APPENDIX J

Noise Data

LOCAL REGULATIONS AND STANDARDS

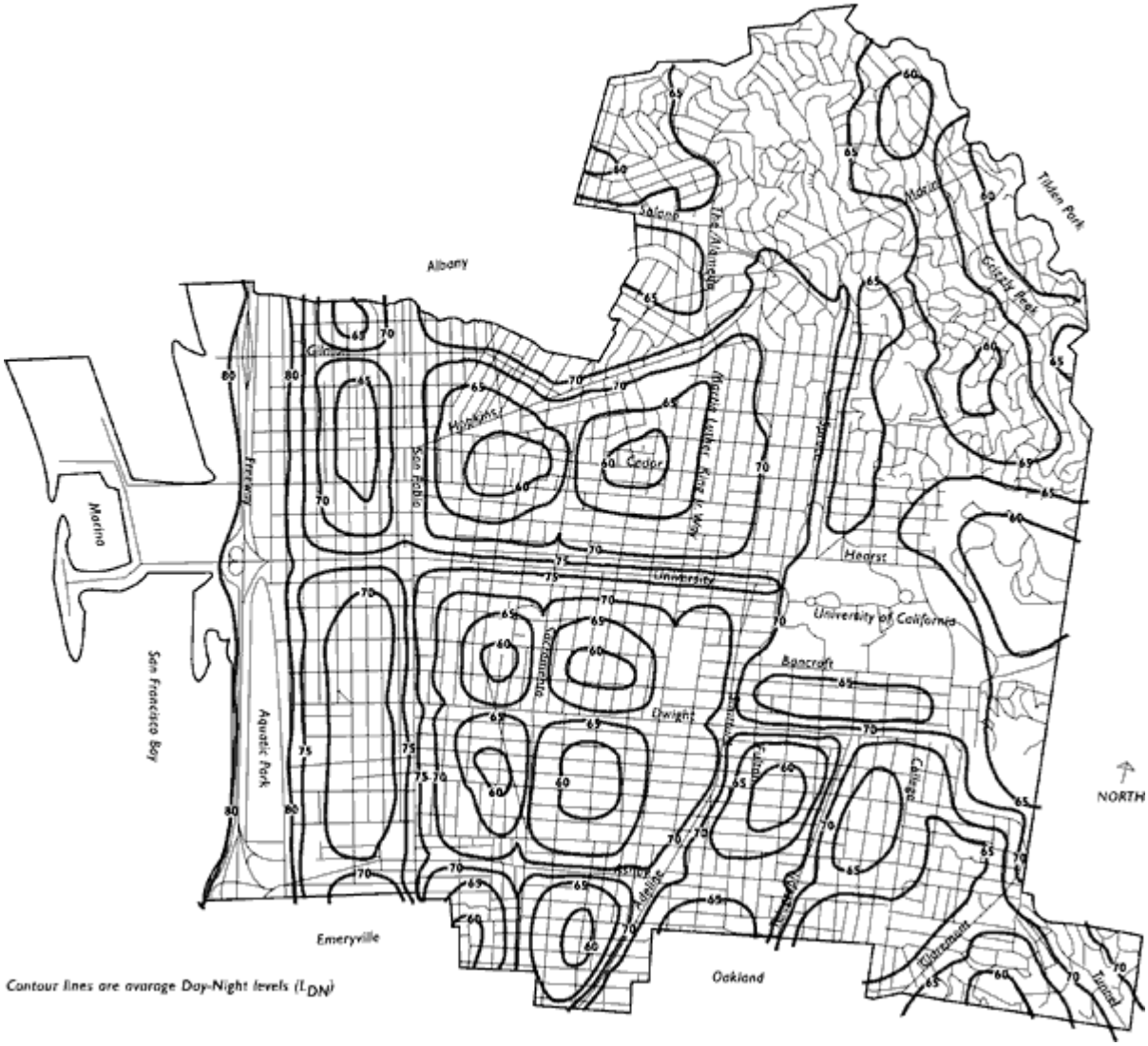
role in the pollution picture--regionally and locally--has been substantially reduced in recent years by pollution control programs of the Bay Area Air Quality Management District (BAAQMD). Any further progress in air quality improvement now focuses heavily on the automobile.

Noise

Major noise sources in Berkeley include cars, trucks, buses, trains, industrial plant equipment noise, and activities associated with neighborhoods and schools (lawn mowing and leaf blowing, children playing, etc.). The most important difference between transportation and non-transportation noise sources is that the City can generally exercise control on the level and duration of noise at the property line of a non-transportation source of noise. Cities adopt noise exposure standards for noise levels generated from mobile sources, such as trucks, trains, or planes, and then make permitting decisions for land uses regarding their sensitivity in areas with excessive noise. Cities play a role in enforcing the requirement in the State Vehicle Code regarding properly operating mufflers, and may also set speed limits or weight restrictions on streets. In general terms, a city's actions are primarily proactive with respect to stationary noise sources versus reactive for those mobile sources beyond city control.

Figure 21, Noise Contours, shows the general noise levels throughout the city. The contour lines represent average Day-Night levels (Ldn).

Figure 21. Noise Contours



Noise measurements taken at many locations throughout the city have shown that overall noise levels have remained fairly constant in Berkeley over the last 20 years. Figure 21 depicts the general level of noise that can be expected on any given day. Comprehensive noise measurements were taken throughout the city in 1973 and 1995. Small decreases in noise levels have occurred along much of San Pablo Avenue and along portions of Ashby Avenue since 1973. Some increases in noise levels have been observed along a number of roadways, including portions of Sixth Street, Martin Luther King Jr. Way, Milvia Street, Shattuck Avenue, Oxford Street, Claremont Avenue, Grizzly Peak Boulevard, Gilman Street, Hopkins Street, Delaware Street, Hearst Avenue, and Dwight Way. These changes are consistent with the recent citywide traffic counts which show that although traffic has increased on some streets, actual traffic volume and traffic speeds have lowered on other streets, which would result in a reduction in noise levels. However, a closer comparison of the two studies shows that the recorded differences may instead be due to slight differences in how the measurements were taken or the particular conditions on the day the measurements were taken.

Noise sources related to heavy manufacturing, located mainly in industrialized West Berkeley, were once a more dominant contributor to the noise environment. In the past, noise-related land use

conflicts between West Berkeley and other more residential sectors of the city were at a minimum, given the distance between these areas. More recently, however, increased residential and commercial uses in West Berkeley have begun to threaten industrial uses, in part through a changing perception of environmental standards as they relate to the manufacturing process. The presumption in the past in most industrially zoned areas was that noise generated by an industrial use was an acceptable part of the manufacturing context. The Concept Plan for West Berkeley was adopted in 1991 and included policies to address these types of noise conflicts in order to maintain the historic mix of land uses in an environmentally responsible manner. The West Berkeley Plan, adopted in 1993, calls for more stringent environmental review and regulation, including the mitigation of noise through both industrial and residential measures.

The City's Noise Ordinance sets limits for permissible noise levels during the day and night according to the zoning of the area. The Noise Ordinance does not recognize residents living in non-residential zones, such as in West Berkeley. In addition, if ambient noise (the general level of noise in the area) exceeds the standard, that ambient noise level becomes the allowable noise level. Enforcement of the Berkeley Noise Ordinance (Chapter 13.40 of the Municipal Code) is often related to commercial or industrial mechanical equipment that is sited near residential uses.

Element Objectives

The policies and actions of the Environmental Management Element are intended to make Berkeley a more environmentally sustainable community by achieving the following eight objectives:

1. Promote development and coordination of local and regional environmental management programs and facilitate community participation in environmental protection and conservation.

2. Reduce solid and hazardous wastes and minimize risk from hazardous materials.

3. Reduce emissions and improve air quality.

4. Conserve water, improve water quality, and facilitate creek restoration.

5. Protect, maintain, and enhance the urban forest (including street and park trees) and natural habitat areas.

6. Support and promote a local food system based upon sustainable regional agriculture to assure access to healthy, affordable, and culturally appropriate foods.

7. Reduce nonrenewable energy consumption and unnecessary glare from inappropriate lighting.

8. Protect the community from excessive noise levels.

Policies and Actions

Environmental Management Programs

Policy EM-1 City of Berkeley Leadership

Policy EM-41 Fossil Fuel

Encourage and support efforts to reduce use of fossil fuel and other finite, nonrenewable resources.

Actions:

A. Wherever feasible, purchase low-emission, fuel-efficient vehicles and phase out use of diesel-fuel vehicles.

B. Encourage actions that provide access by proximity, such as locating housing closer to transportation, commercial services, and job centers. (Also see Transportation Policy T-16, Housing Policy H-16, and Land Use Policy LU-23.)

C. Encourage use of "bio-diesel" fuel as an alternative to fossil fuel.

Policy EM-42 Outdoor and Street Lighting

Outdoor lighting should be chosen to avoid glare and provide an attractive nighttime environment with "fully shielded" fixtures to limit light rays emitted above the horizontal plane.

Noise

Policy EM-43 Noise Reduction

Reduce significant noise levels and minimize new sources of noise.

Actions:

A. Increase enforcement of the Noise Ordinance to reduce noise impacts.

B. Consider improvements to the Noise Ordinance to improve the City’s ability to reduce noise impacts.

C. Promote increased public awareness concerning the negative effects of excessive noise on humans.

Policy EM-44 Noise Prevention and Elimination

Protect public health and welfare by eliminating existing noise problems where feasible and by preventing significant future degradation of the acoustic environment.

Actions:

A. Incorporate noise considerations into land use planning decisions.

B. Ensure the effective enforcement of City, State, and Federal noise levels by appropriate City departments.

C. Coordinate with the California Occupational Safety and Health Administration (Cal-OSHA) to provide information on and enforcement of occupational noise requirements within the City of

Berkeley.

D. Support Federal and State legislation to lower allowable noise level on all motor vehicles.

Policy EM-45 Traffic Noise

Work with local and regional agencies to reduce local and regional traffic, which is the single largest source of unacceptable noise in the city.

Actions:

A. Encourage neighborhood traffic calming strategies that cause motorists to slow down and decrease noise levels in all residential areas. (Also see Transportation Policy T-20.)

B. Through the taxi permit process, restrict taxis and shuttles from honking in neighborhoods.

C. Minimize potential transportation noise through proper design of street circulation, coordination of routing, and other traffic control measures.

D. Promote and encourage new vehicle technologies to reduce transportation noise levels.

E. Construct a noise barrier for Aquatic Park. (Also see Open Space and Recreation Policy OS-8.)

F. Enforce muffler laws.

G. Work with AC Transit to reduce bus noise. (Also see Transportation Policy T-2.)

H. Establish noise emission limits on City public works projects and vehicles, such as refuse collection trucks, and work with other large institutions in the city, such as BUSD, to reduce vehicle noise emissions.

Policy EM-46 Noise Mitigation

Require operational limitations and all feasible noise buffering for new uses that generate significant noise impacts near residential, institutional, or recreational uses.

Actions:

A. Promote use of noise insulation materials in new construction and major rehabilitation.

B. Mitigate significant noise impacts on parks and public open space, whenever feasible. (Also see Open Space and Recreation Policy OS-12.)

Policy EM-47 Land Use Compatibility

Ensure that noise-sensitive uses, including, but not limited to, residences, child-care centers, hospitals, and nursing homes, are protected from detrimental noise levels.

Action:

A. Noise-sensitive development proposals should be reviewed with respect to the Land Use Compatibility Guidelines below.

If the noise level is within the "normally acceptable" level, noise exposure would be acceptable for the intended land use. Development may occur without requiring an evaluation of the noise environment unless the use could generate noise impacts on adjacent uses.

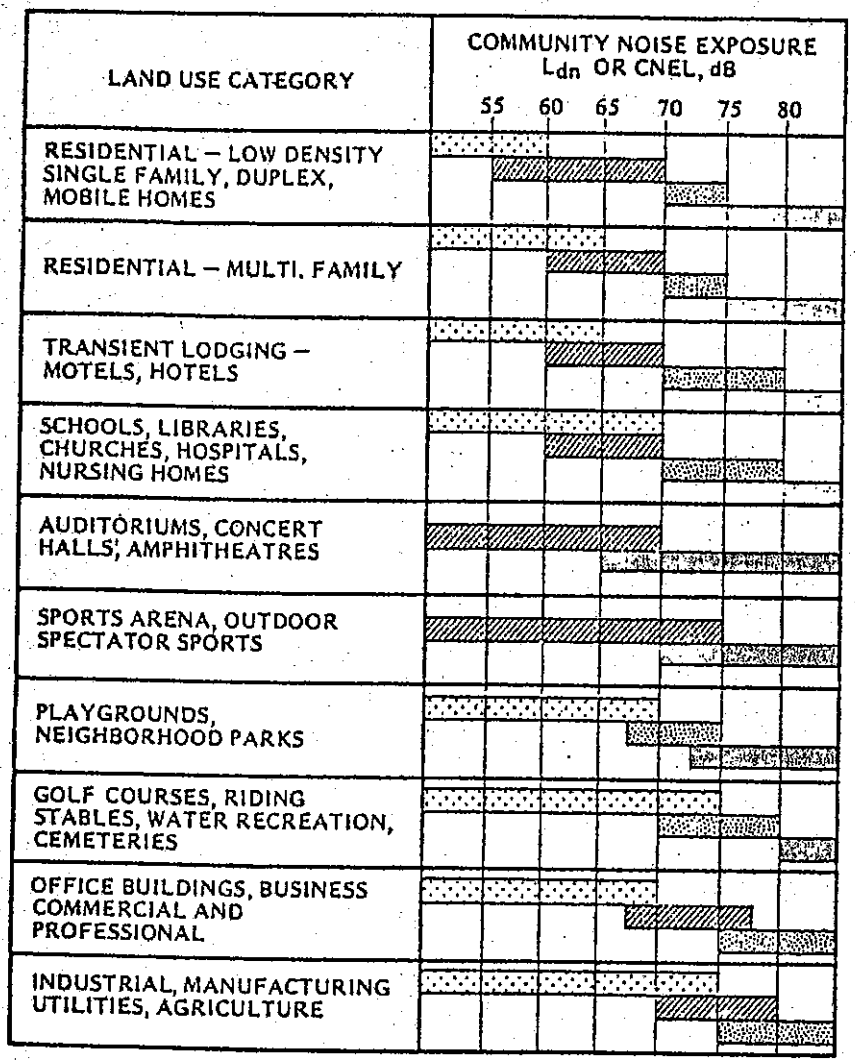
If the noise level is within the "conditionally acceptable" level, noise exposure would be conditionally acceptable; a specified land use may be permitted only after detailed analysis of the noise environment and the project characteristics to determine whether noise insulation or protection features are required. Such noise insulation features may include measures to protect noise-sensitive outdoor activity areas (e.g., at residences, schools, or parks) or may include building sound insulation treatments such as sound-rated windows to protect interior spaces in sensitive receptors.

If the noise level is within the "normally unacceptable" level, analysis and mitigation are required. Development should generally not be undertaken unless adequate noise mitigation options have been analyzed and appropriate mitigations incorporated into the project to reduce the exposure of people to unacceptable noise levels.

If the noise level is within the "clearly unacceptable" level, new construction or development should not be undertaken unless all feasible noise mitigation options have been analyzed and appropriate mitigations incorporated into the project to reduce exposure of people to unacceptable noise levels.

Department of Planning & Development, 1947 Center Street, 3rd Floor, Berkeley, CA 94704
Questions or comments? Email: planning@cityofberkeley.info Phone: (510) 981-7400
(510) 981-CITY/2489 or 311 from any landline in Berkeley
TTY: (510) 981-6903

LAND USE COMPATABILITY FOR COMMUNITY NOISE ENVIRONMENTS



INTERPRETATION

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. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

NORMALLY UNACCEPTABLE

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

CLEARLY UNACCEPTABLE

New construction or development should generally not be undertaken.

A. NORMALIZED NOISE EXPOSURE INFORMATION DESIRED

Where sufficient data exists, evaluate land use suitability with respect to a "normalized" value of CNEL or L_{dn}. Normalized values are obtained by adding or subtracting the constants described in Table I to the measured or calculated value of CNEL or L_{dn}.

B. NOISE SOURCE CHARACTERISTICS

The land use-noise compatibility recommendations should be viewed in relation to the specific source of the noise. For example, aircraft and railroad noise is normally made up of higher single noise events than auto traffic but occurs less frequently. Therefore, different sources yielding the same composite noise exposure do not necessarily create the same noise environment. The State Aeronautics Act uses 65 dB CNEL as the criterion which airports must eventually meet to protect existing residential communities from unacceptable exposure to aircraft noise. In order to facilitate the purposes of the Act, one of which is to encourage land uses compatible with the 65 dB CNEL criterion wherever possible, and in order to facilitate the ability of airports to comply with the Act, residential uses located in Community Noise Exposure Areas greater than 65 dB should be discouraged and considered located within normally unacceptable areas.

C. SUITABLE INTERIOR ENVIRONMENTS

One objective of locating residential units relative to a known noise source is to maintain a suitable interior noise environment at no greater than 45 dB CNEL or L_{dn}. This requirement, coupled with the measured or calculated noise reduction performance of the type of structure under consideration, should govern the minimum acceptable distance to a noise source.

D. ACCEPTABLE OUTDOOR ENVIRONMENTS

Another consideration, which in some communities is an overriding factor, is the desire for an acceptable outdoor noise environment. When this is the case, more restrictive standards for land use compatibility, typically below the maximum considered "normally acceptable" for that land use category, may be appropriate.

Chapter 13.40

COMMUNITY NOISE*

Sections:

*For advertising regulations generally, see Ch. 9.08 of this code.

Section 13.40.010 Purpose and intent.

The Council finds and determines that:

A. Certain sound levels and vibrations are detrimental to the public health, welfare, safety, and quality of life, and are contrary to the public interest;

B. Every person is entitled to an environment in which the noise is not detrimental to his or her life, quality of life, health, or enjoyment of property;

C. The making and creating of disturbing, excessive, or offensive noises within the jurisdictional limits of the City is a condition that has persisted, and the level and frequency of occurrences of such noises continues to increase;

D. The public health, comfort, convenience, safety, welfare, prosperity, peace, and quiet of the City and its inhabitants will be promoted by maintaining quiet in those areas which exhibit low sound levels and by reducing noise in those areas within the City where sound levels are above acceptable values. (Ord. 7122-NS § 1, 2009: Ord. 5500-NS § 1 (part), 1982)

Section 13.40.020 Definitions.

A. Terminology. All terminology used in this chapter, not defined below, shall be in conformance with applicable publications of the American National Standards Institute (ANSI) or its successor body.

B. "A-weighted sound level" means the sound level in decibels as measured on a sound level meter using the A-weighting network. The level so read is designated dB(A) or dBA.

C. "Ambient noise level" means the composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location, minus the source which is the subject of enforcement.

D. "Amplified sound" means any sound created by the use of sound amplifying equipment.

E. "Commercial area" means those parcels within zoning districts specified as commercial (C-1, C-2, C-3, C-N, C-NS, C-SA, C-SO, C-T, and C-W) in the "Official Zoning Map" created by Ordinance No. 6478-N.S., or as subsequently amended.

F. "Construction" means any site preparation, assembly, erection, substantial repair, alteration, or similar action, for or of public or private rights-of-way, structures, utilities or similar property.

G. "Cumulative period" means an additive period of time composed of individual time segments which may be continuous or interrupted.

H. "Decibel (dB)" means a unit of measurement which indicates the relative intensity of a sound. It is equal to twenty times the logarithm to the base ten of the ratio of the pressure of the sound measured to the reference pressure, which is twenty micropascals.

I. "Demolition" means any dismantling, intentional destruction or removal of structures, utilities, public or private right-of-way surfaces, or similar property.

J. "Emergency work or action" means work or action made necessary to restore property to a safe condition after a public calamity, or work required to protect persons or property from imminent exposure to danger or damage, or work by public or private utilities to restore utility service.

K. "EHD" means the Environmental Health Division or noise control office.

L. "Event" means a program, performance, or presentation intended to draw spectators, including but not limited to a street event or park event as defined by Section 13.44.020.G and Section 6.46.020.B and D, respectively.

M. "Fixed noise source" means a stationary device which creates sounds while fixed or motionless, including but not limited to residential, agricultural, industrial and commercial machinery and equipment, pumps, fans, compressors, air conditioners, and refrigeration equipment.

N. "Impulsive sound" means sound of short duration, usually less than one second, with an abrupt onset and rapid decay. Examples of sources of impulsive sound include explosions, drop forge impacts, and the discharge of firearms.

O. "Industrial area" means those parcels within zoning districts specified as industrial (M, MM, MULI, and MUR) in the "Official Zoning Map" created by Ordinance No. 6478-N.S., or as subsequently amended.

P. "Intrusive noise" means that noise which 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.

Q. "Mobile noise source" means any noise source other than a fixed noise source.

R. "Motor vehicle" means and shall include any and all self-propelled vehicles as defined in the California Motor Vehicle Code, including all on-highway type motor vehicles subject to registration under said code, and all off-highway type motor vehicles subject to identification under said code.

S. "NCO" means a noise control officer or other authorized agent designated by the City Manager to enforce the provisions of this chapter.

T. "Noise disturbance" means any sound which is determined to violate Section 13.40.030, 13.40.050, 13.40.060, or 13.40.070.

U. "Noise zone" means any defined areas or regions of a generally consistent land use wherein the ambient noise levels are within a range of five dB. (Typically, all sites within any given noise zone will be of comparable proximity to major noise sources.)

V. "Person" means any individual, association, partnership, institution or corporation, and includes any agent, officer, employee, department, agency or instrumentality of a state or any political subdivision of a state.

W. "Powered model vehicle" means any self-propelled, airborne, waterborne, or land-borne plane, vessel, or vehicle, which is not designed to carry persons, including but not limited to any model airplane, boat, car, or rocket.

X. "Public right-of-way" means any street, avenue, boulevard, highway, sidewalk or alley or similar place which is owned or controlled by a governmental entity.

Y. "Public space" means any real property or structures thereon which are owned or controlled by a governmental entity.

Z. "Pure tone" means any sound which can be judged as audible as a single pitch or a set of single pitches by a NCO.

AA. "Real property boundary" means an imaginary line along the ground surface, and its vertical extension, which separates the real property owned by one person from that owned by another person, but not including inter-building real property divisions such as walls and fences.

BB. "Residential area" means those parcels within zoning districts specified as residential (R-1, R-1A, R-2, R-2A, R-3, R-4, R-5, and ES-R) in the "Official Zoning Map" created by Ordinance No. 6478-N.S., or as subsequently amended.

CC. "Sound amplifying equipment" means any electronic device for the amplification of the human voice, music, or any other sound, excluding standard automobile radios when used and heard only by the occupants of the vehicle in which the radio is installed, and, as used in this chapter, warning devices on authorized emergency vehicles or horns or other warning devices on any vehicle used only for traffic safety purposes.

DD. "Sound level" means the level of sound as measured in decibels.

EE. "Sound level meter" means a sound measuring instrument meeting American National Standard Institute's Standard S1.41971 or most recent revision thereof for Type 1 or Type 2 sound level meters or an instrument and the associated recording and analyzing equipment which provide equivalent data. (Ord. 7122-NS § 2, 2009: Ord. 5500-NS § 1 (part), 1982)

Section 13.40.030 General noise regulations.

A. Notwithstanding any other provisions of this chapter, and in addition thereto, it shall be unlawful for any person to willfully or negligently make or continue, or cause to be made or continued, any loud, unnecessary, or unusual noise which disturbs the peace and quiet of any neighborhood or which causes any discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area. Noncommercial nonamplified public speaking and public assembly activities conducted on any public space or public right-of-way shall be exempt from the operation of this section.

B. Any violation of this chapter may be charged as either a misdemeanor or an infraction as set forth in Chapter 1.20. The violation of any of the provisions of this chapter is declared to be a public nuisance and may also be abated as provided in Sections 11.40.010 through 11.44.030 of the Berkeley Municipal Code.

C. If it is determined by the responding agency that a sound level violates this chapter, the following procedures shall be followed, except as otherwise provided in Section 13.40.070:

1. A warning shall be issued by a NCO to the person responsible for the violation.
2. If the violation persists following the warning or recurs within an eight-hour period, the person responsible shall be in violation of this chapter.

D. The factors which will be considered in determining whether a violation of the provisions of this chapter exists shall include, but not be limited to, the following:

1. The sound level of the alleged objectionable noise.
2. The sound level of the ambient noise.
3. The proximity of the noise to residential sleeping facilities.
4. The nature and zoning of the area within which the noise emanates.
5. The number of persons affected by the noise source.
6. The time of day or night the noise occurs.
7. The duration of the noise and its tonal quality.

E. If a NCO investigates a noise complaint and finds the noise level to have been mitigated to the extent technically and economically feasible, after balancing (1) the number of decibels and the amount of time the offending noise exceeds the allowed limit, (2) the number of persons affected, and (3) the cost of reducing the decibels or amount of time to come into compliance this chapter, the EHD may deem the noise level to be in compliance with this chapter. Such determination may be appealed to the City Manager within 30 days of the decision. (Ord. 7122-NS § 3, 2009: Ord. 5500-NS § 1 (part), 1982)

Section 13.40.040 Noise measurement procedure.

Upon receipt of two non-anonymous citizen noise complaints in a commercial area or regarding any event, or upon receipt of one non-anonymous citizen noise complaint in all other areas, a NCO or other authorized agent of the City Manager, equipped with a sound level meter, shall investigate the complaint. Except as otherwise provided in this chapter, the investigation shall consist of a measurement and the gathering of data to adequately define the noise problem and shall include the following:

A. Non-Acoustic Data.

1. Type of noise source.
2. Location of noise source relative to complainant's property.
3. Time period during which noise source is considered by complainant to be intrusive.
4. Total duration of noise produced by noise source.
5. Date and time of noise measurement survey.

B. Noise Measurement Procedure. Utilizing the "A" weighting scale of sound level meter and the "slow" meter response, a NCO shall measure the sound level on the receiver's property. (Ord. 7122-NS § 4, 2009: Ord. 5500-NS § 1 (part), 1982)

Section 13.40.050 Exterior noise standards.

A. Maximum permissible sound levels shall be determined by the zoning district of the property subject to the noise, not the property from which the noise originates.

1. The noise standards for the various categories of land use in Table 13.40-1 or 13.40-2 shall, unless otherwise specifically indicated in other codes, apply to all such property within a designated zone.

2. No person shall operate or cause to be operated any source of sound at any location within the incorporated City or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which causes the sound level when measured on any other property to exceed:

a. The noise standard for that land use as specified in Table 13.40-1 for a cumulative period of more than 30 minutes in any hour; or

b. The noise standard for that land use as specified in Table 13.40-1 plus 5 dBA for a cumulative period of more than 15 minutes in any hour; or

c. The noise standard for that land use as specified in Table 13.40-1 plus 10 dBA for a cumulative period of more than 5 minutes in any hour; or

d. The noise standard for that land use as specified in Table 13.40-1 plus 15 dBA for a cumulative period of more than 1 minute in any hour; or

e. The noise standard for that land use as specified in Table 13.40-1 plus 20 dBA for any period of time.

Table 13.40-1
EXTERIOR NOISE LIMITS
(Levels not to be exceeded more than 30 minutes any hour)

Zoning District	Time Period	Noise Level (dBA)
R-1, R-2, R-1A, R-2A, and ESR	7:00 a.m. – 10:00 p.m. 10:00 p.m. – 7:00 a.m.	55 45
R-3 and above	7:00 a.m. – 10:00 p.m. 10:00 p.m. – 7:00 a.m.	60 55
Commercial	7:00 a.m. – 10:00 p.m. 10:00 p.m. – 7:00 a.m.	65 60
Industry	Anytime	70

3. If the measured ambient noise level is greater than the level permissible within any of the noise limit categories above, the sound level when measured on any other property shall not exceed:

a. The ambient noise level for a cumulative period of more than 30 minutes in any hour; or

b. The ambient noise level plus 5 dBA for a cumulative period of more than 15 minutes in any hour; or

c. The ambient noise level plus 10 dBA for a cumulative period of more than 5 minutes in any hour; or

d. The ambient noise level plus 15 dBA for a cumulative period of more than 1 minute in any hour; or

e. The ambient noise level plus 20 dBA for any period of time.

4. If the measurement location is on a boundary between two different zones, the sound level limit applicable to the quieter noise zone shall apply.

5. If possible, the ambient noise level may be measured at the same location along the property line utilized in subsection A.2 of this section with the alleged offending noise source inoperative. If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be measured, the ambient noise level may be determined by traveling away from the noise source to a point where a steady state decibel reading is achieved. If this test is not possible, the noise level measured while the source is in operation shall be compared directly to the noise level standards.

B. The classification of additional areas of the community not listed in Table 13.40-1 in terms of environmental noise zones shall be determined by the EHD. Industrial noise limits are intended primarily for use at the boundary of industrial zones rather than for noise reduction within the zone. (Ord. 7122-NS § 5, 2009: Ord. 5500-NS § 1 (part), 1982)

Section 13.40.060 Interior noise standards.

A. Maximum Permissible Dwelling Interior Sound Levels.

1. The interior noise standards for multi-family residential dwellings as presented in Table 13.40-2 shall apply, unless otherwise specifically indicated in other codes, within all such dwellings with windows in their normal seasonal configuration.

Table 13.40-2
INTERIOR NOISE LIMITS

Zoning District	Time Interval	Allowable Interior Noise Level (dBA)
All	10:00 p.m. – 7:00 a.m. 7:00 a.m. – 10:00 p.m.	40 45

2. No person shall operate or cause to be operated within a multi-family dwelling unit any source of sound or allow the creation of any noise which causes the sound level when measured inside a neighboring dwelling unit to exceed:

a. The noise standard as specified in Table 13.40-2 for a cumulative period of more than 5 minutes in any hour; or

b. The noise standard as specified in Table 13.40-2 plus five dBA for a cumulative period of more than one minute in any hour; or

c. The noise standard as specified in Table 13.40-2 plus 10 dBA for any period of time.

3. If the measured ambient noise level is greater than the level permissible within any of the noise limit categories above, the sound level when measured on the other property shall not exceed:

a. The ambient noise level for a cumulative period of more than 5 minutes in any hour; or

b. The ambient noise level plus 5 dBA for a cumulative period of more than 1 minute in any hour; or

c. The ambient noise level plus 10 dBA for any period of time. (Ord. 7122-NS § 6, 2009: Ord. 5500-NS § 1 (part), 1982)

Section 13.40.070 Prohibited acts.

Only the warning in Section 13.40.030.C (the warning procedure) must be given and disobeyed for a violation of subsection A of this section, or subsection B.3 of this section (raucous yelling), subsection B.4 of this section (street sales), subsection B.5 of this section (animal noise), or subsection B.8 of this section (vibration) to arise.

Both the warning procedure and the measurement procedure in Section 13.40.040 (the measurement procedure) must be conducted for a violation of subsection B.1 of this section (sound devices), subsection B.2 of this section (amplified sound), subsection B.6 of this section (loading/unloading), subsection B.7 of this section (construction/demolition), subsection B.9 of this section (model vehicles), or subsection B.11 of this section (power tools) to arise.

Neither the warning procedure nor the measurement procedure must be conducted for a violation of subsection B.10 of this section (emergency tests), subsection B.13 of this section (tampering), or subsection B.14 of this section (gas leaf blowers) to arise.

Only the measurement procedure must be conducted for a violation of subsection B.12 of this section (loud clubs without signs) to arise.

A. Noise Disturbances Prohibited. No person shall unnecessarily make, continue, or cause to be made or continued, any noise disturbance prohibited by Section 13.40.030.A that is not otherwise specifically listed in subsection B of this section.

B. Specific Prohibitions. The following acts, and the causing or permitting thereof, are declared to be in violation of this chapter:

1. Radios, Television Sets, Musical Instruments and Similar Devices. Operating, playing or permitting the operation or playing of any radio, television set, phonograph, drum, musical instrument, or similar device which produces or reproduces sound in such a manner as to violate the provisions of Section 13.40.050 or 13.40.060, except for sound levels for which a variance or permit has been issued by the EHD.

2. Loudspeakers (Amplified Sound) Not Associated With an Event. Using or operating for any purpose any loudspeaker, loudspeaker system, or similar device, such that the sound therefrom violates the provisions of

Section 13.40.050 or 13.40.060, except for sound levels for which a variance or permit has been issued by the EHD.

3. Yelling, Shouting. Loud or raucous yelling, shouting, whistling, or singing so as to cause a noise disturbance is hereby prohibited.

4. Street Sales. The solicitation, sale, or advertising of any product or service by shouting or outcry within any residential or commercial area or noise sensitive zone of the City except by variance issued by the EHD. The provisions of this subsection shall not be construed to prohibit the selling by outcry of merchandise, food, or beverages at licensed sporting events, parades, fairs, circuses, or other similar licensed public entertainment events for which a permit has been issued.

5. Animals. Keeping or maintaining, or permitting to be kept or maintained, upon any premises owned, occupied, or controlled by any person of any animal or animals, which by any frequent or long continued noise shall cause annoyance or discomfort to two or more reasonable persons of normal sensitiveness who reside in separate residences (including apartments and condominiums). However, a NCO or his or her agent may proceed on the basis of a complaint of only one person, if circumstances are determined to exist whereby a noise disturbance caused by an animal affects only one individual. Any noise which is audible continuously for 10 minutes or intermittently for 30 minutes shall be prima facie evidence of such annoyance or discomfort. Factors which can be used to evaluate excessive animal noise include but are not limited to (a) pitch, (b) pattern, and (c) frequency of occurrence. This subsection may be enforced by an Animal Control Officer.

6. Loading and Unloading. Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, or similar objects between the hours of ten p.m. and seven a.m. such that the sound therefrom across a residential real property line violates the provisions of Section 13.40.050 or 13.40.060.

7. Construction/Demolition.

a. Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work before 7:00 a.m. on a weekday (or before 9:00 a.m. on a weekend or holiday) or after 7:00 p.m. on a weekday (or after 8:00 p.m. on a weekend or holiday) such that the sound therefrom across a residential or commercial real property line violates Section 13.40.050 or 13.40.060, except for emergency work of public service utilities or by variance issued by the EHD. (This section shall not apply to the use of domestic power tools as specified in subsection B.11 of this section.)

b. Noise Restrictions at Affected Properties. Where technically and economically feasible, construction activities shall be conducted in such a manner that the maximum sound levels at affected properties will not exceed those listed in the following schedule:

AT RESIDENTIAL PROPERTIES: Mobile Equipment. Maximum sound levels for nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment:

Table 13.40-3

	R-1, R-2 Residential	R-3 and above Multi-Family Residential	Commercial/Industrial
Weekdays 7:00 a.m. to 7:00 p.m.	75 dBA	80 dBA	85 dBA
Weekends 9:00 a.m. to 8:00 p.m. and legal holidays	60	65	70

Stationary Equipment. Maximum sound levels for repetitively scheduled and relatively long term operation (period of 10 days or more) of stationary equipment:

Table 13.40-4

	R-1, R-2 Residential	R-3 and above Multi-Family Residential	Commercial/Industrial
Weekdays 7:00 a.m. to 7:00 p.m.	60 dBA	65 dBA	70 dBA
Weekends 9:00 a.m. to 8:00 p.m. and legal holidays	50	55	60

8. Vibration. Operating or permitting the operation of any device that creates a vibration, which annoys or disturbs at least two or more reasonable persons of normal sensitiveness who reside in separate residences (including apartments and condominiums) at or beyond the property boundary of the source, if on private property, or at least 150 feet (46 meters) from the source, if on a public space or public right-of-way.

9. Powered Model Vehicles. Operating or permitting the operation of powered model vehicles such that the sound therefrom across a residential or commercial real property line violates the provisions of Sections 13.40.050 or 13.40.060.

10. Emergency Signaling Devices.

a. The intentional sounding or permitting the sounding outdoors of any fire, burglar, or civil defense alarm, siren, whistle, or similar stationary emergency signaling device, except for emergency purposes or for testing, as provided in subsection B.10.b of this section.

b. i. Testing of a stationary emergency signaling device shall not occur before 7:00 a.m. or after 7:00 p.m. Any such testing shall use only the minimum cycle test time. In no case shall such test time exceed 60 seconds.

ii. Testing of the complete emergency signaling system, including the functioning of the signaling device, and the personnel response to the signaling device, shall not occur more than once in each calendar month. Such testing shall not occur before 7:00 a.m. or after 10:00 p.m. The time limit specified in subsection B.10.b.i of this section shall not apply to such complete system testing.

c. Sounding or permitting the sounding of any exterior burglar or fire alarm or any motor vehicle burglar alarm, unless such alarm is terminated within 15 minutes of any single security violation or false alarm.

11. Domestic Power Tools, Machinery.

a. Operating or permitting the operation of any mechanically powered saw, sander, drill, grinder, lawn or garden tool, or similar tool before 7:00 a.m. on a weekday (or before 9:00 a.m. on a weekend or holiday) or after 7:00 p.m. on a weekday (or after 8:00 p.m. on a weekend or holiday) such that the sound therefrom across a residential or commercial real property line violates Section 13.40.050 or 13.40.060.

b. Any motor, machinery, pump, such as swimming pool equipment, etc., shall be sufficiently enclosed or muffled and maintained so as not to create a Noise Disturbance in accordance with Section 13.40.050 or 13.40.060.

12. Places of Public Entertainment. Operating or permitting the operation or playing of any loudspeaker, musical instrument, motorized racing vehicle, or other source of sound in any place of public entertainment that exceeds 95 dBA as read on the scale of a sound level meter at any point normally occupied by a customer, without a conspicuous and legible sign stating: "WARNING! SOUND LEVELS WITHIN MAY CAUSE HEARING IMPAIRMENT."

13. Tampering. The removal or rendering inoperative, other than for purposes of maintenance, repair, or replacement, of any noise control device or element thereof, of any product required to meet specified noise emission limits under federal, state, or local law, and the use of said product after its noise control device has been removed or rendered inoperative, other than for purposes of maintenance, repair, or replacement.

14. Notwithstanding subsection B.11 of this section, it shall be unlawful for any person, including any City employee, to operate any portable machine powered with a gasoline engine used to blow leaves, dirt, and other debris off sidewalks, driveways, lawns, or other surfaces within the City limits.

a. Notice of this prohibition shall be posted in all stores selling such gasoline powered machines within the City limits. (Ord. 7122-NS § 7, 2009: Ord. 6026-NS § 1, 1990: Ord. 5500-NS § 1 (part), 1982)

Section 13.40.080 Special provisions--Exemptions.

The following are exempt from the provisions of this chapter:

A. Emergency Exemption. The provisions of this chapter shall not apply to:

1. The emission of sound for the purpose of alerting persons to the existence of an emergency; or

2. The emission of sound in the performance of emergency work.

B. Warning Devices. Warning devices necessary for the protection of public safety, as for example, police, fire and ambulance sirens, and train horns, shall be exempted from the provisions of this chapter.

C. If a permit for an event allows sound levels that are louder than the limits specified in Section 13.40.050 or 13.40.060, or time periods for sound levels that are longer than the limits specified in this chapter, then the sound levels and time periods in the permit shall apply.

D. There may be instances, especially in existing older buildings, where compliance with the noise standards set forth in this chapter may not be economically or technically feasible, and therefore, the EHD may grant administrative exceptions to those standards on a case-by-case basis after balancing (1) the number of decibels and the amount of time the offending noise exceeds the allowed limit, (2) the number of persons affected,

and (3) the cost of reducing the decibels or amount of time to come into compliance with this chapter. Such determination may be appealed to the City Manager within 30 days of the decision. (Ord. 7122-NS § 8, 2009: Ord. 5500-NS § 1 (part), 1982)

Section 13.40.090 Issuance of variances by the NCO.

The creation of any noise which exceeds the standards specified in this chapter that is not otherwise exempt requires the issuance of a variance. The EHD shall evaluate all applications for variances from the requirements of this chapter and may grant said variances with respect to time for compliance, subject to such terms, conditions, and requirements as it may deem reasonable to achieving compliance with the provisions of this chapter. Each such variance shall set forth in detail the approved method of achieving compliance and a time schedule for its accomplishment. If in the judgment of the EHD the time for compliance cannot be reasonably determined, a variance to cause the noise may be issued for a period not to exceed three years. In determining the reasonableness of the terms of any proposed variance, the EHD shall consider the magnitude of nuisance caused by the offensive noise, the uses of property within the area of impingement by the noise, operations carried on under existing nonconforming rights or conditional use permits or zoning variances, the time factors related to study, design, financing and construction of remedial work, the economic factors related to age and useful life of the equipment and the general public interest and welfare.

A. Any person seeking a variance pursuant to this section shall file an application with the EHD. The application shall contain information which demonstrates that bringing the source of sound or activity for which the variance is sought into compliance with this chapter would constitute an unreasonable hardship on the applicant, or the community, or on other persons.

A separate application shall be filed for each noise source; provided, however, that several mobile sources are under common ownership, or several fixed sources on a single property may be combined into one application. Notice of an application for variance shall be posted for 12 working days in the area of the proposed variance, which notice shall state the last the day to file an objection to the variance. If an individual who claims to be adversely affected by allowance of the variance files a written objection by the deadline provided in the notice with the EHD objecting to the proposed variance, the EHD will facilitate discussion with the applicant to mitigate that individual's concerns. Any late written objections shall be taken into consideration for future events.

B. In determining whether to grant or deny the application, the EHD shall balance the hardship on the applicant, the community, and other persons of not granting variance against the adverse impact on the health, safety, and welfare of persons affected, and any other adverse impacts of granting the variance. Applicants for variances and persons contesting variances may be required to submit such information as the EHD may reasonably require. In granting or denying an application, the EHD shall keep on public file a copy of the decision and the reasons for denying or granting the variance.

C. Variances shall be granted by notice to the applicant containing all necessary conditions, including a time limit on the permitted activity. The variance shall not become effective until all conditions are agreed to by the applicant. Noncompliance with any condition of the variance shall terminate the variance and subject the person holding it to those provisions of this chapter. (Ord. 7122-NS § 9, 2009: Ord. 5500-NS § 1 (part), 1982)

Section 13.40.100 Permits--Outdoor amplified sound.

A. Applications. Any person(s) or organization(s) wishing to use amplified sound outdoors for an event must obtain a permit for the amplified sound from the EHD. In evaluating the application, the EHD shall consider the following factors in addition to additional criteria the EHD may adopt:

Factors:

1. Time and duration (if any) of event.
2. Location or route of event.
3. Anticipated number of people in attendance.
4. Number of people to be affected by the event.
5. Magnitude of noise.
6. Provisions of the organization to deal with complaints received.
7. Provisions of the organization for admitting people to the event.
8. Provisions of the organization for crowd control, disabled access, pedestrian access, and vehicle access.
9. Past compliance and noncompliance with the provisions of this chapter and previous permits granted to the organization.

10. That on private property there have been no more than seven permits for outdoor or indoor amplified sound granted for the location applied for within that calendar year or any such permit granted for an event taking place at the location within 30 days of the requested date.

11. That on public property no more than one permit be issued for the location in any one day.

This application will be due to the EHD no less than 30 days before the intended date of the event, unless the proposed event is in response to an occurrence whose timing did not reasonably allow the applicant to file a timely application and the imposition of this time limitation would place an unreasonable restriction on free speech. An application must be on a form provided by the City and shall include the names, addresses, phone numbers, and photo identification of all persons who are or will be responsible for the conduct of the event. The application will be denied if the information contained in the application, including supplemental information, if any, is found to be false in any material respect, the applicant fails to meet the City requirements for a permit, or Factors 10 or 11 above apply.

B. Contents of Permits and Conditions. An amplified sound permit may impose reasonable time, place, and manner conditions such that the proposed sound will not pose a traffic or safety hazard, interfere with fire or police protection services, or unreasonably interfere with pedestrian or vehicular use of the public right-of-way. All amplified sound permits shall be subject to the following conditions:

1. The only amplified sounds permitted shall be either music or human speech, or both;

2. Sound amplification equipment on private property shall not be utilized in any location for a period in excess of 4 hours in any 24-hour period;

3. Sound amplifying equipment when associated with an approved event permit shall be used upon public property for the duration of the event and only between the hours of 10:00 a.m. and 8:00 p.m., except as may be permitted pursuant to other provisions of this code, such as Section 13.40.080, and upon private property only between the hours of 10:00 a.m. and 8:00 p.m.;

4. Speakers for outdoor sound amplification equipment shall be directed, to the extent feasible toward open or unoccupied space and away from residentially occupied property;

5a. The sound emanating from sound amplifying equipment on private property shall not exceed 15 dBA above the ambient noise level measured at the exterior of any dwelling unit located on any residential property; and in no case to exceed 65 dBA at the exterior of any such building;

5b. On public property such sound may not exceed 15 dBA above the ambient noise level measured at any point 50 feet from the sound amplifying equipment. The EHD may allow higher limits upon a showing that an expected audience cannot be effectively communicated to within the above limits;

6. In any event, the volume of sound shall be so controlled that it will not be unreasonably loud, raucous, jarring, disturbing or a nuisance to reasonable persons of normal sensitiveness within the area of audibility;

7. Such other terms as may be necessary to ensure compliance with the provisions of this chapter;

8. The organization must provide the EHD with the names of two people who will be in attendance at all times and have the authority to deal with a NCO or the police in response to complaints and/or violations;

9. The permittee shall carry the permit during the proposed event and show it, upon demand, to any City employee authorized to enforce this chapter;

10. All sound equipment must be kept in locations that comply with the location and size requirements of Section 14.48.170.

C. The EHD may require the applicant to distribute flyers throughout the surrounding area in advance of the proposed event, notifying the affected residents and business people of the proposed event.

D. A NCO may summarily terminate the permit after a warning, if the activity for which the permit is issued results in violations of any applicable laws or regulations.

E. A violation of any permit conditions is a violation of this chapter.

F. The EHD may issue additional regulations to further the purposes of this section. (Ord. 7122-NS § 10, 2009: Ord. 5500-NS § 1 (part), 1982)

Section 13.40.110 Permits--Indoor amplified sound.

For indoor amplified sound, a person or organization may apply for a permit from the EHD pursuant to Section 13.40.100 of this chapter, if sound levels will violate the standards set forth in Section 13.40.030, 13.40.050 or 13.40.060; provided, however, that such a permit will be subject to all of the applicable conditions listed in Section 13.40.100.

All indoor amplified sound will otherwise be subject to the sound levels stated in Sections 13.40.030, 13.40.050 and 13.40.060.

If there is reason to believe that any indoor amplified sound may be of a prolonged or disturbing nature, the person(s) or organization(s) responsible shall notify all residents within a 50-foot area at least 5 days prior to the incident of the time and date of the activity and whom to contact in case of a complaint. (Ord. 7122-NS § 11, 2009: Ord. 5500-NS § 1 (part), 1982)

Section 13.40.115 Permissible levels for entertainment establishments.

An entertainment establishment may exceed the sound level limits in this chapter by no more than five decibels higher than either the applicable standard or the ambient noise level, whichever is higher, and may deviate from the time restrictions set forth in this chapter, if the applicable use permit so provides. (Ord. 7122-NS § 12, 2009)

Section 13.40.120 Appeals.

Any person directly affected by the noise and/or the applicant who is aggrieved by approval or disapproval of a variance or permit by the EHD may appeal in writing to the City Manager no less than 72 hours prior to the anticipated exercise of the variance or permit. The City Manager shall consider the appeal as soon as possible. The City Manager shall provide written notice of his or her decision to the appellant. The City Manager's decision shall be final. (Ord. 7122-NS § 13, 2009: Ord. 5500-NS § 1 (part), 1982)

Section 13.40.130 Fees.

A. The City Council may establish by resolution the fees that shall be charged for permits issued under this chapter.

B. Any indigent person who cannot afford to pay the permit fees may apply for a fee waiver accompanied by such relevant information and documentation as is reasonably necessary to verify indigence. For purposes of this section, an indigent person is one who is eligible for County relief pursuant to Section 17000 et seq. of the Welfare and Institutions Code.

C. This section shall not limit the EHD from recovering all costs associated with sound surveys and complaint investigations pursuant to the fee resolution. (Ord. 7122-NS § 14, 2009)

17.120.050 - Noise.

All activities shall be so operated that the noise level inherently and regularly generated by these activities across real property lines shall not exceed the applicable values indicated in Subsection A., B., or C. as modified where applicable by the adjustments indicated in Subsection D. or E. Further noise restrictions are outlined in Section 8.18.010 of the Oakland Municipal Code.

A. Residential Zone Noise Level Standards. The maximum allowable noise levels received by any Residential Zone are described in Table 17.120.01.

Table 17.120.01 establishes the maximum allowable receiving noise levels:

TABLE 17.120.01

MAXIMUM ALLOWABLE RECEIVING NOISE LEVEL STANDARDS, RESIDENTIAL AND CIVIC

Cumulative Number of Minutes in Either the Daytime or Night time One Hour Time Period	Daytime 7 a.m. to 10 p.m.	Nighttime 10 p.m. to 7 a.m.
20	60	45
10	65	50
5	70	55
1	75	60
0	80	65

B. Commercial Noise Level Standards. The maximum allowable noise levels received by any land use activity within any Commercial Zone (including the Housing and Business Mix HBX Zones, and the Central Estuary District D-CE-3 and D-CE-4 Zones) are described in Table 17.120.02.

Table 17.120.02 establishes the maximum allowable receiving noise levels:

TABLE 17.120.02

MAXIMUM ALLOWABLE RECEIVING NOISE LEVEL STANDARDS

Cumulative Number of Minutes in Either the Daytime or Nighttime One Hour Time Period	Anytime
20	65
10	70
5	75
1	80
0	85

C. Industrial, Agricultural and Extractive Noise Level Standards. The maximum allowable noise levels received by any land use activity within any Industrial Zone are described in Table 17.120.03.

Table 17.120.03 establishes the maximum allowable receiving noise levels:

TABLE 17.120.03

MAXIMUM ALLOWABLE RECEIVING NOISE LEVEL STANDARDS, dBA

Cumulative Number of Minutes in Any One Hour Time Period	Anytime
20	70
10	75
5	80
1	85
0	90

D. In the event the measured ambient noise level exceeds the applicable noise level standard in any category above, the stated applicable noise level shall be adjusted so as to equal the ambient noise level.

E. Each of the noise level standards specified above in Subsections A., B., and C. shall be reduced by five (5) dBA for a simple tone noise such as a whine, screech, or hum, noise consisting primarily of speech or music, or for recurring impulse noise such as hammering or riveting.

F. Noise Measurement Procedures. Utilizing the "A" weighing scale of the sound level meter and the "slow" meter response (use "fast" response for impulsive type sounds), the noise level shall be measured at a position or positions at any point on the receiver's property. In general, the microphone shall be located four (4) to five (5) feet above the ground; ten (10) feet or more from the nearest reflective surface, where possible. However, in those cases where another elevation is deemed appropriate, the latter shall be utilized. If the noise complaint is related to interior noise levels, interior noise measurements shall be made within the affected residential unit. The measurements shall be made at a point at least four (4) feet from the wall, ceiling or floor nearest the noise source, with windows in the normal seasonal configuration.

G. Temporary Construction or Demolition Which Exceed the Following Noise Level Standards.

1. The daytime noise level received by any Residential, Commercial, or Industrial land use which is produced by any nonscheduled, intermittent, short-term construction or demolition operation (less than ten (10) days) or by any repetitively scheduled and relatively long-term construction or demolition operation (ten (10) days or more) shall not exceed the maximum allowable receiving noise levels described in Table 17.120.04.

Table 17.120.04 establishes the maximum allowable receiving noise levels:

TABLE 17.120.04

MAXIMUM ALLOWABLE RECEIVING NOISE LEVEL STANDARDS, dBA

	Daily 7 a.m. to 7 p.m.	Weekends 9 a.m. to 8 p.m.
Short-Term Operation		
Residential	80	65

Commercial, Industrial	85	70
Long-Term Operation		
Residential	65	55
Commercial, Industrial	70	60

2. The nighttime noise level received by any land use and produced by any construction or demolition activity between weekday hours of seven (7) p.m. and seven (7) a.m. or between eight (8) p.m. and nine (9) a.m. on weekends and federal holidays shall not exceed the applicable nighttime noise level standards outlined in this Section.

H. Residential Air Conditioning Units and Refrigeration Systems. The exterior noise level associated with a residential air conditioning unit or refrigeration systems shall not exceed fifty (50) dBA, with the exception that systems installed prior to the effective date of this Section shall not exceed fifty-five (55) dBA.

I. Commercial Refrigeration Units. Stationary and mobile commercial refrigeration units shall not produce a noise level greater than the noise level standards set forth in this Section. Between the hours of ten (10) p.m. and seven (7) a.m., a mobile refrigeration unit shall not be located within two hundred (200) feet of any Residential Zone boundary unless such unit is within an enclosure which reduces the noise level outside the enclosure to no more than sixty (60) dBA and reduces vibration to a level below the vibration perception threshold set forth in Section 17.120.060.

J. Commercial Exhaust Systems. Unnecessary noise caused by exhaust from ventilation units, or other air control device shall not produce a noise level greater than the noise level standards set forth in this Section between the hours of ten p.m. and seven a.m. and shall not be located within two hundred (200) feet of any Residential Zone boundary unless such unit is within an enclosure which reduces the noise level outside the enclosure to no more than sixty (60) dBA and reduces vibration to a level below the vibration perception threshold set forth in Section 17.120.060.

(Ord. No. 13357, § 3(Exh. A), 2-16-2016; Ord. No. 13302, § 5(Exh. C), 4-21-2015; Ord. No. 13251, § 5(Exh. A), 7-29-2014; Ord. No. 13172, § 3(Exh. A), 7-2-2013; Ord. No. 13168, § 5(Exh. A-2), 6-18-2013; Ord. 12875 § 2(part), 2008; Ord. 12872 § 4 (part), 2008; Ord. 11895 § 7, 1996: prior planning code § 7710)

17.120.060 - Vibration.

All activities, except those located within the M-40 Zone, the D-CE-1, D-CE-2, D-CE-5, or D-CE-6 Zones, or in the D-CO, IG, M-30, or CIX Zones more than four hundred (400) feet from any Residential Zone boundary, shall be so operated as not to create a vibration which is perceptible without instruments by the average person at or beyond any lot line of the lot containing such activities. Ground vibration caused by motor vehicles, trains, and temporary construction or demolition work is exempted from this standard.

(Ord. No. 13302, § 5(Exh. C), 4-21-2015; Ord. No. 13251, § 5(Exh. A), 7-29-2014; Ord. No. 13168, § 5(Exh. A-2), 6-18-2013; Ord. 12875 § 2(part), 2008; Ord. 11895 § 8, 1996: prior planning code § 7711)

CONSTRUCTION NOISE AND VIBRATION CALCULATIONS

Project: Anchor House: Architectural Damage

Pile Driving Analysis	FTA Reference PPV at 25 Feet 25	SR to North, ft 65	SR to East, ft 150	SR to South, ft 100	SR to West, ft 60
Pile Driving (impact upp	1.518	0.362	0.103	0.190	0.408
Vibratory Roller	0.21	0.050	0.014	0.026	0.056
Clam shovel	0.20	0.048	0.014	0.025	0.054
Hoe Ram	0.089	0.021	0.006	0.011	0.024
Large Bulldozer	0.089	0.021	0.006	0.011	0.024
Caisson Drilling	0.089	0.021	0.006	0.011	0.024
Loaded Trucks	0.076	0.018	0.005	0.010	0.020
Jackhammer	0.035	0.008	0.002	0.004	0.009
Small Bulldozer	0.003	0.001	0.000	0.000	0.001

Screening Distances

Equipment Type	FTA Reference PPV at 25 Feet 25	Distance at which 0.20 in/sec PPC occurs	PPV Output per Equipment	Distance at which 0.12 in/sec PPC occurs	PPV Output per Equipment
Pile Driving	1.52	97	0.20	136	0.12
Vibratory Roller	0.21	26	0.20	37	0.12
Caisson Drilling	0.089	15	0.19	21	0.12
Large Bulldozer	0.089	15	0.19	21	0.12

Project: Anchor House Construction Noise Calcs

Activity Phase**	RCNM Outputs, dBA Lmax, at 50 feet	Noise Level at senstive Receptors to North (65 feet)	Noise Level at senstive Receptors to East (100 feet)	Noise Level at senstive Receptors to South (100 feet)	Noise Level at senstive Receptors to West (60 feet)
Pile Driving	101	99	95	95	99
Demolition	90	88	84	84	88
Grading	85	83	79	79	83

Project: Anchor House Vibration Annoyance

Building Construction/Other Equipment	FTA Reference VdB	VdB N	VdB E	VdB W	Screening distances (ft) for 72 VdB	VdB level	Screening distances (ft) for 65 VdB	VdB level
feet	*25*	*180*	*230*	*140*				
Vibratory Roller	94	68	65	72	140	72	230	65
Hoe Ram	87	61	58	65	80	72	140	65
Large Bulldozer	87	61	58	65	80	72	140	65
Caisson Drilling	87	61	58	65	80	72	140	65
Loaded Trucks	86	60	57	64	75	72	130	65
Jackhammer	79	53	50	57	42	72	75	65
Small Bulldozer	58	32	29	36	9	72	15	65

feet	*25*	*65*	*150*	*60*				
Pile Driver	112	100	89	101	520	72	890	65

Project: People's Park Architectural Damage

Pile Driving Analysis	FTA Reference PPV 25	SR to North, ft 75	SR to East, ft 93	SR to East, ft 100	SR to South, ft 225	SR to South, ft 250	SR to West, ft 55
Pile Driving (impact upp	1.518	0.292	0.212	0.190	0.056	0.0480	0.465

Grading	FTA Reference PPV 25	SR to North, ft 50	SR to East, ft 95	SR to South, ft 50	SR to West, ft 10
Large Bulldozer	0.089	0.031	0.012	0.031	0.352
Small Bulldozer	0.003	0.001	0.000	0.001	0.012

Screening Distances

Equipment Type	FTA Reference PPV 25	Distance at which 0.20 in/sec PPC	PPV Output per Equipment	Distance at which 0.12 in/sec PPC	PPV Output per Equipment
Vibratory Roller	1.52	97	0.20	136	0.12
Hoe Ram	0.202	25	0.20	25	0.20
Large Bulldozer	0.21	26	0.20	37	0.12
Loaded Trucks	0.089	15	0.19	15	0.19
Large Bulldozer	0.089	15	0.19	21	0.12

Project: People's Park Construction Noise Calcs

Pile Driving		RCNM Reference	dBA Lmax N	dBA Lmax E	dBA Lmax S	dBA Lmax W	Screening distances	Screening distances
	feet	*50*	*67*	*85*	*230*	*55*	*1000*	*3000*
Impact Pile Driver		101	98	96	88	100	75	65

Paving		RCNM Reference	dBA Lmax N	dBA Lmax E	dBA Lmax S	dBA Lmax W	Screening distances	Screening distances
	feet	*50*	*160*	*500*	*230*	*50*	*150*	*480*
Vibratory Roller		85	75	65	72	85	75	65

Grading		RCNM Reference	dBA Lmax N	dBA Lmax E	dBA Lmax S	dBA Lmax W	Screening distances	Screening distances
	feet	*50*	*180*	*270*	*180*	*230*	*230*	*480*
Grader		85	74	70	74	72	72	65

Project: People's Park Vibration Annoyance Calcs

Pile Driving	FTA Reference VdB	VdB N	VdB E	VdB S	VdB W	Screening distances
feet	*25*	*67*	*85*	*230*	*55*	*520*
Impact Pile Driver	112	99	96	83	102	72

Paving	FTA Reference VdB	VdB N	VdB E	VdB S	VdB W	Screening distances
feet	*25*	*160*	*500*	*230*	*10*	*240*
Vibratory Roller	94	70	55	65	106	65

Grading	FTA Reference VdB	VdB N	VdB E	VdB S	VdB W	Screening distances
feet	*25*	*180*	*270*	*180*	*230*	*140*
Large Bulldozer	87	61	56	61	58	65
Small Bulldozer	58	32	27	32	29	36

Screening Distances

Pile Driving	FTA Reference VdB, ft	Screening Distance, ft	VdB	Screening Distance, ft	VdB
	25	--	*for 72 VdB*	*for 65 VdB*	--
Pile Driving	112	520	72	890	65
Vibratory Roller	94	140	72	240	65
Caisson Drilling	87	80	72	140	65
Large Builldozer	87	80	72	140	65

STATIONARY NOISE CALCULATIONS

Project: Anchor House Stationary Noise Calcs

HVAC Attenuation Supportive Housing Building	Distance to reciever	Attenuated dBA**	5 dBA attenuation with Parapet Wall
receptors to north	70	45	40
receptors to east	105	41	36
receptors to south	120	40	35
receptors to west	70	45	40

*** Based on reference noise level of 72 dBA at 3 feet*

Attenuation calculated through Inverse Square Law: Lp(R2) = Lp(R1) - 20Log(R2/R1)

Project: People's Park Stationary Noise Calcs

HVAC Attenuation Supportive Housing Building	Distance to reciever, ft	Attenuated dBA**	5 dBA attenuation with Parapet Wall
receptors to west	48	48	43
receptors to north	50	48	43
receptors to south	85	43	38

HVAC Attenuation Student Housing Building - East and West Wing	Distance to reciever, ft	Attenuated dBA**	5 dBA attenuation with Parapet Wall
receptors to north	182	36	31
receptors to east	194	36	31

HVAC Attenuation Student Housing - South Wing	Distance to reciever, ft	Attenuated dBA**	5 dBA attenuation with Parapet Wall
receptors to south	87	43	38

*** Based on reference noise level of 72 dBA at 3 feet*

Attenuation calculated through Inverse Square Law: Lp(R2) = Lp(R1) - 20Log(R2/R1)

TRAFFIC NOISE INCREASE CALCULATIONS

Traffic Noise Calculator: FHWA 77-108 **UCB-01 LRDP: Existing**

	Output						Inputs													Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour																	
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	Segment	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever	Ground Absorption	Lane Distance
1	52.6	55.0	55.7	6	12	26	Addison Street	Shattuck Avenue to Oxford Street	1,870	25	0.0%	97.8%	0.0%	2.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
2	60.4	62.8	63.5	18	40	86	Adeline Street	Ashby Avenue to Martin Luther King Junior Way	15,560	25	0.0%	96.4%	3.3%	0.3%	78.1%	13.7%	8.1%	4	Soft	50	0.5	44
3	65.5	67.9	68.5	40	86	186	Adeline Street	south of Alcatraz Avenue	43,230	25	0.0%	98.7%	0.0%	1.3%	78.7%	13.1%	8.2%	6	Soft	50	0.5	68
4	62.5	64.9	65.6	25	55	118	Adeline Street	Ward Street to Oregon Street	17,670	25	0.0%	98.0%	0.0%	2.0%	78.7%	13.1%	8.2%	6	Soft	50	0.5	68
5	60.0	62.4	63.1	17	37	80	Alcatraz Avenue	west of Adeline Street	14,900	25	0.0%	99.0%	0.0%	1.0%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
6	61.1	63.5	64.2	20	44	95	Alcatraz Avenue	west of College Avenue	10,540	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
7	61.5	63.9	64.6	22	47	101	Ashby Avenue	east of Adeline Street	18,360	25	0.0%	98.7%	0.0%	1.3%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
8	64.6	67.0	67.6	35	75	161	Ashby Avenue	west of San Pablo Avenue	22,660	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
9	58.8	61.2	61.9	14	31	67	Bancroft Way	College Avenue to Piedmont Avenue	3,000	25	0.0%	91.7%	0.0%	8.3%	78.7%	13.1%	8.2%	3	Soft	50	0.5	32
10	61.0	63.4	64.1	20	43	94	Bancroft Way	Bowditch Street to College Avenue	4,650	25	0.0%	91.0%	0.0%	9.0%	78.7%	13.1%	8.2%	3	Soft	50	0.5	32
11	61.6	65.2	65.8	26	57	122	Bancroft Way	Telegraph Avenue to Bowditch Street	5,910	25	0.0%	92.1%	0.0%	7.9%	68.6%	17.3%	14.1%	3	Soft	50	0.5	32
12	63.3	66.6	67.3	33	71	153	Bancroft Way	Dana Street to Telegraph Avenue	11,600	25	0.0%	94.4%	0.0%	5.6%	70.7%	16.7%	12.6%	3	Soft	50	0.5	32
13	63.0	65.4	66.1	27	59	127	Bancroft Way	Ellsworth Street to Fulton Street	10,690	25	0.0%	94.3%	0.0%	5.7%	78.7%	13.1%	8.2%	3	Soft	50	0.5	32
14	58.3	60.7	61.4	13	29	62	Bancroft Way	Shattuck Avenue to Fulton Street	4,250	25	0.0%	95.3%	0.0%	4.7%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
15	53.2	55.6	56.3	6	13	28	Berkeley Way	Shattuck Avenue to Fulton Street	1,230	25	0.0%	94.9%	0.0%	5.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
16	53.2	55.6	56.2	6	13	28	Bowditch Street	south of Bancroft Way	2,240	25	0.0%	98.0%	0.0%	2.0%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
17	55.6	58.0	58.7	9	19	41	Bowditch Street	south of Haste Street	2,980	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
18	55.9	57.8	58.5	9	18	40	Cedar Street	Shattuck Avenue to Milvia St	7,540	25	0.0%	99.4%	0.3%	0.3%	80.8%	13.3%	5.9%	2	Soft	50	0.5	20
19	52.1	54.5	55.2	5	11	24	Center Street	west of Oxford Street	1,300	25	0.0%	96.7%	0.0%	3.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
20	58.5	60.9	61.5	14	29	63	Channing Way	east of Shattuck Avenue	5,690	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
21	62.4	64.8	65.5	25	54	116	Claremont Avenue	north of Alcatraz Avenue	13,840	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
22	63.5	65.9	66.5	29	63	136	Claremont Boulevard	north of Russel Street	18,090	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
23	61.4	63.8	64.4	21	46	99	College Avenue	south of Alcatraz Avenue	11,170	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
24	54.2	56.6	57.2	7	15	33	College Avenue	south of Bancroft Way	3,060	25	0.0%	98.3%	0.0%	1.7%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
25	53.5	55.9	56.6	6	14	30	Dana Street	south of Bancroft Way	2,090	25	0.0%	97.4%	0.0%	2.6%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
26	55.6	58.0	58.6	9	19	41	Durant Avenue	east of Shattuck Avenue	2,900	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	3	Soft	50	0.5	32
27	54.6	57.0	57.6	7	16	35	Dwight Way	east of Seventh Street	3,000	25	0.0%	97.9%	0.0%	2.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
28	58.4	60.8	61.5	14	29	63	Dwight Way	east of Telegraph Street	5,650	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
29	62.0	64.4	65.0	23	50	108	Dwight Way	west of Telegraph Street	12,820	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
30	52.3	54.7	55.4	5	11	25	Ellsworth Street	south of Bancroft Way	2,440	25	0.0%	98.9%	0.0%	1.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
31	56.1	58.5	59.2	9	20	44	Euclid Avenue	north of Hearst Avenue	2,700	25	0.0%	95.7%	0.0%	4.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
32	61.6	64.0	64.6	22	47	102	Fulton Street	south of Bancroft Way	11,720	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
33	62.2	64.6	65.2	24	52	111	Gayley Road	north of University Drive	13,120	25	0.0%	96.7%	0.0%	3.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
34	62.2	64.6	65.3	24	52	112	Gayley Road	Stadium Rim Way to University Drive	13,250	25	0.0%	96.7%	0.0%	3.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
35	57.7	59.5	60.2	11	24	52	Gilman Street	Between Peralta Ave and Ordway St	11,640	25	0.0%	98.9%	1.0%	0.1%	82.2%	12.1%	5.7%	2	Soft	50	0.5	20
36	51.9	52.5	53.2	4	8	18	Grizzly Peak Boulevard	north of Euclid Avenue	2,840	25	0.0%	98.5%	1.3%	0.2%	89.7%	8.7%	1.6%	2	Soft	50	0.5	20
37	58.7	61.1	61.8	14	30	66	Haste Street	Bowditch Street to Telegraph Avenue	6,040	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
38	56.2	58.6	59.3	10	21	45	Hearst Avenue	east of Shattuck Avenue	8,860	25	0.0%	99.8%	0.0%	0.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
39	61.7	64.1	64.8	22	48	104	Hearst Avenue	west of Arch Street	12,100	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
40	63.5	65.9	66.6	30	64	137	Hearst Avenue	Euclid Avenue to Scenic Avenue	10,310	25	0.0%	93.0%	0.0%	7.0%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
41	63.0	65.4	66.1	27	59	127	Hearst Avenue	east of Le Roy Avenue	9,440	25	0.0%	93.3%	0.0%	6.7%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
42	70.3	72.7	73.3	83	179	387	I 580 NB On-Ramp	north of Gilman Street	9,920	65	0.0%	92.6%	0.0%	7.4%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
43	69.3	71.7	72.4	72	156	335	I 580 SB Off-Ramp	north of Gilman Street	11,000	65	0.0%	97.9%	0.0%	2.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
44	52.7	55.1	55.8	6	12	26	Kittredge Street	Shattuck Avenue to Fulton Street	2,980	25	0.0%	99.2%	0.0%	0.8%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
45	59.5	61.9	62.6	16	34	74	LaLoma Avenue	north of Hearst Avenue	7,250	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
46	50.2	52.6	53.3	4	8	18	Le Roy Avenue	north of Hearst Avenue	1,240	25	0.0%	98.3%	0.0%	1.7%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
47	64.8	67.1	67.8	36	77	165	Martin Luther King Jr W	Allston Way to Bancroft Way	23,860	25	0.0%	96.8%	0.0%	3.2%	79.1%	13.0%	7.8%	4	Soft	50	0.5	44
48	64.7	67.1	67.8	36	76	165	Martin Luther King Jr W	north of University Avenue	23,360	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
49	55.9	58.3	58.9	9	20	42	Oxford Street	north of Cedar Street	9,070	25	0.0%	100.0%	0.0%	0.0%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
50	61.8	64.2	64.9	23	49	106	Oxford Street	north of Hearst Avenue	12,390	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
51	64.3	66.7	67.3	33	72	154	Oxford Street	north of Berkeley Way	15,690	25	0.0%	95.1%	0.0%	4.9%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
52	64.1	66.5	67.2	32	70	151	Oxford Street	south of Center Street	19,220	25	0.0%	96.5%	0.0%	3.5%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
53	65.3	67.7	68.3	39	83	179	Oxford Street	north of University Avenue	16,410	25	0.0%	93.8%	0.0%	6.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
54	60.9	63.3	63.9	20	42	92	Piedmont Avenue	Bancroft Way to Durant Avenue	11,630	25	0.0%	97.5%	0.0%	2.5%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
55	61.7	64.1	64.7	22	48	103	Piedmont Avenue	Bancroft Way to Optometry Lane	12,150	25	0.0%	96.9%	0.0%	3.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
56	58.9	60.7	61.3	13	29	61	Sacramento St	South of Hopkins St	11,800	25	0.0%	98.5%	0.8%	0.7%	82.8%	11.5%	5.7%	3	Soft	50	0.5	32
57	66.4	68.7	69.2	44	95	205	San Pablo Avenue	Gilman St to Monroe St	25,650	30	0.0%	96.8%	0.0%	3.2%	82.8%	9.6%	7.6%	4	Soft	50	0.5	44
58	65.9	68.3	68.8	42	90	194	San Pablo Avenue	Delaware Street to Hearst Avenue	22,810	30	0.0%	96.8%	0.0%	3.2%	80.6%	11.4%	7.9%	4	Soft	50	0.5	44
59	66.1	68.4	68.9	42	91	196	San Pablo Avenue	north of Ashby Avenue	23,790	30	0.0%	96.8%	0.0%	3.2%	82.5%	9.8%	7.7%	4	Soft	50	0.5	44
60	66.9	69.3	70.0	50	107	231	San Pablo Avenue	south of Ashby Avenue	28,710	30	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
61	50.2	52.6	53.3	4	8	18	Scenic Avenue	north of Hearst Avenue	2,100	25	0.0%	99.7%	0.0%	0.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
62	59.5	61.9	62.5	16	34	74	Seventh Street	south of Dwight Way	8,410	25	0.0%	97.5%	0.0%	2.5%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
63	64.0	66.7	67.4	34	72	156	Shattuck Avenue	Allston Way to Kittredge Street	19,690	25	0.0%	96.8%	0.0%	3.2%	75.2%	15.1%	9.7%	4	Soft	50	0.5	44
64	64.2	66.6	67.3	33	71	153	Shattuck Avenue	Derby Street to Ward Street	31,960	25	0.0%	98.5%	0.0%	1.5%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
65	64.5	66.9	67.6	34	74	159	Shattuck Avenue	Durant Avenue to Channing Way	22,230	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
66	61.3	63.7	64.3	21	45	97	Shattuck Avenue	Hearst Avenue to University Avenue	14,340	25	0.0%	98.1%	0.0%	1.9%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
67	62.2	64.6	65.2	24	52	111	Shattuck Avenue	University Avenue to Addison Street	18,180	25	0.0%	98.2%	0.0%	1.8%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
68	61.1	63.5	64.2	21	44	95	Sixth Street	Hearst Avenue to University Avenue	14,810	25	0.0%	98.2%	0.0%	1.8%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20

69	60.6	63.0	63.7	19	41	88	Sixth Street	University Ave to Bancroft way	15,360	25	0.0%	98.7%	0.0%	1.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
70	59.6	62.0	62.7	16	35	76	Stadium Rim Way	east of Piedmont Avenue	4,420	25	0.0%	93.4%	0.0%	6.6%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
71	59.4	61.8	62.5	16	34	73	Telegraph Avenue	north of Dwight Way	7,110	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
72	58.5	60.0	60.9	12	27	58	Telegraph Avenue	south of Bancroft Way	5,700	25	0.0%	96.8%	0.0%	3.2%	79.2%	16.1%	4.7%	2	Soft	50	0.5	20
73	63.8	66.2	66.9	31	67	144	Telegraph Avenue	south of Derby Street	16,380	25	0.0%	96.0%	0.0%	4.0%	78.8%	13.0%	8.2%	4	Soft	50	0.5	44
74	63.6	66.0	66.7	30	65	139	University Avenue	east of Martin Luther King Jr.	18,150	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
75	63.6	66.0	66.7	30	65	140	University Avenue	east of San Pablo Avenue	25,520	25	0.0%	98.2%	0.0%	1.8%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
76	62.4	64.8	65.4	25	53	115	University Avenue	Shattuck Avenue to Oxford Street	8,020	25	0.0%	93.4%	0.0%	6.6%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
77	64.6	68.3	68.9	42	91	195	University Avenue	Sixth Street to San Pablo Avenue	29,750	25	0.0%	94.7%	4.1%	1.1%	69.4%	15.8%	14.9%	4	Soft	50	0.5	44
78	62.3	64.7	65.4	25	53	114	University Avenue	west of Shattuck Avenue	15,030	25	0.0%	97.3%	0.0%	2.7%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
79	59.4	61.8	62.5	16	34	73	Warring Street	north of Derby Street	15,870	25	0.0%	99.5%	0.0%	0.5%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20

Traffic Noise Calculator: FHWA 77-108 **UCB-01 LRDP: Existing Plus Project**

	Output						Inputs													Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour																	
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	Segment	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever	Ground Absorption	Lane Distance
1	55.1	57.5	58.1	8	17	38	Addison Street	Shattuck Avenue to Oxford Street	3,290	25	0.0%	97.8%	0.0%	2.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
2	61.0	63.4	64.0	20	43	93	Adeline Street	Ashby Avenue to Martin Luther King Junior Way	17,626	25	0.0%	96.4%	3.3%	0.3%	78.1%	13.7%	8.1%	4	Soft	50	0.5	44
3	65.7	68.1	68.7	41	88	190	Adeline Street	south of Alcatraz Avenue	44,951	25	0.0%	98.7%	0.0%	1.3%	78.7%	13.1%	8.2%	6	Soft	50	0.5	68
4	63.0	65.4	66.1	27	59	127	Adeline Street	Ward Street to Oregon Street	19,787	25	0.0%	98.0%	0.0%	2.0%	78.7%	13.1%	8.2%	6	Soft	50	0.5	68
5	60.1	62.5	63.2	18	38	81	Alcatraz Avenue	west of Adeline Street	15,150	25	0.0%	99.0%	0.0%	1.0%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
6	61.2	63.6	64.3	21	45	97	Alcatraz Avenue	west of College Avenue	10,815	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
7	61.7	64.1	64.7	22	48	104	Ashby Avenue	east of Adeline Street	19,049	25	0.0%	98.7%	0.0%	1.3%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
8	64.8	67.2	67.8	36	77	166	Ashby Avenue	west of San Pablo Avenue	23,693	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
9	59.7	62.1	62.8	17	36	77	Bancroft Way	College Avenue to Piedmont Avenue	3,689	25	0.0%	91.7%	0.0%	8.3%	78.7%	13.1%	8.2%	3	Soft	50	0.5	32
10	61.8	64.2	64.9	23	49	106	Bancroft Way	Bowditch Street to College Avenue	5,580	25	0.0%	91.0%	0.0%	9.0%	78.7%	13.1%	8.2%	3	Soft	50	0.5	32
11	62.3	65.9	66.5	29	63	136	Bancroft Way	Telegraph Avenue to Bowditch Street	6,943	25	0.0%	92.1%	0.0%	7.9%	68.6%	17.3%	14.1%	3	Soft	50	0.5	32
12	63.6	66.9	67.6	35	75	161	Bancroft Way	Dana Street to Telegraph Avenue	12,452	25	0.0%	94.4%	0.0%	5.6%	70.7%	16.7%	12.6%	3	Soft	50	0.5	32
13	63.4	65.8	66.4	29	62	134	Bancroft Way	Ellsworth Street to Fulton Street	11,559	25	0.0%	94.3%	0.0%	5.7%	78.7%	13.1%	8.2%	3	Soft	50	0.5	32
14	59.0	61.4	62.1	15	32	69	Bancroft Way	Shattuck Avenue to Fulton Street	4,947	25	0.0%	95.3%	0.0%	4.7%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
15	54.1	56.5	57.1	7	15	32	Berkeley Way	Shattuck Avenue to Fulton Street	1,488	25	0.0%	94.9%	0.0%	5.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
16	54.2	56.6	57.3	7	15	33	Bowditch Street	south of Bancroft Way	2,842	25	0.0%	98.0%	0.0%	2.0%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
17	56.3	58.7	59.4	10	21	46	Bowditch Street	south of Haste Street	3,496	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
18	56.0	57.9	58.6	9	19	40	Cedar Street	Shattuck Avenue to Milvia St	7,705	25	0.0%	99.4%	0.3%	0.3%	80.8%	13.3%	5.9%	2	Soft	50	0.5	20
19	52.9	55.3	56.0	6	12	27	Center Street	west of Oxford Street	1,554	25	0.0%	96.7%	0.0%	3.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
20	59.2	61.6	62.2	15	33	70	Channing Way	east of Shattuck Avenue	6,731	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
21	62.5	64.9	65.5	25	54	117	Claremont Avenue	north of Alcatraz Avenue	13,926	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
22	63.8	66.2	66.9	31	67	144	Claremont Boulevard	north of Russel Street	19,725	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
23	61.7	64.1	64.8	22	48	104	College Avenue	south of Alcatraz Avenue	12,048	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
24	55.3	57.7	58.3	8	18	39	College Avenue	south of Bancroft Way	3,955	25	0.0%	98.3%	0.0%	1.7%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
25	54.3	56.7	57.4	7	16	34	Dana Street	south of Bancroft Way	2,520	25	0.0%	97.4%	0.0%	2.6%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
26	56.9	59.3	60.0	11	23	50	Durant Avenue	east of Shattuck Avenue	3,933	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	3	Soft	50	0.5	32
27	54.8	57.2	57.9	8	17	36	Dwight Way	east of Seventh Street	3,185	25	0.0%	97.9%	0.0%	2.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
28	58.7	61.1	61.7	14	30	65	Dwight Way	east of Telegraph Street	5,994	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
29	62.3	64.7	65.3	24	52	113	Dwight Way	west of Telegraph Street	13,677	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
30	53.6	56.0	56.7	6	14	30	Ellsworth Street	south of Bancroft Way	3,301	25	0.0%	98.9%	0.0%	1.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
31	56.7	59.1	59.8	10	22	48	Euclid Avenue	north of Hearst Avenue	3,130	25	0.0%	95.7%	0.0%	4.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
32	61.9	64.3	65.0	23	50	107	Fulton Street	south of Bancroft Way	12,589	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
33	62.5	64.9	65.6	25	54	117	Gayley Road	north of University Drive	14,153	25	0.0%	96.7%	0.0%	3.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
34	62.5	64.9	65.6	25	55	118	Gayley Road	Stadium Rim Way to University Drive	14,240	25	0.0%	96.7%	0.0%	3.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
35	57.9	59.7	60.4	11	25	53	Gilman Street	Between Peralta Ave and Ordway St	12,096	25	0.0%	98.9%	1.0%	0.1%	82.2%	12.1%	5.7%	2	Soft	50	0.5	20
36	52.2	52.8	53.5	4	9	18	Grizzly Peak Boulevard	north of Euclid Avenue	3,030	25	0.0%	98.5%	1.3%	0.2%	89.7%	8.7%	1.6%	2	Soft	50	0.5	20
37	59.3	61.7	62.4	15	33	72	Haste Street	Bowditch Street to Telegraph Avenue	6,935	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
38	56.6	59.0	59.7	10	22	47	Hearst Avenue	east of Shattuck Avenue	9,635	25	0.0%	99.8%	0.0%	0.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
39	62.1	64.5	65.1	24	51	110	Hearst Avenue	west of Arch Street	13,047	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
40	63.9	66.3	66.9	31	67	145	Hearst Avenue	Euclid Avenue to Scenic Avenue	11,199	25	0.0%	93.0%	0.0%	7.0%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
41	63.4	65.8	66.4	29	62	134	Hearst Avenue	east of Le Roy Avenue	10,333	25	0.0%	93.3%	0.0%	6.7%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
42	70.4	72.8	73.4	84	182	392	I 580 NB On-Ramp	north of Gilman Street	10,135	65	0.0%	92.6%	0.0%	7.4%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
43	69.4	71.8	72.5	73	158	340	I 580 SB Off-Ramp	north of Gilman Street	11,215	65	0.0%	97.9%	0.0%	2.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
44	53.1	55.5	56.1	6	13	28	Kittredge Street	Shattuck Avenue to Fulton Street	3,241	25	0.0%	99.2%	0.0%	0.8%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
45	59.7	62.1	62.7	16	35	76	LaLoma Avenue	north of Hearst Avenue	7,513	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
46	50.5	52.9	53.6	4	9	19	Le Roy Avenue	north of Hearst Avenue	1,326	25	0.0%	98.3%	0.0%	1.7%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
47	64.8	67.2	67.8	36	77	166	Martin Luther King Jr W	Allston Way to Bancroft Way	24,127	25	0.0%	96.8%	0.0%	3.2%	79.1%	13.0%	7.8%	4	Soft	50	0.5	44
48	64.8	67.2	67.8	36	77	166	Martin Luther King Jr W	north of University Avenue	23,614	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
49	56.0	58.4	59.1	9	20	44	Oxford Street	north of Cedar Street	9,457	25	0.0%	100.0%	0.0%	0.0%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
50	62.1	64.6	65.2	24	52	111	Oxford Street	north of Hearst Avenue	13,337	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
51	64.5	66.9	67.6	34	74	160	Oxford Street	north of Berkeley Way	16,551	25	0.0%	95.1%	0.0%	4.9%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
52	64.3	66.7	67.4	33	72	155	Oxford Street	south of Center Street	19,986	25	0.0%	96.5%	0.0%	3.5%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
53	65.5	67.9	68.6	40	86	186	Oxford Street	north of University Avenue	17,357	25	0.0%	93.8%	0.0%	6.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
54	61.3	63.7	64.3	21	45	97	Piedmont Avenue	Bancroft Way to Durant Avenue	12,663	25	0.0%	97.5%	0.0%	2.5%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
55	62.0	64.4	65.0	23	50	108	Piedmont Avenue	Bancroft Way to Optometry Lane	13,011	25	0.0%	96.9%	0.0%	3.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
56	58.9	60.7	61.4	13	29	62	Sacramento St	South of Hopkins St	11,972	25	0.0%	98.5%	0.8%	0.7%	82.8%	11.5%	5.7%	3	Soft	50	0.5	32
57	66.5	68.8	69.3	45	97	208	San Pablo Avenue	Gilman St to Monroe St	26,166	30	0.0%	96.8%	0.0%	3.2%	82.8%	9.6%	7.6%	4	Soft	50	0.5	44
58	66.0	68.4	68.9	42	92	197	San Pablo Avenue	Delaware Street to Hearst Avenue	23,369	30	0.0%	96.8%	0.0%	3.2%	80.6%	11.4%	7.9%	4	Soft	50	0.5	44
59	66.2	68.4	69.0	43	92	198	San Pablo Avenue	north of Ashby Avenue	24,069	30	0.0%	96.8%	0.0%	3.2%	82.5%	9.8%	7.7%	4	Soft	50	0.5	44
60	67.0	69.4	70.0	50	108	233	San Pablo Avenue	south of Ashby Avenue	28,951	30	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
61	50.4	52.8	53.5	4	9	18	Scenic Avenue	north of Hearst Avenue	2,203	25	0.0%	99.7%	0.0%	0.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
62	59.6	62.0	62.6	16	35	75	Seventh Street	south of Dwight Way	8,625	25	0.0%	97.5%	0.0%	2.5%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20

63	64.4	67.1	67.8	36	77	165	Shattuck Avenue	Allston Way to Kittredge Street	21,497	25	0.0%	96.8%	0.0%	3.2%	75.2%	15.1%	9.7%	4	Soft	50	0.5	44
64	64.5	66.9	67.6	34	74	159	Shattuck Avenue	Derby Street to Ward Street	34,069	25	0.0%	98.5%	0.0%	1.5%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
65	64.9	67.3	67.9	36	78	168	Shattuck Avenue	Durant Avenue to Channing Way	24,124	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
66	61.7	64.1	64.8	22	48	104	Shattuck Avenue	Hearst Avenue to University Avenue	15,889	25	0.0%	98.1%	0.0%	1.9%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
67	62.6	65.0	65.6	26	55	118	Shattuck Avenue	University Avenue to Addison Street	19,936	25	0.0%	98.2%	0.0%	1.8%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
68	61.2	63.6	64.3	21	45	96	Sixth Street	Hearst Avenue to University Avenue	15,068	25	0.0%	98.2%	0.0%	1.8%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
69	60.7	63.1	63.7	19	41	89	Sixth Street	University Ave to Bancroft way	15,534	25	0.0%	98.7%	0.0%	1.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
70	60.0	62.5	63.1	17	37	81	Stadium Rim Way	east of Piedmont Avenue	4,850	25	0.0%	93.4%	0.0%	6.6%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
71	59.7	62.1	62.8	17	36	77	Telegraph Avenue	north of Dwight Way	7,661	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
72	58.8	60.4	61.3	13	28	61	Telegraph Avenue	south of Bancroft Way	6,216	25	0.0%	96.8%	0.0%	3.2%	79.2%	16.1%	4.7%	2	Soft	50	0.5	20
73	64.1	66.5	67.1	32	69	149	Telegraph Avenue	south of Derby Street	17,327	25	0.0%	96.0%	0.0%	4.0%	78.8%	13.0%	8.2%	4	Soft	50	0.5	44
74	63.9	66.3	67.0	31	68	145	University Avenue	east of Martin Luther King Jr.	19,381	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
75	63.8	66.2	66.9	31	67	144	University Avenue	east of San Pablo Avenue	26,725	25	0.0%	98.2%	0.0%	1.8%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
76	63.2	65.6	66.3	28	61	132	University Avenue	Shattuck Avenue to Oxford Street	9,827	25	0.0%	93.4%	0.0%	6.6%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
77	64.7	68.4	69.0	43	92	199	University Avenue	Sixth Street to San Pablo Avenue	30,637	25	0.0%	94.7%	4.1%	1.1%	69.4%	15.8%	14.9%	4	Soft	50	0.5	44
78	62.7	65.1	65.7	26	56	121	University Avenue	west of Shattuck Avenue	16,321	25	0.0%	97.3%	0.0%	2.7%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
79	59.8	62.2	62.9	17	36	78	Warring Street	north of Derby Street	17,523	25	0.0%	99.5%	0.0%	0.5%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20

Traffic Noise Calculator: FHWA 77-108 **UCB-01 LRDP: 2040 No Project**

	Output						Inputs													Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour																	
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	Segment	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever	Ground Absorption	Lane Distance
1	53.4	55.8	56.5	6	14	29	Addison Street	Shattuck Avenue to Oxford Street	2,260	25	0.0%	97.8%	0.0%	2.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
2	61.3	63.6	64.3	21	45	97	Adeline Street	Ashby Avenue to Martin Luther King Junior Way	18,830	25	0.0%	96.4%	3.3%	0.3%	78.1%	13.7%	8.1%	4	Soft	50	0.5	44
3	66.3	68.7	69.4	45	98	211	Adeline Street	south of Alcatraz Avenue	52,310	25	0.0%	98.7%	0.0%	1.3%	78.7%	13.1%	8.2%	6	Soft	50	0.5	68
4	63.3	65.7	66.4	29	62	134	Adeline Street	Ward Street to Oregon Street	21,380	25	0.0%	98.0%	0.0%	2.0%	78.7%	13.1%	8.2%	6	Soft	50	0.5	68
5	60.9	63.3	63.9	20	42	91	Alcatraz Avenue	west of Adeline Street	18,030	25	0.0%	99.0%	0.0%	1.0%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
6	62.0	64.4	65.0	23	50	108	Alcatraz Avenue	west of College Avenue	12,750	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
7	62.4	64.8	65.4	25	53	115	Ashby Avenue	east of Adeline Street	22,220	25	0.0%	98.7%	0.0%	1.3%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
8	65.4	67.8	68.5	40	85	183	Ashby Avenue	west of San Pablo Avenue	27,420	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
9	59.7	62.1	62.7	16	35	76	Bancroft Way	College Avenue to Piedmont Avenue	3,630	25	0.0%	91.7%	0.0%	8.3%	78.7%	13.1%	8.2%	3	Soft	50	0.5	32
10	61.9	64.3	64.9	23	49	106	Bancroft Way	Bowditch Street to College Avenue	5,630	25	0.0%	91.0%	0.0%	9.0%	78.7%	13.1%	8.2%	3	Soft	50	0.5	32
11	62.4	66.0	66.6	30	64	139	Bancroft Way	Telegraph Avenue to Bowditch Street	7,150	25	0.0%	92.1%	0.0%	7.9%	68.6%	17.3%	14.1%	3	Soft	50	0.5	32
12	64.2	67.5	68.1	38	81	174	Bancroft Way	Dana Street to Telegraph Avenue	14,040	25	0.0%	94.4%	0.0%	5.6%	70.7%	16.7%	12.6%	3	Soft	50	0.5	32
13	63.9	66.3	66.9	31	67	145	Bancroft Way	Ellsworth Street to Fulton Street	12,930	25	0.0%	94.3%	0.0%	5.7%	78.7%	13.1%	8.2%	3	Soft	50	0.5	32
14	59.2	61.6	62.2	15	33	70	Bancroft Way	Shattuck Avenue to Fulton Street	5,140	25	0.0%	95.3%	0.0%	4.7%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
15	54.1	56.5	57.1	7	15	32	Berkeley Way	Shattuck Avenue to Fulton Street	1,490	25	0.0%	94.9%	0.0%	5.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
16	54.0	56.4	57.1	7	15	32	Bowditch Street	south of Bancroft Way	2,710	25	0.0%	98.0%	0.0%	2.0%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
17	56.5	58.9	59.5	10	22	47	Bowditch Street	south of Haste Street	3,610	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
18	56.7	58.6	59.3	10	21	45	Cedar Street	Shattuck Avenue to Milvia St	9,120	25	0.0%	99.4%	0.3%	0.3%	80.8%	13.3%	5.9%	2	Soft	50	0.5	20
19	52.9	55.3	56.0	6	13	27	Center Street	west of Oxford Street	1,570	25	0.0%	96.7%	0.0%	3.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
20	59.3	61.7	62.3	15	33	72	Channing Way	east of Shattuck Avenue	6,880	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
21	63.3	65.7	66.3	28	61	132	Claremont Avenue	north of Alcatraz Avenue	16,750	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
22	64.3	66.7	67.4	33	72	155	Claremont Boulevard	north of Russel Street	21,890	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
23	62.2	64.6	65.3	24	52	112	College Avenue	south of Alcatraz Avenue	13,520	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
24	55.0	57.4	58.0	8	17	37	College Avenue	south of Bancroft Way	3,700	25	0.0%	98.3%	0.0%	1.7%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
25	54.4	56.8	57.4	7	16	34	Dana Street	south of Bancroft Way	2,530	25	0.0%	97.4%	0.0%	2.6%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
26	56.4	58.8	59.5	10	21	46	Durant Avenue	east of Shattuck Avenue	3,510	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	3	Soft	50	0.5	32
27	55.4	57.8	58.4	8	18	39	Dwight Way	east of Seventh Street	3,630	25	0.0%	97.9%	0.0%	2.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
28	59.2	61.7	62.3	15	33	71	Dwight Way	east of Telegraph Street	6,840	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
29	62.8	65.2	65.9	26	57	123	Dwight Way	west of Telegraph Street	15,510	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
30	53.2	55.6	56.2	6	13	28	Ellsworth Street	south of Bancroft Way	2,950	25	0.0%	98.9%	0.0%	1.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
31	56.9	59.3	60.0	11	23	50	Euclid Avenue	north of Hearst Avenue	3,270	25	0.0%	95.7%	0.0%	4.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
32	62.4	64.8	65.5	25	54	116	Fulton Street	south of Bancroft Way	14,180	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
33	63.0	65.4	66.1	27	59	127	Gayley Road	north of University Drive	15,880	25	0.0%	96.7%	0.0%	3.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
34	63.0	65.4	66.1	27	59	127	Gayley Road	Stadium Rim Way to University Drive	16,030	25	0.0%	96.7%	0.0%	3.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
35	58.5	60.3	61.0	13	27	59	Gilman Street	Between Peralta Ave and Ordway St	14,080	25	0.0%	98.9%	1.0%	0.1%	82.2%	12.1%	5.7%	2	Soft	50	0.5	20
36	52.8	53.4	54.0	4	9	20	Grizzly Peak Boulevard	north of Euclid Avenue	3,440	25	0.0%	98.5%	1.3%	0.2%	89.7%	8.7%	1.6%	2	Soft	50	0.5	20
37	59.5	61.9	62.6	16	35	74	Haste Street	Bowditch Street to Telegraph Avenue	7,310	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
38	57.1	59.5	60.1	11	24	51	Hearst Avenue	east of Shattuck Avenue	10,720	25	0.0%	99.8%	0.0%	0.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
39	62.6	65.0	65.6	25	55	118	Hearst Avenue	west of Arch Street	14,640	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
40	64.4	66.8	67.4	34	72	156	Hearst Avenue	Euclid Avenue to Scenic Avenue	12,480	25	0.0%	93.0%	0.0%	7.0%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
41	63.8	66.2	66.9	31	67	144	Hearst Avenue	east of Le Roy Avenue	11,420	25	0.0%	93.3%	0.0%	6.7%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
42	71.1	73.5	74.2	95	204	439	I 580 NB On-Ramp	north of Gilman Street	12,000	65	0.0%	92.6%	0.0%	7.4%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
43	70.2	72.6	73.2	82	177	381	I 580 SB Off-Ramp	north of Gilman Street	13,310	65	0.0%	97.9%	0.0%	2.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
44	53.5	55.9	56.6	6	14	30	Kittredge Street	Shattuck Avenue to Fulton Street	3,610	25	0.0%	99.2%	0.0%	0.8%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
45	60.3	62.7	63.4	18	39	84	LaLoma Avenue	north of Hearst Avenue	8,770	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
46	51.1	53.5	54.1	4	9	20	Le Roy Avenue	north of Hearst Avenue	1,500	25	0.0%	98.3%	0.0%	1.7%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
47	65.6	67.9	68.6	40	87	187	Martin Luther King Jr W	Allston Way to Bancroft Way	28,870	25	0.0%	96.8%	0.0%	3.2%	79.1%	13.0%	7.8%	4	Soft	50	0.5	44
48	65.5	67.9	68.6	40	87	187	Martin Luther King Jr W	north of University Avenue	28,270	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
49	56.7	59.1	59.7	10	22	48	Oxford Street	north of Cedar Street	10,970	25	0.0%	100.0%	0.0%	0.0%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
50	62.7	65.1	65.7	26	56	120	Oxford Street	north of Hearst Avenue	14,990	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
51	65.1	67.5	68.2	38	81	175	Oxford Street	north of Berkeley Way	18,980	25	0.0%	95.1%	0.0%	4.9%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
52	65.0	67.4	68.0	37	79	171	Oxford Street	south of Center Street	23,260	25	0.0%	96.5%	0.0%	3.5%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
53	66.1	68.5	69.1	44	94	203	Oxford Street	north of University Avenue	19,860	25	0.0%	93.8%	0.0%	6.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
54	61.7	64.1	64.8	22	48	104	Piedmont Avenue	Bancroft Way to Durant Avenue	14,070	25	0.0%	97.5%	0.0%	2.5%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
55	62.5	64.9	65.5	25	54	117	Piedmont Avenue	Bancroft Way to Optometry Lane	14,700	25	0.0%	96.9%	0.0%	3.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
56	59.7	61.5	62.2	15	32	70	Sacramento St	South of Hopkins St	14,280	25	0.0%	98.5%	0.8%	0.7%	82.8%	11.5%	5.7%	3	Soft	50	0.5	32
57	67.3	69.5	70.0	50	108	233	San Pablo Avenue	Gilman St to Monroe St	31,040	30	0.0%	96.8%	0.0%	3.2%	82.8%	9.6%	7.6%	4	Soft	50	0.5	44
58	66.7	69.1	69.7	47	102	220	San Pablo Avenue	Delaware Street to Hearst Avenue	27,600	30	0.0%	96.8%	0.0%	3.2%	80.6%	11.4%	7.9%	4	Soft	50	0.5	44
59	66.9	69.2	69.7	48	103	223	San Pablo Avenue	north of Ashby Avenue	28,790	30	0.0%	96.8%	0.0%	3.2%	82.5%	9.8%	7.7%	4	Soft	50	0.5	44
60	67.7	70.1	70.8	57	122	263	San Pablo Avenue	south of Ashby Avenue	34,740	30	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
61	51.0	53.4	54.1	4	9	20	Scenic Avenue	north of Hearst Avenue	2,540	25	0.0%	99.7%	0.0%	0.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
62	60.3	62.7	63.4	18	39	84	Seventh Street	south of Dwight Way	10,180	25	0.0%	97.5%	0.0%	2.5%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20

63	64.8	67.5	68.2	38	82	177	Shattuck Avenue	Allston Way to Kittredge Street	23,820	25	0.0%	96.8%	0.0%	3.2%	75.2%	15.1%	9.7%	4	Soft	50	0.5	44
64	65.0	67.4	68.1	37	80	173	Shattuck Avenue	Derby Street to Ward Street	38,670	25	0.0%	98.5%	0.0%	1.5%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
65	65.3	67.7	68.4	39	84	181	Shattuck Avenue	Durant Avenue to Channing Way	26,900	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
66	62.1	64.5	65.1	24	51	110	Shattuck Avenue	Hearst Avenue to University Avenue	17,350	25	0.0%	98.1%	0.0%	1.9%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
67	63.0	65.4	66.0	27	59	126	Shattuck Avenue	University Avenue to Addison Street	22,000	25	0.0%	98.2%	0.0%	1.8%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
68	62.0	64.4	65.0	23	50	108	Sixth Street	Hearst Avenue to University Avenue	17,920	25	0.0%	98.2%	0.0%	1.8%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
69	61.5	63.9	64.5	22	46	100	Sixth Street	University Ave to Bancroft way	18,590	25	0.0%	98.7%	0.0%	1.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
70	60.5	62.9	63.5	19	40	86	Stadium Rim Way	east of Piedmont Avenue	5,350	25	0.0%	93.4%	0.0%	6.6%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
71	60.2	62.6	63.3	18	39	83	Telegraph Avenue	north of Dwight Way	8,600	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
72	59.3	60.8	61.8	14	30	66	Telegraph Avenue	south of Bancroft Way	6,900	25	0.0%	96.8%	0.0%	3.2%	79.2%	16.1%	4.7%	2	Soft	50	0.5	20
73	64.7	67.1	67.7	35	76	163	Telegraph Avenue	south of Derby Street	19,820	25	0.0%	96.0%	0.0%	4.0%	78.8%	13.0%	8.2%	4	Soft	50	0.5	44
74	64.4	66.8	67.5	34	73	158	University Avenue	east of Martin Luther King Jr.	21,960	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
75	64.5	66.9	67.5	34	74	158	University Avenue	east of San Pablo Avenue	30,880	25	0.0%	98.2%	0.0%	1.8%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
76	63.2	65.6	66.2	28	61	130	University Avenue	Shattuck Avenue to Oxford Street	9,700	25	0.0%	93.4%	0.0%	6.6%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
77	65.4	69.1	69.7	48	103	222	University Avenue	Sixth Street to San Pablo Avenue	36,000	25	0.0%	94.7%	4.1%	1.1%	69.4%	15.8%	14.9%	4	Soft	50	0.5	44
78	63.2	65.6	66.2	28	60	130	University Avenue	west of Shattuck Avenue	18,190	25	0.0%	97.3%	0.0%	2.7%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
79	60.2	62.6	63.3	18	38	83	Warring Street	north of Derby Street	19,200	25	0.0%	99.5%	0.0%	0.5%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20

Traffic Noise Calculator: FHWA 77-108 **UCB-01 LRDP: 2040 Plus Project**

	Output						Inputs													Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour																	
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	Segment	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever	Ground Absorption	Lane Distance
1	55.6	58.0	58.6	9	19	40	Addison Street	Shattuck Avenue to Oxford Street	3,680	25	0.0%	97.8%	0.0%	2.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
2	61.7	64.1	64.8	22	48	104	Adeline Street	Ashby Avenue to Martin Luther King Junior Way	20,896	25	0.0%	96.4%	3.3%	0.3%	78.1%	13.7%	8.1%	4	Soft	50	0.5	44
3	66.5	68.9	69.5	46	100	215	Adeline Street	south of Alcatraz Avenue	54,031	25	0.0%	98.7%	0.0%	1.3%	78.7%	13.1%	8.2%	6	Soft	50	0.5	68
4	63.8	66.2	66.8	31	66	142	Adeline Street	Ward Street to Oregon Street	23,497	25	0.0%	98.0%	0.0%	2.0%	78.7%	13.1%	8.2%	6	Soft	50	0.5	68
5	60.9	63.3	64.0	20	43	92	Alcatraz Avenue	west of Adeline Street	18,280	25	0.0%	99.0%	0.0%	1.0%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
6	62.0	64.4	65.1	24	51	109	Alcatraz Avenue	west of College Avenue	13,025	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
7	62.5	64.9	65.5	25	54	117	Ashby Avenue	east of Adeline Street	22,909	25	0.0%	98.7%	0.0%	1.3%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
8	65.6	68.0	68.6	40	87	188	Ashby Avenue	west of San Pablo Avenue	28,453	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
9	60.4	62.8	63.5	18	40	85	Bancroft Way	College Avenue to Piedmont Avenue	4,319	25	0.0%	91.7%	0.0%	8.3%	78.7%	13.1%	8.2%	3	Soft	50	0.5	32
10	62.5	64.9	65.6	25	55	118	Bancroft Way	Bowditch Street to College Avenue	6,560	25	0.0%	91.0%	0.0%	9.0%	78.7%	13.1%	8.2%	3	Soft	50	0.5	32
11	63.0	66.6	67.2	33	70	152	Bancroft Way	Telegraph Avenue to Bowditch Street	8,183	25	0.0%	92.1%	0.0%	7.9%	68.6%	17.3%	14.1%	3	Soft	50	0.5	32
12	64.4	67.7	68.4	39	84	181	Bancroft Way	Dana Street to Telegraph Avenue	14,892	25	0.0%	94.4%	0.0%	5.6%	70.7%	16.7%	12.6%	3	Soft	50	0.5	32
13	64.1	66.5	67.2	33	70	151	Bancroft Way	Ellsworth Street to Fulton Street	13,799	25	0.0%	94.3%	0.0%	5.7%	78.7%	13.1%	8.2%	3	Soft	50	0.5	32
14	59.7	62.1	62.8	17	36	77	Bancroft Way	Shattuck Avenue to Fulton Street	5,837	25	0.0%	95.3%	0.0%	4.7%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
15	54.8	57.2	57.8	8	17	36	Berkeley Way	Shattuck Avenue to Fulton Street	1,748	25	0.0%	94.9%	0.0%	5.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
16	54.9	57.3	57.9	8	17	36	Bowditch Street	south of Bancroft Way	3,312	25	0.0%	98.0%	0.0%	2.0%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
17	57.1	59.5	60.1	11	24	51	Bowditch Street	south of Haste Street	4,126	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
18	56.8	58.7	59.4	10	21	46	Cedar Street	Shattuck Avenue to Milvia St	9,285	25	0.0%	99.4%	0.3%	0.3%	80.8%	13.3%	5.9%	2	Soft	50	0.5	20
19	53.6	56.0	56.7	6	14	30	Center Street	west of Oxford Street	1,824	25	0.0%	96.7%	0.0%	3.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
20	59.9	62.3	62.9	17	36	79	Channing Way	east of Shattuck Avenue	7,921	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
21	63.3	65.7	66.3	29	61	132	Claremont Avenue	north of Alcatraz Avenue	16,836	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
22	64.6	67.0	67.7	35	75	162	Claremont Boulevard	north of Russel Street	23,525	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
23	62.5	64.9	65.5	25	54	117	College Avenue	south of Alcatraz Avenue	14,398	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
24	55.9	58.3	59.0	9	20	43	College Avenue	south of Bancroft Way	4,595	25	0.0%	98.3%	0.0%	1.7%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
25	55.0	57.4	58.1	8	17	37	Dana Street	south of Bancroft Way	2,960	25	0.0%	97.4%	0.0%	2.6%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
26	57.5	59.9	60.6	12	25	55	Durant Avenue	east of Shattuck Avenue	4,543	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	3	Soft	50	0.5	32
27	55.6	58.0	58.7	9	19	41	Dwight Way	east of Seventh Street	3,815	25	0.0%	97.9%	0.0%	2.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
28	59.5	61.9	62.5	16	34	74	Dwight Way	east of Telegraph Street	7,184	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
29	63.0	65.4	66.1	27	59	127	Dwight Way	west of Telegraph Street	16,367	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
30	54.3	56.7	57.3	7	15	33	Ellsworth Street	south of Bancroft Way	3,811	25	0.0%	98.9%	0.0%	1.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
31	57.5	59.9	60.5	12	25	54	Euclid Avenue	north of Hearst Avenue	3,700	25	0.0%	95.7%	0.0%	4.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
32	62.7	65.1	65.7	26	56	121	Fulton Street	south of Bancroft Way	15,049	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
33	63.3	65.7	66.3	28	61	132	Gayley Road	north of University Drive	16,913	25	0.0%	96.7%	0.0%	3.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
34	63.3	65.7	66.4	29	62	133	Gayley Road	Stadium Rim Way to University Drive	17,020	25	0.0%	96.7%	0.0%	3.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
35	58.7	60.5	61.2	13	28	60	Gilman Street	Between Peralta Ave and Ordway St	14,536	25	0.0%	98.9%	1.0%	0.1%	82.2%	12.1%	5.7%	2	Soft	50	0.5	20
36	53.0	53.6	54.2	4	10	21	Grizzly Peak Boulevard	north of Euclid Avenue	3,630	25	0.0%	98.5%	1.3%	0.2%	89.7%	8.7%	1.6%	2	Soft	50	0.5	20
37	60.0	62.4	63.1	17	37	80	Haste Street	Bowditch Street to Telegraph Avenue	8,205	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
38	57.4	59.8	60.4	12	25	53	Hearst Avenue	east of Shattuck Avenue	11,495	25	0.0%	99.8%	0.0%	0.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
39	62.8	65.2	65.9	27	57	123	Hearst Avenue	west of Arch Street	15,587	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
40	64.7	67.1	67.7	35	76	163	Hearst Avenue	Euclid Avenue to Scenic Avenue	13,369	25	0.0%	93.0%	0.0%	7.0%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
41	64.1	66.5	67.2	33	70	151	Hearst Avenue	east of Le Roy Avenue	12,313	25	0.0%	93.3%	0.0%	6.7%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
42	71.2	73.6	74.2	96	206	444	I 580 NB On-Ramp	north of Gilman Street	12,215	65	0.0%	92.6%	0.0%	7.4%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
43	70.2	72.6	73.3	83	179	385	I 580 SB Off-Ramp	north of Gilman Street	13,525	65	0.0%	97.9%	0.0%	2.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
44	53.8	56.2	56.9	7	14	31	Kittredge Street	Shattuck Avenue to Fulton Street	3,871	25	0.0%	99.2%	0.0%	0.8%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
45	60.5	62.9	63.5	18	40	86	LaLoma Avenue	north of Hearst Avenue	9,033	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
46	51.3	53.7	54.4	5	10	21	Le Roy Avenue	north of Hearst Avenue	1,586	25	0.0%	98.3%	0.0%	1.7%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
47	65.7	68.0	68.6	41	87	188	Martin Luther King Jr W	Allston Way to Bancroft Way	29,137	25	0.0%	96.8%	0.0%	3.2%	79.1%	13.0%	7.8%	4	Soft	50	0.5	44
48	65.6	68.0	68.6	41	87	188	Martin Luther King Jr W	north of University Avenue	28,524	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
49	56.8	59.2	59.9	11	23	49	Oxford Street	north of Cedar Street	11,357	25	0.0%	100.0%	0.0%	0.0%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
50	62.9	65.3	66.0	27	58	125	Oxford Street	north of Hearst Avenue	15,937	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
51	65.3	67.7	68.4	39	84	180	Oxford Street	north of Berkeley Way	19,841	25	0.0%	95.1%	0.0%	4.9%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
52	65.1	67.5	68.1	38	81	175	Oxford Street	south of Center Street	24,026	25	0.0%	96.5%	0.0%	3.5%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
53	66.3	68.7	69.3	45	97	210	Oxford Street	north of University Avenue	20,807	25	0.0%	93.8%	0.0%	6.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
54	62.0	64.4	65.1	23	51	109	Piedmont Avenue	Bancroft Way to Durant Avenue	15,103	25	0.0%	97.5%	0.0%	2.5%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
55	62.7	65.1	65.8	26	56	122	Piedmont Avenue	Bancroft Way to Optometry Lane	15,561	25	0.0%	96.9%	0.0%	3.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
56	59.8	61.6	62.2	15	33	70	Sacramento St	South of Hopkins St	14,452	25	0.0%	98.5%	0.8%	0.7%	82.8%	11.5%	5.7%	3	Soft	50	0.5	32
57	67.3	69.6	70.1	51	109	236	San Pablo Avenue	Gilman St to Monroe St	31,556	30	0.0%	96.8%	0.0%	3.2%	82.8%	9.6%	7.6%	4	Soft	50	0.5	44
58	66.8	69.2	69.7	48	104	223	San Pablo Avenue	Delaware Street to Hearst Avenue	28,159	30	0.0%	96.8%	0.0%	3.2%	80.6%	11.4%	7.9%	4	Soft	50	0.5	44
59	67.0	69.3	69.8	48	104	224	San Pablo Avenue	north of Ashby Avenue	29,069	30	0.0%	96.8%	0.0%	3.2%	82.5%	9.8%	7.7%	4	Soft	50	0.5	44
60	67.8	70.2	70.8	57	122	264	San Pablo Avenue	south of Ashby Avenue	34,981	30	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
61	51.2	53.6	54.3	4	10	21	Scenic Avenue	north of Hearst Avenue	2,643	25	0.0%	99.7%	0.0%	0.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
62	60.4	62.8	63.5	18	39	85	Seventh Street	south of Dwight Way	10,395	25	0.0%	97.5%	0.0%	2.5%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20

63	65.1	67.8	68.5	40	86	185	Shattuck Avenue	Allston Way to Kittredge Street	25,627	25	0.0%	96.8%	0.0%	3.2%	75.2%	15.1%	9.7%	4	Soft	50	0.5	44
64	65.3	67.7	68.3	39	83	180	Shattuck Avenue	Derby Street to Ward Street	40,779	25	0.0%	98.5%	0.0%	1.5%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
65	65.6	68.0	68.7	41	88	189	Shattuck Avenue	Durant Avenue to Channing Way	28,794	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
66	62.4	64.8	65.5	25	54	116	Shattuck Avenue	Hearst Avenue to University Avenue	18,899	25	0.0%	98.1%	0.0%	1.9%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
67	63.3	65.7	66.4	29	62	133	Shattuck Avenue	University Avenue to Addison Street	23,756	25	0.0%	98.2%	0.0%	1.8%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
68	62.0	64.4	65.1	24	51	109	Sixth Street	Hearst Avenue to University Avenue	18,178	25	0.0%	98.2%	0.0%	1.8%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
69	61.5	63.9	64.6	22	47	101	Sixth Street	University Ave to Bancroft way	18,764	25	0.0%	98.7%	0.0%	1.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
70	60.8	63.2	63.9	20	42	91	Stadium Rim Way	east of Piedmont Avenue	5,780	25	0.0%	93.4%	0.0%	6.6%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
71	60.5	62.9	63.6	19	40	86	Telegraph Avenue	north of Dwight Way	9,151	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
72	59.6	61.1	62.1	15	32	69	Telegraph Avenue	south of Bancroft Way	7,416	25	0.0%	96.8%	0.0%	3.2%	79.2%	16.1%	4.7%	2	Soft	50	0.5	20
73	64.9	67.3	67.9	36	78	168	Telegraph Avenue	south of Derby Street	20,767	25	0.0%	96.0%	0.0%	4.0%	78.8%	13.0%	8.2%	4	Soft	50	0.5	44
74	64.7	67.1	67.7	35	76	164	University Avenue	east of Martin Luther King Jr.	23,191	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
75	64.6	67.0	67.7	35	75	163	University Avenue	east of San Pablo Avenue	32,085	25	0.0%	98.2%	0.0%	1.8%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
76	63.9	66.3	67.0	31	68	146	University Avenue	Shattuck Avenue to Oxford Street	11,507	25	0.0%	93.4%	0.0%	6.6%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
77	65.5	69.2	69.8	49	105	225	University Avenue	Sixth Street to San Pablo Avenue	36,887	25	0.0%	94.7%	4.1%	1.1%	69.4%	15.8%	14.9%	4	Soft	50	0.5	44
78	63.5	65.9	66.5	29	63	136	University Avenue	west of Shattuck Avenue	19,481	25	0.0%	97.3%	0.0%	2.7%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
79	60.6	63.0	63.7	19	41	88	Warring Street	north of Derby Street	20,853	25	0.0%	99.5%	0.0%	0.5%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20

Traffic Noise Calculator: FHWA 77-108 **UCB-01 Anchor House: Existing Plus Project**

	Output						Inputs													Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour																	
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	Segment	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever	Ground Absorption	Lane Distance
1	52.7	55.1	55.7	6	12	26	Addison Street	Shattuck Avenue to Oxford Street	1,886	25	0.0%	97.8%	0.0%	2.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
2	60.5	62.8	63.5	19	40	86	Adeline Street	Ashby Avenue to Martin Luther King Junior Way	15,640	25	0.0%	96.4%	3.3%	0.3%	78.1%	13.7%	8.1%	4	Soft	50	0.5	44
3	65.5	67.9	68.6	40	86	186	Adeline Street	south of Alcatraz Avenue	43,310	25	0.0%	98.7%	0.0%	1.3%	78.7%	13.1%	8.2%	6	Soft	50	0.5	68
4	62.5	64.9	65.6	25	55	118	Adeline Street	Ward Street to Oregon Street	17,732	25	0.0%	98.0%	0.0%	2.0%	78.7%	13.1%	8.2%	6	Soft	50	0.5	68
5	60.0	62.4	63.1	17	37	80	Alcatraz Avenue	west of Adeline Street	14,909	25	0.0%	99.0%	0.0%	1.0%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
6	61.1	63.5	64.2	20	44	95	Alcatraz Avenue	west of College Avenue	10,550	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
7	61.5	63.9	64.6	22	47	101	Ashby Avenue	east of Adeline Street	18,384	25	0.0%	98.7%	0.0%	1.3%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
8	64.6	67.0	67.6	35	75	162	Ashby Avenue	west of San Pablo Avenue	22,679	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
9	58.9	61.3	61.9	14	31	67	Bancroft Way	College Avenue to Piedmont Avenue	3,026	25	0.0%	91.7%	0.0%	8.3%	78.7%	13.1%	8.2%	3	Soft	50	0.5	32
10	61.1	63.5	64.1	20	44	94	Bancroft Way	Bowditch Street to College Avenue	4,689	25	0.0%	91.0%	0.0%	9.0%	78.7%	13.1%	8.2%	3	Soft	50	0.5	32
11	61.6	65.2	65.8	26	57	123	Bancroft Way	Telegraph Avenue to Bowditch Street	5,952	25	0.0%	92.1%	0.0%	7.9%	68.6%	17.3%	14.1%	3	Soft	50	0.5	32
12	63.3	66.6	67.3	33	71	154	Bancroft Way	Dana Street to Telegraph Avenue	11,644	25	0.0%	94.4%	0.0%	5.6%	70.7%	16.7%	12.6%	3	Soft	50	0.5	32
13	63.1	65.5	66.1	28	59	128	Bancroft Way	Ellsworth Street to Fulton Street	10,734	25	0.0%	94.3%	0.0%	5.7%	78.7%	13.1%	8.2%	3	Soft	50	0.5	32
14	58.4	60.8	61.4	13	29	62	Bancroft Way	Shattuck Avenue to Fulton Street	4,287	25	0.0%	95.3%	0.0%	4.7%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
15	53.9	56.3	57.0	7	15	31	Berkeley Way	Shattuck Avenue to Fulton Street	1,439	25	0.0%	94.9%	0.0%	5.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
16	53.2	55.6	56.3	6	13	28	Bowditch Street	south of Bancroft Way	2,251	25	0.0%	98.0%	0.0%	2.0%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
17	55.7	58.1	58.7	9	19	41	Bowditch Street	south of Haste Street	2,990	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
18	55.9	57.8	58.5	9	18	40	Cedar Street	Shattuck Avenue to Milvia St	7,547	25	0.0%	99.4%	0.3%	0.3%	80.8%	13.3%	5.9%	2	Soft	50	0.5	20
19	52.2	54.6	55.2	5	11	24	Center Street	west of Oxford Street	1,311	25	0.0%	96.7%	0.0%	3.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
20	58.5	60.9	61.5	14	29	63	Channing Way	east of Shattuck Avenue	5,724	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
21	62.4	64.8	65.5	25	54	116	Claremont Avenue	north of Alcatraz Avenue	13,843	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
22	63.5	65.9	66.5	29	63	137	Claremont Boulevard	north of Russel Street	18,156	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
23	61.4	63.8	64.4	21	46	99	College Avenue	south of Alcatraz Avenue	11,202	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
24	54.2	56.6	57.3	7	15	33	College Avenue	south of Bancroft Way	3,095	25	0.0%	98.3%	0.0%	1.7%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
25	53.5	55.9	56.6	6	14	30	Dana Street	south of Bancroft Way	2,090	25	0.0%	97.4%	0.0%	2.6%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
26	55.6	58.0	58.7	9	19	41	Durant Avenue	east of Shattuck Avenue	2,942	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	3	Soft	50	0.5	32
27	54.6	57.0	57.6	7	16	35	Dwight Way	east of Seventh Street	3,007	25	0.0%	97.9%	0.0%	2.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
28	58.4	60.8	61.5	14	29	63	Dwight Way	east of Telegraph Street	5,662	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
29	62.0	64.4	65.0	23	50	108	Dwight Way	west of Telegraph Street	12,843	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
30	52.3	54.7	55.4	5	11	25	Ellsworth Street	south of Bancroft Way	2,443	25	0.0%	98.9%	0.0%	1.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
31	56.1	58.5	59.2	9	20	44	Euclid Avenue	north of Hearst Avenue	2,716	25	0.0%	95.7%	0.0%	4.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
32	61.6	64.0	64.7	22	48	103	Fulton Street	south of Bancroft Way	11,810	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
33	62.2	64.6	65.2	24	52	112	Gayley Road	north of University Drive	13,190	25	0.0%	96.7%	0.0%	3.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
34	62.2	64.6	65.3	24	52	113	Gayley Road	Stadium Rim Way to University Drive	13,318	25	0.0%	96.7%	0.0%	3.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
35	57.7	59.5	60.2	11	24	52	Gilman Street	Between Peralta Ave and Ordway St	11,658	25	0.0%	98.9%	1.0%	0.1%	82.2%	12.1%	5.7%	2	Soft	50	0.5	20
36	52.0	52.5	53.2	4	8	18	Grizzly Peak Boulevard	north of Euclid Avenue	2,850	25	0.0%	98.5%	1.3%	0.2%	89.7%	8.7%	1.6%	2	Soft	50	0.5	20
37	58.7	61.1	61.8	14	30	66	Haste Street	Bowditch Street to Telegraph Avenue	6,053	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
38	56.3	58.7	59.3	10	21	45	Hearst Avenue	east of Shattuck Avenue	8,961	25	0.0%	99.8%	0.0%	0.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
39	61.8	64.2	64.8	23	49	105	Hearst Avenue	west of Arch Street	12,212	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
40	63.6	66.0	66.6	30	64	138	Hearst Avenue	Euclid Avenue to Scenic Avenue	10,397	25	0.0%	93.0%	0.0%	7.0%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
41	63.0	65.4	66.1	27	59	127	Hearst Avenue	east of Le Roy Avenue	9,512	25	0.0%	93.3%	0.0%	6.7%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
42	70.3	72.7	73.3	83	180	387	I 580 NB On-Ramp	north of Gilman Street	9,928	65	0.0%	92.6%	0.0%	7.4%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
43	69.3	71.7	72.4	72	156	335	I 580 SB Off-Ramp	north of Gilman Street	11,008	65	0.0%	97.9%	0.0%	2.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
44	52.7	55.1	55.8	6	12	26	Kittredge Street	Shattuck Avenue to Fulton Street	2,989	25	0.0%	99.2%	0.0%	0.8%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
45	59.5	61.9	62.6	16	34	74	LaLoma Avenue	north of Hearst Avenue	7,252	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
46	50.3	52.7	53.3	4	8	18	Le Roy Avenue	north of Hearst Avenue	1,243	25	0.0%	98.3%	0.0%	1.7%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
47	64.8	67.1	67.8	36	77	165	Martin Luther King Jr W	Allston Way to Bancroft Way	23,879	25	0.0%	96.8%	0.0%	3.2%	79.1%	13.0%	7.8%	4	Soft	50	0.5	44
48	64.7	67.1	67.8	36	77	165	Martin Luther King Jr W	north of University Avenue	23,376	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
49	55.9	58.3	58.9	9	20	42	Oxford Street	north of Cedar Street	9,119	25	0.0%	100.0%	0.0%	0.0%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
50	61.9	64.3	64.9	23	49	106	Oxford Street	north of Hearst Avenue	12,482	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
51	64.3	66.7	67.4	33	72	155	Oxford Street	north of Berkeley Way	15,833	25	0.0%	95.1%	0.0%	4.9%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
52	64.2	66.6	67.2	33	70	151	Oxford Street	south of Center Street	19,352	25	0.0%	96.5%	0.0%	3.5%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
53	65.3	67.7	68.4	39	84	181	Oxford Street	north of University Avenue	16,699	25	0.0%	93.8%	0.0%	6.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
54	60.9	63.3	64.0	20	43	92	Piedmont Avenue	Bancroft Way to Durant Avenue	11,690	25	0.0%	97.5%	0.0%	2.5%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
55	61.7	64.1	64.7	22	48	103	Piedmont Avenue	Bancroft Way to Optometry Lane	12,207	25	0.0%	96.9%	0.0%	3.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
56	58.9	60.7	61.3	13	29	61	Sacramento St	South of Hopkins St	11,807	25	0.0%	98.5%	0.8%	0.7%	82.8%	11.5%	5.7%	3	Soft	50	0.5	32
57	66.4	68.7	69.2	44	95	205	San Pablo Avenue	Gilman St to Monroe St	25,671	30	0.0%	96.8%	0.0%	3.2%	82.8%	9.6%	7.6%	4	Soft	50	0.5	44
58	65.9	68.3	68.8	42	90	194	San Pablo Avenue	Delaware Street to Hearst Avenue	22,845	30	0.0%	96.8%	0.0%	3.2%	80.6%	11.4%	7.9%	4	Soft	50	0.5	44
59	66.1	68.4	68.9	42	91	196	San Pablo Avenue	north of Ashby Avenue	23,811	30	0.0%	96.8%	0.0%	3.2%	82.5%	9.8%	7.7%	4	Soft	50	0.5	44
60	66.9	69.3	70.0	50	107	231	San Pablo Avenue	south of Ashby Avenue	28,726	30	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
61	50.2	52.6	53.3	4	8	18	Scenic Avenue	north of Hearst Avenue	2,100	25	0.0%	99.7%	0.0%	0.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
62	59.5	61.9	62.5	16	34	74	Seventh Street	south of Dwight Way	8,417	25	0.0%	97.5%	0.0%	2.5%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20

63	64.0	66.7	67.4	34	73	156	Shattuck Avenue	Allston Way to Kittredge Street	19,847	25	0.0%	96.8%	0.0%	3.2%	75.2%	15.1%	9.7%	4	Soft	50	0.5	44
64	64.2	66.6	67.3	33	71	153	Shattuck Avenue	Derby Street to Ward Street	32,042	25	0.0%	98.5%	0.0%	1.5%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
65	64.5	66.9	67.6	34	74	160	Shattuck Avenue	Durant Avenue to Channing Way	22,350	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
66	61.3	63.7	64.3	21	45	97	Shattuck Avenue	Hearst Avenue to University Avenue	14,420	25	0.0%	98.1%	0.0%	1.9%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
67	62.2	64.6	65.3	24	52	112	Shattuck Avenue	University Avenue to Addison Street	18,339	25	0.0%	98.2%	0.0%	1.8%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
68	61.1	63.5	64.2	21	44	95	Sixth Street	Hearst Avenue to University Avenue	14,820	25	0.0%	98.2%	0.0%	1.8%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
69	60.6	63.0	63.7	19	41	88	Sixth Street	University Ave to Bancroft way	15,367	25	0.0%	98.7%	0.0%	1.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
70	59.7	62.1	62.7	16	35	76	Stadium Rim Way	east of Piedmont Avenue	4,430	25	0.0%	93.4%	0.0%	6.6%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
71	59.4	61.8	62.5	16	34	73	Telegraph Avenue	north of Dwight Way	7,131	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
72	58.5	60.0	61.0	12	27	58	Telegraph Avenue	south of Bancroft Way	5,721	25	0.0%	96.8%	0.0%	3.2%	79.2%	16.1%	4.7%	2	Soft	50	0.5	20
73	63.8	66.2	66.9	31	67	144	Telegraph Avenue	south of Derby Street	16,417	25	0.0%	96.0%	0.0%	4.0%	78.8%	13.0%	8.2%	4	Soft	50	0.5	44
74	63.7	66.1	66.7	30	65	140	University Avenue	east of Martin Luther King Jr.	18,341	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
75	63.7	66.1	66.7	30	65	140	University Avenue	east of San Pablo Avenue	25,642	25	0.0%	98.2%	0.0%	1.8%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
76	62.5	64.9	65.6	25	55	118	University Avenue	Shattuck Avenue to Oxford Street	8,316	25	0.0%	93.4%	0.0%	6.6%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
77	64.6	68.3	68.9	42	91	195	University Avenue	Sixth Street to San Pablo Avenue	29,799	25	0.0%	94.7%	4.1%	1.1%	69.4%	15.8%	14.9%	4	Soft	50	0.5	44
78	62.4	64.8	65.4	25	54	115	University Avenue	west of Shattuck Avenue	15,256	25	0.0%	97.3%	0.0%	2.7%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
79	59.4	61.8	62.5	16	34	73	Warring Street	north of Derby Street	15,936	25	0.0%	99.5%	0.0%	0.5%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20

Traffic Noise Calculator: FHWA 77-108 **UCB-01 People's Park: Existing Plus Project**

	Output						Inputs													Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour																	
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	Segment	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever	Ground Absorption	Lane Distance
1	52.6	55.0	55.7	6	12	26	Addison Street	Shattuck Avenue to Oxford Street	1,875	25	0.0%	97.8%	0.0%	2.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
2	60.5	62.9	63.5	19	40	86	Adeline Street	Ashby Avenue to Martin Luther King Junior Way	15,677	25	0.0%	96.4%	3.3%	0.3%	78.1%	13.7%	8.1%	4	Soft	50	0.5	44
3	65.5	67.9	68.6	40	86	186	Adeline Street	south of Alcatraz Avenue	43,327	25	0.0%	98.7%	0.0%	1.3%	78.7%	13.1%	8.2%	6	Soft	50	0.5	68
4	62.5	64.9	65.6	25	55	118	Adeline Street	Ward Street to Oregon Street	17,787	25	0.0%	98.0%	0.0%	2.0%	78.7%	13.1%	8.2%	6	Soft	50	0.5	68
5	60.0	62.4	63.1	17	37	80	Alcatraz Avenue	west of Adeline Street	14,914	25	0.0%	99.0%	0.0%	1.0%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
6	61.1	63.5	64.2	20	44	95	Alcatraz Avenue	west of College Avenue	10,552	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
7	61.5	63.9	64.6	22	47	101	Ashby Avenue	east of Adeline Street	18,397	25	0.0%	98.7%	0.0%	1.3%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
8	64.6	67.0	67.6	35	75	162	Ashby Avenue	west of San Pablo Avenue	22,691	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
9	58.8	61.2	61.9	14	31	67	Bancroft Way	College Avenue to Piedmont Avenue	3,015	25	0.0%	91.7%	0.0%	8.3%	78.7%	13.1%	8.2%	3	Soft	50	0.5	32
10	61.1	63.5	64.1	20	44	94	Bancroft Way	Bowditch Street to College Avenue	4,679	25	0.0%	91.0%	0.0%	9.0%	78.7%	13.1%	8.2%	3	Soft	50	0.5	32
11	61.6	65.2	65.8	26	57	122	Bancroft Way	Telegraph Avenue to Bowditch Street	5,938	25	0.0%	92.1%	0.0%	7.9%	68.6%	17.3%	14.1%	3	Soft	50	0.5	32
12	63.4	66.6	67.3	33	71	154	Bancroft Way	Dana Street to Telegraph Avenue	11,665	25	0.0%	94.4%	0.0%	5.6%	70.7%	16.7%	12.6%	3	Soft	50	0.5	32
13	63.1	65.5	66.1	28	59	128	Bancroft Way	Ellsworth Street to Fulton Street	10,755	25	0.0%	94.3%	0.0%	5.7%	78.7%	13.1%	8.2%	3	Soft	50	0.5	32
14	58.4	60.8	61.4	13	29	62	Bancroft Way	Shattuck Avenue to Fulton Street	4,290	25	0.0%	95.3%	0.0%	4.7%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
15	53.2	55.6	56.3	6	13	28	Berkeley Way	Shattuck Avenue to Fulton Street	1,231	25	0.0%	94.9%	0.0%	5.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
16	53.3	55.7	56.3	6	13	29	Bowditch Street	south of Bancroft Way	2,300	25	0.0%	98.0%	0.0%	2.0%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
17	55.9	58.3	58.9	9	20	42	Bowditch Street	south of Haste Street	3,139	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
18	55.9	57.8	58.5	9	18	40	Cedar Street	Shattuck Avenue to Milvia St	7,550	25	0.0%	99.4%	0.3%	0.3%	80.8%	13.3%	5.9%	2	Soft	50	0.5	20
19	52.2	54.6	55.2	5	11	24	Center Street	west of Oxford Street	1,313	25	0.0%	96.7%	0.0%	3.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
20	58.5	60.9	61.5	14	29	63	Channing Way	east of Shattuck Avenue	5,728	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
21	62.4	64.8	65.5	25	54	116	Claremont Avenue	north of Alcatraz Avenue	13,845	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
22	63.5	65.9	66.6	29	63	137	Claremont Boulevard	north of Russel Street	18,190	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
23	61.4	63.8	64.5	21	46	99	College Avenue	south of Alcatraz Avenue	11,221	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
24	54.2	56.6	57.3	7	15	33	College Avenue	south of Bancroft Way	3,111	25	0.0%	98.3%	0.0%	1.7%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
25	53.5	55.9	56.6	6	14	30	Dana Street	south of Bancroft Way	2,090	25	0.0%	97.4%	0.0%	2.6%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
26	55.6	58.0	58.7	9	19	41	Durant Avenue	east of Shattuck Avenue	2,925	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	3	Soft	50	0.5	32
27	54.6	57.0	57.7	8	16	35	Dwight Way	east of Seventh Street	3,022	25	0.0%	97.9%	0.0%	2.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
28	58.6	61.0	61.7	14	30	65	Dwight Way	east of Telegraph Street	5,925	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
29	62.1	64.5	65.1	24	51	110	Dwight Way	west of Telegraph Street	13,068	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
30	52.3	54.7	55.4	5	11	25	Ellsworth Street	south of Bancroft Way	2,445	25	0.0%	98.9%	0.0%	1.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
31	56.1	58.5	59.2	9	20	44	Euclid Avenue	north of Hearst Avenue	2,710	25	0.0%	95.7%	0.0%	4.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
32	61.6	64.0	64.7	22	47	102	Fulton Street	south of Bancroft Way	11,735	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
33	62.2	64.6	65.2	24	52	112	Gayley Road	north of University Drive	13,155	25	0.0%	96.7%	0.0%	3.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
34	62.2	64.6	65.3	24	52	112	Gayley Road	Stadium Rim Way to University Drive	13,285	25	0.0%	96.7%	0.0%	3.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
35	57.7	59.5	60.2	11	24	52	Gilman Street	Between Peralta Ave and Ordway St	11,666	25	0.0%	98.9%	1.0%	0.1%	82.2%	12.1%	5.7%	2	Soft	50	0.5	20
36	52.0	52.5	53.2	4	8	18	Grizzly Peak Boulevard	north of Euclid Avenue	2,851	25	0.0%	98.5%	1.3%	0.2%	89.7%	8.7%	1.6%	2	Soft	50	0.5	20
37	58.9	61.3	62.0	15	31	68	Haste Street	Bowditch Street to Telegraph Avenue	6,312	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
38	56.3	58.7	59.3	10	21	45	Hearst Avenue	east of Shattuck Avenue	8,877	25	0.0%	99.8%	0.0%	0.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
39	61.7	64.1	64.8	22	48	104	Hearst Avenue	west of Arch Street	12,127	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
40	63.5	65.9	66.6	30	64	138	Hearst Avenue	Euclid Avenue to Scenic Avenue	10,337	25	0.0%	93.0%	0.0%	7.0%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
41	63.0	65.4	66.1	27	59	127	Hearst Avenue	east of Le Roy Avenue	9,472	25	0.0%	93.3%	0.0%	6.7%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
42	70.3	72.7	73.3	83	180	387	I 580 NB On-Ramp	north of Gilman Street	9,932	65	0.0%	92.6%	0.0%	7.4%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
43	69.3	71.7	72.4	72	156	336	I 580 SB Off-Ramp	north of Gilman Street	11,012	65	0.0%	97.9%	0.0%	2.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
44	52.7	55.1	55.8	6	12	26	Kittredge Street	Shattuck Avenue to Fulton Street	2,995	25	0.0%	99.2%	0.0%	0.8%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
45	59.5	61.9	62.6	16	34	74	LaLoma Avenue	north of Hearst Avenue	7,253	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
46	50.2	52.6	53.3	4	8	18	Le Roy Avenue	north of Hearst Avenue	1,242	25	0.0%	98.3%	0.0%	1.7%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
47	64.8	67.1	67.8	36	77	165	Martin Luther King Jr W	Allston Way to Bancroft Way	23,875	25	0.0%	96.8%	0.0%	3.2%	79.1%	13.0%	7.8%	4	Soft	50	0.5	44
48	64.7	67.1	67.8	36	77	165	Martin Luther King Jr W	north of University Avenue	23,375	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
49	55.9	58.3	58.9	9	20	42	Oxford Street	north of Cedar Street	9,091	25	0.0%	100.0%	0.0%	0.0%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
50	61.8	64.2	64.9	23	49	106	Oxford Street	north of Hearst Avenue	12,411	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
51	64.3	66.7	67.3	33	72	154	Oxford Street	north of Berkeley Way	15,711	25	0.0%	95.1%	0.0%	4.9%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
52	64.1	66.5	67.2	32	70	151	Oxford Street	south of Center Street	19,244	25	0.0%	96.5%	0.0%	3.5%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
53	65.3	67.7	68.3	39	83	179	Oxford Street	north of University Avenue	16,431	25	0.0%	93.8%	0.0%	6.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
54	60.9	63.3	64.0	20	43	92	Piedmont Avenue	Bancroft Way to Durant Avenue	11,679	25	0.0%	97.5%	0.0%	2.5%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
55	61.7	64.1	64.7	22	48	103	Piedmont Avenue	Bancroft Way to Optometry Lane	12,199	25	0.0%	96.9%	0.0%	3.1%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
56	58.9	60.7	61.3	13	29	61	Sacramento St	South of Hopkins St	11,810	25	0.0%	98.5%	0.8%	0.7%	82.8%	11.5%	5.7%	3	Soft	50	0.5	32
57	66.4	68.7	69.2	44	95	205	San Pablo Avenue	Gilman St to Monroe St	25,680	30	0.0%	96.8%	0.0%	3.2%	82.8%	9.6%	7.6%	4	Soft	50	0.5	44
58	65.9	68.3	68.8	42	90	194	San Pablo Avenue	Delaware Street to Hearst Avenue	22,839	30	0.0%	96.8%	0.0%	3.2%	80.6%	11.4%	7.9%	4	Soft	50	0.5	44
59	66.1	68.4	68.9	42	91	196	San Pablo Avenue	north of Ashby Avenue	23,806	30	0.0%	96.8%	0.0%	3.2%	82.5%	9.8%	7.7%	4	Soft	50	0.5	44
60	66.9	69.3	70.0	50	107	231	San Pablo Avenue	south of Ashby Avenue	28,724	30	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
61	50.2	52.6	53.3	4	8	18	Scenic Avenue	north of Hearst Avenue	2,100	25	0.0%	99.7%	0.0%	0.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
62	59.5	61.9	62.5	16	34	74	Seventh Street	south of Dwight Way	8,426	25	0.0%	97.5%	0.0%	2.5%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20

63	64.0	66.7	67.4	34	72	156	Shattuck Avenue	Allston Way to Kittredge Street	19,693	25	0.0%	96.8%	0.0%	3.2%	75.2%	15.1%	9.7%	4	Soft	50	0.5	44
64	64.2	66.6	67.3	33	71	153	Shattuck Avenue	Derby Street to Ward Street	32,083	25	0.0%	98.5%	0.0%	1.5%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
65	64.5	66.9	67.6	34	74	160	Shattuck Avenue	Durant Avenue to Channing Way	22,345	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
66	61.3	63.7	64.3	21	45	97	Shattuck Avenue	Hearst Avenue to University Avenue	14,368	25	0.0%	98.1%	0.0%	1.9%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
67	62.2	64.6	65.2	24	52	112	Shattuck Avenue	University Avenue to Addison Street	18,304	25	0.0%	98.2%	0.0%	1.8%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
68	61.1	63.5	64.2	21	44	95	Sixth Street	Hearst Avenue to University Avenue	14,824	25	0.0%	98.2%	0.0%	1.8%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
69	60.6	63.0	63.7	19	41	88	Sixth Street	University Ave to Bancroft way	15,375	25	0.0%	98.7%	0.0%	1.3%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
70	59.7	62.1	62.7	16	35	76	Stadium Rim Way	east of Piedmont Avenue	4,430	25	0.0%	93.4%	0.0%	6.6%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
71	59.5	61.9	62.6	16	34	74	Telegraph Avenue	north of Dwight Way	7,279	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20
72	58.5	60.0	61.0	13	27	58	Telegraph Avenue	south of Bancroft Way	5,741	25	0.0%	96.8%	0.0%	3.2%	79.2%	16.1%	4.7%	2	Soft	50	0.5	20
73	63.8	66.2	66.9	31	67	144	Telegraph Avenue	south of Derby Street	16,435	25	0.0%	96.0%	0.0%	4.0%	78.8%	13.0%	8.2%	4	Soft	50	0.5	44
74	63.6	66.0	66.7	30	65	140	University Avenue	east of Martin Luther King Jr.	18,250	25	0.0%	96.8%	0.0%	3.2%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
75	63.6	66.0	66.7	30	65	140	University Avenue	east of San Pablo Avenue	25,609	25	0.0%	98.2%	0.0%	1.8%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
76	62.4	64.8	65.4	25	54	115	University Avenue	Shattuck Avenue to Oxford Street	8,075	25	0.0%	93.4%	0.0%	6.6%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
77	64.6	68.3	68.9	42	91	196	University Avenue	Sixth Street to San Pablo Avenue	29,819	25	0.0%	94.7%	4.1%	1.1%	69.4%	15.8%	14.9%	4	Soft	50	0.5	44
78	62.4	64.8	65.4	25	53	115	University Avenue	west of Shattuck Avenue	15,146	25	0.0%	97.3%	0.0%	2.7%	78.7%	13.1%	8.2%	4	Soft	50	0.5	44
79	59.4	61.8	62.5	16	34	73	Warring Street	north of Derby Street	15,970	25	0.0%	99.5%	0.0%	0.5%	78.7%	13.1%	8.2%	2	Soft	50	0.5	20