Acoustical Analysis

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Date: September 9, 2024

Subject: 1921-1927 West San Carlos Street Project – Acoustical Analysis

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1.0 PURPOSE

The purpose of this memorandum is to identify the noise impacts associated with construction and operations of the proposed 1921-1927 West San Carlos Street Project (Project), located in the City of San José, California.

2.0 PROJECT DESCRIPTION

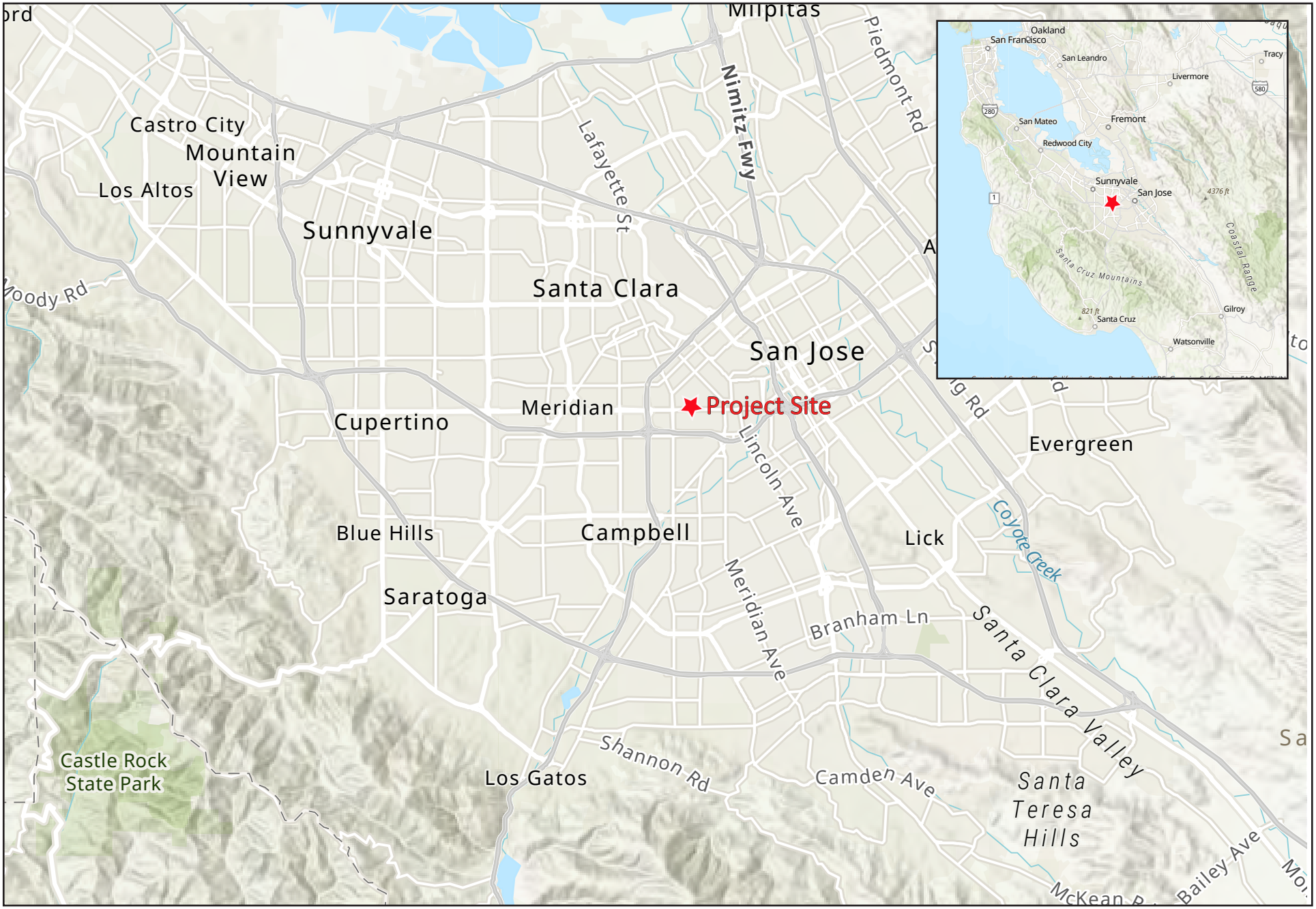
The proposed Project is in the City of San José (City) in the northwestern portion of Santa Clara County, California. The Project site is located at 1921-1927 West San Carlos Street. **Figure 1: Regional Vicinity** and **Figure 2: Site Vicinity**, depict the Project site in a regional and local context. The Project site is located approximately 2 miles west of downtown San José, in an urbanized area. Surrounding land uses are mainly commercial and residential uses. The proposed Project site includes five parcels (Assessor Parcel Numbers 274-17-018, 274-17-019, 274-17-020, 274-17-021, and 274-17-022) and is approximately 0.56 gross acres. The proposed Project would require annexation of the Project site and the immediately adjacent section of Cleveland Avenue to the City of San José to extend applicability of City laws and services to the Project site. The Project site is designated by the General Plan as Mixed-Use Commercial (MUC) within the West San Carlos Urban Village which allows for the Project uses. The Project site is zoned as Commercial General (CG) and Single-Family Residential (R1). The proposed Project would require a General Plan Amendment (GPA) to change the land use designation from Mixed Use Commercial (MUC) to Urban Village (UV). The UV designation allows for a 250 dwelling units per acre.

The proposed Project site is currently developed by existing commercial buildings. The overall Project site is flat and previously graded. The Project site is surrounded by residential uses to the north, east, and west of the site and commercial uses to the east, south, and west of the site. The Project site is bound by West San Carlos Street to the south and Cleveland Avenue to the west. Additionally, Interstate 880 (I-880) is located approximately 0.6 miles west of the Project site and Interstate 280 (I-280) is located approximately 0.4 miles south of the Project site.

The Project proposes to demolish the existing buildings and construct a seven-story affordable housing building totaling 108,935 square feet (sf). As shown in **Figure 3: Site Plan**, the proposed development

would contain approximately 94 dwelling units (65,138 net rentable sf), 2,475 sf of retail space, 1,371 sf of amenity space and 10,203 sf of parking space. The proposed Project includes a total of 31 surface parking spaces and 58 bicycle parking stalls on the ground floor. The primary pedestrian entrance for retail uses would be provided along West San Carlos Street and the primary residential entrance would be provided along Cleveland Avenue. Vehicle access to the Project site would be provided via two driveways on Cleveland Avenue, one for access to the retail parking area and one for access to the residential parking.

Construction is anticipated to begin in early 2027 and last approximately 18 months until summer 2028. Construction methods would include demolition of the existing commercial uses, site preparation, grading, paving, building construction, and architectural coating. Construction of the Project would be required to be consistent with the City's Best Management Practices and California Building Code.



Source: USGS, 2024

Figure 1: Regional Vicinity

1921 and 1927 West San Carlos Street Project
Technical Studies

Not to scale

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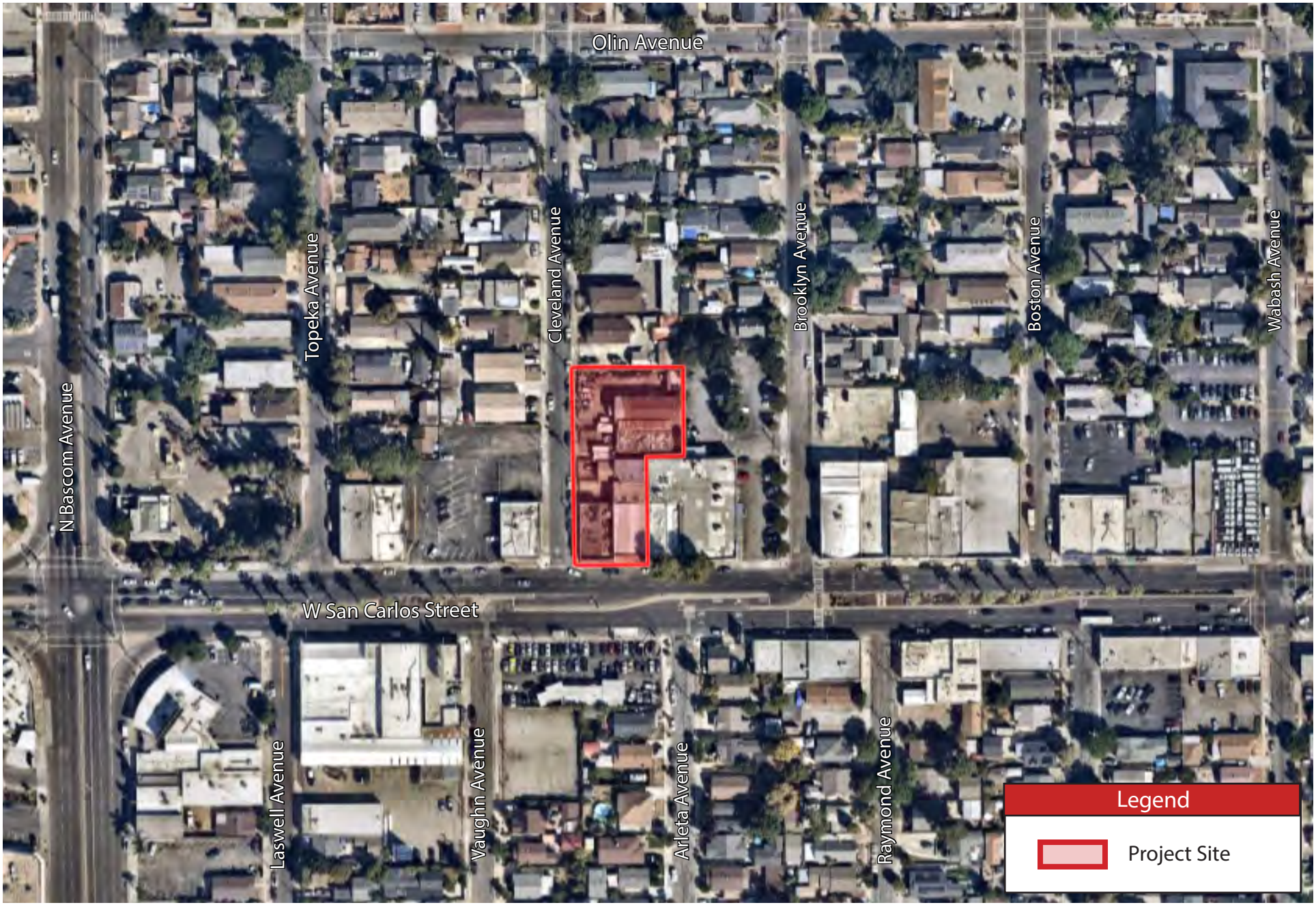

Source: Nearmap, 2024

Figure 2: Site Vicinity

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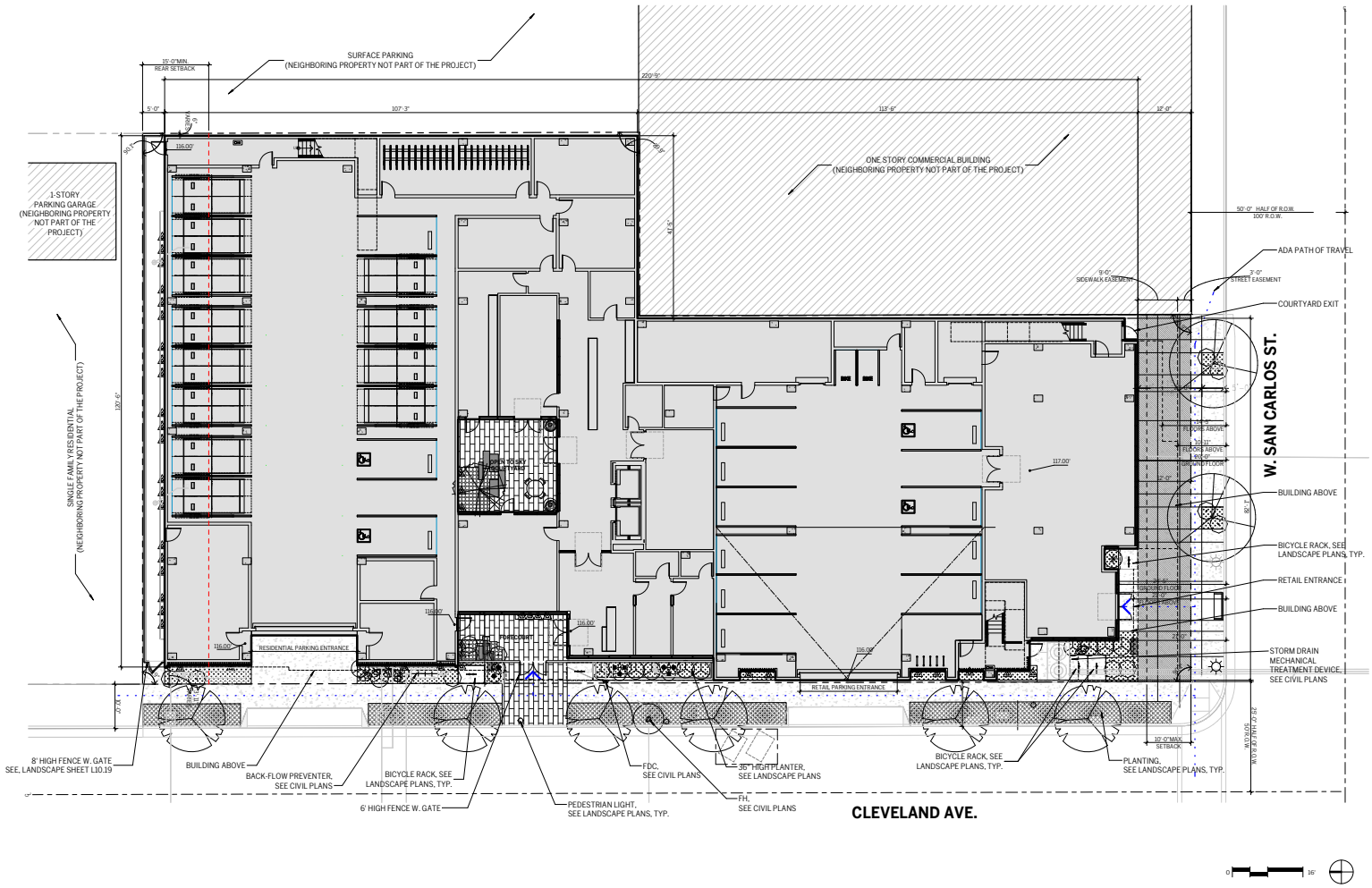

LEGEND

- BUILDING FOOTPRINT
- NEIGHBORING BUILDING
- CONCRETE
- PUBLIC MAINTAINED LANDSCAPE
- PLANTING
- DECORATIVE PAVING
- PERVIOUS CONCRETE PAVERS
- PROJECT BOUNDARY AREA
- ACCESSIBLE PATH
- OVERHEAD BUILDING
- SETBACKS
- ROAD CENTERLINE
- EASEMENT
- TREE GRATE
- BACK-FLOW PREVENTER
- PROPOSED FIRE HYDRANT
- PROPOSED FDC
- PROPOSED PEDESTRIAN LIGHT
- PROPOSED BICYCLE RACKS

PLANNING DATA

A. TOTAL ACRES OF SUBJECT PROPERTY: **0.56 ACRES**
B. TOTAL NUMBER OF DWELLING UNITS: **94 UNITS**
C. PERCENTAGE OF PROPOSED SITE COVERAGE FOR BUILDINGS, OFF-STREET PARKING AND LOADING, AND LANDSCAPING: **(23,161 / 24,491 SITE) X 100 = 94.56%**

UNIT MIX

UNITS

	STUDIO	1BED	2BED	3BED	TOTALS
LEVEL 7	1	3	4	4	12
LEVEL 6	4	4	4	4	16
LEVEL 5	5	4	4	4	17
LEVEL 4	6	4	4	4	18
LEVEL 3	6	4	4	4	18
LEVEL 2	2	3	4	4	13
LEVEL 1	0	0	0	0	0
TOTALS	**24**	**22**	**24**	**24**	**94**
MIX	25.5%	23.4%	25.5%	25.5%	100%

Source: Steinberg Hart, 2024

Figure 3: Site Plan

1921 and 1927 West San Carlos Street Project
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3.0 THRESHOLDS AND SIGNIFICANCE CRITERIA

CEQA Thresholds

Based upon the criteria derived from Appendix G of the CEQA Guidelines, a Project normally would have a significant effect on the environment if it would:

1. Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

2. Generate excessive groundborne vibration or groundborne noise levels; and

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

Applicable Plans and Policies

Sensitive receptors near the Project site are located in the City of San José. Therefore, noise standards for the City of San José are presented below.

Federal Transit Administration

The Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (2018) (FTA Noise and Vibration Manual) identifies a maximum 8-hour noise level standard of 80 dBA L_{eq} at residential uses and 85 dBA L_{eq} at commercial uses for short-term construction activities.

City of San José General Plan

The San José General Plan identifies goals, policies, and implementations in the Noise Element. The Noise Element provides a basis for comprehensive local programs to regulate environmental noise and protect citizens from excessive exposure. **Table 1: Land-Use Compatibility Guidelines for Community Noise in San José** highlights five land-use categories and the outdoor noise compatibility guidelines.

Table 1: Land-Use Compatibility Guidelines for Community Noise in San José

Land-Use Category	Exterior Noise Exposure (L_{dn}), in dBA		
	Normally Acceptable[1]	Conditionally Acceptable[2]	Normally Unacceptable[3]
Residential, Hotels and Motels, Hospitals, and Residential Care	Up to 60	>60 to 75	>75
Outdoor Sports and Recreation, Neighborhood Parks and Playgrounds	Up to 65	>65 to 80	>80
Schools, Libraries, Museums, Meeting Halls, Churches	Up to 60	>60 to 75	>75
Office Buildings, Business Commercial, and Professional Offices	Up to 70	>70 to 80	>75
Sports Area, Outdoor Spectator Sports	Up to 70	>70 to 80	>65
Public and Quasi-Public Auditoriums, Concert Halls, Amphitheaters	-	>55 to 70	>70

1. Normally Acceptable – Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction. There are no special noise insulation requirements.
2. Conditionally Acceptable – New construction should be undertaken only after a detailed analysis of the noise reduction requirement is conducted and needed noise insulation features included in the design.
3. Normally Unacceptable – New construction should be discouraged and may be denied as inconsistent with the General Plan and City Code. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
4. Outdoor open space noise standards do not apply to private balconies/patios.

Source: City of San José General Plan, 2014.

The San José General Plan requires that construction operations use the best available noise suppression devices and techniques and limit construction hours near residential uses per the City's Municipal Code. The City would consider construction noise to be significant if substantial noise generating activities (such as building demolition, grading, excavation, pile driving, use of impact equipment, or building framing) occur for more than 12 months when located within 500 feet of residential uses or 200 feet of commercial or office uses. For large or complex projects, a construction noise logistics plan would be required to be in place prior to the start of construction and implemented during construction to reduce noise impacts on surrounding residential and commercial uses.

The San José General Plan restricts the noise generation of new nonresidential land uses to 55 dBA L_{dn} at the property line when located adjacent to existing or planned noise sensitive residential and public/quasi-public land uses.

The San José General Plan establishes a continuous vibration limit of 0.20 in/sec PPV for typical buildings and 0.08 in/sec PPV for sensitive historic structures per General Plan Policy EC-2.3. The policy restricts pile drivers within 125 feet of any buildings and within 300 feet of historical building.

City of San José Municipal Code

According to San José Municipal Code, Section 20.100.450, construction hours within 500 feet of a residential unit are limited to the hours of 7:00 a.m. to 7:00 p.m. on Monday through Friday, unless

otherwise allowed in a Development Permit or other planning approval. The Municipal Code does not establish quantitative noise limits for construction activities in the City. **Table 2: City of San José Zoning Ordinance Noise Standards** shows the San José standards for maximum noise level at the property line.

Table 2: City of San José Zoning Ordinance Noise Standards

Land Use Types	Maximum Noise Level in Decibels at Property Line
Any residential use adjacent to a property used or zoned for residential purposes	55
Commercial use adjacent to property used or zoned for residential purposes	55
Commercial use adjacent to a property used or zoned for commercial or other non-residential uses	60
Source: City of San José Municipal Code section 20.30.700. and 20.40.600	

Significance Criteria

This report relies on the following standards and significance criteria to evaluate potential noise and vibration impacts from the proposed Project in accordance with the CEQA thresholds of significance outlined above in CEQA Thresholds.

Construction Noise

Per General Plan Policy EC-1.7, the City of San José considers projects involving substantial noise-generating activities (such as building demolition, grading, excavation, pile driving, use of impact equipment, or building framing) continuing for more than 12 months within 500 feet of residential land uses or within 200 feet of commercial land uses or offices to be significant and require the mitigation stated in Policy EC-1.7. The construction noise analysis also quantifies construction noise and compares the construction-related noise levels to the FTA's 8-hour average construction noise standards of 80 dBA L_{eq} at residential uses, 85 dBA L_{eq} at commercial uses, and 90 dBA L_{eq} at industrial uses.[1] The construction analysis compares construction noise to FTA thresholds for informational purposes.

Operational Noise

Per General Plan Policy EC-1.2, a significant permanent noise level increase would occur if the Project would result in: a) a noise level increase of 5 dBA L_{dn} or greater, with a future noise level of less than 60 dBA L_{dn}, or b) a noise level increase of 3 dBA L_{dn} or greater, with a future noise level of 60 dBA L_{dn} or greater. Additionally, a significant noise impact would be identified if the Project would expose persons to or generate noise levels that would exceed applicable noise standards presented in the General Plan.

Section 20.30.700 of the City's Municipal Code establishes a limit of 55 dBA for commercial areas adjacent to residential areas and 60 dBA for commercial uses adjacent to commercial areas, when measured at the property line. The analysis below compares generated noise levels to the Municipal Code standards,

[1] Federal Transit Administration; Transit Noise and Vibration Assessment Manual, 2018.

however, the Municipal Code is not used as a criterion to determine the significance of project impacts under CEQA.

Vibration

General Plan Policy EC-2.3 relies on guidance developed by Caltrans to address vibration impacts from development projects in San José. A vibration limit of 12.7 millimeters per second (mm/sec; 0.5 inch/sec) PPV is used for buildings that are structurally sound and designed to modern engineering standards. A conservative vibration limit of five mm/sec (0.2 inches/sec) PPV has been used for buildings that are found to be structurally sound but where structural damage is a major concern. For historic buildings or buildings that are documented to be structurally weakened, a conservative limit of two mm/sec (0.08 inches/sec) PPV is used to provide the highest level of protection.

Methodology

Construction

Construction noise estimates are based upon typical noise levels generated by construction equipment published by the Federal Transit Administration (FTA) and FHWA. Construction noise is assessed in dBA L_{eq}. This unit is appropriate because L_{eq} can be used to describe noise level from operation of each piece of equipment separately, and levels can be combined to represent the noise level from all equipment operating during a given period. The FTA Transit Noise and Vibration Impact Assessment Manual (2018) (FTA Noise and Vibration Manual) identifies a maximum 8-hour noise level standard of 80 dBA L_{eq} at residential uses, 85 dBA L_{eq} at commercial, and 90 dBA L_{eq} at industrial uses for short-term construction activities. Noise generated by short-term construction activities below the FTA's maximum 8-hour noise level standard would have a less than significant impact.

Reference noise levels are used to estimate noise levels at nearby noise-sensitive receptors based on a standard noise attenuation rate of 6 dB per doubling of distance (line-of-sight method of sound attenuation for point sources of noise). Construction noise is analyzed at a distance from the property line of the nearest receptor to the main construction activity at the Project site to provide an average, representative construction noise level for the various phases. Construction noise level estimates do not account for the presence of intervening structures or topography, which may reduce noise levels at receptor locations. Therefore, the noise levels presented herein represent a conservative, reasonable worst-case estimate of actual temporary construction noise.

Operations

The analysis of the existing and future noise environments is based on noise prediction modeling and empirical observations. Reference noise level data are used to estimate the Project operational noise impacts from stationary sources. Noise levels are collected from field noise measurements and other published sources from similar types of activities are used to estimate noise levels expected with the Project's stationary sources. The reference noise levels are used to represent a worst-case noise environment as noise level from stationary sources can vary throughout the day. Reference noise level data are used to estimate the Project operational noise impacts from stationary sources. The Existing Year and With Project traffic noise levels in the Project vicinity were calculated using the FHWA Highway Noise Prediction Model (FHWA-RD-77-108).

Vibration

Groundborne vibration levels associated with Project construction-related activities were evaluated utilizing typical groundborne vibration levels associated with construction equipment, obtained from FTA published data for construction equipment. Potential groundborne vibration impacts related to structural damage and human annoyance were evaluated, considering the distance from construction activities to nearby land uses and typically applied criteria for structural damage and human annoyance.

4.0 EXISTING CONDITIONS

Existing Noise Sources

The City of San José (including the Project site) is impacted by various noise sources. Mobile sources, especially cars and trucks, are the most common and significant sources of noise in most communities. Other sources of noise are the various land uses (i.e., residential, commercial, institutional, and recreational and parks activities) throughout the City that generate stationary-source noise.

Noise Measurements

To determine ambient noise levels in the Project area, three short-term (10-minute) noise measurements and one long-term (24-hour) noise measurement were taken using a Larson Davis SoundExpert LxT Type I integrating sound level meter on November 7 and November 8, 2023; refer to **Appendix A** for existing noise measurement data.

As shown in **Figure 4: Noise Measurement Locations,** short-term measurement 1 (ST-1) was taken to represent the ambient noise level at the residential northwest of the Project site on Cleveland Avenue, ST-2 was taken to represent existing noise levels on southwest of the Project site by Vaughn Avenue, and ST-3 was taken to represent the existing noise level at residential and commercial uses south of the Project site. Long-term measurement 1 (LT-1) were taken to represent existing ambient noise levels at the residential uses northeast of the Project site along Brooklyn Avenue. The primary noise sources during the noise measurements were traffic along Cleveland Avenue, West San Carlos Street, Brooklyn Avenue, and stationary noise at commercial operations nearby. **Table 7: Noise Measurements** provides the ambient noise levels measured at these locations.

Table 7: Noise Measurements

Site No.	Location	L_{eq} (dBA)	L_{min} (dBA)	L_{max} (dBA)	L_{dn} (dBA)	Time	Date
ST-1	48 Cleveland Avenue	53.0	48.7	62.5	-	3:22 p.m. to 3:32 p.m.	11/7/2023
ST-2	318 Vaughn Avenue	57.4	49.4	67.7	-	3:39 p.m. to 3:49 p.m.	11/7/2023
ST-3	316 Arleta Avenue	59.5	49.1	68.7	-	3:53 p.m. to 4:03 p.m.	11/7/2023
LT-1	75 Brooklyn Avenue	54.1	36.9	84.2	57.2	4:40 p.m. to 4:40 p.m.	11/7/2023–11/8/2023
Source: Noise Measurements taken by Kimley-Horn on November 7th and 8th, 2023.							

Existing Mobile Noise

Existing roadway noise levels were calculated for the roadway segments in the Project vicinity. This task was accomplished using the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108) and existing traffic volumes from Kimley-Horn Transportation Analysis (2023). Existing traffic volumes are obtained from the traffic modeling performed by Kimley-Horn. Day/night traffic distributions were based upon continuous hourly noise measurement data. Using this data and the FHWA traffic noise prediction methodology, traffic noise levels were calculated for existing (2023) conditions. The existing mobile noise in the Project area are generated along Cleveland Avenue, West San Carlos Street, and Brooklyn Avenue.

Existing Stationary Noise

The primary sources of stationary noise in the Project vicinity are those associated with the operations of nearby existing commercial spaces and residential uses surrounding of the Project site. The noise associated with these sources may represent a single-event noise occurrence, short-term noise, or long-term/continuous noise.

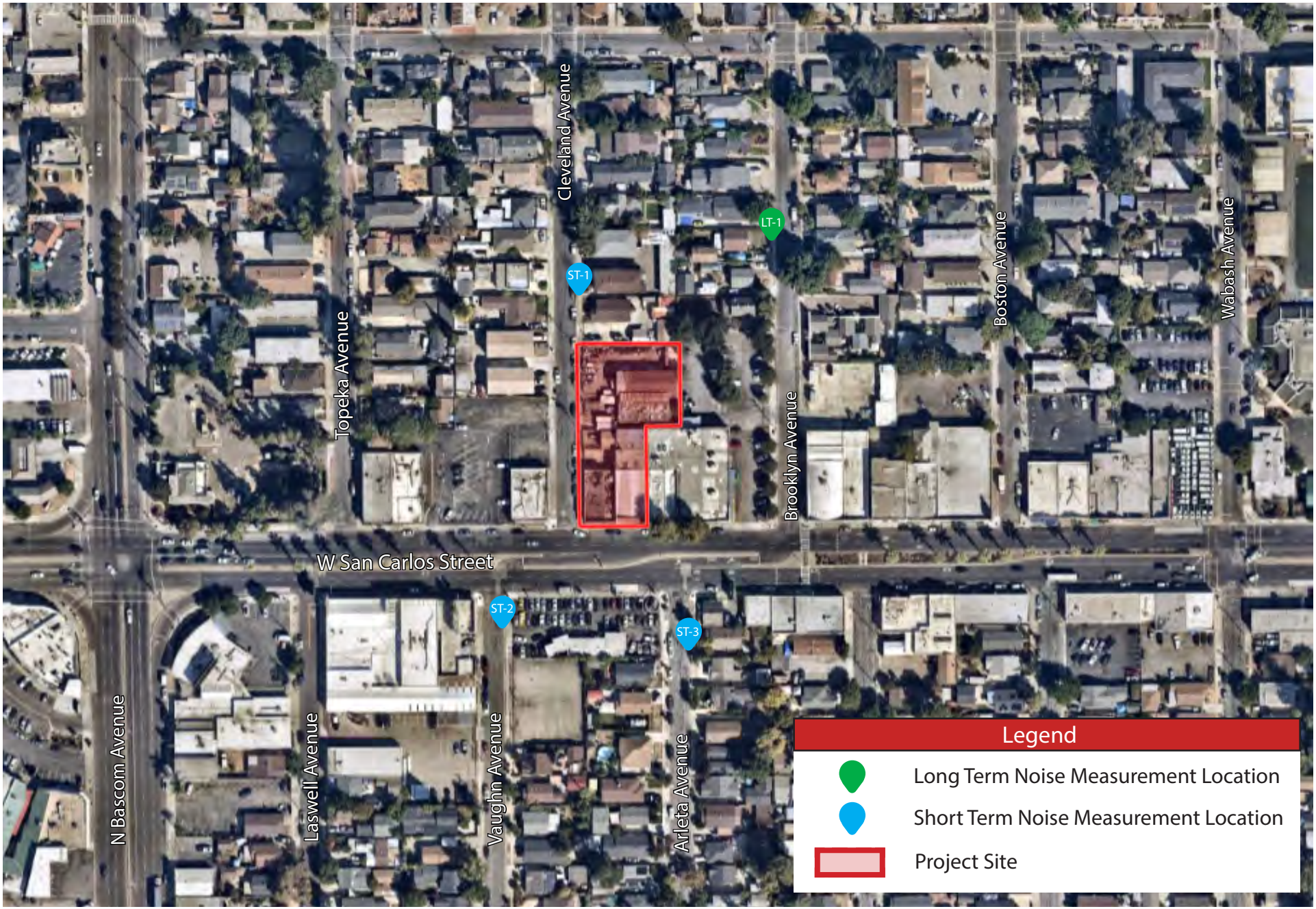
Sensitive Receptors

Noise exposure standards and guidelines for various types of land uses reflect the varying noise sensitivities associated with each of these uses. Residences, hospitals, schools, guest lodging, libraries, and churches are treated as the most sensitive to noise intrusion and therefore have more stringent noise exposure targets than do other uses, such as manufacturing or agricultural uses that are not subject to impacts such as sleep disturbance.

As shown in **Table 8: Sensitive Receptors**, sensitive receptors near the Project site are primarily surrounding residential uses; refer to **Figure 5: Sensitive Receptor Locations**. These distances are measured from the Project site boundary to the sensitive receptor property line.

Table 8: Sensitive Receptors

	Receptor Description	Distance and Direction from the Project Site[1]
1	Residential Uses along Cleveland Avenue (west)	40 feet west
2	Residential Uses along Cleveland Avenue (east)	Adjacent to the north
3	Residential Uses along Brooklyn Avenue	Adjacent to the east
4	Residential Uses along Raymond Avenue	290 feet southeast
5	Residential Uses along Arleta Avenue	160 feet southeast
1. Distances are measured from the Project site boundary to the property line of the nearest sensitive receptor.		
Source: Google Earth, 2024.		



Source: Nearmap, 2024.

Figure 4: Noise Measurements

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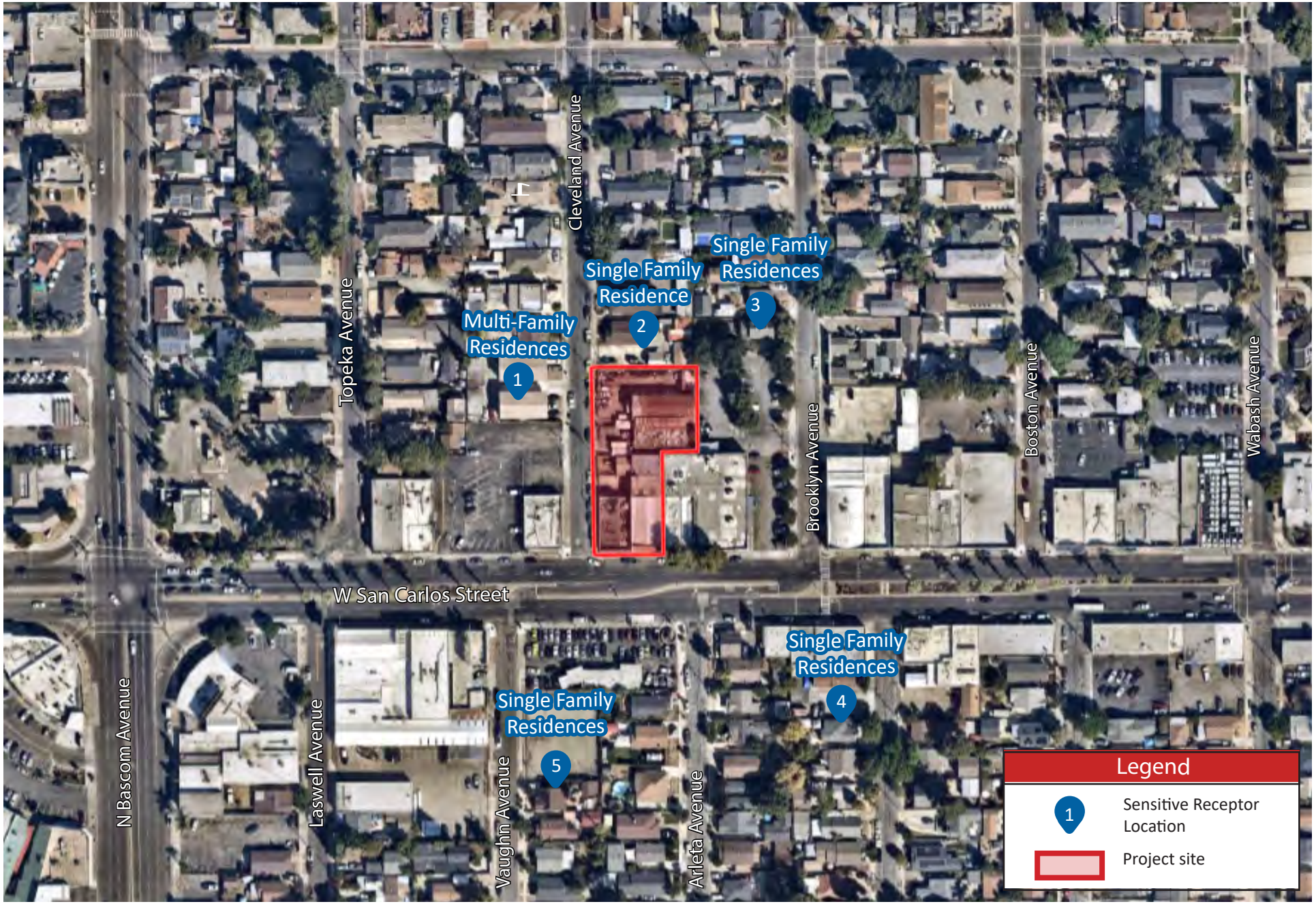

Source: Nearmap, 2024

Figure 5: Sensitive Receptor Locations

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Technical Studies

Not to scale

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5.0 IMPACT ANALYSIS

Threshold (a) Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Construction

Construction-related activities would temporarily increase ambient noise levels in the proposed Project vicinity. Construction-related noise levels at and near the Project site would fluctuate depending on the level and type of construction activity on a given day. During construction, exterior noise levels could affect the various uses surrounding the site. Project construction would occur adjacent to existing commercial spaces and residential uses. However, construction activities would occur throughout the Project site and would not be concentrated at a single point near sensitive receptors. Therefore, noise levels shown below represent conservative estimates. Noise levels typically attenuate (or drop off) at a rate of 6 dB per doubling of distance from point sources, such as industrial machinery. During construction, exterior noise levels could affect the buildings near the construction site.

Construction activities associated with development of the Project would include demolition, site preparation, grading, paving, building construction, and architectural coating. Such activities would require excavators and bulldozers during demolition, graders, scrapers, and tractors during site preparation; graders, dozers, and tractors during grading; cranes, forklifts, generators, tractors, and welders during building construction; pavers, rollers, mixers, tractors, and paving equipment during paving; and air compressors during architectural coating. It should be noted that only a limited amount of equipment can operate near a given location at a particular time. Typical noise levels associated with individual construction equipment and noise levels at the nearest sensitive receptors are listed in **Table 9: Typical Construction Noise Levels.**

Table 9: Typical Construction Noise Levels

Equipment	Typical Noise Level (dBA) at 30 feet from Source	Typical Noise Level (dBA) at 50 feet from Source[1]	Typical Noise Level (dBA) at 120 feet from Source[1]
Air Compressor	84	80	72
Backhoe	84	80	72
Compactor	86	82	74
Concrete Mixer	89	85	77
Concrete Pump	86	82	74
Concrete Vibrator	80	76	68
Dozer	89	85	77
Generator	86	82	74
Grader	89	85	77
Impact Wrench	89	85	77
Jack Hammer	92	88	80
Loader	84	80	72
Paver	89	85	77
Pneumatic Tool	89	85	77
Pump	81	77	69
Roller	89	85	77
Saw	80	76	68
Scraper	89	85	77
Shovel	86	82	74
Truck	88	84	76

[1] Calculated using the inverse square law formula for sound attenuation: $dBA_2 = dBA_1+20Log(d_1/d_2)$
Where: dBA_2 = estimated noise level at receptor; dBA_1 = reference noise level; d_1 = reference distance; d_2 = receptor location distance.
Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018.

Noise impacts for mobile construction equipment are typically assessed as emanating from the center of the equipment activity or construction site.[2] For the proposed Project, this center point would be approximately 120 feet from the nearest sensitive receptor and 30 feet from the nearest commercial receptor. These sensitive uses may be exposed to elevated noise levels during Project construction. The Federal Highway Administration Roadway Construction Noise Model (RCNM) was used to calculate noise levels during construction activities; refer to **Appendix A: Noise Data**. RCNM is a computer program used to assess construction noise impacts and allows for user-defined construction equipment and user-defined noise limit criteria. Noise levels were calculated for each construction phase and are based on the equipment used, distance to the nearest property/receptor, and acoustical use factor for equipment.

The noise levels calculated in show estimated exterior construction noise at the closest sensitive and commercial receptors. Based on the calculations using the RCNM as shown in **Table 10: Project Construction Noise Levels**, construction noise levels would range from approximately 78.2 dBA L_{eq} to 90.9

[2] For the purposes of this analysis, the construction area is defined as the center of the Project site per the methodology in the FTA Transit Noise and Vibration Impact Assessment Manual (September 2018). Although some construction activities may occur at distances closer than 120 feet from the nearest properties, construction equipment would be dispersed throughout the Project site during various construction activities. Therefore, the center of the Project site represents the most appropriate distance based on the sporadic nature of construction activities.

dBA L_{eq} at the nearest commercial receptors and 66.1 dBA L_{eq} to 78.9 dBA L_{eq} at the nearest residential receptors.

Table 10: Project Construction Noise Levels

Construction Phase	Receptor Location			Modeled Exterior Noise Level (dBA L_{eq}) [2,3]	Noise Threshold (dBA L_{eq}) [4]	Exceeded?
	Land Use	Direction	Distance (feet) [1]			
Demolition	Commercial	East	30	90.9	85	**Yes**
	Residential	North	120	78.9	80	No
	Residential	West	120	78.9	80	No
Site Preparation	Commercial	East	30	88.0	85	**Yes**
	Residential	North	120	76.0	80	No
	Residential	West	120	76.0	80	No
Grading	Commercial	East	30	89.0	85	**Yes**
	Residential	North	120	77.0	80	No
	Residential	West	120	77.0	80	No
Building Construction	Commercial	East	30	88.1	85	**Yes**
	Residential	North	120	76.0	80	No
	Residential	West	120	76.0	80	No
Paving	Commercial	East	30	89.8	85	**Yes**
	Residential	North	120	77.8	80	No
	Residential	West	120	77.8	80	No
Architectural Coating	Commercial	East	30	78.2	85	**Yes**
	Residential	North	120	66.1	80	No
	Residential	West	120	66.1	80	No

Notes:
1. Distance is from the nearest receptor to the main construction activity area on the Project site. Not all equipment would operate at the closest distance to the receptor.
2. Modeled noise levels conservatively assume the simultaneous operation of all pieces of equipment.
3. The FTA Noise and Vibration Manual establishes construction noise standards of 80 dBA $L_{eq(8\text{-}hour)}$ for residential uses and 86 dBA $L_{eq(8\text{-}hour)}$ for commercial uses.

Source: Federal Highway Administration, *Roadway Construction Noise Model,* 2006. Refer to Appendix A for noise modeling results.

As shown in **Table 10**, the loudest noise level would be 90.9 dBA L_{eq} at the nearest commercial use, which is above the FTA's 85 dBA L_{eq} standard at commercial receptors. At the closest sensitive receptors, construction noise levels would remain below the FTA's 80 dBA L_{eq} standard.

The City of San José does have construction noise standards that limit construction schedules and times when within 500 feet of residences and 200 feet of commercial spaces. These limitations would only be required if substantial noise generating activities lasted more than 12 months. The Project construction is anticipated to occur for an 18-month period and substantial noise generation activities involved with Project construction would occur for more than 12 months. Therefore, the Project would be subject to the Policy EC-1.7 of the San José General Plan. Further, as shown in **Table 10**, noise levels at the closest commercial receptors are exceeding the FTA's construction noise standards. Actual construction-related noise activities would be lower than the conservative levels described above and would cease upon completion of construction. Due to the variability of construction activities and equipment for the Project, overall construction noise levels would be intermittent and would fluctuate over time. In addition, the noise levels above assume that construction noise is constant, when, in fact, construction activities and associated noise levels would generally be brief and sporadic, depending on the type, intensity, and location of construction activities. The Contractor would also equip all construction equipment, fixed and mobile, with properly operating and maintained noise mufflers, consistent with manufacturer's standards per the City's Standard Permit Conditions. However, to ensure consistency with the General Plan Policy EC-1.7, Mitigation Measure (MM) NOI-1 would be implemented.

As mentioned above, uses near the Project site include residences and commercial spaces. These sensitive uses may be exposed to elevated noise levels during Project construction. However, the proposed Project would be required to adhere to the Standard Permit Conditions and MM NOI-1 which would require the preparation of a Construction Noise Logistics Plan and would ensure that all construction equipment is equipped with properly operating and maintained mufflers and other state required noise attenuation devices. The Standard Permit Conditions are required to ensure that construction noise levels do not exceed the City's standards and that time-of-day restrictions are adhered to. The proposed Project construction would have some demolition, grading, building construction and would last more than 12 months. Therefore, with implementation of these conditions and MM NOI-1, construction noise impacts to nearby receptors would be less than significant.

Standard Permit Conditions

Construction-Related Noise. Noise minimization measures include, but are not limited to, the following:

i. Pile Driving is prohibited.
ii. Limit construction to the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday for any on-site or off-site work within 500 feet of any residential unit. Construction outside of these hours may be approved through a development permit based on a site-specific "construction noise mitigation plan" and a finding by the Director of Planning, Building and Code Enforcement that the construction noise mitigation plan is adequate to prevent noise disturbance of affected residential use.
iii. Construct solid plywood fences around ground level construction sites adjacent to operational businesses, residences, or other noise-sensitive land uses.
iv. Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.

v. Prohibit unnecessary idling of internal combustion engines.
vi. Locate stationary noise-generating equipment such as air compressors or portable power generators as far as possible from sensitive receptors. Construct temporary noise barriers to screen stationary noise-generating equipment when located near adjoining sensitive land uses.
vii. Utilize "quiet" air compressors and other stationary noise sources where technology exists.
viii. Control noise from construction workers' radios to a point where they are not audible at existing residences bordering the Project site.
ix. Notify all adjacent business, residences, and other noise-sensitive land uses of the construction schedule, in writing, and provide a written schedule of "noisy" construction activities to the adjacent land uses and nearby residences.
x. If complaints are received or excessive noise levels cannot be reduced using the measures above, erect a temporary noise control blanket barrier along surrounding building facades that face the construction sites.
xi. Designate a "disturbance coordinator" who shall be responsible for responding to any complaints about construction noise. The disturbance coordinator shall determine the cause of the noise complaint (e.g., bad muffler, etc.) and shall require that reasonable measures be implemented to correct the problem. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule.

Mitigation Measures

MM NOI-1 Construction Noise Logistics Plan

Prior to demolition or grading permit issuance (whichever comes first), the Applicant shall demonstrate, to the satisfaction of the City of San José Director of Public Works or City Engineer that the Project includes a Construction Noise Logistics Plan that includes, at a minimum, the following measures:

- Prohibit unnecessary idling of internal combustion engines. Post signs at gates and other places where vehicles may congregate reminding operators of the State's Airborne Toxic Control Measure (ATCM) limiting idling to no more than 5 minutes.
- Construction contracts specify that all construction equipment, fixed or mobile, shall be equipped with State required noise attenuation devices such as properly operating and maintained mufflers.
- Property owners and occupants located within 300 feet of the Project boundary shall be sent a notice, at least 15 days prior to commencement of any demolition, construction activities (whichever comes first), regarding the construction schedule of the proposed Project. A sign, legible at 50 feet shall also be posted at the Project construction site. All notices and signs shall be reviewed and approved by the Director of Planning, Building and Code Enforcement or Director's designee, prior to mailing or posting and shall indicate the dates and duration of construction activities, as well as provide a contact name and a telephone number for the Noise Disturbance Coordinator where residents can inquire about the construction process and register complaints.

- Prior to issuance of any Grading or Building Permit, the Contractor shall provide evidence that at all times during construction activities and on-site construction staff member shall be designated as a Noise Disturbance Coordinator. The Noise Disturbance Coordinator is responsible for responding to complaints about construction noise. When a complaint is received, the Noise Disturbance Coordinator shall determine the cause (e.g., starting too early, bad muffler, etc.), implement reasonable measures to resolve the complaint, and document actions taken. All notices sent to residential units within 300 feet of the construction site and all signs posted at the construction site, shall include the contact name and the telephone number for the Noise Disturbance Coordinator.

Construction Traffic Noise

Construction noise may be generated by large trucks moving materials to and from the Project site. Large trucks would be necessary to deliver building materials as well as remove dump materials. Cut and fill would not be required during the grading process. Based on the California Emissions Estimator Model (CalEEMod) default assumptions for this Project, as analyzed in 1921-1927 West San Carlos Street Project Air Quality and Greenhouse Gas Emissions Analysis, the Project would generate the highest number of daily trips during the overlapping building construction, paving, and architectural coating phases. The model estimates that the Project would generate up to 73 worker trips and 12 vendor trips per day for building construction, 18 worker trips for paving, and 15 worker trips for architectural coating. Because of the logarithmic nature of noise levels, a doubling of the traffic volume (assuming that the speed and vehicle mix do not also change) would result in a noise level increase of 3 dBA. Nearby roadways used to access the site, such as Cleveland Avenue and West San Carlos Street, have a minimum average daily traffic (ADT) of 560 trips. Therefore, 118 Project construction trips (106 worker trips plus 12 vendor trips) would not double the existing traffic volume per day on any of the nearby roadway segments.[3] Construction related traffic noise would not be noticeable and would not create a significant noise impact.

California establishes noise limits for vehicles licensed to operate on public roads using a pass-by test procedure. Pass-by noise refers to the noise level produced by an individual vehicle as it travels past a fixed location. The pass-by procedure measures the total noise emissions of a moving vehicle with a microphone. When the vehicle reaches the microphone, the vehicle is at full throttle acceleration at an engine speed calculated for its displacement.

For heavy trucks, the State pass-by standard is consistent with the federal limit of 80 dBA. The State pass-by standard for light trucks and passenger cars (less than 4.5 tons gross vehicle rating) is also 80 dB at 15 meters from the centerline. According to the FHWA, dump trucks typically generate noise levels of 77 dBA and flatbed trucks typically generate noise levels of 74 dBA, at a distance of 50 feet from the truck.[4]

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[3] Kimley-Horn. *1921-1927 West San Carlos Street Local Transportation Analysis*, December 2023.

[4] Federal Highway Administration, *Roadway Construction Noise Model*, 2006.

Operation

As discussed above, the closest sensitive receptors are residential uses surrounding the Project site. The City of San José stationary source exterior Zoning Ordinance Noise Standards for residential areas is 55 dBA L_{eq}. The land use compatibility standard for residential areas is also up to 60 dBA L_{dn} for normally acceptable conditions. Generally, traffic volumes on Project area roadways would have to approximately double for the resulting traffic noise levels to increase by 3 dBA. Therefore, permanent increases in ambient noise levels of less than 3 dBA are considered to be less than significant.

Traffic Noise

Implementation of the Project would generate increased traffic volumes along study roadway segments. The Project is expected to generate 485 net daily trips[5], which would result in noise increases on Project area roadways. In general, a traffic noise increase of less than 3 dBA is barely perceptible to people, while a 5-dBA increase is readily noticeable.[6] Generally, traffic volumes on Project area roadways would have to approximately double for the resulting traffic noise levels to increase by 3 dBA. Therefore, permanent increases in ambient noise levels of less than 3 dBA are considered to be less than significant.

As shown in **Table 11: Existing and Project Traffic Noise**, the existing traffic-generated noise level on Project area roadways is between 45.5 dBA L_{dn} and 63.4 dBA L_{dn} at 100 feet from the centerline. As previously described, L_{dn} is 24-hour average noise level with a 10 dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively.

Traffic noise levels for roadways primarily affected by the Project were calculated using the FHWA's Highway Noise Prediction Model (FHWA-RD-77-108). Traffic noise modeling was conducted for conditions with and without the Project, based on traffic volumes (Kimley-Horn, 2023). As noted in **Table 10**, Project noise levels 100 feet from the centerline would range from 47.6 dBA L_{dn} to 63.4 dBA L_{dn}. The Project generated trips would have the highest increase of 2.6 dBA L_{dn} on Cleveland Avenue. However, the 2.6 dBA L_{dn} increase is under the perceptible 3.0 dBA noise level increase per General Plan EC – 1.1. Therefore, the Project would not have a significant impact on existing traffic noise levels.

Table 11: Existing and Project Traffic Noise

Roadway Segment	Existing Conditions		With Project		Change from No Project Conditions	Significant Impact?
	ADT	dBA L_{dn}[1]	ADT	dBA L_{dn}[1]		
Bascom Avenue						
North of San Carlos Street	18,280	62.9	18,350	62.9	0.0	**No**
South of San Carlos Street	20,390	63.4	20,520	63.4	0.0	**No**
San Carlos Street						

[5] Kimley-Horn. *1921-1927 West San Carlos Street Local Transportation Analysis*, December 2023.
[6] Caltrans, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, 2013.

Roadway Segment	Existing Conditions		With Project		Change from No Project Conditions	Significant Impact?
	ADT	dBA L_{dn}[1]	ADT	dBA L_{dn}[1]		
East of Bascom Avenue	16,610	62.5	16,990	62.6	0.1	**No**
East of Cleveland Avenue	17,280	62.7	17,780	62.8	0.1	**No**
West of Vaughn Avenue	16,480	62.5	16,930	62.6	0.1	**No**
East of Brooklyn Avenue	15,980	62.4	16,120	62.4	0.0	**No**
West of Brooklyn Avenue	17,060	62.7	17,380	62.7	0.0	**No**
East of Wabash Avenue	16,760	62.6	16,900	62.6	0.0	**No**
West of Leland Avenue	16,080	62.4	16,220	62.4	0.0	**No**
Stevens Creek Boulevard						
West of Bascom Avenue	13,240	61.6	13,420	61.6	0.0	**No**
Cleveland Avenue						
North of San Carlos Street	560	45.5	1,030	48.1	2.6	**No**
Vaughn Avenue						
South of San Carlos Street	920	47.6	920	47.6	0.0	**No**
Brooklyn Avenue						
North of San Carlos Street	1,480	49.7	1,660	50.2	0.5	**No**
Wabash Avenue						
North of San Carlos Street	1,660	50.2	1,660	50.2	0.0	**No**
Leland Avenue						
South of San Carlos Street	1,880	50.7	1,880	50.7	0.0	**No**
ADT = average daily trips; dBA = A-weighted decibels; L_{dn}= day-night noise levels						
1.Traffic noise levels are at 100 feet from the roadway centerline. The actual sound level at any receptor location is dependent upon such factors as the source-to-receptor distance and the presence of intervening structures, barriers, and topography.						

Table 12: Background and Background Plus Project Traffic Noise, shows the background conditions traffic. As shown in **Table 7**, background roadway noise levels with the project would range from 47.6 dBA L_{dn} to 63.5 dBA L_{dn} and would remain under the perceptible 3.0 dBA noise level increase. Project traffic would also traverse and disperse over Project area roadways, where existing ambient noise levels already exist. Future development associated with the Project would result in additional traffic on adjacent roadways, thereby potentially increasing vehicular noise near existing and proposed land uses. However, the resulting additional ADT would not double the existing traffic volumes on the surrounding roadways. Additionally, the highest increase would be 2.6 dBA L_{dn} and would not generate a perceptible noise level change of 3.0 dBA. Therefore, impacts would be less than significant.

Table 12: Background and Background Plus Project Traffic Noise

Roadway Segment	Existing Conditions		With Project		Change from No Project Conditions	Significant Impact?
	ADT	dBA L_{dn}[1]	ADT	dBA L_{dn}[1]		
Bascom Avenue						

Roadway Segment	Existing Conditions		With Project		Change from No Project Conditions	Significant Impact?
	ADT	dBA L_{dn}[1]	ADT	dBA L_{dn}[1]		
North of San Carlos Street	19,360	63.2	19,430	63.2	0.0	**No**
South of San Carlos Street	20,840	63.5	20,970	63.5	0.0	**No**
San Carlos Street						
East of Bascom Avenue	19,340	63.2	19,720	63.3	0.1	**No**
East of Cleveland Avenue	19,860	63.3	20,360	63.4	0.1	**No**
West of Vaughn Avenue	19,060	63.1	19,510	63.2	0.1	**No**
East of Brooklyn Avenue	18,560	63.0	18,700	63.1	0.1	**No**
West of Brooklyn Avenue	19,640	63.3	19,960	63.3	0.0	**No**
East of Wabash Avenue	19,410	63.2	19,550	63.2	0.0	**No**
West of Leland Avenue	18,870	63.1	19,010	63.1	0.0	**No**
Stevens Creek Boulevard						
West of Bascom Avenue	16,200	62.4	16,380	62.5	0.1	**No**
Cleveland Avenue						
North of San Carlos Street	560	45.5	1,030	48.1	2.6	**No**
Vaughn Avenue						
South of San Carlos Street	920	47.6	920	47.6	0.0	**No**
Brooklyn Avenue						
North of San Carlos Street	1,480	49.7	1,660	50.2	0.5	**No**
Wabash Avenue						
North of San Carlos Street	1,660	50.2	1,660	50.2	0.0	**No**
Leland Avenue						
South of San Carlos Street	2,020	51.0	2,020	51.0	0.0	**No**
ADT = average daily trips; dBA = A-weighted decibels; L_{dn}= day-night noise levels						
1.Traffic noise levels are at 100 feet from the roadway centerline. The actual sound level at any receptor location is dependent upon such factors as the source-to-receptor distance and the presence of intervening structures, barriers, and topography.						

Stationary Noise Sources

Implementation of the Project would create new sources of noise in the Project vicinity from residential and recreational sources, mechanical equipment, loading areas, parking lot noise, and landscape maintenance.

Residential and Recreational Sources

Noise that is typical of residential and recreational areas includes group conversations, pet noise, vehicle noise (see discussion below) and general maintenance activities. Noise from residential stationary sources would primarily occur during the "daytime" activity hours of 7:00 a.m. to 7:00 p.m. Furthermore, the

residences would be required to comply with the noise standards set forth in the City's General Plan and Municipal Code.

The Project area may include some crowd noise caused by the recreational activities at the proposed second floor community deck and playground. Crowd noise is dependent on several factors including vocal effort, impulsiveness, and the random orientation of the crowd members. Crowd noise is estimated at 60 dBA at one meter (3.28 feet) away for raised normal speaking. This noise level would have a +5 dBA adjustment for the impulsiveness of the noise source, and a -3 dBA adjustment for the random orientation of the crowd members. Therefore, crowd noise would be 62 dBA at one meter from the source.[7] Noise has a decay rate due to distance attenuation, which is calculated based on the Inverse Square Law. Based upon the Inverse Square Law, sound levels decrease by 6 dBA for each doubling of distance from the source. The nearest sensitive property line would be located approximately 10 feet from the proposed gathering areas (i.e., community deck, courtyard). At this distance, crowd noise would be approximately 50.3 dBA at the nearest sensitive receptor property line to the north. Therefore, crowd noise at the closest existing sensitive receptors would not exceed the City's 55 dBA standard. A less than significant impact would occur in this regard. Therefore, impacts associated with recreational noise would not produce levels in exceedance of General Plan Policy EC-1.1 and EC-1.2 and would be less than significant.

Mechanical Equipment

Regarding mechanical equipment, the Project would generate stationary-source noise associated with heating, ventilation, and air conditioning (HVAC) units. HVAC units typically generate noise levels of approximately 55.4 dBA L_{dn} at 50 feet.[8] A majority of the mechanical equipment would be located within the proposed building and would not be perceptible at the nearest sensitive receptors due to building and wall attenuation. The nearest audible mechanical equipment would be located on the roof of the proposed building approximately 60 feet from the nearest sensitive receptor property line. At 60 feet, mechanical equipment noise levels would be 53.8 dBA L_{dn} without accounting for any noise attenuating structures. This noise level is below the City's 55 dBA exterior standard for residential uses. Additionally, the noise level would not raise the ambient noise level of 57.2 dBA L_{dn} at existing sensitive receptors by more than five dBA. Thus, impacts from mechanical equipment would not exceed the City's General Plan standards in Policy EC 1.1 and EC-1.2 and would be less than significant.

Loading Areas

The Project is a mixed-use development that would necessitate occasional deliveries for the retail use. The primary noise associated with deliveries is the arrival and departure of trucks. Normal deliveries typically occur during daytime hours. During loading and unloading activities, noise would be generated by the trucks' diesel engines, exhaust systems, and brakes during low gear shifting' braking activities; backing up toward the docks/loading areas; dropping down the dock ramps; and maneuvering away from the docks. The Project is not anticipated to require a significant number of truck deliveries and the

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7 Hayne, M.J., et al., *Prediction of Crowd Noise*, Acoustics, 2006.

8 Elliott H. Berger, Rick Neitzel, and Cynthia A. Kladden, *Noise Navigator Sound Level Database with Over 1700 Measurement Values*, 2010.

majority of deliveries for the retail use would consist of vendor deliveries in light-duty trucks and vans and would be infrequent and irregular. The proposed Project's loading areas would be within the retail parking lot or located on along West San Carlos Street. While there would be temporary noise increases during truck maneuvering and engine idling, these impacts would of short duration and infrequent. Due to the vehicle type, duration of loading activities, and infrequency of deliveries, noise impacts related to loading areas would not reach levels that exceed the City's General Plan standards in Policy EC-1.1 and EC-1.2 and would be less than significant.

Parking Areas

The proposed Project includes parking for residences and the retail use within the proposed building, approximately 35 feet from the closest residences. Noise impacts associated with on-site parking would be considered minimal since the parking area would be enclosed within the building structure. In addition, on-site parking lot noise would also be partially masked noise attenuation from the intervening building and walls. Further, some parking lot noise currently exists on-site for the existing commercial uses. Noise associated with on-site parking lot activities is not anticipated to exceed the City's Noise Standards or the San José Land use Compatibility Standards during operation. Therefore, noise impacts from on-site parking lots would not reach levels that exceed the City's General Plan Policy EC-1.1 and EC-1.2 and would be less than significant.

Landscape Maintenance Activities

Development and operation of the Project includes landscaping that would require periodic maintenance. Noise generated by a gasoline-powered lawnmower is estimated to be approximately 42.6 dBA L_{dn} at a distance of 50 feet.[9] Landscape Maintenance activities would be spread throughout the site and would occur at the closest point to sensitive receptors. Landscape maintenance activities would reach 47.1 dBA L_{dn} at the closest sensitive receptor approximately 30 feet away. Maintenance activities would operate during daytime hours for brief periods of time as allowed by the City Municipal Code and would not permanently increase ambient noise levels in the Project vicinity and would be consistent with activities that currently occur at the surrounding uses. Therefore, with adherence to the City's Municipal Code, impacts associated with landscape maintenance would not produce levels in exceedance of General Plan Policy EC-1.1 and EC-1.2 and would be less than significant.

Mitigation Measure: Refer to MM NOI-1, above.

Level of Significance: Less than significant impact with mitigation.

[9] U.S. EPA, *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*, 1971.

Threshold (b) Generate excessive groundborne vibration or groundborne noise levels.

Increases in groundborne vibration levels attributable to the Project would be primarily associated with construction-related activities. Construction on the Project site would have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and the operations involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. The effect on buildings located in the vicinity of the construction site often varies depending on soil type, ground strata, and construction characteristics of the receiver building(s). The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, to slight damage at the highest levels. Groundborne vibrations from construction activities rarely reach levels that damage structures.

The nearest off-site structure is located adjacent to the east of the active construction zone. As shown in **Table 13: Typical Construction Equipment Vibration Levels**, based on Federal Transit Administration (FTA) vibration data[10], at 5 feet the vibration velocities from construction equipment would be 0.995 in/sec PPV, which is above the City's 0.20 PPV threshold listed under Policy EC-2.3 in the San José General Plan.

Table 13: Typical Construction Equipment Vibration Levels

Equipment	Peak Particle Velocity at 5 Feet (in/sec)	Peak Particle Velocity at 8 Feet (in/sec)	Peak Particle Velocity at 12 Feet (in/sec) [1]	Peak Particle Velocity at 14 Feet (in/sec) [1]	Peak Particle Velocity at 15 Feet (in/sec) [1]
Large Bulldozer	0.995	0.482	0.268	0.212	0.192
Loaded Trucks	0.850	0.420	0.229	0.181	0.164
Rock Breaker	0.660	0.326	0.177	0.141	0.127
Jackhammer	0.391	0.193	0.105	0.084	0.075
Small Bulldozer/Tractors	0.033	0.017	0.009	0.007	0.007

1. Calculated using the following formula: $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$, where: PPV_{equip} = the peak particle velocity in in/sec of the equipment adjusted for the distance; PPV_{ref} = the reference vibration level in in/sec from Table 7-4 of the Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018; D = the distance from the equipment to the receiver.
Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018.

As mentioned previously, the nearest building/structure would be located adjacent to the Project site to the east. As shown in **Table 13**, vibration velocities would exceed the City's 0.20 in/sec PPV threshold for all equipment except for small bulldozers at the adjacent property. At 8 feet, the jack hammer would be consistent with the City's 0.20 in/sec PPV vibration threshold, and, at 12 feet, the rock breaker would be below the City's 0.20 in/sec PPV vibration threshold. At 14 and 15 feet, the loaded trucks and large bulldozers would be below the City's 0.20 in/sec PPV vibration threshold respectively. Thus, the Project would implement MM NOI-2 to reduce potential construction vibration impacts at the nearest buildings. The MM NOI-2 would include screening distances for specified construction equipment to ensure nearby buildings are not impacted by high construction vibration levels. It is also noted that construction activities

[10] Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018.

would occur throughout the Project site and would not be concentrated at the point closest to the nearest buildings/structures, and thus the frequency of vibration events would be intermittent and temporary. As such, the Project would not exceed the City's 0.20 in/sec PPV threshold with the implementation of MM NOI-2, and a less than significant impact would occur in this regard.

The Project operations would not generate groundborne vibration that could be felt at surrounding uses. Project operations would not involve railroads or substantial heavy truck operations, and therefore would not result in vibration impacts at surrounding uses. As a result, impacts from vibration associated with Project operation would be less than significant.

Mitigation Measure:

MM NOI-2 Construction Equipment Vibration Control

The Project Applicant will require contractor(s) to comply with a Vibration Management Plan and implement minimum allowable setbacks from nearby buildings/structures to the north and west for heavy machinery. For all new construction, the contractor(s) will not use pile drivers, pavement breakers, or blasting equipment. In addition, when construction is required in direct proximity to the existing on-site residential care facility to the north and/or the residences immediately west of the Project site, the contractor(s) will observe the following minimum allowable setbacks for specified construction equipment:

- Jackhammers shall not be used within 8 feet of any building.
- Rock Breakers shall not be used within 12 feet of any building.
- Loaded Trucks shall not be sued within 14 feet of any building.
- Large Bulldozers shall not be used within 15 feet of any building.

Level of Significance: Less than significant impact with mitigation.

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

The nearest airports to the Project site are the Norman Y. Mineta San José International Airport located approximately 1.9 miles southwest of the Project. Thus, the Project is within 2 miles of the San José International Airport. However, according to the City's aircraft noise contour projections, the Project site is located outside the noise impact area of San José International Airport.[11] Additionally, there are no private airstrips located within the Project vicinity. Therefore, the Project would not expose people residing or working in the Project area to excessive airport- or airstrip-related noise levels and no mitigation is required.

Mitigation Measure: No mitigation is required.

Level of Significance: Less than significant impact.

[11] City of San José, *Norman Y. Mineta San José International Airport Noise Assessment for the Master Plan Environmental Impact Report*, October 2019.

6.0 REFERENCES

1. California Department of Transportation, *Traffic Noise Analysis Protocol*, 2011.
2. California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, 2013.
3. California Department of Transportation, *Transportation and Construction-Induced Vibration Guidance Manual*, 2004.
4. City of San José, *Envision San José 2040 General Plan*, 2014.
5. City of San José, *Municipal Code Section 20.100.450.*, 2024.
6. City of San José, *Norman Y. Mineta San José International Airport Noise Assessment for the Master Plan Environmental Impact Report*, October 2019.
7. Elliott H. Berger, Rick Neitzel, and Cynthia A. Kladden, Noise Navigator Sound Level Database with Over 1700 Measurement Values, 2010.
8. Federal Highway Administration, *Highway Traffic and Construction Noise - Problem and Response*, April 2006.
9. Federal Highway Administration, *Roadway Construction Noise Model*, 2006.
10. Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018.
11. Hayne, M.J., et al., *Prediction of Crowd Noise*, Acoustics, 2006.
12. Kimley-Horn. *1921-1927 West San Carlos Street Local Transportation Analysis*, December 2023.
13. United States Department of Housing and Urban Development, *Noise Guidebook*, 2009.
14. United States Environmental Protection Agency, *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*, 1971.

Appendix A

Noise Measurement Data

Noise Measurement Field Data

Project:	Path West San Carlos	**Job Number:**	197454002
Site No.:	ST-1	**Date:**	11/7/2023
Analyst:	Tanay Pradhan	**Time:**	3:22 p.m.
Location:	48-50 Cleveland Avenue		
Noise Sources:	Traffic along Cleveland Avenue and West San Carlos Street, Residential Noise		
Comments:	Music began playing at a commercial use nearby		

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
53.0	48.7	62.5	95.7

Equipment	
Sound Level Meter:	LD SoundExpert LxT
Calibrator:	CAL200
Response Time:	Slow
Weighting:	A
Microphone Height:	5 feet

Weather	
Temp. (degrees F):	66
Wind (mph):	17.4
Sky:	Partly Cloudy
Bar. Pressure:	30.13
Humidity:	62%

Photo:

Kimley»Horn

Measurement Report

Report Summary

Meter's File Name	LxT_Data.068.s	Computer's File Name	LxTse_0006073-20231107 152238-LxT_Data.068.ldbin
Meter	LxT SE 0006073	Firmware	2.404
User		Location	
Job Description			
Note			

Start Time	2023-11-07 15:22:38	Duration	0:10:00.0		
End Time	2023-11-07 15:32:38	Run Time	0:10:00.0	Pause Time	0:00:00.0
Pre-Calibration	2023-11-07 15:21:00	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA_{eq}	53.0 dB		
LAE	80.8 dB	SEA	--- dB
EA	13.3 µPa²h		
LA_{peak}	95.7 dB	2023-11-07 15:22:42	
LAS_{max}	62.5 dB	2023-11-07 15:30:09	
LAS_{min}	48.7 dB	2023-11-07 15:28:48	
LA_{eq}	53.0 dB		
LC_{eq}	66.3 dB	LC_{eq} - LA_{eq}	13.3 dB
LAI_{eq}	56.0 dB	LAI_{eq} - LA_{eq}	3.0 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LApk > 135.0 dB	0	0:00:00.0
LApk > 137.0 dB	0	0:00:00.0
LApk > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
53.0 dB	53.0 dB	0.0 dB

LDEN	LDay	LEve	LNight
53.0 dB	53.0 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	53.0 dB		66.3 dB		--- dB	
$Ls_{(max)}$	62.5 dB	2023-11-07 15:30:09	--- dB	None	--- dB	None
$LS_{(min)}$	48.7 dB	2023-11-07 15:28:48	--- dB	None	--- dB	None
$L_{Peak(max)}$	95.7 dB	2023-11-07 15:22:42	--- dB	None	--- dB	None

Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	56.5 dB
LAS 10.0	54.9 dB
LAS 33.3	52.6 dB
LAS 50.0	52.1 dB
LAS 66.6	51.5 dB
LAS 90.0	50.4 dB

Time History

Noise Measurement Field Data

Project:	Path West San Carlos	**Job Number:**	197454002
Site No.:	ST-2	**Date:**	11/7/2023
Analyst:	Tanay Pradhan	**Time:**	3:39 p.m.
Location:	318-326 Vaughn Avenue		
Noise Sources:	Traffic along Vaughn Avenue and West San Carlos Street, Residential Noise		
Comments:			

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
57.4	49.4	67.7	85.8

Equipment	
Sound Level Meter:	LD SoundExpert LxT
Calibrator:	CAL200
Response Time:	Slow
Weighting:	A
Microphone Height:	5 feet

Weather	
Temp. (degrees F):	66
Wind (mph):	17.4
Sky:	Partly Cloudy
Bar. Pressure:	30.13
Humidity:	62%

Photo:

Kimley»Horn

Measurement Report

Report Summary

Meter's File Name	LxT_Data.069.s	Computer's File Name	LxTse_0006073-20231107 153920-LxT_Data.069.ldbin
Meter	LxT SE 0006073	Firmware	2.404
User		Location	
Job Description			
Note			

Start Time	2023-11-07 15:39:20	Duration	0:10:00.0		
End Time	2023-11-07 15:49:20	Run Time	0:10:00.0	Pause Time	0:00:00.0
Pre-Calibration	2023-11-07 15:20:59	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA_{eq}	57.4 dB		
LAE	85.2 dB	SEA	--- dB
EA	36.6 µPa²h		
LA_{peak}	85.8 dB	2023-11-07 15:39:26	
LAS_{max}	67.7 dB	2023-11-07 15:47:17	
LAS_{min}	49.4 dB	2023-11-07 15:39:54	
LA_{eq}	57.4 dB		
LC_{eq}	69.1 dB	LC_{eq} - LA_{eq}	11.7 dB
LAI_{eq}	60.0 dB	LAI_{eq} - LA_{eq}	2.6 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LApk > 135.0 dB	0	0:00:00.0
LApk > 137.0 dB	0	0:00:00.0
LApk > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
57.4 dB	57.4 dB	0.0 dB

LDEN	LDay	LEve	LNight
57.4 dB	57.4 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	57.4 dB		69.1 dB		--- dB	
$Ls_{(max)}$	67.7 dB	2023-11-07 15:47:17	--- dB	None	--- dB	None
$LS_{(min)}$	49.4 dB	2023-11-07 15:39:54	--- dB	None	--- dB	None
$L_{Peak(max)}$	85.8 dB	2023-11-07 15:39:26	--- dB	None	--- dB	None

Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	61.7 dB
LAS 10.0	60.2 dB
LAS 33.3	57.0 dB
LAS 50.0	55.8 dB
LAS 66.6	54.7 dB
LAS 90.0	52.7 dB

Time History

Noise Measurement Field Data

Project:	Path West San Carlos	**Job Number:**	197454002
Site No.:	ST-3	**Date:**	11/7/2023
Analyst:	Tanay Pradhan	**Time:**	3:53 p.m.
Location:	310-316 Arleta Avenue		
Noise Sources:	Traffic along Arleta Avenue and West San Carlos Street, Residential Noise		
Comments:			

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
59.5	49.1	68.7	86.1

Equipment	
Sound Level Meter:	LD SoundExpert LxT
Calibrator:	CAL200
Response Time:	Slow
Weighting:	A
Microphone Height:	5 feet

Weather	
Temp. (degrees F):	66
Wind (mph):	17.4
Sky:	Partly Cloudy
Bar. Pressure:	30.13
Humidity:	62%

Photo:

Kimley»Horn

Measurement Report

Report Summary

Meter's File Name	LxT_Data.070.s	Computer's File Name	LxTse_0006073-20231107 155351-LxT_Data.070.ldbin
Meter	LxT SE 0006073	Firmware	2.404
User		Location	
Job Description			
Note			

Start Time	2023-11-07 15:53:51	Duration	0:10:00.0		
End Time	2023-11-07 16:03:51	Run Time	0:10:00.0	Pause Time	0:00:00.0
Pre-Calibration	2023-11-07 15:20:59	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA_{eq}	59.5 dB		
LAE	87.3 dB	SEA	--- dB
EA	59.4 µPa²h		
LA_{peak}	86.1 dB	2023-11-07 15:55:53	
LAS_{max}	68.7 dB	2023-11-07 15:57:03	
LAS_{min}	49.1 dB	2023-11-07 15:54:34	
LA_{eq}	59.5 dB		
LC_{eq}	68.5 dB	LC_{eq} - LA_{eq}	9.0 dB
LAI_{eq}	62.2 dB	LAI_{eq} - LA_{eq}	2.7 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LApk > 135.0 dB	0	0:00:00.0
LApk > 137.0 dB	0	0:00:00.0
LApk > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
59.5 dB	59.5 dB	0.0 dB

LDEN	LDay	LEve	LNight
59.5 dB	59.5 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	59.5 dB		68.5 dB		--- dB	
$Ls_{(max)}$	68.7 dB	2023-11-07 15:57:03	--- dB	None	--- dB	None
$LS_{(min)}$	49.1 dB	2023-11-07 15:54:34	--- dB	None	--- dB	None
$L_{Peak(max)}$	86.1 dB	2023-11-07 15:55:53	--- dB	None	--- dB	None

Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	64.1 dB
LAS 10.0	62.5 dB
LAS 33.3	59.5 dB
LAS 50.0	58.0 dB
LAS 66.6	56.3 dB
LAS 90.0	52.4 dB

Noise Measurement Field Data

Project:	Path West San Carlos	**Job Number:**	197454002
Site No.:	LT-1	**Date:**	11/7/2023
Analyst:	Tanay Pradhan	**Time:**	4:40 p.m.
Location:	75-83 Brooklyn Avenue		
Noise Sources:	Residential Noise, Pedestrian Noise, Traffic along Brooklyn Avenue		
Comments:			

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
54.1	36.9	84.2	106.8

Equipment	
Sound Level Meter:	LD SoundExpert LxT
Calibrator:	CAL200
Response Time:	Slow
Weighting:	A
Microphone Height:	5 feet

Weather	
Temp. (degrees F):	66
Wind (mph):	17.4
Sky:	Partly Cloudy
Bar. Pressure:	30.13
Humidity:	62%

Photo:

Kimley»Horn

Measurement Report

Report Summary

Meter's File Name	LxT_Data.071.s	Computer's File Name	LxTse_0006073-20231107 164035-LxT_Data.071.ldbin
Meter	LxT SE 0006073	Firmware	2.404
User		Location	
Job Description			
Note			

Start Time	2023-11-07 16:40:35	Duration	24:00:00.0		
End Time	2023-11-08 16:40:35	Run Time	24:00:00.0	Pause Time	0:00:00.0
Pre-Calibration	2023-11-07 15:20:59	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA_{eq}	54.1 dB		
LAE	103.5 dB	SEA	--- dB
EA	2.5 mPa²h		
LA_{peak}	106.8 dB	2023-11-07 16:40:46	
LAS_{max}	84.2 dB	2023-11-08 13:06:45	
LAS_{min}	36.9 dB	2023-11-08 02:57:48	
LA_{eq}	54.1 dB		
LC_{eq}	65.3 dB	LC_{eq} - LA_{eq}	11.2 dB
LAI_{eq}	57.1 dB	LAI_{eq} - LA_{eq}	3.0 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LApk > 135.0 dB	0	0:00:00.0
LApk > 137.0 dB	0	0:00:00.0
LApk > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
57.2 dB	55.6 dB	0.0 dB

LDEN	LDay	LEve	LNight
57.6 dB	56.1 dB	52.7 dB	49.1 dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	54.1 dB		65.3 dB		--- dB	
$Ls_{(max)}$	84.2 dB	2023-11-08 13:06:45	--- dB	None	--- dB	None
$LS_{(min)}$	36.9 dB	2023-11-08 02:57:48	--- dB	None	--- dB	None
$L_{Peak(max)}$	106.8 dB	2023-11-07 16:40:46	--- dB	None	--- dB	None

Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	58.9 dB
LAS 10.0	55.4 dB
LAS 33.3	48.6 dB
LAS 50.0	46.4 dB
LAS 66.6	44.8 dB
LAS 90.0	42.3 dB

Time History

140

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: PATH West San Carlos
Project Number:
Scenario: Existing
Ldn/CNEL: Ldn

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

								Vehicle Mix		Distance from Centerline of Roadway				
#	Roadway	Segment	Lanes	Median Width	ADT Volume	Speed (mph)	Alpha Factor	Medium Trucks	Heavy Trucks	Ldn at 100 Feet	Distance to Contour 70 Ldn	65 Ldn	60 Ldn	55 Ldn
1	Bascom Avenue	North of San Carlos Street/Stevens Creek Boulevard	4	20	18,280	35	0	2.0%	1.0%	62.9	-	62	196	619
2	Bascom Avenue	South of San Carlos Street/Stevens Creek Boulevard	4	20	20,390	35	0	2.0%	1.0%	63.4	-	69	218	690
3	San Carlos Street	East of Bascom Avenue	4	25	16,610	35	0	2.0%	1.0%	62.5	-	57	179	567
4	Stevens Creek Boulevard	West of Bascom Avenue	4	25	13,240	35	0	2.0%	1.0%	61.6	-	-	143	452
5	Cleveland Avenue	North of San Carlos Street	2	10	560	25	0	2.0%	1.0%	45.5	-	-	-	-
6	Vaughn Avenue	South of San Carlos Street	2	10	920	25	0	2.0%	1.0%	47.6	-	-	-	-
7	San Carlos Street	East of Cleveland Avenue	4	25	17,280	35	0	2.0%	1.0%	62.7	-	59	187	590
8	San Carlos Street	West of Vaughn Avenue	4	25	16,480	35	0	2.0%	1.0%	62.5	-	-	178	563
9	Brooklyn Avenue	North of San Carlos Street	2	10	1,480	25	0	2.0%	1.0%	49.7	-	-	-	-
10	San Carlos Street	East of Brooklyn Avenue	4	25	15,980	35	0	2.0%	1.0%	62.4	-	-	172	545
11	San Carlos Street	West of Brooklyn Avenue	4	25	17,060	35	0	2.0%	1.0%	62.7	-	58	184	582
12	Wabash Avenue	North of San Carlos Street	2	10	1,660	25	0	2.0%	1.0%	50.2	-	-	-	-
13	Leland Avenue	South of San Carlos Street	2	10	1,880	25	0	2.0%	1.0%	50.7	-	-	-	37
14	San Carlos Street	East of Wabash Avenue	4	25	16,760	35	0	2.0%	1.0%	62.6	-	57	181	572
15	San Carlos Street	West of Leland Avenue	4	25	16,080	35	0	2.0%	1.0%	62.4	-	-	174	549

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: PATH West San Carlos
Project Number:
Scenario: Existing Plus Project
Ldn/CNEL: Ldn

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

									Vehicle Mix		Distance from Centerline of Roadway			
#	Roadway	Segment	Lanes	Median Width	ADT Volume	Speed (mph)	Alpha Factor	Medium Trucks	Heavy Trucks	Ldn at 100 Feet	Distance to Contour 70 Ldn	65 Ldn	60 Ldn	55 Ldn
1	Bascom Avenue	North of San Carlos Street/Stevens Creek Boulevard	4	20	18,350	35	0	2.0%	1.0%	62.9	-	62	197	621
2	Bascom Avenue	South of San Carlos Street/Stevens Creek Boulevard	4	20	20,520	35	0	2.0%	1.0%	63.4	-	69	220	695
3	San Carlos Street	East of Bascom Avenue	4	25	16,990	35	0	2.0%	1.0%	62.6	-	58	183	580
4	Stevens Creek Boulevard	West of Bascom Avenue	4	25	13,420	35	0	2.0%	1.0%	61.6	-	-	145	458
5	Cleveland Avenue	North of San Carlos Street	2	10	1,030	25	0	2.0%	1.0%	48.1	-	-	-	-
6	Vaughn Avenue	South of San Carlos Street	2	10	920	25	0	2.0%	1.0%	47.6	-	-	-	-
7	San Carlos Street	East of Cleveland Avenue	4	25	17,780	35	0	2.0%	1.0%	62.8	-	61	192	607
8	San Carlos Street	West of Vaughn Avenue	4	25	16,930	35	0	2.0%	1.0%	62.6	-	58	183	578
9	Brooklyn Avenue	North of San Carlos Street	2	10	1,660	25	0	2.0%	1.0%	50.2	-	-	-	-
10	San Carlos Street	East of Brooklyn Avenue	4	25	16,120	35	0	2.0%	1.0%	62.4	-	-	174	550
11	San Carlos Street	West of Brooklyn Avenue	4	25	17,380	35	0	2.0%	1.0%	62.7	-	59	188	593
12	Wabash Avenue	North of San Carlos Street	2	10	1,660	25	0	2.0%	1.0%	50.2	-	-	-	-
13	Leland Avenue	South of San Carlos Street	2	10	1,880	25	0	2.0%	1.0%	50.7	-	-	-	37
14	San Carlos Street	East of Wabash Avenue	4	25	16,900	35	0	2.0%	1.0%	62.6	-	58	182	577
15	San Carlos Street	West of Leland Avenue	4	25	16,220	35	0	2.0%	1.0%	62.4	-	-	175	554

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: PATH West San Carlos
Project Number:
Scenario: Opening Year
Ldn/CNEL: Ldn

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

									Vehicle Mix		Distance from Centerline of Roadway			
#	Roadway	Segment	Lanes	Median Width	ADT Volume	Speed (mph)	Alpha Factor	Medium Trucks	Heavy Trucks	Ldn at 100 Feet	Distance to Contour 70 Ldn	65 Ldn	60 Ldn	55 Ldn
1	Bascom Avenue	North of San Carlos Street/Stevens Creek Boulevard	4	20	19,360	35	0	2.0%	1.0%	63.2	-	66	207	656
2	Bascom Avenue	South of San Carlos Street/Stevens Creek Boulevard	4	20	20,840	35	0	2.0%	1.0%	63.5	-	71	223	706
3	San Carlos Street	East of Bascom Avenue	4	25	19,340	35	0	2.0%	1.0%	63.2	-	66	209	660
4	Stevens Creek Boulevard	West of Bascom Avenue	4	25	16,200	35	0	2.0%	1.0%	62.4	-	-	175	553
5	Cleveland Avenue	North of San Carlos Street	2	10	560	25	0	2.0%	1.0%	45.5	-	-	-	-
6	Vaughn Avenue	South of San Carlos Street	2	10	920	25	0	2.0%	1.0%	47.6	-	-	-	-
7	San Carlos Street	East of Cleveland Avenue	4	25	19,860	35	0	2.0%	1.0%	63.3	-	68	214	678
8	San Carlos Street	West of Vaughn Avenue	4	25	19,060	35	0	2.0%	1.0%	63.1	-	65	206	651
9	Brooklyn Avenue	North of San Carlos Street	2	10	1,480	25	0	2.0%	1.0%	49.7	-	-	-	-
10	San Carlos Street	East of Brooklyn Avenue	4	25	18,560	35	0	2.0%	1.0%	63.0	-	63	200	634
11	San Carlos Street	West of Brooklyn Avenue	4	25	19,640	35	0	2.0%	1.0%	63.3	-	67	212	670
12	Wabash Avenue	North of San Carlos Street	2	10	1,660	25	0	2.0%	1.0%	50.2	-	-	-	-
13	Leland Avenue	South of San Carlos Street	2	10	2,020	25	0	2.0%	1.0%	51.0	-	-	-	40
14	San Carlos Street	East of Wabash Avenue	4	25	19,410	35	0	2.0%	1.0%	63.2	-	66	210	663
15	San Carlos Street	West of Leland Avenue	4	25	18,870	35	0	2.0%	1.0%	63.1	-	64	204	644

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: PATH West San Carlos
Project Number:
Scenario: Opening Year Plus Project
Ldn/CNEL: Ldn

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

								Vehicle Mix		Distance from Centerline of Roadway				
#	Roadway	Segment	Lanes	Median Width	ADT Volume	Speed (mph)	Alpha Factor	Medium Trucks	Heavy Trucks	Ldn at 100 Feet	Distance to Contour 70 Ldn	65 Ldn	60 Ldn	55 Ldn
1	Bascom Avenue	North of San Carlos Street/Stevens Creek Boulevard	4	20	19,430	35	0	2.0%	1.0%	63.2	-	66	208	658
2	Bascom Avenue	South of San Carlos Street/Stevens Creek Boulevard	4	20	20,970	35	0	2.0%	1.0%	63.5	-	71	225	710
3	San Carlos Street	East of Bascom Avenue	4	25	19,720	35	0	2.0%	1.0%	63.3	-	67	213	673
4	Stevens Creek Boulevard	West of Bascom Avenue	4	25	16,380	35	0	2.0%	1.0%	62.5	-	-	177	559
5	Cleveland Avenue	North of San Carlos Street	2	10	1,030	25	0	2.0%	1.0%	48.1	-	-	-	-
6	Vaughn Avenue	South of San Carlos Street	2	10	920	25	0	2.0%	1.0%	47.6	-	-	-	-
7	San Carlos Street	East of Cleveland Avenue	4	25	20,360	35	0	2.0%	1.0%	63.4	-	69	220	695
8	San Carlos Street	West of Vaughn Avenue	4	25	19,510	35	0	2.0%	1.0%	63.2	-	67	211	666
9	Brooklyn Avenue	North of San Carlos Street	2	10	1,660	25	0	2.0%	1.0%	50.2	-	-	-	-
10	San Carlos Street	East of Brooklyn Avenue	4	25	18,700	35	0	2.0%	1.0%	63.1	-	64	202	638
11	San Carlos Street	West of Brooklyn Avenue	4	25	19,960	35	0	2.0%	1.0%	63.3	-	68	215	681
12	Wabash Avenue	North of San Carlos Street	2	10	1,660	25	0	2.0%	1.0%	50.2	-	-	-	-
13	Leland Avenue	South of San Carlos Street	2	10	2,020	25	0	2.0%	1.0%	51.0	-	-	-	40
14	San Carlos Street	East of Wabash Avenue	4	25	19,550	35	0	2.0%	1.0%	63.2	-	67	211	667
15	San Carlos Street	West of Leland Avenue	4	25	19,010	35	0	2.0%	1.0%	63.1	-	65	205	649

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

	Noise Level (dBA Leq)	Reference Dist. (feet)	Dist. to Property Line (feet)	Building Row*	Distance Attenuation	Duration (minutes)	anti-log	Total Noise Energy
HVAC	52	50	60		50.4	30	110062.03	3301860.818
Crowd Noise	62	3.28	10		52.3	60	170509.15	10230548.95
Landscape Equipment	50	50	30		54.4	30	277777.78	8333333.333
					Total	120		
Ambient (at Measurement #1)	53					-60	199526.23	-11971573.89
							total	9894169.214
							No. samples	60
								164902.8202
							L_{50}	52.2