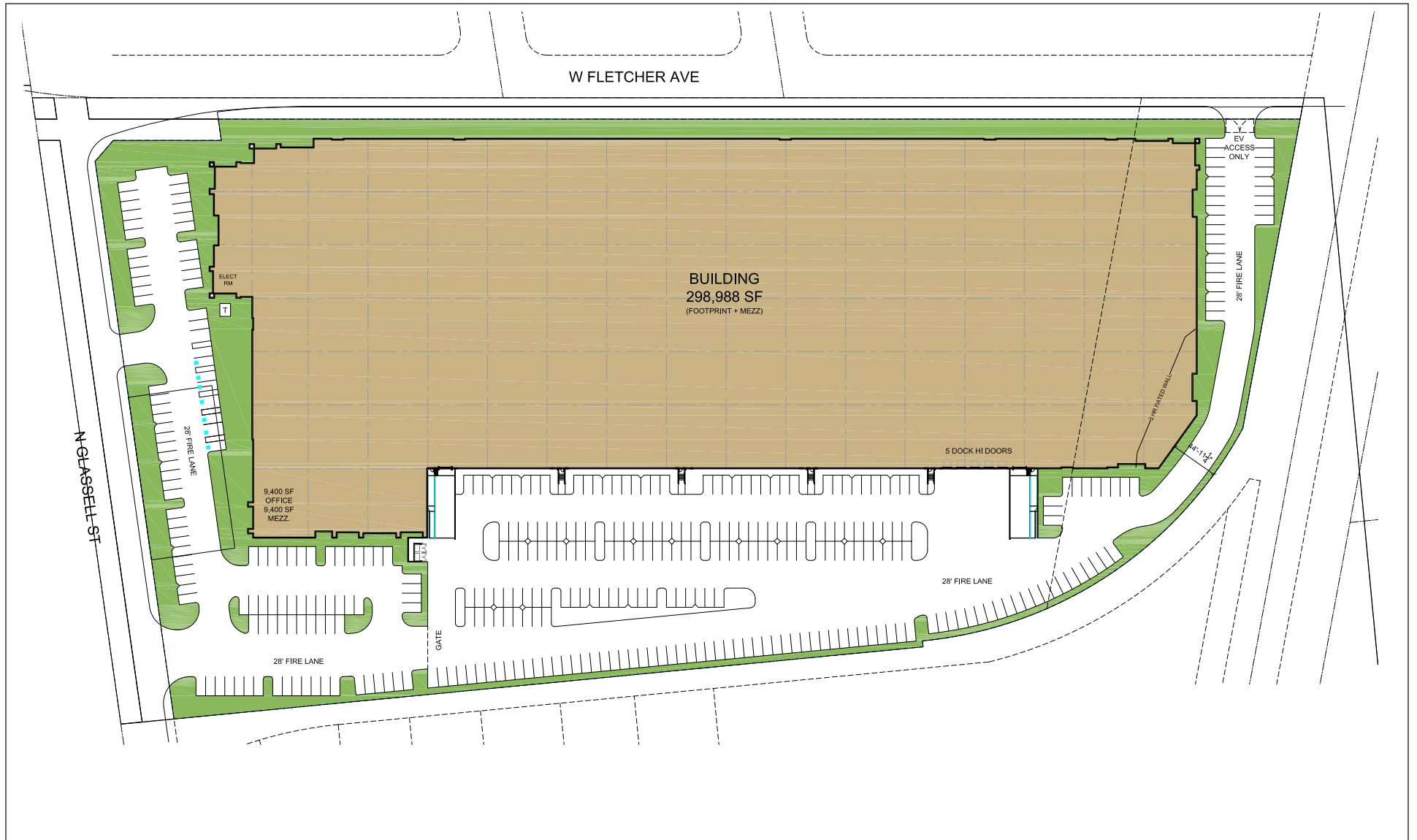
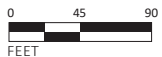


FIGURE 2

LSA



SOURCE: Herdman Architecture + Design

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2411 Glassell Street Project
Site Plan

The nearest sensitive receptors are:

- **North:** Existing single-family residences approximately 54 feet (ft) away from the project boundary line.
- **East:** Existing single-family residences approximately 150 feet (ft) away from the project boundary line.

NOISE AND VIBRATION FUNDAMENTALS

CHARACTERISTICS OF SOUND

Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect the ability to hear. Pitch is the number of complete vibrations, or cycles per second, of a sound wave, which results in the tone's range from high to low. Loudness is the strength of a sound, and it describes a noisy or quiet environment; it is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity is the average rate of sound energy transmitted through a unit area perpendicular to the direction in which the sound waves are traveling. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effect on adjacent sensitive land uses.

MEASUREMENT OF SOUND

Sound intensity is measured with the A-weighted decibel (dBA) scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound, similar to the human ear's de-emphasis of these frequencies. Decibels (dB), unlike the linear scale (e.g., inches or pounds), are measured on a logarithmic scale representing points on a sharply rising curve.

For example, 10 dB is 10 times more intense than 0 dB, 20 dB is 100 times more intense than 0 dB, and 30 dB is 1,000 times more intense than 0 dB. Thirty decibels (30 dB) represents 1,000 times as much acoustic energy as 0 dB. The decibel scale increases as the square of the change, representing the sound pressure energy. A sound as soft as human breathing is about 10 times greater than 0 dB. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. A 10 dB increase in sound level is perceived by the human ear as only a doubling of the sound's loudness. Ambient sounds generally range from 30 dB (very quiet) to 100 dB (very loud).

Sound levels are generated from a source, and their decibel level decreases as the distance from that source increases. Sound levels dissipate exponentially with distance from their noise sources. For a single point source, sound levels decrease approximately 6 dB for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment. If noise is produced by a line source (e.g., highway traffic or railroad operations), the sound decreases 3 dB for each doubling of distance in a hard site environment. Line source sound levels decrease 4.5 dB for each doubling of distance in a relatively flat environment with absorptive vegetation.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. The equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq} and Community Noise Equivalent Level (CNEL) or the day-night average noise level (L_{dn}) based on A-weighted decibels. CNEL is the time-weighted average noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and a 10 dBA weighting factor applied to noises occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during the relaxation. CNEL and L_{dn} are within 1 dBA of each other and are normally interchangeable. The City uses the CNEL noise scale for long-term traffic noise impact assessment.

Other noise rating scales of importance when assessing the annoyance factor include the maximum instantaneous noise level (L_{max}), which is the highest sound level that occurs during a stated time period. The noise environments discussed in this analysis for short-term noise impacts are specified in terms of maximum levels denoted by L_{max} , which reflects peak operating conditions and addresses the annoying aspects of intermittent noise. It is often used together with another noise scale, or noise standards in terms of percentile noise levels, in noise ordinances for enforcement purposes. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half the time the noise level exceeds this level, and half the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the background noise level during a monitoring period. For a relatively constant noise source, the L_{eq} and L_{50} are approximately the same.

Noise impacts can be described in three categories. The first category includes audible impacts, which are increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3 dB or greater because this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1 dB and 3 dB. This range of noise levels has been found to be noticeable only in laboratory environments. The last category includes changes in noise levels of less than 1 dB, which are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant.

Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to sound levels higher than 85 dBA. Exposure to high sound levels affects the entire system, with prolonged sound exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. In comparison, extended periods of sound exposure above 90 dBA would result in permanent cell damage. When the sound level reaches 120 dBA, a tickling sensation occurs in the human ear, even with short-term exposure. This level of sound is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by a feeling of pain in the ear (i.e., the threshold of pain). A sound level of 160–165 dBA will result in dizziness or a

loss of equilibrium. The ambient or background noise problem is widespread and generally more concentrated in urban areas than in outlying, less developed areas.

Table A lists definitions of acoustical terms, and Table B shows common sound levels and their sources.

Table A: Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit of sound measurement that denotes the ratio between two quantities that are proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in 1 second (i.e., the number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. (All sound levels in this report are A-weighted unless reported otherwise.)
L_{01} , L_{10} , L_{50} , L_{90}	The fast A-weighted noise levels that are equaled or exceeded by a fluctuating sound level 1%, 10%, 50%, and 90% of a stated time period, respectively.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time-varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 5 dBA to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 dBA to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L_{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 dBA to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L_{max} , L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Ambient Noise Level	The all-encompassing noise associated with a given environment at a specified time. Usually a composite of sound from many sources from many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, time of occurrence, and tonal or informational content, as well as the prevailing ambient noise level.

Sources: (1) Technical Noise Supplement (Caltrans 2013); (2) Transit Noise and Vibration Impact Assessment Manual (FTA 2018).

Caltrans = California Department of Transportation

FTA = Federal Transit Administration

Table B: Common Sound Levels and Their Noise Sources

Noise Source	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Evaluations
Near Jet Engine	140	Deafening	128 times as loud
Civil Defense Siren	130	Threshold of Pain	64 times as loud
Hard Rock Band	120	Threshold of Feeling	32 times as loud
Accelerating Motorcycle at a Few Feet Away	110	Very Loud	16 times as loud
Pile Driver; Noisy Urban Street/ Heavy City Traffic	100	Very Loud	8 times as loud
Ambulance Siren; Food Blender	95	Very Loud	—
Garbage Disposal	90	Very Loud	4 times as loud
Freight Cars; Living Room Music	85	Loud	—
Pneumatic Drill; Vacuum Cleaner	80	Loud	2 times as loud
Busy Restaurant	75	Moderately Loud	—
Near Freeway Auto Traffic	70	Moderately Loud	Reference level
Average Office	60	Quiet	One-half as loud
Suburban Street	55	Quiet	—
Light Traffic; Soft Radio Music in Apartment	50	Quiet	One-quarter as loud
Large Transformer	45	Quiet	—
Average Residence without Stereo Playing	40	Faint	One-eighth as loud
Soft Whisper	30	Faint	—
Rustling Leaves	20	Very Faint	—
Human Breathing	10	Very Faint	Threshold of Hearing

Source: Compiled by LSA (2022).

FUNDAMENTALS OF VIBRATION

Vibration refers to ground-borne noise and perceptible motion. Ground-borne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors, where the motion may not be discernible, but without the effects associated with the shaking of a building there is less adverse reaction. Vibration energy propagates from a source through intervening soil and rock layers to the foundations of nearby buildings. The vibration then propagates from the foundation throughout the remainder of the structure. Building vibration may be perceived by occupants as the motion of building surfaces, the rattling of items sitting on shelves or hanging on walls, or a low-frequency rumbling noise. The rumbling noise is caused by the vibration of walls, floors, and ceilings that radiate sound waves. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by 10 dB or less. This is an order of magnitude below the damage threshold for normal buildings.

Typical sources of ground-borne vibration are construction activities (e.g., blasting, pile-driving, and operating heavy-duty earthmoving equipment), steel-wheeled trains, and occasional traffic on rough roads. Problems with both ground-borne vibration and noise from these sources are usually localized to areas within approximately 100 ft from the vibration source, although there are examples of ground-borne vibration causing interference out to distances greater than 200 ft as detailed in the Federal Transit Administration's (FTA) 2018 *Transit Noise and Vibration Impact Assessment Manual* (FTA Manual). When roadways are smooth, vibration from traffic, even heavy trucks, is rarely perceptible. It is assumed for most projects that the roadway surface will be smooth

enough that ground-borne vibration from street traffic will not exceed the impact criteria; however, construction of the project could result in ground-borne vibration that may be perceptible and annoying.

Ground-borne noise is not likely to be a problem because noise arriving via the normal airborne path will usually be greater than ground-borne noise.

Ground-borne vibration has the potential to disturb people and damage buildings. Although it is very rare for train-induced ground-borne vibration to cause even cosmetic building damage, it is not uncommon for construction processes such as blasting and pile-driving to cause vibration of sufficient amplitudes to damage nearby buildings (FTA 2018). Ground-borne vibration is usually measured in terms of vibration velocity, either the root-mean-square (RMS) velocity or peak particle velocity (PPV). The RMS is best for characterizing human response to building vibration, and PPV is used to characterize the potential for damage. Decibel notation acts to compress the range of numbers required to describe vibration. Vibration velocity level in decibels is defined as

$$L_v = 20 \log_{10} [V/V_{ref}]$$

where “ L_v ” is the vibration velocity in decibels (VdB), “ V ” is the RMS velocity amplitude, and “ V_{ref} ” is the reference velocity amplitude, or 1×10^{-6} inches/second (in/sec) used in the United States.

REGULATORY SETTING

APPLICABLE NOISE STANDARDS

The applicable noise standards governing the project site include the criteria in the City's General Plan Noise Element (Noise Element) and Municipal Code.

City of Orange

Noise Element of the General Plan

The Noise Element provides the City's goals and policies related to noise, including the land use compatibility guidelines for community exterior noise environments. The City has identified the following goals and policies in the General Plan Noise Element which are applicable to the project.

- **Goal 1.0:** Promote a pattern of land uses compatible with current and future noise levels.

Policy 1.1: Consider potential excessive noise levels when making land use planning decisions.

Policy 1.2: Encourage new development projects to provide sufficient spatial buffers to separate excessive noise generating land uses and noise-sensitive land uses.

Policy 1.4: Ensure that acceptable noise levels are maintained near noise-sensitive uses.

Policy 1.5: Reduce impacts of high-noise activity centers located near residential areas.

- **Goal 6.0:** Minimize industrial activity noise in residential areas and near noise-sensitive land uses.

Policy 6.1: Encourage the design and construction of industrial uses to minimize excessive noise through project design features that include noise control.

Policy 6.2: Encourage industrial uses to locate vehicular traffic and operations away from abutting residential zones as much as possible.

- **Goal 7.0:** Minimize construction, maintenance vehicle, and nuisance noise in residential areas and near noise-sensitive land uses.

Policy 7.1: Schedule City maintenance and construction projects so that they generate noise during less sensitive hours.

Policy 7.2: Require developers and contractors to employ noise minimizing techniques during construction and maintenance operations.

Policy 7.3: Limit the hours of construction and maintenance operations located adjacent to noise-sensitive land uses.

Policy 7.4: Encourage limitations on the hours of operations and deliveries for commercial, mixed-use, and industrial uses abutting residential zones.

Operational Noise Standards. The City’s performance standards set the limits for non-transportation or stationary noise sources as summarized in Table C. These standards are designed to protect noise-sensitive land uses adjacent to stationary sources from excessive noise and represent the acceptable exterior noise levels at the sensitive receptor.

Table C: Maximum Allowable Noise Exposure – Stationary Noise Sources

Noise Level Descriptor	Daytime (7:00 a.m. to 10:00 p.m.) L_{eq}	Nighttime (10:00 p.m. to 7:00 a.m.) L_{eq}
Hourly Equivalent Level (L_{eq}), dBA	55 dBA	45 dBA
Maximum Level (L_{max}), dBA	70 dBA	65 dBA

Source: City of Orange (2010).

Notes:

- These standards apply to new or existing noise-sensitive land uses affected by new or existing non-transportation noise sources, as determined at the outdoor activity area of the receiving land use. However, these noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).
- Each of the noise levels specified above should be lowered by five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. Such noises are generally considered by residents to be particularly annoying and are a primary source of noise complaints. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).
- No standards have been included for interior noise levels. Standard construction practices that comply with the exterior noise levels identified in this table generally result in acceptable interior noise levels.
- The City may impose noise level standards which are more or less restrictive than those specified above based upon determination of existing low or high ambient noise levels. If the existing ambient noise level exceeds the standards listed in Table C, then the noise level standards shall be increased at 3 dB increments to encompass the ambient environment. Noise level standards incorporating adjustments for existing ambient noise levels shall not exceed a maximum of 70 dB L_{eq} .

dBA = A-weighted decibels

L_{eq} = equivalent continuous sound level

Construction Noise Standards. The City addresses construction noise in Chapter 8.24, Noise Control, of the Orange Municipal Code, which states that construction noise is exempt from the standards identified in Table D if construction activities occur during the hours of 7:00 a.m. to 8:00 p.m., Monday through Saturday, or during the hours of 9:00 a.m. to 8:00 p.m. on Sundays and federal holidays.

State of California Green Building Standards Code

The State of California’s Green Building Standards Code (CALGreen Code) contains mandatory measures for non-residential building construction in Section 5.507 on Environmental Comfort. These noise standards are applied to new construction in California for controlling interior noise levels resulting from exterior noise sources. The regulations specify that acoustical studies must be prepared when non-residential structures are developed in areas where the exterior noise levels exceed 65 dBA CNEL, such as within a noise contour of an airport, freeway, railroad, and other noise source. If the development falls within an airport or freeway 65 dBA CNEL noise contour, buildings shall be constructed to provide an interior noise level environment attributable to exterior sources that does not exceed an hourly equivalent level of 50 dBA L_{eq} in occupied areas during any hour of operation.

Federal Transit Administration

Although the City does not have daytime construction noise level limits for activities that occur within the specified hours of the OMC, to determine potential California Environmental Quality Act (CEQA) noise impacts, construction noise was assessed using criteria from the FTA Manual (FTA 2018). Table D shows the FTA's Detailed Assessment Construction Noise Criteria based on the composite noise levels per construction phase.

Table D: Detailed Assessment Daytime Construction Noise Criteria

Land Use	Daytime 1-hour L_{eq} (dBA)
Residential	80
Commercial	85
Industrial	90

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).

dBA = A-weighted decibels

FTA = Federal Transit Administration

L_{eq} = equivalent continuous sound level

APPLICABLE VIBRATION STANDARDS

California Department of Transportation

Vibration standards included in the California Department of Transportation's (Caltrans) *Transportation and Construction Vibration Guidance Manual* (Caltrans Manual) (2020) are used in this analysis for ground-borne vibration impacts on human annoyance and building damage. The criteria for environmental impact from ground-borne vibration are based on the maximum levels for a single event and the RMS vibration level. Table E provides the criteria for assessing the potential for interference or annoyance from vibration levels in a building.

Table E: Interpretation of Vibration Criteria for Detailed Analysis

Human Response	Vibration Level (RMS in/sec)
Barely perceptible	0.01
Distinctly perceptible	0.04
Strongly perceptible	0.10
Severe	0.40

Source: *Transportation and Construction Vibration Guidance Manual* (Caltrans 2020).

Caltrans = California Department of Transportation

in/sec = inch/inches per second

RMS = root-mean-square

Table F lists the potential vibration building damage criteria associated with construction activities, as suggested in the Caltrans Manual. Caltrans guidelines show that a vibration level of up to 0.5 in/sec in PPV is considered safe for newer residential structures and modern industrial or commercial buildings and would not result in any construction vibration damage.

Table F: Construction Vibration Damage Criteria

Structure / Condition	PPV (in/sec)
Extremely fragile historic buildings, ruins, ancient monuments	0.08
Fragile buildings	0.10
Historic and some old buildings	0.25
Older residential structures	0.30
New residential structures	0.50
Modern industrial / commercial buildings	0.50

Source: *Transportation and Construction Vibration Guidance Manual*, Table 19 (Caltrans 2020).

Caltrans = California Department of Transportation

PPV = peak particle velocity

in/sec = inch/inches per second

OVERVIEW OF THE EXISTING NOISE ENVIRONMENT

The primary existing noise sources in the project area include traffic on Glassell Street and Fletcher Avenue, and infrequent rail activity to the east.

AMBIENT NOISE MEASUREMENTS

Long-Term Noise Measurements

To assess existing noise levels, LSA conducted three long-term (24-hour) noise measurements in the vicinity of the project site. The long-term noise level measurements were conducted from September 3 through September 4, 2025, using three Larson Davis Spark 706RC Dosimeters. Table G provides a summary of the measured hourly noise levels and calculated CNEL level from the long-term noise level measurements. As shown in Table G, the calculated CNEL levels range from 56.5 dBA CNEL to 70.7 dBA CNEL. Hourly noise levels at surrounding sensitive uses are as low as 44.1 dBA L_{eq} during nighttime hours and 49.4 dBA L_{eq} during daytime hours. Noise measurement sheets are provided in Appendix A. Figure 3 shows the long-term monitoring locations.

Table G: Long-Term 24-Hour Ambient Noise Monitoring Results

Location		Daytime Noise Levels ¹ (dBA L_{eq})	Evening Noise Levels ² (dBA L_{eq})	Nighttime Noise Levels ³ (dBA L_{eq})	Daily Noise Levels (dBA CNEL)
LT-1	2411 North Glassell Street, Orange, CA. On tree just north of the fence line along Fletcher Avenue. Approximately 40 feet from the Fletcher Avenue centerline and 260 feet from the Glassell Street centerline.	57.7 – 64.4	56.1 – 61.6	49.1 – 59.1	63.2
LT-2	318 East Redwood Ave, Orange, CA. On the tree just west of the sidewalk near the residence. Approximately 80 feet from the Fletcher Avenue centerline and 20 feet from the Beechwood Street centerline.	49.4 – 59.0	50.0 – 53.4	44.1 – 50.7	56.5
LT-3	Near the southwest corner of 508 East Glendora Avenue, Orange, CA. On a utility pole. Approximately 70 feet from the Orange Olive Road centerline and 135 feet from the rail centerline.	67.1-70.8	63.9-68.6	55.0-66.1	70.7

Source: Compiled by LSA (2025).

Note: Noise measurements were conducted from September 3 to September 4, 2025, starting at 12:00 a.m.

¹ Daytime Noise Levels = noise levels during the hours from 7:00 a.m. to 7:00 p.m.

² Evening Noise Levels = noise levels during the hours from 7:00 p.m. to 10:00 p.m.

³ Nighttime Noise Levels = noise levels during the hours from 10:00 p.m. to 7:00 a.m.

CNEL = Community Noise Equivalent Level

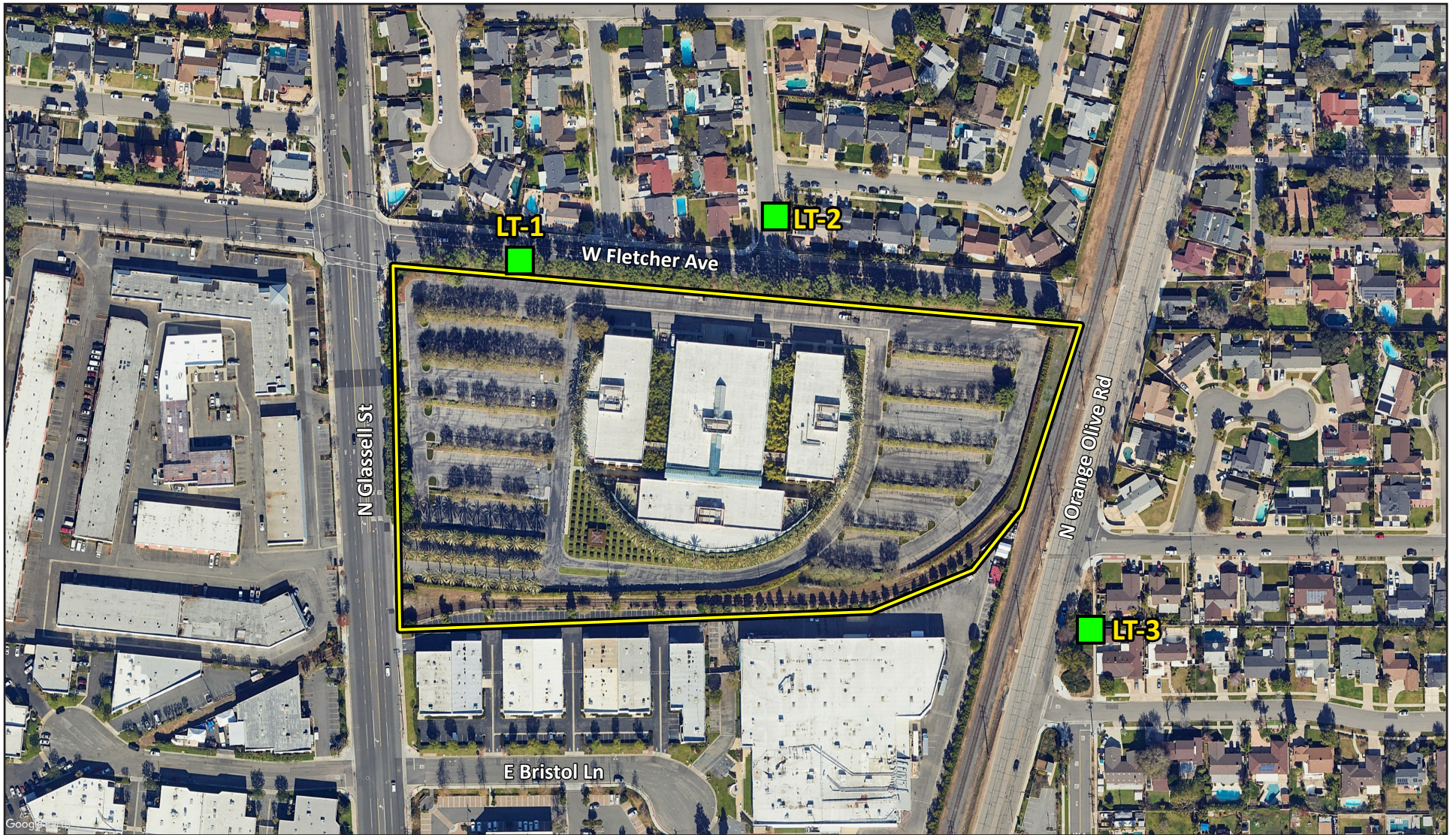
ft = foot/feet

dBA = A-weighted decibels

L_{eq} = equivalent continuous sound level

EXISTING AIRCRAFT NOISE

Aircraft flyovers may be audible on the project site due to aircraft activity in the vicinity. The nearest airport to the project is John Wayne Airport (JWA), a commercial airport approximately 10 miles to the south. The project site is well outside the JWA Airport the 60–65 dBA CNEL noise contour (John Wayne Airport 2024). Because the project site is outside the 60–65 dBA CNEL noise contour, no further analysis associated with aircraft noise impacts is necessary.



LSA



0 100 200
FEET

LEGEND



Project Site Boundary



Long-term Noise Monitoring Location

FIGURE 3

2411 Glassell Street Project
Noise Monitoring Locations

SOURCE: Google Earth 2025

I:\E\ESL2201.115\G\Noise_Locs.ai (9/19/2025)

EXISTING RAIL ACTIVITY NOISE

As shown in Table G above, the exterior noise level at the LT-3 location, representing the eastern section of the project site, was recorded at 70.7 dBA CNEL. Because the office use portion of the proposed buildings would be further to the west, noise impacts from the adjacent rail line would decrease below 65 dBA CNEL due to distance attenuation and shielding from the proposed building. Because the areas of the project containing office uses would be below 65 dBA CNEL, the project would comply with the applicable CALGreen Code standards, and no further analysis associated with on-site rail noise impacts is necessary.

PROJECT IMPACTS

SHORT-TERM CONSTRUCTION NOISE IMPACTS

Two types of short-term noise impacts could occur during the construction of the proposed project. First, construction crew commutes and the transport of construction equipment and materials to the site for the proposed project would incrementally increase noise levels on access roads leading to the site. Although there would be a relatively high single-event noise-exposure potential causing intermittent noise nuisance (passing trucks at 50 feet would generate up to 84 dBA L_{max}), the effect on longer-term ambient noise levels would be small when compared to the existing average daily traffic (ADT) volume on Glassell Road. Based on the ADT provided by the *Traffic Impact Analysis for 2411 Glassell Street* (EPD Solutions Inc., 2025), the ADT on Glassell Road is approximately 16,620. During the building construction phase, approximately 565 acoustically equivalent trips would occur during an average day from worker and delivery activities resulting in a traffic noise increase of approximately 0.1 dBA, as shown in Appendix B. A noise level increase of less than 3 dBA would not be perceptible to the human ear. Therefore, short-term construction-related impacts associated with worker commutes and equipment transport to the project site would be less than significant.

The second type of short-term noise impact is related to noise generated during construction, which includes demolition of the existing structures and other site improvements, site preparation, grading, building construction, paving, and architectural coating on the project site. Construction is completed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the site and, therefore, the noise levels surrounding the site as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table H lists typical construction equipment noise levels recommended for noise impact assessments, based on a distance of 50 ft between the equipment and a noise receptor, taken from the Federal Highway Administration's *FHWA Roadway Construction Noise Model* (FHWA 2006).

In addition to the reference maximum noise level, the usage factor provided in Table H is used to calculate the hourly noise level impact for each piece of equipment based on the following equation:

$$L_{eq}(equip) = E.L. + 10 \log(U.F.) - 20 \log\left(\frac{D}{50}\right)$$

where: $L_{eq}(equip)$ = L_{eq} at a receiver resulting from the operation of a single piece of equipment over a specified time period.

E.L. = noise emission level of the particular piece of equipment at a reference distance of 50 ft.

U.F. = usage factor that accounts for the fraction of time that the equipment is in use over the specified period of time.

D = distance from the receiver to the piece of equipment.

Table H: Typical Construction Equipment Noise Levels

Equipment Description	Acoustical Usage Factor (%) ¹	Maximum Noise Level (L _{max}) at 50 Ft ²
Auger Drill Rig	20	84
Backhoes	40	80
Compactor (ground)	20	80
Compressor	40	80
Cranes	16	85
Dozers	40	85
Dump Trucks	40	84
Excavators	40	85
Flat Bed Trucks	40	84
Forklift	20	85
Front-end Loaders	40	80
Graders	40	85
Impact Pile Drivers	20	95
Jackhammers	20	85
Paver	50	77
Pickup Truck	40	55
Pneumatic Tools	50	85
Pumps	50	77
Rock Drills	20	85
Rollers	20	85
Scrapers	40	85
Tractors	40	84
Trencher	50	80
Welder	40	73

Source: FHWA Roadway Construction Noise Model User's Guide, Table 1 (FHWA 2006).

Note: Noise levels reported in this table are rounded to the nearest whole number.

¹ Usage factor is the percentage of time during a construction noise operation that a piece of construction equipment is operating at full power.

² Maximum noise levels were developed based on Specification 721.560 from the Central Artery/Tunnel program to be consistent with the City of Boston's Noise Code for the "Big Dig" project.

FHWA = Federal Highway Administration

ft = foot/feet

L_{max} = maximum instantaneous sound level

Each piece of construction equipment operates as an individual point source. Using the following equation, a composite noise level can be calculated when multiple sources of noise operate simultaneously:

$$Leq (composite) = 10 * \log_{10} \left(\sum_{1}^n 10^{\frac{Ln}{10}} \right)$$

Using the equations from the methodology above, the reference information in Table H, and the construction equipment list provided, the composite noise levels of each construction phase were calculated. The project construction composite noise levels at a distance of 50 ft would range from 74 dBA L_{eq} to 88 dBA L_{eq}, with the highest noise levels occurring during the demolition and site preparation phases.

Once composite noise levels are calculated, reference noise levels can then be adjusted for distance using the following equation:

$$Leq \text{ (at distance } X) = Leq \text{ (at 50 feet)} - 20 * \log_{10} \left(\frac{X}{50} \right)$$

In general, this equation shows that doubling the distance would decrease noise levels by 6 dBA while halving the distance would increase noise levels by 6 dBA.

Table I shows the nearest sensitive uses to the project site, their distance from the center of construction activities, and composite noise levels expected during construction. These noise level projections do not consider intervening topography or barriers. Construction equipment calculations are provided in Appendix B.

Table I: Potential Construction Noise Impacts at Nearest Receptor

Receptor (Location)	Composite Noise Level (dBA L_{eq}) at 50 ft ¹	Distance (ft)	Composite Noise Level (dBA L_{eq})
Residential Uses (North)	88	315	72
Industrial Uses (South)		350	71
Industrial Uses (West)		670	65
Residential Uses (East)		700	65

Source: Compiled by LSA (2025).

¹ The composite construction noise level represents the demolition and site preparation phases which are expected to result in the greatest noise level as compared to other phases.

dBA L_{eq} = average A-weighted hourly noise level

ft = foot/feet

While construction noise will vary, it is expected that composite noise levels during construction at the nearest off-site sensitive residential uses to the north would reach 72 dBA L_{eq} while construction noise levels would approach 71 dBA L_{eq} at the nearest industrial uses to the south during daytime hours. These predicted noise levels would only occur when all construction equipment is operating simultaneously and, therefore, are assumed to be rather conservative in nature. While construction-related short-term noise levels have the potential to be higher than existing ambient noise levels in the project area under existing conditions, the noise impacts would no longer occur once project construction is completed.

As stated above, the City's Noise Ordinance regulates noise impacts associated with construction activities. The proposed project would comply with the construction hours specified in the City's Noise Ordinance, which states that construction activities are allowed between the hours 7:00 a.m. to 8:00 p.m., Monday through Saturday, and during the hours of 9:00 a.m. to 8:00 p.m. on Sundays and federal holidays.

As it relates to off-site uses, construction-related noise impacts would remain below the 80 dBA L_{eq} and 90 dBA L_{eq} 1-hour construction noise level criteria for daytime construction noise level criteria as established by the FTA for residential and industrial land uses, respectively; therefore, the impact would be considered less than significant.

SHORT-TERM CONSTRUCTION VIBRATION IMPACTS

This construction vibration impact analysis discusses the level of human annoyance using vibration levels in RMS and assesses the potential for building damages using vibration levels in PPV (in/sec). This is because vibration levels calculated in RMS are best for characterizing human response to building vibration, and vibration level in PPV is best for characterizing the potential for damage.

Table J shows the PPV and RMS values at 25 feet from the construction vibration source. As shown in Table K, bulldozers, and other heavy-tracked construction equipment (expected to be used for this project) generate approximately 0.089 PPV in/sec or 0.062 RMS in/sec of ground-borne vibration when measured at 25 feet, based on the Caltrans Manual. The distance to the nearest buildings for vibration impact analysis is measured between the nearest off-site buildings, and the project construction boundary (assuming the construction equipment would be used at or near the project setback line).

Table J: Vibration Source Amplitudes for Construction Equipment

Equipment	Reference PPV/L _v at 25 ft	
	PPV (in/sec)	RMS (in/sec) ¹
Pile Driver (Impact), Typical	0.644	0.451
Pile Driver (Sonic), Typical	0.170	0.119
Vibratory Roller	0.210	0.147
Hoe Ram	0.089	0.062
Large Bulldozer²	0.089	0.062
Caisson Drilling	0.089	0.062
Loaded Trucks²	0.076	0.053
Jackhammer	0.035	0.025
Small Bulldozer	0.003	0.002

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).

¹ RMS vibration velocity is 70 percent of maximum PPV

² Equipment shown in **bold** is expected to be used on site.

Caltrans = California Department of Transportation

ft = foot/feet

in/sec = inch/inches per second

L_v = velocity in decibels

PPV = peak particle velocity

RMS = root-mean-square

The formula for vibration transmission is provided below, and Tables K and L, below, provide a summary of off-site construction vibration levels. The material dampening coefficient, 'n', ranges between 1.1 and 1.5 depending on soil type and distance from equipment.

$$PPV_{\text{equip}} = PPV_{\text{ref}} \times (25/D)^n$$

Table K: Potential Construction Vibration Annoyance Impacts at Nearest Receptor

Receptor (Location)	Reference Vibration Level (RMS in/sec) at 25 ft ¹	Distance (ft) ²	Vibration Level (RMS in/sec)
Residential Uses (North)	0.062	315	0.001
Industrial Uses (South)		350	0.001
Industrial Uses (West)		670	<0.001
Residential Uses (East)		700	<0.001

Source: Compiled by LSA (2025).

¹ The reference vibration level is associated with a large bulldozer, which is expected to be representative of the heavy equipment used during construction.

² The assessment distance is associated with the average condition, identified by the distance from the center of construction activities to surrounding uses.

ft = foot/feet

in/sec = inches per second

RMS = root-mean-square

Table L: Potential Construction Vibration Damage Impacts at Nearest Receptor

Receptor (Location)	Reference Vibration Level (PPV) at 25 ft ¹	Distance (ft) ²	Vibration Level (PPV)
Residential Uses (North)	0.089	56	0.028
Industrial Uses (South)		75	0.017
Industrial Uses (West)		150	0.006
Residential Uses (East)		150	0.006

Source: Compiled by LSA (2025).

¹ The reference vibration level is associated with a large bulldozer, which is expected to be representative of the heavy equipment used during construction.

² The assessment distance is associated with the peak condition, identified by the distance from the perimeter of construction activities and incorporating the project design features to surrounding structures.

ft = foot/feet

PPV = peak particle velocity

As previously shown in Table E, the threshold at which vibration levels would result in annoyance would be 0.04 in/sec RMS. Based on the information provided in Table K, vibration levels are expected to approach 0.001 in/sec RMS at the closest receptors and would not exceed the annoyance thresholds.

Based on the information provided in Table L, vibration levels are expected to approach 0.028 PPV in/sec at the nearest surrounding structures and would remain below the Caltrans threshold of 0.5 in/sec PPV for building damage. Vibration levels associated with smaller equipment would be substantially lower than the heavy equipment analyzed. Therefore, construction would not result in any vibration annoyance or damage, and impacts would be less than significant.

Because construction activities are regulated by the City's Municipal Code, which states that construction activities are allowed between the hours of 7:00 a.m. to 8:00 p.m., Monday through Saturday, and during the hours of 9:00 a.m. to 8:00 p.m. on Sundays and federal holidays, vibration impacts would not occur during the more sensitive nighttime hours.

LONG-TERM OFF-SITE TRAFFIC NOISE IMPACTS

Traffic noise is the major noise source in the project area. Other sources of noise in the project area would be low or intermittent and would not contribute to or reach the levels of noise generated by traffic. The FHWA Highway Traffic Noise Prediction Model (FHWA-RD-77-108) was used to evaluate highway traffic-related noise conditions along roadway segments in the project vicinity. This model requires various parameters, including traffic volumes, vehicle mix, vehicle speed, and roadway geometry to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The resultant noise levels are weighted and summed over 24-hour periods to determine the CNEL values.

The without and with project scenario traffic volumes were obtained from the *Traffic Impact Analysis for 2411 Glassell Street Project* (EPD Solutions Inc., 2025). Appendix C provides the specific assumptions used in developing these noise levels and model printouts. Table M provides the traffic noise levels for the existing, opening year 2027, and horizon year 2050 with and without project scenarios. These noise levels represent worst-case scenarios, which assume that no shielding is provided between the traffic and the locations where the noise contours are drawn.

As shown in Table M, project-related traffic noise would generate the greatest increase of 0.2 dBA along Glassell Street. A noise level increase of less than 3 dBA would not be perceptible to the human ear. Therefore, project-related traffic would have a less than significant impact on off-site sensitive receptors, and no mitigation is required.

LONG-TERM TRAFFIC-RELATED VIBRATION IMPACTS

The proposed project would not generate vibration levels related to on-site operations. In addition, vibration levels generated from project-related traffic on the adjacent roadways are unusual for on-road vehicles because the rubber tires and suspension systems of on-road vehicles provide vibration isolation. Based on a reference vibration level of 0.076 in/sec PPV, structures greater than 20 feet from the roadways that contain project trips would experience vibration levels below the most conservative standard of 0.12 in/sec PPV; therefore, vibration levels generated from project-related traffic on the adjacent roadways would be less than significant, and no mitigation measures are required.

Table M: Traffic Noise Levels Without and With Proposed Project – Existing, Opening Year 2027, Horizon Year 2050 Buildout

Roadway Segment	Existing		Existing – With Project			Year 2027 – No Project		Year 2027 – With Project			Year 2050 – No Project		Year 2050 – With Project		
	ADT	CNEL (dBA) 50 ft from Centerline of Nearest Lane	ADT	CNEL (dBA) 50 ft from Centerline of Nearest Lane	Increase from Existing Conditions (dBA)	ADT	CNEL (dBA) 50 ft from Centerline of Nearest Lane	ADT	CNEL (dBA) 50 ft from Centerline of Nearest Lane	Increase from Year 2027 Conditions (dBA)	ADT	CNEL (dBA) 50 ft from Centerline of Nearest Lane	ADT	CNEL (dBA) 50 ft from Centerline of Nearest Lane	Increase from Year 2050 Conditions (dBA)
Glassell Street North of Lincoln Avenue	21,340	68.8	21,580	68.9	0.1	22,450	69.0	22,690	69.1	0.1	23,700	69.3	23,940	69.3	0.0
Glassell Street Between Lincoln Avenue and Fletcher Avenue	16,620	67.7	17,340	67.9	0.2	17,540	68.0	18,260	68.1	0.1	18,950	68.3	19,670	68.5	0.2
Glassell Street between Fletcher Avenue and Meats Avenue	17,650	68.0	18,370	68.2	0.2	18,620	68.2	19,340	68.4	0.2	20,010	68.5	20,730	68.7	0.2
Glassell Street between Meats Avenue and Taft Avenue	14,870	67.2	15,330	67.4	0.2	15,730	67.5	16,190	67.6	0.1	19,820	68.5	20,280	68.6	0.1
Glassell Street South of Taft Avenue	22,750	69.1	22,870	69.1	0.0	24,000	69.3	24,120	69.3	0.0	26,060	69.7	26,180	69.7	0.0
Lincoln Avenue West of Glassell Street	20,920	68.7	21,160	68.8	0.1	21,760	68.9	22,000	68.9	0.0	23,050	69.1	23,290	69.2	0.1
Lincoln Avenue East of Glassell Street	21,840	68.9	22,080	69.0	0.1	22,730	69.1	22,970	69.1	0.0	24,700	69.4	24,940	69.5	0.1
Fletcher Avenue West of Glassell Street	2,280	52.9	2,280	52.9	0.0	2,400	53.2	2,400	53.2	0.0	4,570	56.0	4,570	56.0	0.0
Fletcher Avenue East of Glassell Street	610	48.3	610	48.3	0.0	670	48.7	670	48.7	0.0	710	48.9	710	48.9	0.0
Meats Avenue East of Glassell Street	7,290	63.5	7,290	63.5	0.0	7,820	63.8	7,820	63.8	0.0	8,480	64.1	8,480	64.1	0.0
Taft Avenue West of Glassell Street	14,610	64.8	14,950	64.9	0.1	15,230	65.0	15,570	65.1	0.1	17,270	65.6	17,610	65.7	0.1
Taft Avenue East of Glassell Street	12,980	64.3	12,980	64.3	0.0	13,530	64.5	13,530	64.5	0.0	13,590	64.5	13,590	64.5	0.0

Source: Compiled by LSA (2025).

Note: Shaded cells indicate roadway segments adjacent to the project site.

ADT = average daily traffic

ft = foot/feet

dBA = A-weighted decibels

CNEL= Community Noise Exposure Level

LONG-TERM OFF-SITE STATIONARY NOISE IMPACTS

Adjacent off-site land uses would be potentially exposed to stationary-source noise impacts from the proposed on-site heating, ventilation, and air conditioning (HVAC) equipment, and truck deliveries and loading and unloading activities. The potential noise impacts to off-site sensitive land uses from the proposed HVAC equipment and truck delivery activities are discussed below. To determine the future noise impacts from project operations to the noise-sensitive uses, a 3-D noise model, SoundPLAN, was used to incorporate the site topography as well as the shielding from the proposed building on-site. A graphic representation of the operational noise impacts is presented in Appendix D.

Heating, Ventilation, and Air Conditioning Equipment

The project would have various rooftop mechanical equipment, including HVAC units, atop the proposed buildings. Based on the project site plan, the project is assumed to have four rooftop HVAC units atop the proposed building and assumed to operate 24 hours per day. The HVAC equipment could operate 24 hours per day and would generate sound power levels (L_w) of up to 87 dBA L_w or a sound pressure level of 72 dBA L_{eq} at 5 feet, based on manufacturer data (Trane n.d.).

Truck Arrival and Departure Activities

Noise levels generated by delivery trucks would be similar to noise readings from truck loading and unloading activities, which generate a noise level of 75 dBA L_{eq} at 20 feet based on measurements taken by LSA (*Operational Noise Impact Analysis for Richmond Wholesale Meat Distribution Center* [LSA 2016]). Shorter term noise levels that occur during the docking process taken by LSA were measured to be 76.3 dBA L_8 at 20 feet. Trucks would arrive on site and maneuver their trailers so that trailers would be parked within the loading docks. During this process, noise levels are associated with the truck engine noise, air brakes, and back-up alarms while the truck is backing into the dock. These noise levels would occur for a shorter period of time (less than 5 minutes). After a truck enters the loading dock, the doors would be closed, and the remainder of the truck loading activities would be enclosed and therefore much less perceptible. It is assumed that truck arrivals and departure activities could occur at 10 spaces for a period of less than 5 minutes each.

Truck Loading and Unloading Activities

Noise levels taken by LSA for delivery trucks being loaded and unloaded for a similar type of project (*Operational Noise Impact Analysis for Richmond Wholesale Meat Distribution Center* [LSA 2016]), generated a noise level of 75 dBA L_{eq} at 20 feet. Noise levels generated by delivery trucks being loaded and unloaded for the proposed project are also assumed to be 75 dBA L_{eq} at 20 feet because they are similar types of projects. Based on prior analysis experience, it is reasonable to assume that unloading activities could occur at half of the total docks (3 docks) simultaneously for a period of 30 minutes in a given hour.

Cumulative Operations Noise Assessment

Tables N and O below show the combined hourly noise levels generated by HVAC equipment and truck delivery activities at the closest off-site land uses.

Table N: Daytime Exterior Noise Level Impacts

Receptor	Direction	Existing Quietest Daytime Noise Level (dBA L_{eq})	Project Generated Noise Levels (dBA L_{eq})	Potential Operational Noise Impact? ¹
Residential	North	57.7	35.2	No
Residential	East	67.1	53.6	No

Source: Compiled by LSA (2025).

¹ A potential operational noise impact would occur if (1) the quietest daytime ambient hour is less than 55 dBA L_{eq} and project noise impacts are greater than 55 dBA L_{eq} , OR (2) the quietest daytime ambient hour is greater than 55 dBA L_{eq} and project noise impacts are 3 dBA greater than the quietest daytime ambient hour.

dBA = A-weighted decibels

L_{eq} = equivalent noise level

Table O: Nighttime Exterior Noise Level Impacts

Receptor	Direction	Existing Quietest Nighttime Noise Level (dBA L_{eq})	Project Generated Noise Levels (dBA L_{eq})	Potential Operational Noise Impact? ¹
Residential	North	49.1	35.2	No
Residential	East	55.0	53.6	No

Source: Compiled by LSA (2025).

¹ A potential operational noise impact would occur if (1) the quietest nighttime ambient hour is less than 45 dBA L_{eq} and project noise impacts are greater than 45 dBA L_{eq} , OR (2) the quietest nighttime ambient hour is greater than 45 dBA L_{eq} and project noise impacts are 3 dBA greater than the quietest nighttime ambient hour.

dBA = A-weighted decibels

L_{eq} = equivalent noise level

The results in Tables N and O show that project-generated noise levels would remain below the residential use daytime noise standard of 55 dBA L_{eq} and would not exceed the residential nighttime measured ambient noise levels. Therefore, because project noise levels would not generate a noise level increase of 3 dBA or more over the quietest ambient noise levels for daytime and nighttime, the impact would be less than significant, and no noise reduction measures are required. Additionally, as shown in Appendix D, the 70 dBA L_{max} and 65 dBA L_{max} noise contours generated by the proposed project during daytime and nighttime hours, respectively, would remain outside the limits of the closest sensitive receptors. Therefore, operations at the proposed project would not generate noise levels at surrounding sensitive properties that exceed the noise level standard of 70 dBA L_{max} or 65 dBA L_{max} .

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APPENDIX A

NOISE MONITORING DATA

Noise Measurement Survey – 24 HR

Project Number: ESL2201.115
Project Name: Glassell Ave Industrial

Test Personnel: Corey Knips
Equipment: LD Spark 706RC (SN: 17814)

Site Number: LT-1

Start Date: 9/3/2025
Time: From 12:00 a.m. To 12:00 a.m.

Site Location: 2411 North Glassell Street, Orange, CA. On tree just north of the fence line along Fletcher Avenue. Approximately 40 feet from the Fletcher Avenue centerline and 260 feet from the Glassell Street centerline.

Primary Noise Sources: Traffic on Glassell Street and light traffic on Fletcher Avenue.

Comments: _____

Photo:



Long-Term (24-Hour) Noise Level Measurement Results at LT-1

Start Time	Date	Noise Level (dBA)		
		L _{eq}	L _{max}	L _{min}
12:00 AM	9/3/2025	51.9	73.3	44.4
1:00 AM	9/3/2025	49.1	63.8	43.0
2:00 AM	9/3/2025	49.9	72.1	40.5
3:00 AM	9/3/2025	50.1	66.8	39.6
4:00 AM	9/3/2025	56.6	74.2	40.6
5:00 AM	9/3/2025	59.1	81.6	44.9
6:00 AM	9/3/2025	58.9	72.9	47.4
7:00 AM	9/3/2025	60.3	72.9	48.6
8:00 AM	9/3/2025	60.3	77.7	43.6
9:00 AM	9/3/2025	64.4	93.3	44.7
10:00 AM	9/3/2025	62.1	87.0	44.8
11:00 AM	9/3/2025	59.7	85.5	46.2
12:00 PM	9/3/2025	58.8	73.8	48.8
1:00 PM	9/3/2025	62.1	87.0	49.6
2:00 PM	9/3/2025	59.8	74.5	48.4
3:00 PM	9/3/2025	61.2	83.8	50.1
4:00 PM	9/3/2025	60.3	72.3	48.1
5:00 PM	9/3/2025	60.1	80.8	48.0
6:00 PM	9/3/2025	57.7	71.9	47.0
7:00 PM	9/3/2025	61.6	86.8	46.5
8:00 PM	9/3/2025	56.7	72.7	46.7
9:00 PM	9/3/2025	56.1	79.3	46.0
10:00 PM	9/3/2025	53.0	69.6	45.3
11:00 PM	9/3/2025	51.3	66.8	43.5

Source: Compiled by LSA Associates, Inc. (2025).

dBA = A-weighted decibel

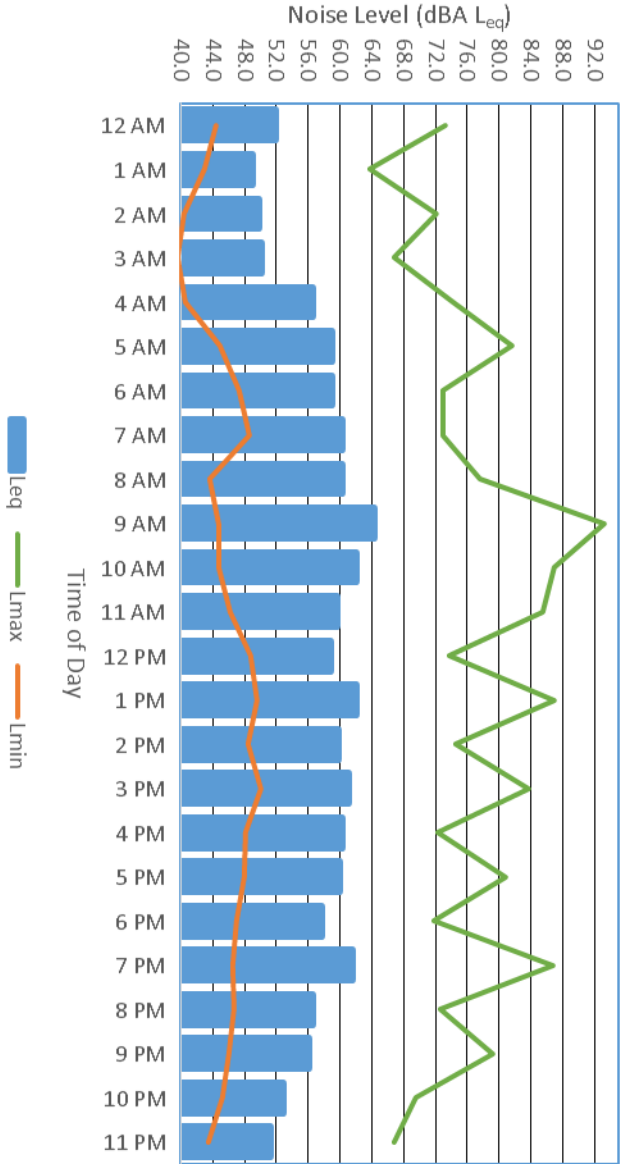
L_{eq} = equivalent continuous sound level

L_{max} = maximum instantaneous noise level

L_{min} = minimum measured sound level

Long-Term (24-Hour) Noise Level Measurement

LT-1



Noise Measurement Survey – 24 HR

Project Number: ESL2201.115
Project Name: Glassell Ave Industrial

Test Personnel: Corey Knips
Equipment: LD Spark 706RC (SN: 18571)

Site Number: LT-2

Start Date: 9/3/2025
Time: From 12:00 a.m. To 12:00 a.m.

Site Location: 318 East Redwood Ave, Orange, CA. On the tree just west of the sidewalk near the residence. Approximately 80 feet from the Fletcher Avenue centerline and 20 feet from the Beechwood Street centerline.

Primary Noise Sources: Light traffic on Fletcher Avenue and birds chirping nearby.

Comments: _____

Photo:



Long-Term (24-Hour) Noise Level Measurement Results at LT-3

Start Time	Date	Noise Level (dBA)		
		L _{eq}	L _{max}	L _{min}
12:00 AM	9/3/2025	46.8	67.0	41.1
1:00 AM	9/3/2025	45.9	66.1	39.2
2:00 AM	9/3/2025	50.7	68.3	38.2
3:00 AM	9/3/2025	45.4	66.2	38.2
4:00 AM	9/3/2025	44.1	59.9	38.9
5:00 AM	9/3/2025	49.9	73.8	42.4
6:00 AM	9/3/2025	48.9	64.8	43.5
7:00 AM	9/3/2025	50.9	72.5	42.0
8:00 AM	9/3/2025	51.7	67.8	42.1
9:00 AM	9/3/2025	53.6	75.1	40.4
10:00 AM	9/3/2025	55.9	81.1	41.4
11:00 AM	9/3/2025	52.7	70.2	41.5
12:00 PM	9/3/2025	49.4	68.3	42.7
1:00 PM	9/3/2025	59.0	85.6	42.7
2:00 PM	9/3/2025	58.3	80.1	43.2
3:00 PM	9/3/2025	54.5	82.5	44.3
4:00 PM	9/3/2025	54.2	78.3	43.6
5:00 PM	9/3/2025	52.3	77.8	43.6
6:00 PM	9/3/2025	56.0	85.9	42.7
7:00 PM	9/3/2025	52.8	72.5	42.1
8:00 PM	9/3/2025	53.4	76.2	43.1
9:00 PM	9/3/2025	50.0	68.3	42.2
10:00 PM	9/3/2025	47.9	70.4	41.3
11:00 PM	9/3/2025	46.1	65.7	39.9

Source: Compiled by LSA Associates, Inc. (2025).

dBA = A-weighted decibel

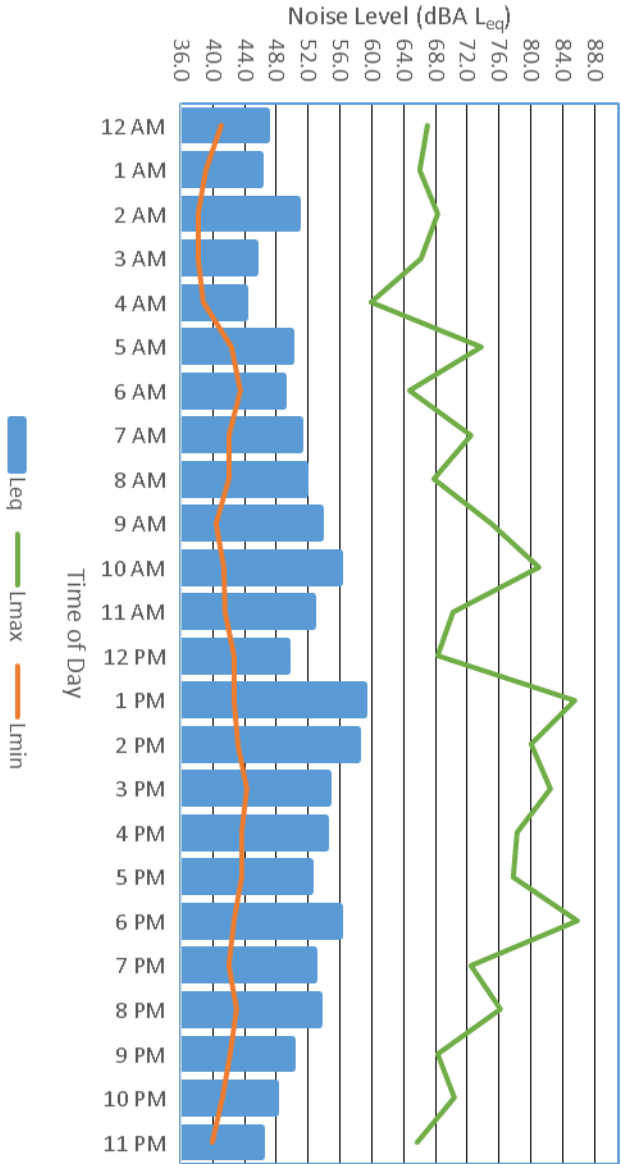
L_{eq} = equivalent continuous sound level

L_{max} = maximum instantaneous noise level

L_{min} = minimum measured sound level

Long-Term (24-Hour) Noise Level Measurement

LT-2



Noise Measurement Survey – 24 HR

Project Number: ESL2201.115
Project Name: Glassell Ave Industrial

Test Personnel: Corey Knips
Equipment: LD Spark 706RC (SN: 18571)

Site Number: LT-3

Start Date: 9/3/2025
Time: From 12:00 a.m. To 12:00 a.m.

Site Location: Near the southwest corner of 508 East Glendora Avenue, Orange, CA. On a utility pole. Approximately 70 feet from the Orange Olive Road centerline and 135 feet from the rail centerline.

Primary Noise Sources: Traffic on Orange Olive Road and occasionally trains.

Comments: _____

Photo:



Long-Term (24-Hour) Noise Level Measurement Results at LT-3

Start Time	Date	Noise Level (dBA)		
		L _{eq}	L _{max}	L _{min}
12:00 AM	9/3/2025	57.3	74.6	48.7
1:00 AM	9/3/2025	57.5	78.7	48.5
2:00 AM	9/3/2025	55.0	74.8	48.4
3:00 AM	9/3/2025	56.8	78.4	48.1
4:00 AM	9/3/2025	61.8	78.0	48.0
5:00 AM	9/3/2025	65.1	84.1	47.8
6:00 AM	9/3/2025	66.1	77.3	50.5
7:00 AM	9/3/2025	70.3	84.6	49.9
8:00 AM	9/3/2025	69.7	80.8	50.4
9:00 AM	9/3/2025	67.3	83.6	50.4
10:00 AM	9/3/2025	67.1	80.3	50.2
11:00 AM	9/3/2025	67.3	83.1	49.7
12:00 PM	9/3/2025	67.4	81.2	51.2
1:00 PM	9/3/2025	67.4	82.5	51.2
2:00 PM	9/3/2025	68.0	81.4	51.5
3:00 PM	9/3/2025	69.5	84.7	52.0
4:00 PM	9/3/2025	70.8	80.3	51.2
5:00 PM	9/3/2025	70.8	83.2	51.7
6:00 PM	9/3/2025	69.2	85.4	51.1
7:00 PM	9/3/2025	68.6	86.2	51.0
8:00 PM	9/3/2025	64.3	80.6	51.0
9:00 PM	9/3/2025	63.9	79.7	50.5
10:00 PM	9/3/2025	61.3	79.4	50.6
11:00 PM	9/3/2025	64.6	86.7	50.3

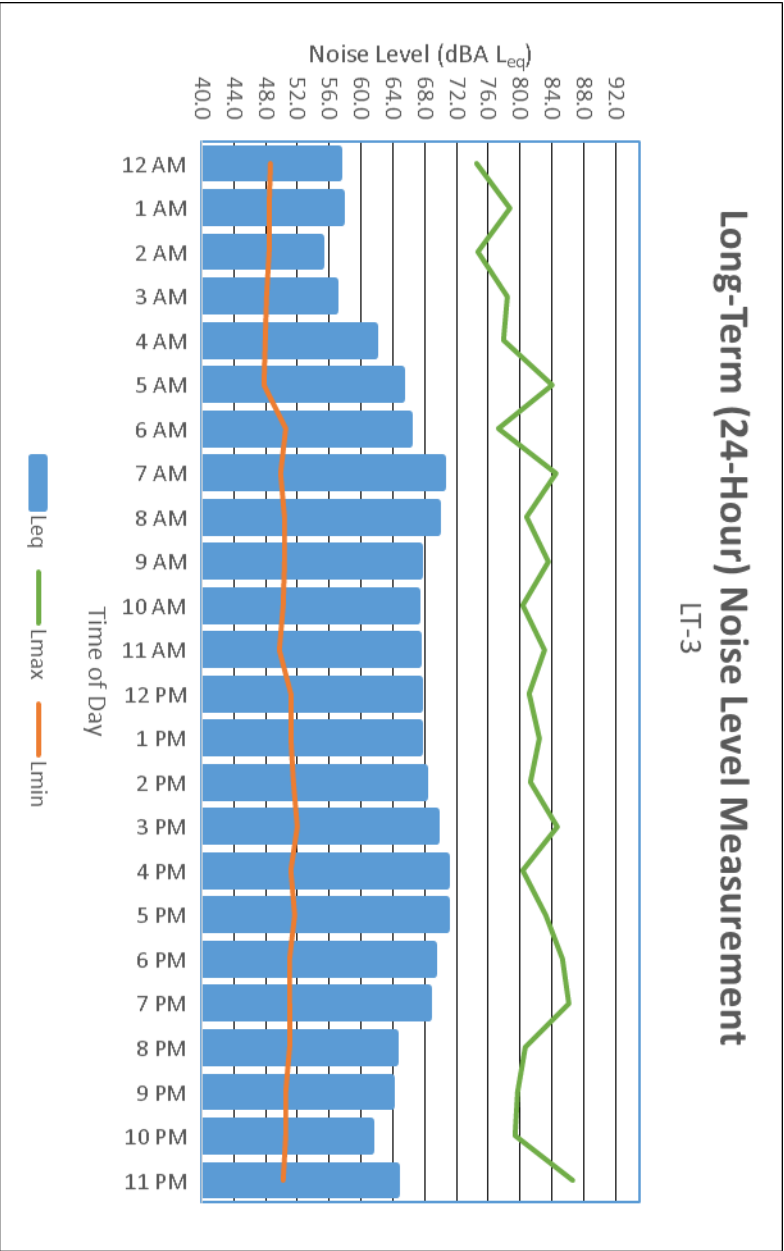
Source: Compiled by LSA Associates, Inc. (2025).

dBA = A-weighted decibel

L_{eq} = equivalent continuous sound level

L_{max} = maximum instantaneous noise level

L_{min} = minimum measured sound level



APPENDIX B

CONSTRUCTION NOISE LEVEL CALCULATIONS

Construction Calculations

Phase: Demolition

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor ¹	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Concrete Saw	1	90	20	50	0.5	90	83
Excavator	3	81	40	50	0.5	81	82
All Other Equipment > 5 hp	1	85	50	50	0.5	85	82
Dozer	2	82	40	50	0.5	82	81
Combined at 50 feet						92	88
Combined at Receptor 315 feet						76	72

Phase: Site Preparation

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor ¹	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Tractor	4	84	40	50	0.5	84	86
Dozer	3	82	40	50	0.5	82	83
Combined at 50 feet						86	88
Combined at Receptor 315 feet						70	72
Combined at Receptor 350 feet						69	71
Combined at Receptor 670 feet						64	65
Combined at Receptor 700 feet						63	65

Phase: Grading

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor ¹	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Grader	1	85	40	50	0.5	85	81
Dozer	1	82	40	50	0.5	82	78
Scraper	2	84	40	50	0.5	84	83
Tractor	2	84	40	50	0.5	84	83
Excavator	2	81	40	50	0.5	81	80
Combined at 50 feet						89	87
Combined at Receptor 315 feet						73	71

Phase: Building Construction

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor ¹	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Man Lift	3	75	20	50	0.5	75	73
Crane	1	81	16	50	0.5	81	73
Generator	1	81	50	50	0.5	81	78
Tractor	3	84	40	50	0.5	84	85
Welder / Torch	1	74	40	50	0.5	74	70
Combined at 50 feet						87	86
Combined at Receptor 315 feet						71	70

Phase: Paving

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor ¹	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Paver	2	77	50	50	0.5	77	77
Roller	2	80	20	50	0.5	80	76
All Other Equipment > 5 HP	2	85	50	50	0.5	85	85
Combined at 50 feet						87	86
Combined at Receptor 315 feet						71	70

Phase: Architectural Coating

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor ¹	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Compressor (air)	1	78	40	50	0.5	78	74
Combined at 50 feet						78	74
Combined at Receptor 315 feet						62	58

Sources: RCNM

¹ - Percentage of time that a piece of equipment is operating at full power.

dBA – A-weighted Decibels

Lmax- Maximum Level

Leq- Equivalent Level

Construction Traffic Noise Calculator

Construction Phase	One-Way Worker Trip/Day	One Way Vendor Trip/Day	One Way Hauling Trip Number	Total
Demolition	17.5	0	8.67	26.17
Site Preparation	17.5	0	0	17.5
Grading	20	0	9.17	29.17
Building Construction	126	49	0	175
Paving	15	0	0	15
Architectural Coating	25.1	0	0	25.1
Maximum	175			

Roadway	Speed	Existing Volume	MT Factor	HT Factor
Glassell St	45	16,620	5	12.9

	Worker Trip/Day	Vendor Trip/Day	Hauling Trip Number	Total	Overlap?
Demolition	18	0	112	130	
Site Preparation	18	0	0	18	
Grading	20	0	119	139	
Building Construction	126	439	0	565	
Paving	15	0	0	15	
Architectural Coating	25	0	0	26	

Overlap? N
Total Equivalent Vehicles 565
Noise Increase (dBA) 0.1

Phase Number	Phase Name	Number of Days
1	Demolition	75
2	Site Preparation	10
3	Grading	30
4	Building Construction	300
5	Paving	20
6	Architectural Coating	40

Speed	MT Factor	HT Factor
25	12.6	39.8
30	8.9	26.3
35	7.1	19.1
40	5.8	15.1
45	5	12.9
50	4.5	11.5
	4.1	10.4
55	3.7	9.6
60	3.5	8.9
65	10.8	23

APPENDIX C

FHWA TRAFFIC NOISE MODEL PRINTOUTS

TABLE Existing Without Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street North of Lincoln Avenue

NOTES: 2411 Glassell Street Project - Existing Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 21340 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.81

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
73.2	198.1	614.7	1940.1

TABLE Existing Without Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street Between Lincoln Avenue and Fletcher Avenue

NOTES: 2411 Glassell Street Project - Existing Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 16620 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.73

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	156.3	479.5	1511.3

TABLE Existing Without Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street between Fletcher Avenue and Meats Avenue

NOTES: 2411 Glassell Street Project - Existing Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 17650 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.99

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
64.6	165.4	508.9	1604.8

TABLE Existing Without Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street between Meats Avenue and Taft Avenue

NOTES: 2411 Glassell Street Project - Existing Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 14870 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.25

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	141.0	429.4	1352.3

TABLE Existing Without Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street South of Taft Avenue

NOTES: 2411 Glassell Street Project - Existing Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 22750 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.09

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
76.7	210.6	655.2	2068.2

TABLE Existing Without Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Lincoln Avenue West of Glassel Street

NOTES: 2411 Glassell Street Project - Existing Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 20920 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.73

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
72.2	194.3	602.7	1901.9

TABLE Existing Without Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Lincoln Avenue East of Glassell Street

NOTES: 2411 Glassell Street Project - Existing Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 21840 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.92

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
74.4	202.5	629.1	1985.5

TABLE Existing Without Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Fletcher Avenue West of Glassell Street

NOTES: 2411 Glassell Street Project - Existing Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2280 SPEED (MPH): 25 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 52.94

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	64.2

TABLE Existing Without Project-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Fletcher Avenue East of Glassell Street

NOTES: 2411 Glassell Street Project - Existing Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 610 SPEED (MPH): 25 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 48.29

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	0.0

TABLE Existing Without Project-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Meats Avenue East of Glassell Street

NOTES: 2411 Glassell Street Project - Existing Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7290 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 25 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.46

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	158.7	496.2

TABLE Existing Without Project-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Taft Avenue West of Glassell Street

NOTES: 2411 Glassell Street Project - Existing Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 14610 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.85

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	77.6	228.3	716.2

TABLE Existing Without Project-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Taft Avenue East of Glassell Street

NOTES: 2411 Glassell Street Project - Existing Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 12980 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.33

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	70.3	203.3	636.5

TABLE Existing With Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street North of Lincoln Avenue

NOTES: 2411 Glassell Street Project - Existing With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 21580 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.86

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
73.8	200.2	621.6	1961.9

TABLE Existing With Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street Between Lincoln Avenue and Fletcher Avenue

NOTES: 2411 Glassell Street Project - Existing With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 17340 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.91

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	162.6	500.1	1576.8

TABLE Existing With Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street between Fletcher Avenue and Meats Avenue

NOTES: 2411 Glassell Street Project - Existing With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 18370 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.16

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
66.2	171.7	529.6	1670.2

TABLE Existing With Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street between Meats Avenue and Taft Avenue

NOTES: 2411 Glassell Street Project - Existing With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15330 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.38

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	145.0	442.5	1394.1

TABLE Existing With Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street South of Taft Avenue

NOTES: 2411 Glassell Street Project - Existing With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 22870 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.12

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
77.0	211.7	658.6	2079.1

TABLE Existing With Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Lincoln Avenue West of Glassell Street

NOTES: 2411 Glassell Street Project - Existing With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 21160 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.78

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
72.8	196.5	609.6	1923.7

TABLE Existing With Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Lincoln Avenue East of Glassel Street

NOTES: 2411 Glassell Street Project - Existing With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 22080 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.96

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
75.0	204.7	636.0	2007.3

TABLE Existing With Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Fletcher Avenue West of Glassell Street

NOTES: 2411 Glassell Street Project - Existing With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2280 SPEED (MPH): 25 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 52.94

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	64.2

TABLE Existing With Project-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Fletcher Avenue East of Glassell Street

NOTES: 2411 Glassell Street Project - Existing With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 610 SPEED (MPH): 25 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 48.29

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	0.0

TABLE Existing With Project-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Meats Avenue East of Glassell Street

NOTES: 2411 Glassell Street Project - Existing With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7290 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 25 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.46

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	158.7	496.2

TABLE Existing With Project-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Taft Avenue West of Glassell Street

NOTES: 2411 Glassell Street Project - Existing With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 14950 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.95

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	79.1	233.5	732.9

TABLE Existing With Project-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Taft Avenue East of Glassell Street

NOTES: 2411 Glassell Street Project - Existing With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 12980 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.33

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	70.3	203.3	636.5

TABLE Opening Year 2027 Without Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street North of Lincoln Avenue

NOTES: 2411 Glassell Street Project - Opening Year 2027 Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 22450 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.04

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
75.9	208.0	646.6	2041.0

TABLE Opening Year 2027 Without Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street Between Lincoln Avenue and Fletcher Avenue

NOTES: 2411 Glassell Street Project - Opening Year 2027 Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 17540 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.96

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
64.4	164.4	505.8	1594.8

TABLE Opening Year 2027 Without Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street between Fletcher Avenue and Meats Avenue

NOTES: 2411 Glassell Street Project - Opening Year 2027 Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 18620 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.22

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
66.8	173.9	536.7	1692.9

TABLE Opening Year 2027 Without Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street between Meats Avenue and Taft Avenue

NOTES: 2411 Glassell Street Project - Opening Year 2027 Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15730 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.49

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	148.5	454.0	1430.5

TABLE Opening Year 2027 Without Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street South of Taft Avenue

NOTES: 2411 Glassell Street Project - Opening Year 2027 Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 24000 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.33

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
79.8	221.8	691.1	2181.8

TABLE Opening Year 2027 Without Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Lincoln Avenue West of Glassell Street

NOTES: 2411 Glassell Street Project - Opening Year 2027 Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 21760 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.90

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
74.3	201.8	626.8	1978.2

TABLE Opening Year 2027 Without Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Lincoln Avenue East of Glassell Street

NOTES: 2411 Glassell Street Project - Opening Year 2027 Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 22730 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.09

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
76.6	210.5	654.6	2066.4

TABLE Opening Year 2027 Without Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Fletcher Avenue West of Glassell Street

NOTES: 2411 Glassell Street Project - Opening Year 2027 Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2400 SPEED (MPH): 25 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 53.17

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	66.3

TABLE Opening Year 2027 Without Project-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Fletcher Avenue East of Glassell Street

NOTES: 2411 Glassell Street Project - Opening Year 2027 Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 670 SPEED (MPH): 25 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 48.69

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	0.0

TABLE Opening Year 2027 Without Project-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Meats Avenue East of Glassell Street

NOTES: 2411 Glassell Street Project - Opening Year 2027 Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7820 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 25 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.76

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	58.7	170.0	532.1

TABLE Opening Year 2027 Without Project-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Taft Avenue West of Glassell Street

NOTES: 2411 Glassell Street Project - Opening Year 2027 Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15230 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.03

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	80.4	237.8	746.6

TABLE Opening Year 2027 Without Project-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Taft Avenue East of Glassell Street

NOTES: 2411 Glassell Street Project - Opening Year 2027 Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 13530 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.51

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	72.8	211.7	663.4

TABLE Opening Year 2027 With Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street North of Lincoln Avenue

NOTES: 2411 Glassell Street Project - Opening Year 2027 With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 22690 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.08

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
76.5	210.1	653.5	2062.8

TABLE Opening Year 2027 With Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street Between Lincoln Avenue and Fletcher Avenue

NOTES: 2411 Glassell Street Project - Opening Year 2027 With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 18260 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.14

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
66.0	170.8	526.4	1660.2

TABLE Opening Year 2027 With Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street between Fletcher Avenue and Meats Avenue

NOTES: 2411 Glassell Street Project - Opening Year 2027 With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 19340 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.39

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
68.5	180.3	557.4	1758.3

TABLE Opening Year 2027 With Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street between Meats Avenue and Taft Avenue

NOTES: 2411 Glassell Street Project - Opening Year 2027 With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 16190 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.62

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	152.5	467.2	1472.3

TABLE Opening Year 2027 With Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street South of Taft Avenue

NOTES: 2411 Glassell Street Project - Opening Year 2027 With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 24120 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.35

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
80.1	222.9	694.5	2192.7

TABLE Opening Year 2027 With Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Lincoln Avenue West of Glassel Street

NOTES: 2411 Glassell Street Project - Opening Year 2027 With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 22000 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.95

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
74.8	204.0	633.7	2000.1

TABLE Opening Year 2027 With Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Lincoln Avenue East of Glassel Street

NOTES: 2411 Glassell Street Project - Opening Year 2027 With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 22970 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.13

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
77.2	212.6	661.5	2088.2

TABLE Opening Year 2027 With Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Fletcher Avenue West of Glassell Street

NOTES: 2411 Glassell Street Project - Opening Year 2027 With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2400 SPEED (MPH): 25 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 53.17

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	66.3

TABLE Opening Year 2027 With Project-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Fletcher Avenue East of Glassell Street

NOTES: 2411 Glassell Street Project - Opening Year 2027 With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 670 SPEED (MPH): 25 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 48.69

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	0.0

TABLE Opening Year 2027 With Project-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Meats Avenue East of Glassell Street

NOTES: 2411 Glassell Street Project - Opening Year 2027 With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7820 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 25 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.76

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	58.7	170.0	532.1

TABLE Opening Year 2027 With Project-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Taft Avenue West of Glassell Street

NOTES: 2411 Glassell Street Project - Opening Year 2027 With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15570 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.12

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	82.0	243.0	763.2

TABLE Opening Year 2027 With Project-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Taft Avenue East of Glassell Street

NOTES: 2411 Glassell Street Project - Opening Year 2027 With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 13530 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.51

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	72.8	211.7	663.4

TABLE Horizon Year (2050) Without Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street North of Lincoln Avenue

NOTES: 2411 Glassell Street Project - Horizon Year (2050) Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 23700 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.27

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
79.0	219.1	682.4	2154.5

TABLE Horizon Year (2050) Without Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street Between Lincoln Avenue and Fletcher Avenue

NOTES: 2411 Glassell Street Project - Horizon Year (2050) Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 18950 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.30

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
67.6	176.9	546.2	1722.9

TABLE Horizon Year (2050) Without Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street between Fletcher Avenue and Meats Avenue

NOTES: 2411 Glassell Street Project - Horizon Year (2050) Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 20010 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.54

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
70.1	186.3	576.6	1819.2

TABLE Horizon Year (2050) Without Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street between Meats Avenue and Taft Avenue

NOTES: 2411 Glassell Street Project - Horizon Year (2050) Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 19820 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.49

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
69.6	184.6	571.1	1802.0

TABLE Horizon Year (2050) Without Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street South of Taft Avenue

NOTES: 2411 Glassell Street Project - Horizon Year (2050) Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 26060 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.68

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
84.9	240.3	750.2	2369.0

TABLE Horizon Year (2050) Without Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Lincoln Avenue West of Glassell Street

NOTES: 2411 Glassell Street Project - Horizon Year (2050) Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 23050 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.15

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
77.4	213.3	663.8	2095.5

TABLE Horizon Year (2050) Without Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Lincoln Avenue East of Glassell Street

NOTES: 2411 Glassell Street Project - Horizon Year (2050) Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 24700 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.45

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
81.5	228.1	711.1	2245.4

TABLE Horizon Year (2050) Without Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Fletcher Avenue West of Glassell Street

NOTES: 2411 Glassell Street Project - Horizon Year (2050) Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4570 SPEED (MPH): 25 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.96

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	108.3

TABLE Horizon Year (2050) Without Project-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Fletcher Avenue East of Glassell Street

NOTES: 2411 Glassell Street Project - Horizon Year (2050) Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 710 SPEED (MPH): 25 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 48.95

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	0.0

TABLE Horizon Year (2050) Without Project-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Meats Avenue East of Glassell Street

NOTES: 2411 Glassell Street Project - Horizon Year (2050) Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8480 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 25 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.11

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	62.8	184.0	577.0

TABLE Horizon Year (2050) Without Project-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Taft Avenue West of Glassell Street

NOTES: 2411 Glassell Street Project - Horizon Year (2050) Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 17270 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.57

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	89.8	269.2	846.4

TABLE Horizon Year (2050) Without Project-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Taft Avenue East of Glassell Street

NOTES: 2411 Glassell Street Project - Horizon Year (2050) Without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 13590 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.53

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	73.0	212.6	666.3

TABLE Horizon Year (2050) With Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street North of Lincoln Avenue

NOTES: 2411 Glassell Street Project - Horizon Year (2050) With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 23940 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.31

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
79.6	221.3	689.3	2176.4

TABLE Horizon Year (2050) With Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street Between Lincoln Avenue and Fletcher Avenue

NOTES: 2411 Glassell Street Project - Horizon Year (2050) With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 19670 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.46

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
69.3	183.2	566.8	1788.3

TABLE Horizon Year (2050) With Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street between Fletcher Avenue and Meats Avenue

NOTES: 2411 Glassell Street Project - Horizon Year (2050) With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 20730 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.69

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
71.8	192.7	597.2	1884.7

TABLE Horizon Year (2050) With Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street between Meats Avenue and Taft Avenue

NOTES: 2411 Glassell Street Project - Horizon Year (2050) With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 20280 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.59

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
70.7	188.7	584.3	1843.8

TABLE Horizon Year (2050) With Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Glassell Street South of Taft Avenue

NOTES: 2411 Glassell Street Project - Horizon Year (2050) With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 26180 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.70

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
85.2	241.3	753.6	2379.9

TABLE Horizon Year (2050) With Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Lincoln Avenue West of Glassel Street

NOTES: 2411 Glassell Street Project - Horizon Year (2050) With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 23290 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.19

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
78.0	215.5	670.7	2117.3

TABLE Horizon Year (2050) With Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Lincoln Avenue East of Glassell Street

NOTES: 2411 Glassell Street Project - Horizon Year (2050) With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 24940 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.49

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
82.1	230.2	718.0	2267.2

TABLE Horizon Year (2050) With Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Fletcher Avenue West of Glassell Street

NOTES: 2411 Glassell Street Project - Horizon Year (2050) With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4570 SPEED (MPH): 25 GRADE: .5

	TRAFFIC DISTRIBUTION	PERCENTAGES	
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 40 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.96

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	108.3

TABLE Horizon Year (2050) With Project-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Fletcher Avenue East of Glassell Street

NOTES: 2411 Glassell Street Project - Horizon Year (2050) With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 710 SPEED (MPH): 25 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 48.95

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	0.0

TABLE Horizon Year (2050) With Project-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Meats Avenue East of Glassell Street

NOTES: 2411 Glassell Street Project - Horizon Year (2050) With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8480 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 25 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.11

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	62.8	184.0	577.0

TABLE Horizon Year (2050) With Project-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Taft Avenue West of Glassell Street

NOTES: 2411 Glassell Street Project - Horizon Year (2050) With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 17610 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.66

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	91.3	274.4	863.1

TABLE Horizon Year (2050) With Project-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/18/2025

ROADWAY SEGMENT: Taft Avenue East of Glassell Street

NOTES: 2411 Glassell Street Project - Horizon Year (2050) With Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 13590 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.53

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	73.0	212.6	666.3

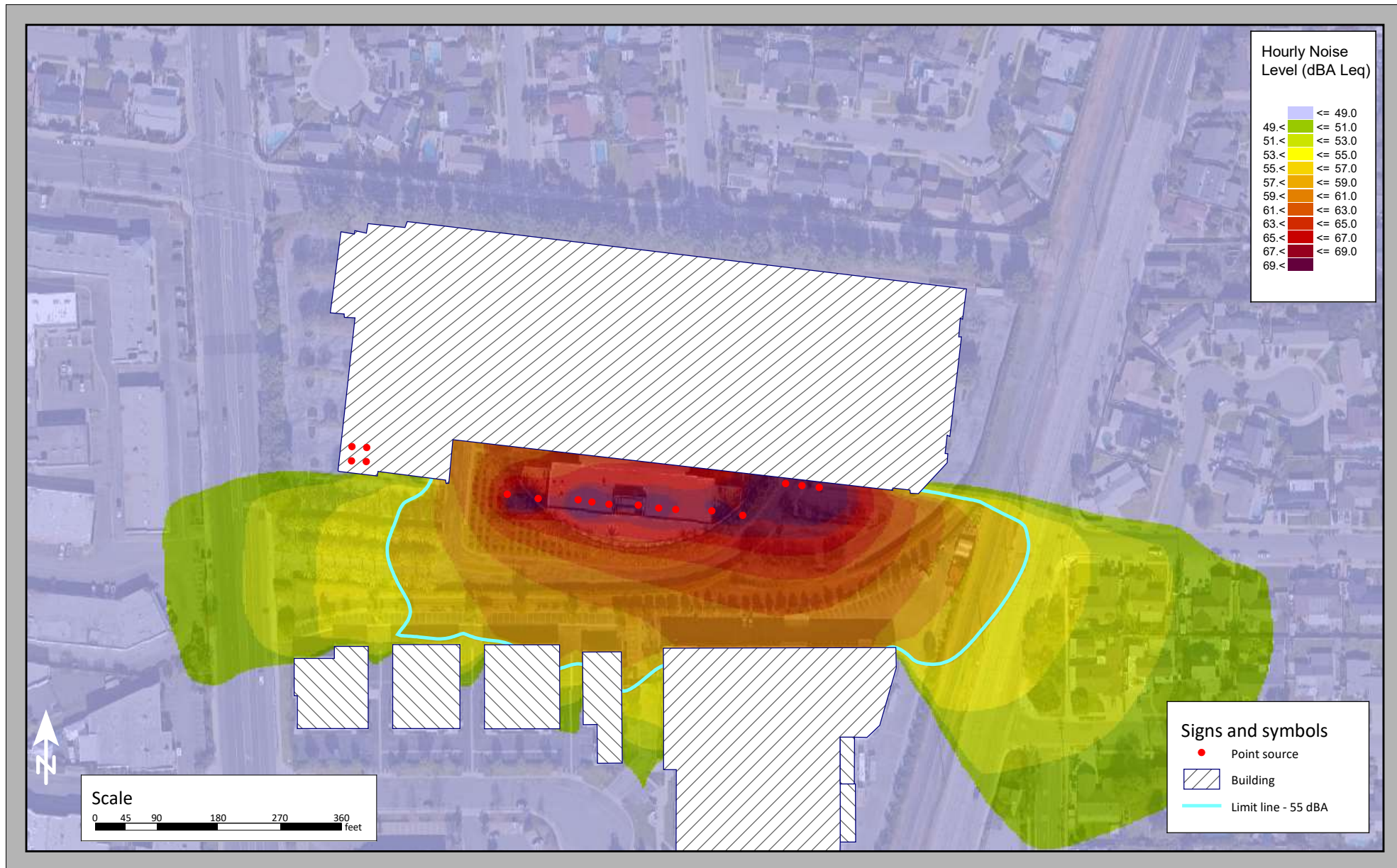
APPENDIX D

SOUNDPLAN NOISE MODEL PRINTOUTS

2411 Glassell Street

Project No. ESL2201.115

Project Operational Noise Levels



2411 Glassell Street

Project No. ESL2201.115

Project Operational Noise Levels - Lmax

