F. NOISE

This section describes existing noise conditions in the vicinity of the project site, establishes criteria for determining the significance of noise impacts, and estimates the likely noise that would result from construction activities, vehicular traffic, and other noise sources. Where appropriate, mitigation measures are recommended to reduce project-related noise impacts to a less-than-significant level.

1. Setting

The setting section begins with an introduction to several key concepts and terms that are used in evaluating noise. It then explains the various agencies that regulate the noise environment in both the County and City of Napa and summarizes key standards that are applied to the proposed project. The setting section concludes with a description of current noise sources that affect the project site and the noise conditions that are experienced in the project site vicinity.

a. Characteristics of Sound. Noise is generally 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 the number of complete vibrations or cycles per second of a wave that results in the range of tone from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment, and 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 refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. 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 effects on adjacent sensitive land uses.

(1) Measurement of Sound. Sound is characterized by various parameters that describe the rate of oscillation (frequency) of sound waves, the distance between successive troughs or crests in the wave, the speed that it travels, and the pressure level or energy content of a given sound. The sound pressure level has become the most common descriptor used to characterize the loudness (or amplitude) of an ambient sound, and the decibel (dB) scale is used to quantify sound intensity. A decibel (dB) is a unit of measurement which indicates the relative intensity of a sound. The 0 point on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Changes of 3 dB or less are only perceptible in laboratory environments. Audible increases in noise levels generally refer to a change of 3 dB or more, as this level has been found to be barely perceptible to the human ear in outdoor environments.

Because sound can vary in intensity by over one million times within the range of human hearing, a logarithmic loudness scale[1] is used to keep sound intensity numbers at a convenient and manageable level. Thus, a 10 dB increase in the level of a continuous noise represents a perceived doubling of loudness, while a 20 dB increase is 100 times more intense, and a 30 dB increase is 1,000 times more intense. As noise spreads from a source, it loses energy so that the farther away the noise

[1] Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale, representing points on a sharply rising curve. The logarithmic decibel scale allows an extremely wide range of acoustic energy to be characterized in a manageable notation.

receiver is from the noise source, the lower the perceived noise level. Noise levels diminish or attenuate as distance from the source increases based on an inverse square rule, depending on how the noise source is physically configured. Noise level from a single-point source, such as a single piece of construction equipment at ground level, attenuates at a rate of 6 dB for each doubling of distance (between the single-point source of noise and the noise-sensitive receptor of concern). Heavily traveled roads with few gaps in traffic behave as continuous line sources and attenuate roughly at a rate of 3 dB per doubling of distance.

Since the human ear is not equally sensitive to all pitches (sound frequencies) within the entire spectrum, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity in a process called "A-weighting," expressed as "dBA." The dBA or A-weighted decibel refers to a scale of noise measurement that approximates the range of sensitivity of the human ear to sounds of different frequencies. Table IV.F-1 contains a list of typical acoustical terms and definitions. Table IV.F-2 shows some representative noise sources and their corresponding noise levels in dBA.

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. 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}, the community noise equivalent level (CNEL), and the day-night average level (L_{dn}) based on A-weighted decibels (dBA). CNEL is the time varying 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 10 dBA weighting factor applied to noise 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 evening relaxation hours. CNEL and L_{dn} are within one dBA of each other and are normally exchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours. Typical A-weighted sound levels from various sources are described in Table IV.F-2.

When assessing the annoyance factor, other noise rating scales of importance include the maximum noise level (L_{max}), which is the highest exponential time averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis are specified in terms of maximum levels denoted by L_{max} for short-term noise impacts. L_{max} reflects peak operating conditions and addresses the annoying aspects of intermittent noise.

Noise impacts can be described in three categories. The first is audible impacts that refer to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3.0 dBA or greater, since, as described earlier, 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 1.0 and 3.0 dBA. This range of noise levels has been found to be noticeable only in laboratory environments. The last category is changes in noise level of less than 1.0 dBA that are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant.

Table IV.F-1: Definitions of Acoustical Terms

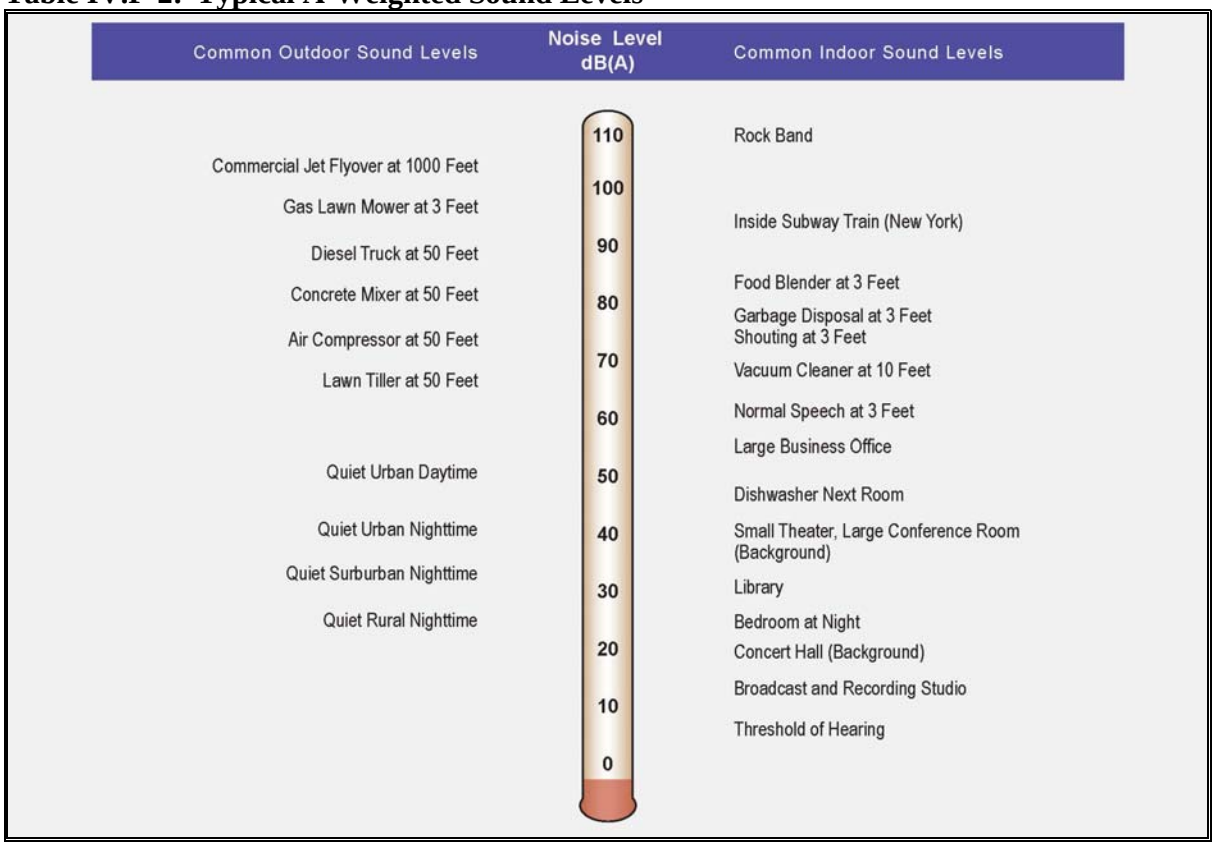
Term	Definitions
Decibel, dB	A unit of level that denotes the ratio between two quantities proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., 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 equaled or exceeded by a fluctuating sound level for 1 percent, 10 percent, 50 percent, and 90 percent of a stated time period.
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 five decibels to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 decibels 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 decibels 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 at 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, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.
Sound Transmission Class, STC	A single number rating used to compare the sound insulation properties of walls, floors, ceilings, windows, or doors. The sound transmission class is derived from measurements in 16 test bands.

Source: Harris, C.M. 1998. *Handbook of Acoustical Measurements and Noise Control.*

(2) Physiological Effects of Noise. According to the U.S. Department of Housing and Urban Development's 1985 Noise Guidebook, permanent physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 to 90 dBA. Exposure to high noise levels affects our entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, and thereby affecting blood pressure, functions of the ear, and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling. To avoid adverse effects on human physical and mental health in the workplace or in communities, the U.S. Department of Labor, Occupation Health and Safety Administration (OSHA) requires the protection of workers from hearing loss when the noise exposure equals or exceeds an 8-hour time-weighted average of 85 dBA.[2]

[2] Occupational Safety & Health Administration, 2008. *Regulations, Standards 29 CFR, Occupational Noise Exposure 1910.95*.

Table IV.F-2: Typical A-Weighted Sound Levels



Source: Compiled by LSA Associates, Inc., 2009.

Unwanted community effects of noise occur at levels much lower than those that cause hearing loss and other health effects. Noise annoyance occurs when it interferes with sleeping, conversation, noise-sensitive work, including learning or listening to radio, television, or music. According to the World Health Organization (WHO) noise studies, few people are seriously annoyed by daytime activities with noise levels below 55 dBA, or are only moderately annoyed with noise levels below 50 dBA.[3]

b. Characteristics of Groundborne Vibration. Vibrating objects in contact with the ground radiate vibration waves through various soil and rock strata to the foundations of nearby buildings. As the vibration propagates from the foundation throughout the remainder of the building, the vibration of floors and walls may cause perceptible vibration from the rattling of windows or a rumbling noise. The rumbling sound caused by the vibration of room surfaces is called groundborne noise. When assessing annoyance from groundborne noise, vibration is typically expressed as root mean square (rms) velocity in units of decibels of 1 micro-inch per second. To distinguish vibration levels from noise levels, the unit is written as "VdB." Human perception to vibration starts at levels as low as 67 VdB and sometimes lower. Annoyance due to vibration in residential settings starts at approximately 70 VdB. Groundborne vibration is almost never annoying to people who are outdoors. Although the

[3] World Health Organization, 1999. *Guidelines for Community Noise, Geneva*. Website: www.who.int/docstore/peh/noise/guidelines2.html (accessed June 2011).

motion of the ground may be perceived, without the effects associated with the shaking of the building, the motion does not provoke the same adverse human reaction.

In extreme cases, excessive groundborne vibration has the potential to cause structural damage to buildings. Construction vibration impacts on building structures are generally assessed in terms of peak particle velocity (PPV). Common sources of groundborne vibration include trains and construction activities such as blasting, pile driving and operating heavy earthmoving equipment. Typical vibration source levels from construction equipment are shown in Table IV.F-3.

Table IV.F-3: Typical Vibration Source Levels for Construction Equipment

Equipment		PPV at 25 ft (in/sec)	Approximate VdB at 25 feet
Pile Driver (impact)	Upper range	1.518	112
	Typical	0.644	104
Pile Driver (sonic)	Upper range	0.734	105
	Typical	0.170	93
Clam shovel drop (slurry wall)		0.202	94
Hydromill (slurry wall)	In soil	0.008	66
	In rock	0.017	75
Vibratory roller		0.210	94
Hoe ram		0.089	87
Large bulldozer		0.089	87
Caisson drilling		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58

Source: Federal Transit Administration, 2006. *Transit Noise and Vibration Impact Assessment.* May.

c. Noise Regulatory Framework. The following section summarizes the regulatory framework related to noise, including federal, State, County and City of Napa plans, policies and standards.

(1) U.S. Environmental Protection Agency (EPA). In 1972, Congress enacted the Noise Control Act. This act authorized the EPA to publish descriptive data on the effects of noise and establish levels of sound "requisite to protect the public welfare with an adequate margin of safety." These levels are separated into health (hearing loss levels) and welfare (annoyance levels), as shown in Table IV.F-4. The EPA cautions that these identified levels are not standards because they do not take into account the cost or feasibility of the levels.

Table IV.F-4: Summary of EPA Noise Levels

Effect	Level	Area
Hearing loss	$L_{eq}(24) \leq 70$ dB	All areas.
Outdoor activity interference and annoyance	$L_{dn} \leq 55$ dB	Outdoors in residential areas and farms and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
	$L_{eq}(24) \leq 55$ dB	Outdoor areas where people spend limited amounts of time, such as school yards, playgrounds, etc.
Indoor activity interference and annoyance	$L_{eq} \leq 45$ dB	Indoor residential areas.
	$L_{eq}(24) \leq 45$ dB	Other indoor areas with human activities such as schools, etc.

Source: U.S. Environmental Protection Agency, 1974. "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety." March.

For protection against hearing loss, 96 percent of the population would be protected if sound levels are less than or equal to an $L_{eq(24)}$ of 70 dBA. The "(24)" signifies an L_{eq} duration of 24 hours. The EPA activity and interference guidelines are designed to ensure reliable speech communication at about 5 feet in the outdoor environment. For outdoor and indoor environments, interference with activity and annoyance should not occur if levels are below 55 dBA and 45 dBA, respectively.

The noise effects associated with an outdoor L_{dn} of 55 dBA are summarized in Table IV.F-5. At 55 dBA L_{dn}, 95 percent sentence clarity (intelligibility) may be expected at 11 feet, and no community reaction. However, 1 percent of the population may complain about noise at this level and 17 percent may indicate annoyance.

(2) State of California. The State of California has established regulations that help prevent adverse impacts to occupants of buildings located near noise sources. Referred to as the "State Noise Insulation Standard," it requires buildings to meet performance standards through design and/or building materials that would offset any noise source in the vicinity of the receptor. State regulations include requirements for the construction of new hotels, motels, apartment houses, and dwellings other than detached single-family dwellings that are intended to limit the extent of noise transmitted into habitable spaces. These requirements are found in the California Code of Regulations, Title 24 (known as the Building Standards Administrative Code), Part 2 (known as the California Building Code), Appendix Chapters 12 and 12A. For limiting noise transmitted between adjacent dwelling units, the noise insulation standards specify the extent to which walls, doors, and floor ceiling assemblies must block or absorb sound. For limiting noise from exterior noise sources, the noise insulation standards set an interior standard of 45 dBA CNEL in any habitable room with all doors and windows closed. In addition, the standards require preparation of an acoustical analysis demonstrating the manner in which dwelling units have been designed to meet this interior standard, where such units are proposed in an area with exterior noise levels greater than 60 dBA CNEL.

Table IV.F-5: Summary of Human Effects in Areas Exposed to 55 dBA L_{dn}

Type of Effects	Magnitude of Effect
Speech – Indoors	100 percent sentence intelligibility (average) with a 5 dB margin of safety.
Speech – Outdoors	100 percent sentence intelligibility (average) at 0.35 meters. 99 percent sentence intelligibility (average) at 1.0 meters. 95 percent sentence intelligibility (average) at 3.5 meters.
Average Community Reaction	None evident; 7 dB below level of significant complaints and threats of legal action and at least 16 dB below "vigorous action."
Complaints	1 percent dependent on attitude and other non-level related factors.
Annoyance	17 percent dependent on attitude and other non-level related factors.
Attitude Towards Area	Noise essentially the least important of various factors.

Source: U.S. Environmental Protection Agency, 1974. "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety." March.

(3) Local Regulations. The project site is located on Napa County property within the jurisdictional boundaries of the City of Napa. According to the County's General Plan Policy CC-41,[4] where noise sensitive uses are proposed on County-owned sites within incorporated jurisdictions, the noise standards of that jurisdiction shall apply. Therefore, for purposes of this analysis, project-related noise impacts are compared to the standards and policies of the City of Napa.

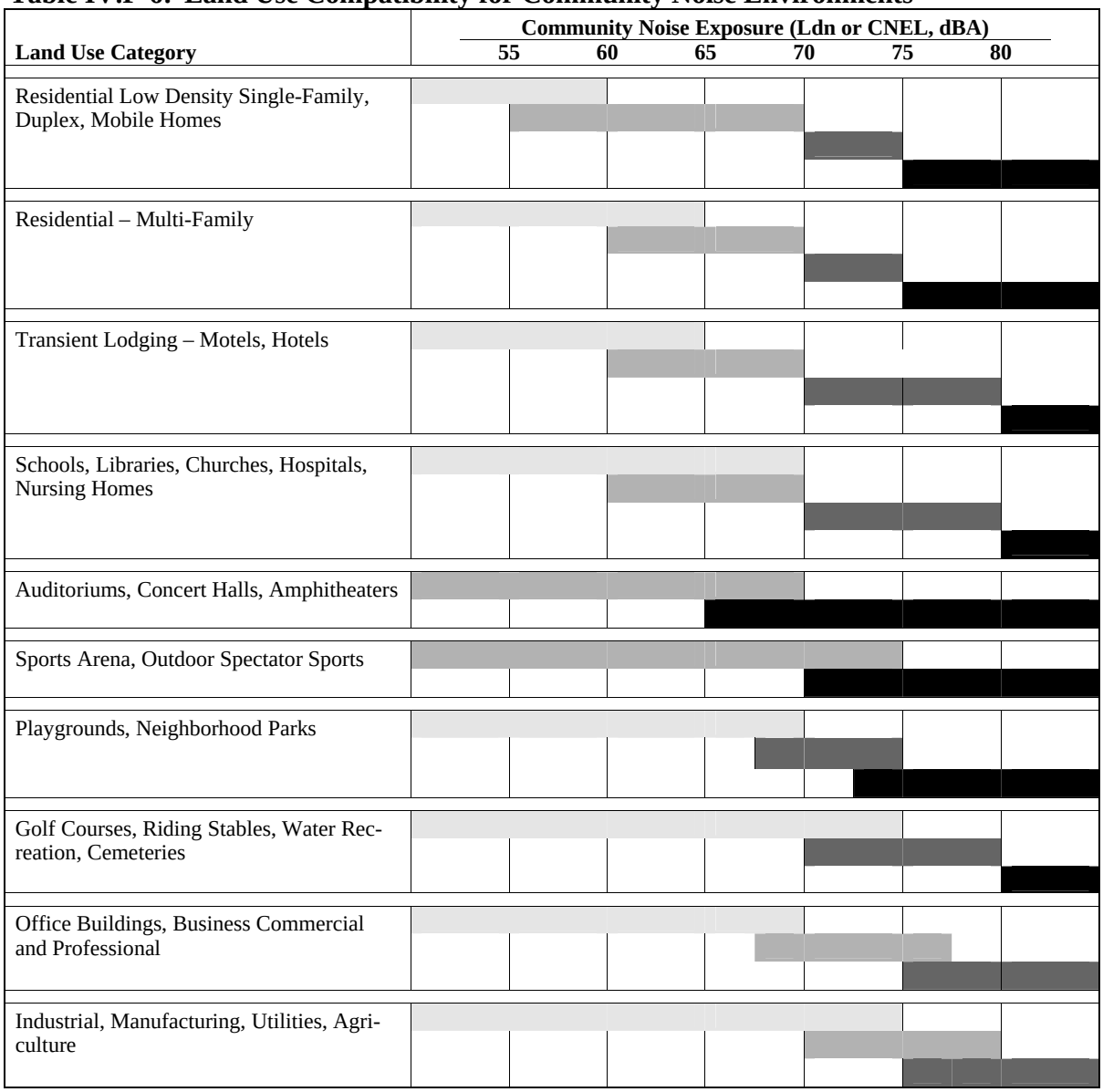
The City of Napa addresses noise goals and policies in the Noise Element of the Health & Safety chapter of the General Plan[5] and in the Noise Control Regulations chapter of the Municipal Code.[6] The Noise Element includes the City's land use compatibility standards for new development, shown in Table IV.F-6. For example, environments with ambient noise levels ranging up to 70 dBA CNEL are considered "normally acceptable" for new office buildings, business commercial, and professional land use development. Where impacts are identified, mitigation must be considered. The City's policy is for new development to identify alternatives to the use of sound walls to attenuate noise impacts wherever possible.

[4] Napa, County of, 2009. *Napa County General Plan (Amended)*. June.

[5] Napa, City of, 1998. *Envision Napa 2020, Policy Document, Chapter 8*. December 1. Incorporates Amendments to May 2010.

[6] Napa, City of, 2012. *Napa Municipal Code, Chapter 8.08*. Website: qcode.us/codes/napa/ (accessed June 26, 2012).

Table IV.F-6: Land Use Compatibility for Community Noise Environments



NORMALLY ACCEPTABLE
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

CONDITIONALLY ACCEPTABLE
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.

NORMALLY UNACCEPTABLE
New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

CLEARLY UNACCEPTABLE
New construction or development clearly should not be undertaken.

Source: Napa, City of, 1998. *Envision Napa 2020, Policy Document, Chapter 8.* December 1. Incorporates Amendments to May 2010.

The City of Napa's Municipal Code regulates noise impacts from construction activities through restrictions on acceptable hours of operation and through enforcement of best management practices. According to the code, authorized construction activities shall be limited to the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday. No start-up of machines or equipment is permitted prior to 8:00 a.m., Monday through Friday; delivery of materials or equipment is prohibited prior to 7:30 a.m. and past 5:00 p.m., Monday through Friday. Furthermore, no cleaning of machines or equipment is permitted past 6:00 p.m., Monday through Friday; and no servicing of equipment is permitted past 6:45 p.m., Monday through Friday. Construction on weekends or legal holidays is limited to the hours of 8:00 a.m. to 4:00 pm., unless a permit has first been secured from the City Manager, or designee, pursuant to the procedures and policies of the Municipal Code.

In addition to the restriction on permissible hours of construction, the Municipal Code also specifies that the construction contractor shall be responsible for ensuring that all muffler systems on construction equipment are properly maintained; that all construction equipment shall not be placed adjacent to developed areas unless said equipment is provided with acoustical shielding and all construction and grading equipment shall be shut down when not actively in use.

d. Existing Noise Environment. The existing ambient noise environment in the vicinity of the project site is discussed below.

(1) Existing Noise Sensitive Land Uses in the Project Vicinity. As discussed in the project description, the existing HHSA campus is surrounded by a mix of residential, public-serving, and commercial uses within the City of Napa. The campus is bordered to the north by the Napa Junior Adventist Academy, a private K-12 school. One-story single-family residences located on Monroe Street and two-story single-family residences located on Legacy Court also border the campus to the north. Land uses farther to the north consist primarily of single-family residential neighborhoods. Land uses to the east of the campus consist of single-family residential neighborhoods. Single-family residential neighborhoods are located south of the campus across Old Sonoma Road approximately 280 feet from the southern boundary of the project site. The campus is bordered to the west by Walnut Street, a two-lane undivided north-south roadway, and the County's Juvenile Justice Center, which is located at the northeast corner of the intersection of Old Sonoma Road and Walnut Street. Land uses immediately west of Walnut Street include a mix of commercial, office, storage, and high-density residential uses.

(2) Existing Traffic Noise Levels. Existing traffic noise levels were calculated using the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model. Traffic data used in the model was obtained from the traffic impact analysis summarized in Section IV.C, Transportation, Circulation and Parking. Table IV.F-7 lists the calculated traffic noise levels along roadway segments in the project vicinity under existing conditions. The traffic noise model printouts are included in Appendix F. Modeled existing traffic noise levels along analyzed roadway segments in the project site vicinity range from 56.6 dBA to 66.5 dBA CNEL at 50 feet from the centerline of the outermost travel lane.

Table IV.F-7: Existing Traffic Noise Levels

Roadway Segment	Average Daily Trips	Centerline to 70 dBA CNEL (feet)	Centerline to 65 dBA CNEL (feet)	Centerline to 60 dBA CNEL (feet)	CNEL (dBA) 50 Feet From Outermost Lane
California Boulevard - 1st Street to 2nd Street	12,700	< 50 [a]	< 50	98	63.0
California Boulevard - 2nd Street to 3rd Street	8,300	< 50	< 50	73	61.8
1st Street - Jefferson Street to California Boulevard	7,200	< 50	< 50	67	61.2
2nd Street - California Boulevard to Jefferson Street	3,900	< 50	< 50	< 50	58.5
3rd Street - California Boulevard to Jefferson Street	2,500	< 50	< 50	< 50	56.6
Jefferson Street - 1st Street to 2nd Street	12,900	< 50	< 50	101	62.2
Jefferson Street - 2nd Street to 3rd Street	12,800	< 50	< 50	100	62.2
Jefferson Street - 3rd Street to Oak Street	12,000	< 50	< 50	96	61.9
Jefferson Street - Oak Street to Laurel Street	10,200	< 50	< 50	85	62.1
Jefferson Street - Laurel Street to Pine Street	11,200	< 50	< 50	89	63.1
Jefferson Street - Elm Street to Old Sonoma Road	12,000	< 50	< 50	94	63.4
Jefferson Street - Old Sonoma Road to Spruce Street	10,300	< 50	< 50	85	62.7
Jefferson Street - Hemlock Street to West Imola Avenue	10,000	< 50	< 50	84	62.0
Old Sonoma Road - Walnut Street to Juvenile Justice Center	3,600	< 50	< 50	< 50	58.1
Old Sonoma Road - South Seymour Street to Jefferson Street	7,600	< 50	< 50	69	61.4
West Imola Avenue - SR29 SB Ramps to Minahen Street	24,200	< 50	92	192	66.5
West Imola Avenue - Minahen Street to Jefferson Street	24,200	< 50	92	192	66.5

[a] Traffic noise within 50 feet of roadway centerline requires site specific analysis.

Source: LSA Associates, Inc., June 2012.

(3) Existing Aircraft Noise Levels. The closest airport, Napa County Airport, is located approximately 4.7 miles south of the project site. The next closest airfield is Petaluma Municipal Airport, located approximately 16 miles west of the project site; Travis Air Force Base is located approximately 17 miles east of the project site. Although noise from aircraft activity is occasionally audible in the project vicinity, due to the distance of the project site from surrounding airports, the project site does not lie within the 55 dBA CNEL noise contour of any airport.

2. Impacts and Mitigation Measures

This section analyzes the potential noise impacts that could result from implementation of the proposed project. This section begins with a listing of criteria of significance, which establish the thresholds for determining whether a project impact is significant. The latter part of this section presents the potential noise impacts associated with the proposed project. Mitigation measures are recommended, as appropriate.

a. Criteria of Significance. A project will normally have a significant effect on the environment related to noise if it will substantially increase the ambient noise levels for adjoining areas or conflict with adopted environmental plans and goals of the community in which it is located. For the purposes of this project, a noise impact is considered significant if the project would:

- Expose persons to or generate noise levels in excess of standards established in the City of Napa General Plan or noise ordinance, or applicable standards of other agencies;
- Expose persons to or generate excessive groundborne vibration or groundborne noise levels;

- Cause a substantial (more than 5 dBA) permanent increase in ambient noise levels over existing levels without the project;
- Cause a substantial (over 5 dBA) temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project; or
- Expose people residing or working in the project area to excessive noise levels from aircraft operations for a project located within 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 or within the vicinity of a private airstrip.

b. Project Impacts. This section describes potential noise impacts which could occur as a result of implementation of the proposed project, identifies which impacts would actually occur, and what measures would be required to reduce any impacts to a less-than-significant level.

(1) Noise Levels in Excess of Established Standards. The following includes a discussion of the project's potential to expose persons to or generate noise levels in excess of standards established by the City of Napa General Plan or other applicable standards.

Stationary Noise Source Impacts. The City of Napa has identified stationary noise sources (air conditioners, compressors, and industrial machinery) as potential noisy distractions to people living near them. Stationary noise sources that may be associated with the project include mechanical ventilation systems, weekly one-hour testing of emergency backup generators, and the activities associated with the proposed parking areas. The proposed project would not include manufacturing processes or mechanical ventilation equipment that would generate excess noise or vibration levels. Noise generated by mechanical equipment such as air conditioners and emergency generators would be similar to or quieter than the existing equipment currently in operation on the project site.

There are currently two generators operating on the project site. It is anticipated that the existing generators would be adequate to provide emergency power for Phase 1. For the Phase 2 buildout, under both the Existing Site Option and the Expanded Site Option two new backup generators would be included in the project for additional emergency power generation. While the newer generators are much quieter, the project would place the new units as far away as possible from the residential areas, major campus entrances, and Old Sonoma Road. Although the precise location is not known at this time, a potential location would be the zone along the north-south boundary between the campus and the Juvenile Justice Center. The final location will be determined through the master planning and design process. The proposed generators would be housed in sound attenuated weather protective enclosures that have been tested to reduce generator noise to below 78 dBA L_{max} as measured at approximately 25 feet under full load and would be tested for 1 hour per week. When averaged over a 24-hour period, these new noise sources would not exceed normally acceptable exterior noise limits shown in Table IV.F-6, as measured at receiving properties and would be similar or less than existing noise sources in the project vicinity.

Typical parking lot activities, such as people conversing or doors slamming, generates approximately 60 dBA to 70 dBA L_{max} at 50 feet. When averaged over a 24-hour time period, noise generated from the proposed new parking areas under both the Existing Site and Expanded Site Options alternatives would not exceed the City of Napa's normally acceptable noise limits shown in Table IV.F-6, when measured at receiving land uses. Therefore, noise from project-related stationary noise sources would result in less-than-significant impacts to noise sensitive land uses in the project vicinity.

Noise Land Use Compatibility. Traffic volumes on the surrounding roadways would be the same under both the Existing Site Option and Expanded Site Option. The primary source of noise on the project site is traffic noise from the surrounding roadways. The existing and cumulative future traffic noise levels on roadway segments surrounding the project site were calculated using the FHWA highway traffic noise prediction model (FHWA RD-77-108). The resulting noise levels were weighted and summed over a 24-hour period in order to determine the CNEL values associated with vehicular traffic. The modeled Existing and Existing Plus Project and Cumulative traffic conditions scenarios were evaluated and are summarized in Table IV.F-8. The grey shaded rows in the tables represent the modeled roadway segments adjacent to the project site.

Environments with ambient noise levels of up to 70 dBA CNEL are considered "normally acceptable" for new office buildings, business, commercial and professional land use development according to the City's noise land use compatibility standards shown in Table IV.F-6. Projected traffic noise levels on the modeled roadway segments of Old Sonoma Road adjacent to the project site would range from 59.3 dBA to 61.8 dBA CNEL as measured at 50 feet from the centerline of the outermost lane under Existing Plus Project conditions. Under Cumulative Plus Project conditions, the increase in traffic noise is primarily associated with cumulative growth in the area with traffic noise levels ranging from 60.0 dBA to 63.3 dBA CNEL as measured at 50 feet from the centerline of the outermost lane. Thus traffic noise levels with implementation of either of the project options would be within the City's established acceptable noise environment standards for development of office uses. Therefore, traffic noise levels would not expose workers or visitors to the project site to noise levels in excess of established standards.

Construction Noise Sources. The proposed project would be developed in phases occurring over the next 3 to 16 years. Phase I is expected to be completed by 2018, with project funding determining the ultimate construction phasing and the site build-out timeline. Therefore, project-related demolition and construction activities could result in short-term noise impacts to both on-site and off-site sensitive receptors. Short-term noise impacts would be associated with demolition, site preparation, and building construction on-site during construction of the proposed project. Construction related short-term noise levels would be higher than existing ambient noise levels in the project area but would no longer occur once construction of the project is completed.

Construction of the proposed project is expected to require the use of bulldozers and scrapers, loaders and graders, and trucks. Design plans have not been finalized to a degree that specifies the exact type of foundation proposed for all buildings that would be constructed with the project. Therefore, for purposes of this analysis, it is assumed that pile driving could also be required for construction of the foundations of the project buildings. As shown in Table IV.F-9, the typical maximum noise level generated by pile drivers is assumed to be 93 dBA L_{max} at 50 feet from the operating equipment. The maximum noise level generated by bulldozers is approximately 85 dBA L_{max} at 50 feet. The maximum noise level generated by front-end loaders is approximately 86 dBA L_{max} at 50 feet from these vehicles. Each doubling of the sound sources with equal acoustical strength would increase the noise level by 3 dBA. Assuming each piece of construction equipment operates at some distance apart from the other equipment, the worst-case combined noise level during this phase of construction would be approximately 94 dBA L_{max} at a distance of 50 feet from multiple pieces of operating construction equipment.

Table IV.F-8: Modeled Traffic Noise Levels (dBA) at 50 Feet from the Centerline of the Outermost Travel Lane

Roadway Segment	Existing (CNEL)	Existing + Project (CNEL)	Increase over Existing	Cumulative (CNEL)	Cumulative + Project (CNEL)	Increase over Existing[1]	Increase over Cumulative	Significant Project Contribution to Cumulative Impact?
California Boulevard - 1st Street to 2nd Street	63.0	63.2	0.2	63.8	64.0	1.0	0.2	No
California Boulevard - 2nd Street to 3rd Street	61.8	62.0	0.2	63.1	63.3	1.5	0.2	No
1st Street - Jefferson Street to California Boulevard	61.2	61.2	0.0	61.6	61.7	0.5	0.1	No
2nd Street - California Boulevard to Jefferson Street	58.5	58.5	0.0	59.6	59.7	1.2	0.1	No
3rd Street - California Boulevard to Jefferson Street	56.6	56.7	0.1	58.9	59.0	2.4	0.1	No
Jefferson Street - 1st Street to 2nd Street	62.2	62.3	0.1	64.0	64.0	1.8	0.0	No
Jefferson Street - 2nd Street to 3rd Street	62.2	62.3	0.1	63.7	63.8	1.6	0.1	No
Jefferson Street - 3rd Street to Oak Street	61.9	62.0	0.1	63.5	63.6	1.7	0.1	No
Jefferson Street - Oak Street to Laurel Street	62.1	62.2	0.1	63.6	63.7	1.6	0.1	No
Jefferson Street - Laurel Street to Pine Street	63.1	63.2	0.1	64.4	64.5	1.4	0.1	No
Jefferson Street - Elm Street to Old Sonoma Road	63.4	63.5	0.1	64.5	64.6	1.2	0.1	No
Jefferson Street - Old Sonoma Road to Spruce Street	62.7	62.9	0.2	64.2	64.3	1.6	0.1	No
Jefferson Street - Hemlock Street to West Imola Avenue	62.0	62.2	0.2	63.6	63.7	1.7	0.1	No
Old Sonoma Road - Walnut Street to Juvenile Justice Center	58.1	59.3	1.2	58.9	60.0	1.9	1.1	No
Old Sonoma Road - South Seymour Street to Jefferson Street	61.4	61.8	0.4	63.0	63.3	1.9	0.3	No
West Imola Avenue - SR29 SB Ramps to Minahen Street	66.5	66.6	0.1	67.4	67.5	1.0	0.1	No
West Imola Avenue - Minahen Street to Jefferson Street	66.5	66.6	0.1	67.5	67.5	1.0	0.0	No

[1] Total cumulative + project trips compared to total existing trips along modeled roadway segments.

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

Source: LSA Associates, Inc., June 2012.

For both project options, construction noise could result in impacts to on-site sensitive uses associated with HHSA functions during subsequent demolition and construction phases as on-site buildings are occupied. As noted above, the worst-case combined noise level during the loudest phase of construction would be approximately 94 dBA L_{max} at a distance of 50 feet from multiple pieces of operating construction equipment. However, compliance with the City's restrictions on permissible hours of demolition and construction activity, as well as strict compliance with the best management practices outlined in the noise control ordinance of the City's Municipal Code would reduce potential construction noise impacts to on-site sensitive uses to a less-than-significant level. Therefore, to ensure that construction noise is reduced to the maximum extent feasible, multi-part mitigation measure NOISE-1, which details these noise control measures, shall be implemented.

Table IV.F-9: Typical Construction Equipment Maximum Noise Levels, L_{max}

Type of Equipment	Range of Maximum Sound Levels (dBA at 50 feet)	Suggested Maximum Sound Levels for Analysis (dBA at 50 feet)
Pile Drivers	81 to 96	93
Auger Drill Rig	78 to 88	85
Jackhammers	75 to 85	82
Pneumatic Tools	78 to 88	85
Pumps	74 to 84	80
Scrapers	83 to 91	87
Haul Trucks	83 to 94	88
Cranes	79 to 86	82
Portable Generators	71 to 87	80
Rollers	75 to 82	80
Dozers	77 to 90	85
Tractors	77 to 82	80
Front-End Loaders	77 to 90	86
Hydraulic Backhoe	81 to 90	86
Hydraulic Excavators	81 to 90	86
Graders	79 to 89	86
Air Compressors	76 to 89	86
Trucks	81 to 87	86

Source: Bolt, Beranek & Newman, 1987. *Noise Control for Buildings and Manufacturing Plants.*

Construction noise could also result in impacts to off-site sensitive uses. The project site is bordered by commercial, office, institutional and residential land uses. Potential impacts to surrounding land uses specific to each project option are described below:

Existing Site Option. Under the Existing Site Option, the closest receptors to the east of the project site are the residences on Legacy Court, located as close as 80 feet from the closest potential project demolition and building construction areas. At this distance, construction noise levels at the exterior facade of these buildings would be expected to range up to 90 dBA L_{max}, if multiple pieces of equipment operated simultaneously at the project construction border near these properties.

The closest receptors to the north of the existing project site are the residences on Monroe Court, located as close as 60 feet from the proposed northern project construction area. At this distance, construction noise levels at the exterior facade of these buildings would be expected to range up to 92.5 dBA L_{max}.

The closest receptors to the west of the existing project site are the buildings of the Napa County Juvenile Justice Center on Walnut Street, located as close as 25 feet from the nearest construction area. At this distance, construction noise levels at the exterior facade of these buildings would be expected to range up to 100 dBA L_{max}. The closest receptors to the south of the project site are the residences south of Old Sonoma Road, located as close as 280 feet from the nearest potential project demolition and building construction areas. At this distance, construction noise levels at the exterior

facade of these buildings would be expected to range up to 79 dBA L_{max}, if multiple pieces of equipment operated simultaneously at the project construction border near this property.

Expanded Site Option. Under the Expanded Site Option, the closest properties to the east of the project site are the residences on Gesford Street and Legacy Court, located as close as 25 feet from the nearest potential project demolition and building construction areas. At this distance, construction noise levels at the exterior facade of these buildings would be expected to range up to 100 dBA L_{max}, for this project option, if multiple pieces of equipment operated simultaneously at the project construction border near these properties.

The closest properties north of the project site are the institutional buildings of the Napa Junior Adventist Academy, located approximately 100 feet from the nearest potential project construction area. At this distance, construction noise levels at the exterior facade of these buildings would be expected to range up to 88 dBA L_{max}. The buildings of the Napa County Juvenile Justice Center are the closest receptor west of the Expanded Site Option and would be approximately 80 feet from the nearest project demolition and building construction areas. At this distance, construction noise levels at the exterior facade of these buildings would be expected to range up to 90 dBA L_{max}, under the Existing Site Option, if multiple pieces of equipment operated simultaneously at the project construction border near this property.

The residences located south of the project site would be approximately 100 feet from the closest potential project demolition and building construction areas. At this distance, construction noise levels at the exterior facade of these buildings would be expected to range up to 88 dBA L_{max}.

For both project options, compliance with the City's restrictions on permissible hours of demolition and construction activity, as well as strict compliance with the best management practices outlined in the noise control ordinance of the City's Municipal Code would reduce potential construction noise impacts to a less-than-significant level. Therefore, to ensure such compliance, the following multi-part mitigation measure shall be implemented for either the Existing Site or the Expanded Site Options, depending on which option is eventually selected. Implementation of this measure would ensure that construction noise is reduced to the maximum extent feasible, minimizing disturbance to off-site sensitive receptors.

Impact NOISE-1: Implementation of both the Existing Site Option and Expanded Site Option would expose noise sensitive uses in the project vicinity to potentially excessive demolition and construction noise levels. (S)

Mitigation Measure NOISE-1: The County shall ensure compliance with the following measures:

- The construction contractor shall limit construction activities to the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday. No start-up of machines or equipment shall be permitted prior to 8:00 a.m., Monday through Friday; delivery of materials or equipment shall be prohibited prior to 7:30 a.m. and past 5:00 p.m., Monday through Friday. Furthermore, no cleaning of machines or equipment shall be permitted past 6:00 p.m., Monday through Friday; and no servicing of equipment shall be permitted past 6:45 p.m., Monday through

Friday. Construction on weekends or legal holidays shall be limited to the hours of 8:00 a.m. to 4:00 pm., unless a permit has first been secured from the City Manager, or designee, pursuant to the procedures and policies of the Municipal Code.

- The construction contractor shall ensure that construction equipment is well maintained and used judiciously to be as quiet as practical. Equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds), wherever feasible; all muffler systems on construction equipment shall be properly maintained;
- The construction contractor shall utilize "quiet" models of air compressors and other stationary noise sources where such technology exists. Implement "quiet" pile driving technology (such as pre-drilling of piles, the use of more than one pile driver to shorten the total pile driving duration), where feasible, in consideration of geotechnical and structural requirements and conditions. Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project demolition or construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used if such jackets are commercially available, and this could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures;
- The construction contractor shall locate stationary noise-generating equipment as far as possible from sensitive receptors that adjoin construction sites. All stationary construction equipment placed within 50 feet of noise sensitive land uses shall be equipped with acoustical shielding;
- The construction contractor shall prohibit unnecessary idling of internal combustion engines. All construction and grading equipment shall be shut down when not actively in use;
- The construction contractor shall post signs at the construction site that include permitted construction days and hours, a day and evening contact number for the job site, and a day and evening contact number for the on-site complaint and enforcement manager, and the City Manager or designee, in the event of problems.
- The construction contractor shall coordinate the construction phasing, to the extent feasible, so as to limit noise producing construction activities that could occur within 200 feet of the Napa Junior Adventist Academy educational buildings under the Expanded Site Option, to days and hours when the school's educational classes are not in session (i.e., late afternoons, weekends, and school vacation days, including, but not limited to, summer break). (LTS)

Implementation of Mitigation Measure NOISE-1 would ensure that construction noise is reduced to the maximum extent feasible, minimizing potential disturbance to both on-site and off-site sensitive receptors. Therefore, short-term project-related construction noise impacts would be reduced to a less-than-significant level.

(2) Excessive Groundborne Vibration or Groundborne Noise Levels. Construction activities, especially those associated with the use of impact equipment such as that used in pile driving, are a known source of groundborne noise and vibration. Operation of heavy earth moving equipment is also a source of potential groundborne vibration.

Pile driving can generate groundborne vibration that can be perceptible at a distance of 100 feet, but would not generally be expected to cause damage to most structures at this distance. The potential exception would be buildings that are fragile and extremely susceptible to vibration damage. The Federal Transit Administration's (FTA) construction vibration impact criteria[7] are shown in Table IV.F-10.

Table IV.F-10: Federal Transit Administration Construction Vibration Impact Criteria

Building Category	Peak Particle Velocity (PPV) (inches/second)
Reinforced-concrete, steel or timber (no plaster)	0.5
Engineered concrete and masonry (no plaster)	0.3
Non-engineered timber and masonry buildings	0.2
Buildings extremely susceptible to vibration damage	0.12

Source: Federal Transit Administration, 2006. *Transit Noise and Vibration Impact Assessment.* May.

Under the Existing Site Option, the closest off-site sensitive receptors to the proposed construction areas are the buildings of the Napa County Juvenile Justice Center on Walnut Street, located as close as 25 feet from the closest potential project building construction area. At this distance, vibration levels from project building construction activities, including the use of large bulldozers and front-end loaders, would be approximately 0.21 PPV, while pile driving could generate vibration levels of approximately 0.64 PPV at this distance.

Under the Expanded Site Option, the closest off-site sensitive receptors to the proposed construction areas are the residences east of the project site on Gesford Street and Legacy Court, located as close as 25 feet from the closest potential project demolition and building construction areas. At this distance, vibration levels from project building construction activities, including the use of large bulldozers and front-end loaders, would be approximately 0.21 PPV, while pile driving could generate vibration levels of approximately 0.64 PPV at this distance.

The proposed project would be developed in phases occurring over the next 3 to 16 years. Phase I is expected to be completed by 2018 and build-out would likely occur by 2028, with project funding determining the ultimate construction phasing and the site build-out timeline. As noted above, the use of large bulldozers and front-end loaders could result in groundborne vibration levels of up to 0.21 PPV, and pile driving activities could generate vibration levels of approximately 0.64 PPV as measured at a distance of 25 feet. Therefore, on-site uses could also be exposed to excessive levels of groundborne vibration during each phase of construction.

These potential groundborne vibration levels for both of the project options are in excess of the FTA's construction vibration impact threshold of 0.2 PPV for non-engineered timber and masonry buildings.

Implementation of Mitigation Measure NOISE-1 would not reduce annoyance or disturbance impacts from construction related groundborne vibration to a less-than-significant level for persons of normal

[7] Federal Transit Administration, 2006. *Transit Noise and Vibration Impact Assessment.* May.

sensitivity living in adjacent structures to the project site. Therefore, in order to reduce project construction potential groundborne vibration impacts to off-site sensitive land uses, additional mitigation would be required.

Utilizing an alternative method for foundation construction other than impact pile driving within 100 feet of sensitive structures and restricting the operation of the largest types of heavy construction equipment within 30 feet of sensitive structures would reduce all construction-related groundborne vibration impacts to a less-than-significant level.

Impact NOISE-2: Implementation of both the Existing Site Option and Expanded Site Option would result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels. (S)

Mitigation Measure NOISE-2: The County shall ensure compliance with the following measures:

- The construction contractor shall implement Mitigation Measure NOISE-1, including restrictions on the permissible hours of construction, in order to reduce annoyance or disturbance impacts for persons of normal sensitiveness living in adjacent structures to the project site.
- The construction contractor shall utilize alternative methods for construction of foundations of all project buildings that would be constructed within 100 feet of sensitive structures. Alternative methods may include, but are not limited to, such techniques as auger cast piles, screw piles, or matt slab foundation. Sensitive structures include any occupied structure that could potentially be damaged by groundborne vibration levels in excess of 0.2 PPV.
- The construction contractor shall ensure that heavy construction equipment such as large vibratory roller compactors, do not operate at any time within 30 feet of sensitive structures in the project vicinity. In addition, the construction contractor shall ensure that heavy construction equipment such as large bulldozers, large dump- or materials delivery-trucks, or similar heavy equipment, do not operate at any time within 15 feet of sensitive structures in the project vicinity. Alternative equipment may include, but are not limited to, smaller vibratory rolling compactors, vibrating plate compactors, and/or jumping jack compactors. (LTS)

Implementation of Mitigation Measure NOISE-2 would ensure that construction-related groundborne vibration is reduced to below the FTA's potential damage vibration criteria level of 0.2 PPV as measured at nearby sensitive structures. Therefore, short-term project-related construction vibration impacts would be reduced to a less-than-significant level.

(3) Permanent Increase In Ambient Noise Levels. As shown in Table IV.F-8, the increase in traffic generated by the proposed project would not be substantial enough to result in any perceptible changes in ambient noise levels in the project vicinity. Based on the significance criteria, a permanent increase of more than 5 dBA in ambient noise levels in the project vicinity above levels existing without the project would be considered a significant impact. The largest increase in project-related traffic noise compared to noise levels existing without the project would occur along 3rd Street from California Boulevard to Jefferson Street. The resulting traffic noise levels would result in an increase of only 0.1 dBA under Existing Plus Project traffic conditions compared to existing

conditions, and would experience an increase of 2.4 dBA under Cumulative Plus Project traffic conditions when compared to existing conditions. Under Cumulative conditions, this increase is primarily attributable to other cumulative growth in the area. This highest increase is less than what is considered barely perceptible in typical outdoor environments. In addition, this increase is well below the significance criteria of a more than 5 dBA increase. Therefore, implementation of the proposed project would result in a less-than-significant increase in traffic noise levels compared to traffic noise levels that would be experienced without the project.

(4) Temporary or Periodic Increase In Ambient Noise Levels. Ambient noise levels in the project vicinity are dominated by traffic on the surrounding roadways. Maximum noise levels from traffic typically occur from truck pass-bys which generate maximum noise levels of approximately 80 dBA. As shown in the discussion under Impact NOISE-1, construction noise impacts would result in substantial temporary increases in ambient noise levels in the project vicinity compared to levels existing without the project.

The project site is located in the City of Napa and is bordered by commercial, office, institutional and residential uses. Proposed construction activities would occur as close as within 25 feet of sensitive receptors. At this distance, the exterior facade of these closest buildings would be exposed to construction noise levels of up to approximately 100 dBA L_{max} which is substantially higher than ambient noise levels existing without the project. However, implementation of all of the noise control measures of Mitigation Measure NOISE-1 would reduce construction noise impacts to a less-than-significant impact.

Impact NOISE-3: Implementation of the project would result in a substantial temporary or periodic increase in ambient noise levels in the project site vicinity above levels existing without the project. (S)

> Mitigation Measure NOISE-3: The County shall implement the measures outlined in Mitigation Measure NOISE-1. (LTS)

Implementation of multi-part mitigation measure NOISE-1 would ensure that construction noise is reduced to the maximum extent feasible, minimizing potential disturbance to both on-site and off-site sensitive receptors. Therefore, short-term project-related construction noise impacts would be reduced to a less-than-significant level.

(5) Aircraft Operations. The closest airport to the project site is the Napa County Airport located approximately 4.7 miles south of the project site. The next closest airfield is Petaluma Municipal Airport, located approximately 16 miles west of the project site; Travis Air Force Base is located approximately 17 miles east of the project site. Although noise from aircraft activity is occasionally audible in the project vicinity, due to the distance of the project site from surrounding airports, the project site does not lie within the 55 dBA CNEL noise contour of any airport. In addition, there are no private airstrips within two miles of the project site. Therefore, on-site development under either the Existing Site Option or the Expanded Site Option would be exposed to less-than-significant noise levels from aircraft operations.

c. Cumulative Impacts. CEQA defines cumulative impacts as "two or more individual effects, which, when considered together, are considerable, or which can compound or increase other envi-

ronmental impacts." Section 15130 of the *CEQA Guidelines* requires that an EIR evaluate potential environmental impacts that are individually limited but cumulatively significant. These impacts can result from the proposed project alone, or together with other projects. The *CEQA Guidelines* state: "The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects." Cumulative impacts can result from individually minor but collectively significant projects taking place over time.[8]

As described in the project impact analysis above, implementation of the proposed project, under both the Existing Site and the Expanded Site Options, would result in significant noise impacts from construction activities. However, construction related noise impacts would be temporary and would no longer occur once construction of the project is completed. Therefore, the project's construction activities would not be considered a cumulatively considerable contribution to the total noise environment in the project vicinity and this impact would be less-than-significant.

Similarly, as also described in the project impact analysis above, implementation of the proposed project, under both the Existing Site and the Expanded Site Options, would result in significant groundborne vibration impacts from construction activities. However, construction-related groundborne vibration impacts would be temporary and would no longer occur once construction of the project is completed. Therefore, groundborne vibration from project construction activities would not be considered a cumulatively considerable contribution to the environment in the project vicinity and this impact would be less than significant.

A significant cumulative impact would also occur if implementation of the proposed project, under either development option, would result in a perceptible permanent increase in traffic noise levels at existing sensitive receptors in the project vicinity that are currently exposed to noise levels above the City's normally acceptable threshold for that type of land use. As shown in Table IV.F-8, no modeled roadway segment would result in a perceptible permanent increase in ambient noise levels compared to conditions existing without the project under either build alternative. Therefore, implementation of the proposed project would not result in noise impacts that would be considered a cumulatively considerable contribution to the total noise environment in the project vicinity and this impact would be less than significant.

[8] *CEQA Guidelines*, 2011 Section 15355.

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