APPENDIX I1:
TOP NOISE

This page intentionally left blank.

AUGUST 2024

PREPARED FOR:
City of Los Angeles,
Department of City Planning

PREPARED BY:
City of Los Angeles,
Department of City Planning
+
Technical Advisory Panel:
Eyestone Environmental, LLC
Acoustical Engineering Services
Ascent Environmental
Christopher A. Joseph & Associates
DKA Planning
Dudek
Environmental Science Associates
Impact Sciences
Meridian Consultants
Michael Baker International
Noah Tanski Environmental Consulting
Parker Environmental Consultants
Rincon Consultants
Sirius Environmental
Terry A. Hayes Associates

CONSTRUCTION NOISE AND VIBRATION

UPDATES TO THRESHOLDS AND METHODOLOGY

TABLE OF CONTENTS

INTRODUCTION

This document updates the construction noise and vibration thresholds to be used by the Department of City Planning in assessing the environmental impacts of projects in accordance with the California Environmental Quality Act (CEQA).[1] As discussed in more detail below, the thresholds are intended to be suited to the generally urban nature of the City, while still recognizing the importance of human health, including sleep disruption. The thresholds are intended to account for reasonable expectations regarding construction noise and vibration during daytime and nighttime hours, and also include absolute maximum noise levels that are intended to protect human health. These thresholds have been established based on input from Technical Advisory Committee noise experts, as well as a review of noise thresholds used by other state and local agencies.

[1] Other City Departments may utilize these thresholds or their own thresholds as they deem appropriate.

REGULATORY BACKGROUND

Noise and vibration impacts are one of the environmental impact categories considered for development projects pursuant to CEQA. There are several plans and regulations that include policies, guidelines, and requirements regarding noise impacts at the federal, state, and local levels. As described below, these plans, guidelines, and laws include the following: the U.S. Occupational Safety and Health Administration (OSHA), the Environmental Protection Agency (EPA), the State of California's Division of Occupational Safety and Health (Cal/OSHA), the State of California's Office of Planning and Research (OPR) CEQA Guidelines (Title 14, Division 6, Chapter 3 of the California Code of Regulations), the City of Los Angeles' (City)'s General Plan Noise Element, the Los Angeles Municipal Code (LAMC), and the Federal Transportation Authority's (FTA) Transit Noise and Vibration Impact Assessment Manual. In addition, as discussed below, relevant information included in the City's 2006 CEQA Thresholds Guide also may be used for guidance in evaluating construction-related noise impacts of development projects.

GENERAL EFFECTS OF NOISE AND VIBRATION EXPOSURE ON HUMAN HEALTH

There are varying effects of noise and associated standards and metrics set forth by agencies to address such effects. For example, the U.S. Occupational Safety and Health Administration (OSHA) and the State's Division of Occupational Safety and Health (also known as Cal/OSHA) have adopted regulations designed to protect workers against the effects of occupational noise exposure. Per Cal/OSHA, the permissible noise exposure for 8 hours is 90 dBA (L_{eq}), which is the limit for potential hearing loss.[2] In addition, based on an urban noise survey conducted by the Environmental Protection Agency (EPA), the relationship between noise level and annoyance ranges from seven percent of the population annoyed at a

[2] Cal/OSHA, Title 8 Regulations, Subchapter 7. General Industry Safety Orders, Group 15. Occupational Noise, Article 105. Control of Noise Exposure, §5096. Exposure Limits for Noise, Table N-1 Permissible Noise Exposure.

noise level of 55 dBA (L_{dn}) to 23 percent annoyed at 70 dBA (L_{dn}).[3] Furthermore, per the EPA, sleep disturbance is one of the main major causes of annoyance due to noise. Two components of sleep disturbance include falling asleep and awakening. The EPA states that noise levels of 40 to 50 dBA could result in difficulty in falling asleep for some people, and noise levels of 70 dBA or higher would likely result in awakening.[4] As another example, the Federal Transit Authority (FTA) also states that there may be adverse community reaction to construction noise and sets forth its own criteria of 80 dBA $L_{eq(8\text{-}hour)}$ for FTA construction activity noise near residential uses during daytime hours.[5] Generally, quantifying noise pollution's contribution to other specific health problems (such as heart disease, high blood pressure and stroke, ulcers, and other digestive disorders), remains a challenge because of a lack of comprehensive and verified data.

There are also varying effects of construction vibration and associated standards and metrics that have been established by various agencies to address such effects. These include effects associated with building damage with criteria for specific building types set forth by Caltrans and the FTA. These agencies have also established guidelines regarding construction vibration related to human annoyance.

CEQA FRAMEWORK FOR NOISE IMPACTS

The CEQA Guidelines state that a significant noise impact would occur if a project would result in the "generation of a substantial temporary or permanent increase in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies." With regard to vibration, the CEQA Guidelines state that a significant vibration impact would occur if the project would result in a "generation of excessive groundborne vibration or groundborne noise levels."

CITY POLICIES & REGULATIONS RELATED TO NOISE

The City's General Plan Noise Element includes general objectives and policies related to reducing or eliminating intrusive noise and reducing or eliminating noise impacts associated with development of land and changes in land use. The Noise Element also includes guidelines for noise compatible land uses. However, the Noise Element does not include specific or mandatory standards, policies, or guidance

[3] EPA, Noise Effects Handbook: A Desk Reference to Health and Welfare Effects of Noise, October 1979, Revised July 1981.
[4] EPA, Noise Effects Handbook: A Desk Reference to Health and Welfare Effects of Noise, Page 6-2, October 1979, Revised July 1981.
[5] FTA, Transit Noise and Vibration Impact Assessment Manual, Chapter 7.1, p. 179, September 2018.

specifically related to thresholds or analysis of construction noise and vibration. The Noise Element defines noise-sensitive land uses as single-family and multi-unit dwellings, long-term care facilities (including convalescent and retirement facilities), dormitories, motels, hotels, transient lodging, and other residential uses; places of assembly including churches or houses of worship; hospitals; libraries; schools; auditoriums; concert halls; outdoor theaters; nature and wildlife preserves; and parks.

The LAMC is the regulatory mechanism for implementing the goals and policies of the City's General Plan, including those set forth in the Noise Element. With regard to construction noise, the City's Noise Ordinance (LAMC Section 112.05) sets forth a maximum noise level for construction equipment of 75 dBA at a distance of 50 feet when operated within 500 feet of a residential zone. Compliance with this standard does not apply where compliance therewith is technically infeasible.[6] In addition, LAMC Section 41.40 prohibits construction between the hours of 9:00 p.m. and 7:00 a.m. Monday through Friday, before 8:00 a.m. and after 6:00 p.m. on Saturday or any national holiday, and at any time on Sunday (i.e., construction is allowed Monday through Friday between 7:00 a.m. and 9:00 p.m. and Saturdays and national holidays between 8:00 a.m. and 6:00 p.m.). Construction may be permitted outside of these hours if a temporary noise variance is approved by the Los Angeles Board of Police Commissioners.

With regard to vibration, LAMC Section 91.3307.1 states, "Adjoining public and private property shall be protected from damage during construction, remodeling, and demolition work. Protection must be provided for footings, foundations, party walls, chimneys, skylights, and roofs. Provisions shall be made to control water runoff and erosion during construction or demolition activities."

In 2006, the City set forth the L.A. CEQA Thresholds Guide, which was intended to provide guidance, as a voluntary tool, for CEQA impact analysis. Today, these thresholds are only used as guidance in instances where staff finds they are beneficial to use and supported with substantial evidence.[7] In addition, the L.A. CEQA Thresholds Guide recognizes that its applicability and use may be re-evaluated after a period of use. With regard to construction noise, the L.A. CEQA Threshold Guide states that a project would normally have a significant impact on noise levels from construction if:

- Construction activities lasting more than one day would exceed existing ambient exterior sound levels by 10 dBA or more at a noise-sensitive use;

[6] In accordance with the City's Noise Regulations, "technically feasible" means that the established noise limitations can be complied with at a project site, with the use of mufflers, shields, sound barriers, and/or other noise reduction devices or techniques employed during the operation of equipment.

[7] "Substantial evidence" in this document is as defined in Public Resources Code Section 21080(e)(1) and CEQA Guidelines Section 15384, and is evidence that is of a ponderable legal significance, reasonable in nature, credible and of solid value.

- Construction activities lasting more than 10 days in a three-month period would exceed existing ambient exterior noise levels by 5 dBA or more at a noise-sensitive use; or
- Construction activities would exceed the ambient noise level by 5 dBA at a noise-sensitive use between the hours of 9:00 p.m. and 7:00 a.m. Monday through Friday, before 8:00 a.m. or after 6:00 p.m. on Saturday, or at any time on Sunday.

Note that in practice, these noise increases have been evaluated in terms of hourly L_{eq}, in lieu of the 24-hour CNEL noise metric, as construction noise typically does not occur over a 24-hour basis. Also note that the above thresholds in the L.A. CEQA Thresholds Guide were developed based on more open-ended noise questions within Appendix G of the CEQA Guidelines that have since been revised.

Use of the above thresholds in City CEQA documents for construction noise impact analysis has proven to be overly sensitive and has resulted in impact conclusions that are not supported with substantial evidence. In particular, use of a threshold of a 5 dBA increase over existing ambient conditions often results in significant impacts for routine construction activities that are expected to occur in an urban environment. For example, in a single-family neighborhood with a 48 dBA L_{eq} daytime baseline, the 5 dBA threshold suggests that a construction impact of 54 dBA L_{eq} would be significant. However, evidence supports that noise levels less than 55 dBA are acceptable to over 90 percent of the general public. The EPA has identified a 55 dBA noise level as the acceptable noise limit for outdoors uses as it would not interfere with activity or result in annoyance[8].

The existing threshold is so low that it has the potential to show significant impacts even for the construction or exterior remodeling of a single-family home in a residential area involving no unusual noise producing equipment. In addition, according to this threshold, a single daily impact in excess of 5 dBA is considered to be a significant environmental impact, even though the impact would be temporary in nature, could result in short-term impacts in terms of human annoyance, but may not necessarily result in direct health impacts unless a certain absolute noise threshold is attained. In other words, while a two- or three-year construction project could result in a 5 dBA impact for a single day, the conclusion that this should be considered a significant effect on the environment would be overly conservative, as the impact would be temporary in nature and not necessarily impactful to public health. The L.A. CEQA Thresholds Guide does not include specific thresholds for vibration related to construction activities. However, over time many City CEQA

[8] EPA, Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare With an Adequate Margin of Safety, March 1974.

documents have used the FTA's criteria for addressing construction vibration related to both human annoyance and building damage.

In the future, the City proposes to require environmental protection measures (EPMs) to be implemented as part of development projects. These EPMs have been drafted and have already been incorporated into draft updates to the City's Land Use Element (in individual Community Plan updates which comprise the Land Use Element) that are underway, such as the Downtown Community Plan Update. These will be applicable to development projects within those geographic areas once those Community Plans or other policy efforts that rezone properties to the new LAMC Chapter 1A zoning are adopted. For areas not undergoing Community Plan updates, EPMs could be made standard conditions of approval until such time that the EPMs are adopted for discretionary projects requiring findings that could support imposing noise conditions. Relevant EPMs related to noise and vibration are included in Attachment 1.

OTHER REFERENCE DOCUMENTS

The following documents and studies were also considered in the evaluation and determination of updated noise and vibration thresholds:

- OSHA – OSHA Technical Manual (OTM) Section III: Chapter 5 Noise; OSHA Standard 1910 Occupational Safety and Health Standards Subpart G Occupational Health and Environmental Control
- EPA – Noise Effects Handbook: A Desk Reference to Health and Welfare Effects of Noise
- FTA – Transit Noise and Vibration Impact Assessment Manual, Chapter 7.1
- Cal/OSHA – Title 8 Regulations, Subchapter 7. General Industry Safety Orders, Group 15, Occupational Noise, Article 105. Control of Noise Exposure, §5096.
- State of California's OPR – General Plan Guidelines
- Caltrans – Traffic Noise Analysis Protocol, Chapter 3.2
- Caltrans – Technical Noise Supplement to the Traffic Noise Analysis Protocol,
- Caltrans – Transportation and Construction Vibration Guidance Manual, Chapter 7.3 Evaluating Potential Vibration Impacts
- City of Los Angeles – General Plan Noise Element
- City of Los Angeles – Municipal Code Chapter XI Noise Regulation

- City of Los Angeles – 2006 L.A. CEQA Threshold Guide
- City of Beverly Hills – Municipal Code, Chapter 1 Noise Regulations, Article 2. Specific Noise Sources and Regulations, Section 5-1-205: Restrictions on Construction Activity
- City of Fresno - General Plan Noise Element
- City of Pasadena – Municipal Code Chapter 9.36 – Noise Restrictions

CONSTRUCTION NOISE & VIBRATION ANALYSIS IN CITY CEQA DOCUMENTS

NOISE ANALYSIS

The City has used various thresholds for evaluating construction noise impacts. Prior to 2006, the City had often used the criteria in the Noise Ordinance to evaluate potential construction noise impacts. Once the L.A. CEQA Thresholds Guide was approved in 2006, the City also used the construction noise thresholds established within the Thresholds Guide. Note that the thresholds in the L.A. CEQA Thresholds Guide were based on broader questions within Appendix G of the CEQA Guidelines that have since been refined after 2006.

In practice, use of the thresholds from the L.A. CEQA Thresholds Guide has resulted in construction noise impact conclusions that are not supported by substantial evidence. This construction noise threshold does not recognize the urban nature of much of the City and the expectation that daytime construction activities are a common activity within an urban environment. As an example, construction of a typical single-family residential addition within an existing neighborhood could potentially exceed the significance thresholds within the L.A. CEQA Thresholds Guide, which are primarily based on increases above ambient noise levels, and which may not necessarily result in human health effects or impacts. Furthermore, these thresholds do not distinguish between daytime and nighttime construction activities where nighttime construction activities are the activities that may have the greater potential to create intrusive noise and impact sleep. In addition, while use of the criteria from the Noise Ordinance (described above) for a maximum 75 dBA at a distance of 50 feet when operated within 500 feet of a residential zone when technically feasible is reasonable, the wording of the criteria including the use of the terminology “technically feasible” as defined therein is somewhat open ended and the standard is limited to a residentially zoned subset of sensitive noise uses, rather than a broader range of sensitive uses which may also be impacted by construction noise.

VIBRATION ANALYSIS

With regard to vibration, City CEQA documents often use FTA's guidance related to potential building damage and human annoyance. Based on this FTA guidance, impacts relative to ground-borne vibration associated with potential building damage would be considered significant if any of the following future events were to occur:

- Project construction activities cause ground-borne vibration levels to exceed 0.5 PPV at the nearest off-site reinforced concrete, steel, or timber building.
- Project construction activities cause ground-borne vibration levels to exceed 0.3 PPV at the nearest off-site engineered concrete and masonry building.
- Project construction activities cause ground-borne vibration levels to exceed 0.2 PPV at the nearest off-site non-engineered timber and masonry building.
- Project construction activities cause ground-borne vibration levels to exceed 0.12 PPV at buildings extremely susceptible to vibration damage, such as historic buildings.

Based on FTA guidance, construction vibration impacts associated with human annoyance would be significant if the following were to occur (applicable to frequent events; 70 or more vibration events per day):

- Project construction activities cause ground-borne vibration levels to exceed 72 VdB at off-site sensitive uses, including residential, hotel and theater uses.

In practice, use of the FTA guidance regarding human annoyance from vibration has proven to be too rigid as most typical construction activities during daytime hours within an urban environment would exceed the 72 VdB threshold if a sensitive use is nearby (i.e., within 80 feet). Similar to construction noise, construction vibration is reasonably anticipated in an urban environment, like that found in the City, and such vibration levels would not be anticipated to result in health impacts or substantially affect the activities of the general public during daytime hours. The guidance regarding building damage has been more reasonable in practice.

CONSTRUCTION NOISE & VIBRATION THRESHOLDS

Recognizing the overly sensitive construction noise threshold in the L.A. CEQA Thresholds Guide and the FTA guidance for construction vibration, the following new thresholds are more suited to the generally urban nature of the City yet still recognize the importance of human health, including sleep disruption. Specifically, these thresholds account for reasonable expectations during daytime and nighttime hours and also include absolute noise levels that are intended to protect human health. These thresholds (Attachment 2 - Thresholds) and methodology (Attachment 3 – Methodology) have been determined based on input from noise experts in the Technical Advisory Committee, as well as a review of noise thresholds used by other state and local agencies and other resource documents.

The construction noise thresholds are focused on impacts to sensitive uses. The Noise Element defines noise-sensitive land uses as single-family and multi-unit dwellings, long-term care facilities (including convalescent and retirement facilities), dormitories, motels, hotels, transient lodging, and other residential uses; places of assembly including churches or houses of worship; hospitals; libraries; schools; auditoriums; concert halls; outdoor theaters; nature and wildlife preserves; and parks. For purposes of environmental analysis based on the updated thresholds, this definition of sensitive uses will be carried over from the list in the Noise Element; however, recording studios will be added as a sensitive use relative to construction vibration impacts.

Generally, there are commonly two types of noise standards, as follows:

- Relative or “increase” standards - these are quantified thresholds, expressed as an allowable increase in decibels, attributed to the construction noise contribution, over the pre-existing outdoor ambient sound level at a receptor.
- Absolute or “fixed” standards - these are quantified thresholds that represent a fixed noise limit and take into account a potential impact that is independent of the pre-existing outdoor ambient sound level at a receptor.

NOISE THRESHOLDS

Daytime Construction Noise Thresholds

Increase Over Ambient

- For construction activities that occur between 7:00 a.m. and 7:00 p.m. Monday through Friday, and between 8:00 a.m. and 6:00 p.m. on Saturdays, there is no numerical threshold above ambient noise levels.

Supporting Discussion Points:

- This approach is consistent with many jurisdictions within the State, including the cities of Beverly Hills, Fresno, and Pasadena, and Caltrans, which do not have a threshold for a numeric increase in ambient noise levels.[9]
- Daytime hours experience higher ambient levels of noise due to additional sources of noise such as traffic noise, maintenance activities, construction activities, etc.
- Construction activity hours for this threshold are within the envelope of the construction hours currently permitted by LAMC 41.40. However, rather than a 9:00 p.m. construction hour end time as permitted by the LAMC, an earlier 7:00 p.m. end time was chosen as people are more sensitive to noise during evening hours when compared to daytime hours. In addition, a 7:00 p.m. end time is supported by the CNEL metric itself wherein a 5-dB penalty is added for noise levels between 7:00 p.m. and 10:00 p.m.
- Daytime construction activities are temporary and periodic.
- This approach recognizes the urban environment of the City and that daytime construction activities are commonplace (e.g., it is not expected that daytime activities would affect most of the general public's sleeping). Potential human health impacts are addressed by the absolute thresholds below and increases in ambient noise levels are addressed in the nighttime thresholds below, including consideration of sleep disruption.
- Within the City, existing daytime ambient noise for uses along major roadways is in the range of 65 to 70 dBA and along quiet residential streets is between 55 and 60 dBA. The table below

[9] City of Beverly Hills Municipal Code Section 5-1-205; City of Fresno General Plan Noise Element Table 14.3-5; City of Pasadena Municipal Code Chapter 9.36.80; Caltrans Traffic Noise Analysis Protocol Chapter 3.2, April 2020.

provides samples of the daytime ambient noise levels, as measured along major roadways and smaller quiet residential streets. As discussed below, construction noise would be limited to a maximum absolute noise threshold of 80 dBA $L_{eq(8\text{-hour})}$ at noise sensitive uses. With respect to ambient noise, the 80 dBA $L_{eq(8\text{-hour})}$ absolute threshold would be similar to a noise increase of approximately 10 dBA (based on an existing 70 dBA ambient noise level, a typical noise level along major roadways) to 25 dBA (based on an existing 55 dBA ambient noise level, a typical noise level in a quieter residential neighborhood) over the ambient noise level. Table 1, below, provides the typical ambient noise levels along various roadways within the City.

Table 1

Typical Ambient Noise Levels Along Roadways

LOCATION	DAYTIME AMBIENT NOISE LEVELS,[a] dBA
Major Roadways	
Hollywood Boulevard (Hollywood)	71.7
Vine Street (Hollywood)	69.5
Sunset Boulevard (Hollywood)	71.0
Highland Boulevard (Hollywood)	71.5
Figueroa Street (downtown)	71.1
Hope Street (downtown)	66.6
7th Street (downtown)	70.5
Vermont Avenue (South LA)	68.6
Burbank Boulevard (Encino)	68.7
Minor Roadways (residential areas)	
Stanbury Avenue (Sherman Oaks)	58.8
Calhoun Avenue (Sherman Oaks)	57.6
Hudson Avenue (Hollywood)	59.9
Leland Way (Hollywood)	60.9
Browning Boulevard (South LA)	58.3
Etiwanda Avenue (Encino)	53.3
Angelo Drive (hillside)	54.7
Hillgrove Drive (hillside)	56.5

[a] *Measured ambient noise levels along noted roadways are based on analysis of previous projects within the City.*

- Although the increase in ambient noise levels of 10 to 25 dBA would be noticeable, the construction noise would be temporary and would occur during daytime hours (outside of the sensitive sleeping hours). Furthermore, residents of urban areas are used to temporary construction noise and its increase to ambient noise levels of 10 to 25 dBA and higher, from time to time during daytime hours. The City of Los Angeles encounters a large amount construction projects; specifically, there

were approximately 173,000 permits applied with the Los Angeles Department of Building and Safety for fiscal year 2022-2023[10]. As such, the City would not consider increases in ambient noise levels resulting from construction activities as constituting significant environmental effects. Instead, as discussed below, the City would utilize an absolute noise exposure level over an extended period for evaluating potential noise impacts during daytime hours, as this metric better reflects potential health impacts due to construction noise.

- Daytime construction noise levels are further reduced by existing building codes for certain types of buildings. For example, the State has established noise insulation standards for new multi-family residential units, hotels, and motels via the California Noise Insulation Standards (Title 24, California Code of Regulations). The noise insulation standards set forth an interior standard of 45 dBA CNEL in any habitable room. The standards require an acoustical analysis demonstrating that dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to exterior noise levels greater than 60 dBA CNEL. Title 24 standards are typically enforced by local jurisdictions through the building permit application process.
- Sensitive uses such as hospital buildings are generally designed to limit the effects of exterior noise on the interior uses of the building, and include fixed windows, which further minimize noise from exterior sources. [11]
- Noise-related impacts to biological resources should be addressed in the biological resources analysis of the CEQA document.

<u>Absolute Thresholds</u>

- On- and off-site construction noise during daytime hours (7:00 a.m. and 7:00 p.m. Monday through Friday, and 8:00 a.m. to 6:00 p.m. on Saturdays) are limited to a maximum 80 dBA $L_{eq(8\text{-}hour)}$ absolute threshold at sensitive uses (at the property line or at the exterior of the building), including outdoor public recreational areas owned or maintained by a public agency. This standard does not apply to private residential balconies which may or may not extend past the exterior of a building, or to private residential recreational areas.

Supporting Discussion Points:

[10] LADBS, "A Few Facts About Us", https://www.ladbs.org/our-organization/messaging/a-few-facts-about-us, Accessed June 2024.

[11] As required per the California Noise Insulation Standards (Title 24, California Code of Regulations), exterior sound insulation requirements.

- The 80 dBA $L_{eq(8\text{-}hour)}$ absolute threshold is used by the FTA for construction noise near residential uses during daytime hours.
- The 80 dBA $L_{eq(8\text{-}hour)}$absolute threshold would be similar to the 75 dBA at 50 feet criteria for residential uses set forth by the LAMC when adjusting for distance and would expand its applicability by also applying to other non-residential sensitive uses.
- Regarding the identification of construction noise sensitive uses, a distinction is also made between regularly inhabited areas of residential uses (such as residential units within a building) and temporarily inhabited residential areas (such as private outdoor amenity spaces, backyards, and private balconies). These private outdoor areas are typically utilized on a more temporary and intermittent basis, often outside the hours of construction, are exposed to higher ambient noise levels from other daytime outdoor activities, such as leaf blowers, traffic noise, human voices, and children playing, and therefore exposure to continuous noise levels at which health impacts could occur or be unreasonably disruptive is not expected. Additionally, residents may opt to not utilize the spaces and avoid exposure to higher noise levels, should construction noise be audible in those spaces.
- Per OSHA/CalOSHA, the noise limit for potential hearing loss is 90 dBA $L_{eq(8\text{-}hour)}$ and the absolute threshold would be well below this limit.[12]

Nighttime Construction Noise Thresholds

Note: Nighttime construction activities require a variance approved by the City of Los Angeles Police Commission.

Increase Over Ambient

- For construction activities that occur between 7:00 P.M. and 7:00 A.M. Monday through Friday, and between 6:00 P.M. and 8:00 A.M. on Saturdays, and anytime on Sundays or national holidays, noise levels at sensitive uses would not exceed 5 dBA above the ambient noise level at the receptor.
- Mat pour activities (and other types of concrete pour, which require an extended continuous pour beyond the allowable construction hours) that are required to occur during nighttime hours for less than five days are exempt from this provision.

[12] OSHA, Standard 1910.95 – Occupation noise exposure. In addition to the permissible noise level of 90 dBA ($L_{eq(8\text{-}hour)}$), OSHA also specified an action level of 85 dBA ($L_{eq(8\text{-}hour)}$) at which a hearing conservation program is required (OSHA Standard 1910.95(c)(1)).

Supporting Discussion Points:

- The threshold is rigorous and similar to San Francisco and other jurisdictions/agencies (including the City Beverly Hills, the FTA and Caltrans).
- A 5-dB increase is generally an increase that is distinctly perceptible.
- The threshold recognizes the importance of human health, as the nighttime ambient noise levels with a 5-dB increase may indicate a potential sleep disturbance, but would be well below the noise limits for potential hearing loss.
- People generally do not use outdoor areas during nighttime activities. However, as indicated above, the threshold takes into account potential noise increase at the building interior, which may result in potential sleep disturbance.
- Mat concrete pour activities typically require a continuous concrete pour to achieve a seamless, integral slab and are necessary for certain types of construction. Therefore, depending on the size of the mat foundation, mat concrete pour activities at times extend into the nighttime hours due to the continuous pour requirements. The number of mat concrete pours is typically limited to a few days for most projects and is temporary in nature. Activities associated with mat and other types of concrete pours involve cement trucks and pumps that do not typically generate noise levels above 80 dBA at a distance of 50 feet. Therefore, mat pour activities with a limited duration are exempted from this threshold and are not expected to result in significant construction noise impacts related to human health. In addition, in accordance with the City's anticipated forthcoming EPMs, staging areas for the mat pour activities would be required to be located as far from noise-sensitive uses as reasonably possible and technically feasible in consideration of site boundaries, topography, intervening roads and uses, and operational constraints.

<u>Absolute Noise</u>

- For construction activities that occur between 7:00 p.m. and 7:00 a.m. Monday through Friday, and between 6:00 p.m. and 8:00 a.m. on Saturdays, and anytime on Sundays or national holidays, the maximum exterior noise level at sensitive uses where sleep is expected will not exceed the following:
    - 55 dBA L_{eq} for sensitive uses within older buildings that would have operable windows that may be open.
    - 65 dBA L_{eq} for sensitive uses with windows closed that are not operable and are single-glazed.

- 70 dBA L_{eq} for sensitive uses that have newer construction (i.e., the structures have been designed to ensure that an interior 45 dBA is obtained with double-paned windows)

- Mat pour activities (and other types of concrete pour, which require an extended continuous pour beyond the allowable construction hours) that are required to occur during nighttime hours for less than five days are exempt from this provision.

Supporting Discussion Points:

- The nighttime absolute noise threshold levels are generally based on levels so as not to impact people sleeping. Two components of sleep disturbance include falling asleep and awakening. Per the EPA, noise levels of 40 to 50 dBA could result in difficulty in falling asleep for some people, and noise levels of 70 dBA or higher would likely result in awakening.[13] Therefore, the threshold is based on not exceeding an interior noise level of 45 dBA L_{eq} (averaged between 40 and 50 dBA).

- These maximums, which are tailored based on likely noise attenuation from different building types would foreseeably provide for an interior noise level of 45 dBA L_{eq}, which will address potential noise disruptions to sleep.

- These noise levels support the expectation of a quieter sound environment at residential land uses during nighttime periods, and all-day on Sundays and national holidays when traditionally most occupants would be home.

[13] EPA, Noise Effects Handbook: A Desk Reference to Health and Welfare Effects of Noise, p. 6-2, July 1981.

VIBRATION THRESHOLDS

Vibration Thresholds for Human Annoyance

- For construction activities that occur between 7:00 a.m. and 7:00 p.m. Monday through Friday, and between 8:00 a.m. and 6:00 p.m. on Saturdays, there is no numerical threshold related to human annoyance.
- During nighttime hours (between 7:00 p.m. and 7:00 a.m. Monday through Friday, and between 6:00 p.m. and 8:00 a.m. on Saturdays), and anytime on Sundays or national holidays, construction activities shall not generate groundborne vibration levels that exceed 80 VdB at the exterior of a sensitive use building.

Supporting Discussion Points:

- The City is an urban area where intermittent human annoyance from construction activity is commonplace and expected during daytime hours and such vibration levels are unlikely to result in health impacts or substantially affect the activities of the public during daytime hours.
- The Federal Transit Administration (FTA) provides ground borne vibration impact criteria ranging from 72 (for frequent vibration events) VdB to 80 VdB (infrequent vibration events) for residences and buildings where people normally sleep. The FTA vibration criteria are specified for long-term operations. However, since project construction activities are temporary, the 80 VdB criteria for infrequent vibration events would be appropriate as a vibration threshold for human annoyance. In addition, vibration due to mat concrete pour activities would be minimal (below 80 VdB), as concrete trucks and concrete pumps do not generate excessive vibration levels. Therefore, mat pour activities with a limited duration are exempted from this threshold and are not expected to result in significant construction vibration impacts.

Vibration Thresholds for Building Damage

- Architectural Building Damage—Construction activities shall not exceed the following building damage thresholds for the identified structures:
    - Fragile Buildings: 0.1 PPV
    - Historic Buildings: 0.25 PPV
    - Older[14] Residential Structures: 0.3 PPV
    - New Residential Structures: 0.5 PPV
    - Modern Industrial/Commercial Buildings: 0.5 PPV

Supporting Discussion Points:

- These thresholds are consistent with Caltrans criteria that are based on specific building types.[15]

[14] Caltrans does not specify the age of the building to be considered. For vibration impact analyses, a building over 50 years old can be considered an "older" residential structure.

[15] Caltrans, Transportation and Construction Guidance Manual, Table 19, Guideline Vibration Damage Potential Threshold Criteria, April 2020.

ATTACHMENT 1

ENVIRONMENTAL PROTECTION MEASURES RELATED TO NOISE AND VIBRATION

The following Environmental Protection Measures (EPMs) are included in new Community Plan EIRs:

Noise and Vibration Standards (NV1) – Construction Noise

NV1-1: Noise Shielding and Muffling

a. Applicability Threshold

Any Project whose earthwork or construction activities involve the use of construction equipment and require a permit from LADBS.

b. Standard

Power construction equipment (including combustion engines), fixed or mobile, shall be equipped with noise shielding and muffling devices consistent with manufacturers' standards or the Best Available Control Technology. All equipment shall be properly maintained, and the Applicant or Owner shall require any construction contractor to keep documentation on-site during any earthwork or construction activities demonstrating that the equipment has been maintained in accordance with manufacturer's specifications.

NV1-2: Use of Driven Pile Systems

a. Applicability Threshold

Any Project whose earthwork and construction activities involve the use of construction equipment and require a permit from LADBS.

b. Standard

Driven (impact) pile systems shall not be used, except in locations where the underlying geology renders drilled piles, sonic, or vibratory pile drivers infeasible, as determined by a soils or geotechnical engineer and documented in a soils report.

NV1-3: Enclosure or Screening of Outdoor Mechanical Equipment

a. Applicability Threshold

Any Project whose earthwork or construction activities involve the use of construction equipment and require a permit from LADBS.

b. Standard

All outdoor mechanical equipment (e.g., generators, compressors) shall be enclosed or visually screened. The equipment enclosure or screen shall be impermeable (i.e., solid material with minimum weight of 2 pounds per square feet) and break the line of sight between the equipment and any off-site Noise-Sensitive Uses.

NV1-4: Location of Construction Staging Areas

a. Applicability Threshold

Any Project whose earthwork or construction activities involve the use of construction equipment and require a permit from LADBS.

b. Standard

Construction staging areas shall be located as far from Noise-Sensitive Uses as reasonably possible and technically feasible in consideration of site boundaries, topography, intervening roads and uses, and operational constraints. The burden of proving what constitutes 'as far as possible' shall be upon the Applicant or Owner, in consideration of the above factors.

NV1-5: Temporary Walls

a. Applicability Threshold

Any Project whose earthwork and construction activities involve the use of construction equipment and require a permit from LADBS; and whose construction activities are located within a line of sight to and within 500 feet of Noise-Sensitive Uses, with the exception of Projects limited to the construction of 2,000 square feet or less of floor area dedicated to residential uses.

b. Standard

Noise barriers, such as temporary walls (minimum ½-inch thick plywood) or sound blankets (minimum STC 25 rating), that are a minimum of eight feet tall, shall be erected between construction activities and Noise-Sensitive Uses as reasonably possible and technically feasible in consideration of site boundaries, topography, intervening roads and uses, and operational constraints. The burden of proving that compliance is technically infeasible shall be upon the Applicant or Owner. Technical infeasibility shall mean that noise barriers cannot be located between construction activities and Noise-Sensitive Uses due to site boundaries, topography, intervening roads and uses, and/or operational constraints.

NV1-6: Noise Study

a. Applicability Threshold

Any Project whose earthwork or construction activities involve the use of construction equipment and require a permit from LADBS; are located within 500 feet of Noise-Sensitive Uses; and have one or more of the following characteristics:

- Two or more subterranean levels;
- 20,000 cubic yards or more of excavated material
- Simultaneous use of five or more pieces of construction equipment; or
- Construction duration (excluding architectural coatings) of 18 months or more.

Or any Project whose construction activities involve impact pile driving or the use of 300 horsepower equipment.

b. Standard

A Noise Study prepared by a Qualified Noise Expert shall be required and prepared prior to obtaining any permit by LADBS. The Noise Study shall characterize expected sources of earthwork and construction noise that may affect identified Noise-Sensitive Uses, quantify expected noise levels at these Noise-Sensitive Uses, and recommend measures to reduce noise exposure to the extent noise reduction measures are available and feasible, and to demonstrate compliance with any noise requirements in the LAMC. Specifically, the Noise Study shall identify noise reduction devices or techniques to reduce noise levels in accordance with accepted industry practices and in compliance with LAMC standards. Noise reduction devices or techniques shall include but not be limited to mufflers, shields, sound barriers, and time and place restrictions on equipment and activities. The Noise Study shall identify anticipated noise reductions at Noise-Sensitive Uses associated with the noise reduction measures. Applicants and Owners shall be required to implement and comply with all measures identified and recommended in the Noise Study. The Noise Study and copies of any contractor agreements shall be maintained pursuant to the proof of compliance requirements in Section I.D.6.

Noise and Vibration Standards (NV2) - Construction Vibration

NV2-1: Baseline Survey and Vibration Control Plan

a. Applicability Threshold

Any Project, with the exception of Projects limited to the construction of 2,000 square feet or less of floor area dedicated to residential uses, whose earthwork or construction activities: (1) involve the use of construction equipment, including Heavy Construction Equipment, that produces 0.12 PPV or more of vibration at a distance of 25 feet (see reference vibration levels in Appendix F); (2) require a permit from LADBS; and (3) which occur:

- Within 25 feet of any building extremely susceptible to vibration damage, including unreinforced masonry buildings, tilt-up concrete wall buildings, wood-frame multi-story buildings with soft, weak or open front walls, and non-ductile concrete buildings, or a building that is designated or determined to be a historic resource pursuant to local or state law or that is determined to be potentially eligible for historic designation in a Historic Resources Survey; or
- Within 15 feet of non-engineered timber and masonry buildings.

Or any Project whose construction activities involve the use of pile drivers within 135 feet of any building extremely susceptible to vibration damage, including existing unreinforced masonry buildings, existing tilt-up concrete wall buildings, existing wood-frame multi-story buildings with soft, weak or open front walls, and existing non-ductile concrete buildings, or a building that is designated or determined to be a historic resource pursuant to local or state law or that is determined to be potentially eligible for historic designation in a Historic Resources Survey.

b. Standard

Prior to demolition, grading/excavation, or construction, a Qualified Structural Engineer shall prepare a survey establishing baseline structural conditions of potentially affected structures and a Vibration Control Plan, which shall include methods to minimize vibration, including, but not limited to:

- A visual inspection of the potentially affected structures to document (by video and/or photography) the apparent physical condition of the building (e.g., cracks, broken panes, etc.).
- A shoring design to protect the identified structures from potential damage;
- Use of drilled piles or a sonic vibratory pile driver rather than impact pile driving, when the use of vibrating equipment is unavoidable;
- Use of rubber-tired equipment rather than metal-tracked equipment; and
- Avoiding the use of vibrating equipment when allowed by best engineering practice.

NV2-2: Repair of Damage

a. Applicability Threshold

Any Project, with the exception of Projects limited to the construction of 2,000 square feet or less of floor area dedicated to residential uses, whose earthwork or construction activities: (1) involve the use of construction equipment, including Heavy Construction Equipment, that produces 0.12 PPV or more of vibration at a distance of 25 feet (see reference vibration levels in Appendix F); (2) require a permit from LADBS; and (3) which occur:

- Within 25 feet of any building extremely susceptible to vibration damage, including unreinforced masonry buildings, tilt-up concrete wall buildings, wood-frame multi-story buildings with soft, weak or open front walls, and non-ductile concrete buildings, or a building that is designated or determined to be a historic resource pursuant to local or state law or that is determined to be potentially eligible for historic designation in a Historic Resources Survey; or
- Within 15 feet of non-engineered timber and masonry buildings.

Or any Project whose construction activities involve the use of pile drivers within 135 feet of any building extremely susceptible to vibration damage, including existing unreinforced masonry buildings, existing tilt-up concrete wall buildings, existing wood-frame multi-story buildings with soft, weak or open front walls, and existing non-ductile concrete buildings, or a building that is designated or determined to be a historic resource pursuant to local or state law or that is determined to be potentially eligible for historic designation in a Historic Resources Survey.

b. Standard

In the event of damage to any non-historic building due to construction vibration, as verified by the Qualified Structural Engineer, a letter describing the damage to the impacted building(s) and recommendations for repair shall be prepared by the Qualified Structural Engineer within 60 days of the time when damage occurred. Repairs shall be undertaken and completed, at the Owner's or Applicant's expense, in conformance with all applicable codes.

In the event of vibration damage to any building that is designated or determined to be a historic resource pursuant to local or state law or that is determined to be potentially eligible for historic designation in a Historic Resources Survey, a letter describing the damage to the impacted building(s) and recommendations for repair shall be prepared by the Qualified Historian within 60 days of the time when damage occurred. Repairs shall be undertaken and completed, at the Owner's or

Applicant's expense, in conformance with the California Historical Building Code (Title 24, Part 8) as well as the Secretary of the Interior's Standards for the Treatment of Historic Properties and associated guidelines, as applicable and as determined by the Qualified Historian.

Additional EPM

Although not included in the current new Community Plan EIRs, the following Additional EPM is included to address vibration-sensitive uses:

NV2-3: Vibration Sensitive Uses

a. Applicability Threshold

Any Project, with the exception of Projects limited to the construction of 2,000 square feet or less of floor area dedicated to residential uses, whose earthwork or construction activities occur within 150 feet of hospital and veterinary operating centers, imaging facilities, and recording studios.

b. Standard

- Prior to demolition, grading/excavation, or construction, a Qualified Vibration Consultant shall prepare a Vibration Impact Analysis at the vibration sensitive use and shall prepare a Vibration Control Plan, to minimize vibration impacts.
- The qualified vibration consultant shall take vibration monitoring measurements during site clearing, earthmoving activities, and foundation and structural activities within 150 feet of the sensitive use in order to assess the actual impact of vibration on adjacent structures and to incorporate and adjust techniques as necessary to reduce vibration. To the extent the adjacent sensitive use allows the applicant to conduct monitoring within the adjacent sensitive use, baseline monitoring prior to construction and monitoring during these construction activities shall be conducted at the sensitive use. The engineer shall insure the incorporation of measures that reduce vibration at the sensitive use.
- Noticing of the scheduling of various phases of construction will be submitted to the adjacent vibration-sensitive use 45 days in advance of activities and shall identify the dates of activity, the hours of activity, types of equipment to be used and the anticipated noise and vibration.

ATTACHMENT 2

THRESHOLDS

CONSTRUCTION NOISE THRESHOLDS

The following thresholds apply to both on- and off-site construction activities associated with a project:

Daytime Construction Activities:

Daytime Construction Activities: Construction activities occurring between 7:00 A.M. and 7:00 P.M. holidays.

Daytime Noise Sensitive Uses. These include single-family and multi-unit dwellings, long-term care facilities (including convalescent and retirement facilities), dormitories, motels, hotels, transient lodging, and other residential uses; places of assembly including churches or houses of worship; hospitals; libraries; schools; auditoriums; concert halls; outdoor theaters; nature and wildlife preserves; outdoor public recreational areas; and parks. This does not include private residential balconies which may or may not extend past the exterior of a building, or to private outdoor spaces.

Threshold:

Increase Over Ambient Threshold. No numerical threshold above ambient noise levels.

Absolute Threshold. Maximum 80 dBA Leq (8-hour) absolute threshold at daytime noise sensitive uses (at the property line with outdoor uses or at the exterior of the building).

Nighttime Construction Activities:

Nighttime Construction Activities: Construction activities occurring between 7:00 P.M. and 7:00 A.M. Monday through Friday, and between 6:00 P.M. and 8:00 A.M. on Saturdays, and anytime on Sundays or national holidays.

Nighttime Noise Sensitive Uses. These include single-family and multi-unit dwellings, long-term care facilities (including convalescent and retirement facilities), dormitories, motels, hotels, transient lodging, and other residential uses; nature and wildlife preserves; outdoor public recreational areas; and parks. This does not include private residential balconies which may or may not extend past the exterior of a building, or to private outdoor spaces.

Threshold:

Increase Over Ambient Threshold. Maximum 5 dBA increase above the ambient noise level at nighttime noise sensitive uses (at the property line with outdoor uses or at the exterior of the building). Mat pour activities (and other types of concrete pour, which require an extended continuous pour beyond the allowable construction hours) that are required to occur during nighttime hours for less than five days are exempt from this provision.

Absolute Threshold. The maximum exterior noise level at nighttime noise sensitive uses where sleep is expected will not exceed the following:

- Maximum 55 dBA Leq for sensitive uses within older buildings that would have operable windows that may be open.
- Maximum 65 dBA Leq for sensitive uses with windows closed that are not operable and are single-glazed.
- Maximum 70 dBA Leq for sensitive uses that have newer construction (e.g., the structures have been designed to ensure that an interior 45 dBA is obtained with double- paned windows). Certain mat pour activities are exempt from this provision.

Mat pour activities (and other types of concrete pour, which require an extended continuous pour beyond the allowable construction hours) that are required to occur during nighttime hours for less than five days are exempt from this provision.

CONSTRUCTION VIBRATION THRESHOLDS

The following thresholds apply to both on- and off-site construction activities associated with a project:

Human Annoyance:

Vibration Sensitive Uses for Human Annoyance. These include single-family and multi-unit dwellings, long-term care facilities (including convalescent and retirement facilities), dormitories, motels, hotels, transient lodging, and other residential uses; places of assembly including churches or houses of worship; hospitals; libraries; schools; auditoriums; concert halls; outdoor theaters; nature and wildlife preserves; outdoor public recreational areas; parks; and recording studios.

Threshold:

Daytime Construction Activities. No numerical threshold.

Nighttime Construction Activities: Maximum 80 VdB at the exterior of a vibration sensitive use building.

Building Damage:

Fragile Buildings are buildings which are extremely susceptible to vibration damage and would include, but not be limited to, existing unreinforced masonry buildings, existing wood-frame multi-story buildings with soft, weak or open front walls, and existing non-ductile concrete buildings.

Historic Buildings are buildings which are considered potential historic resources pursuant to CEQA.

Older Residential Structures are residential buildings which are 50 or more years in age.

New Residential Structures and **Modern Industrial/Commercial Buildings** are buildings which are less than 50 years in age.

Threshold:

Construction activities shall not exceed the following building damage thresholds for the identified structures:

- Fragile Buildings: 0.1 PPV
- Historic Buildings: 0.25 PPV
- Older Residential Structures: 0.3 PPV
- New Residential Structures: 0.5 PPV
- Modern Industrial/Commercial Buildings: 0.5 PPV

ATTACHMENT 3

METHODOLOGY

CONSTRUCTION NOISE AND VIBRATION ANALYSIS METHODOLOGY

Daytime Construction Noise Calculations

In calculating the absolute noise levels, Project construction-related noise levels at the receptor locations are to be calculated based on the anticipated construction equipment planned to be used and using the construction equipment noise levels published by the FHWA's "Roadway Construction Noise Model," as provided in Table 1, on page 3.[1] The construction noise calculations are to be based on the standard point source noise-distance attenuation factor of 6.0 dBA for each doubling of distance, using the following equations:

EQUAiTION 1: $L_{eq(8\text{-}hr)} = L_{max}$ at 50 feet - 20log(D/50) + 10log(UF) + 10Glog(D/50)

Where:

$L_{eq(8\text{-}hr)}$ = calculated noise level, $L_{eq(8\text{-}hr)}$, at a receptor from the operation of a single piece of equipment, dBA.

L_{max} at 50 feet = noise emission level of the construction equipment at the reference distance of 50 feet, dBA (from Table 1).

D = distance from the receptor to the construction equipment, feet

To represent the average construction noise level, as construction equipment would move around the project site, the distance (D) is to be from the approximate center of the project site to the receptor location (maximum 500 feet from the interior of the Project site).

UF = usage factor is the percentage of time during a construction noise operation that a piece of construction equipment is operating at full power.

G = a constant that accounts for topography and ground effects.

For general assessment, assumed G = 0 assuming free-field conditions and without ground effects. If ground effects are of specific importance, use the FTA procedure for calculating G.[2]

1 FHWA Roadway Construction Noise Model User's Guide, 2006.

2 FTA, Transit Noise and Vibration Impact Assessment Manual, Table 4-26, September 2018. See attached.

Table 1

Equipment Noise Emissions and Acoustical Usage Factors

EQUIPMENT	ACOUSTICAL USAGE FACTOR (%)	NOISE LEVEL AT 50 FEET FROM EQUIPMENT, DBA (LMAX)
Auger Drill Rig	20	84
Backhoe	40	78
Compactor (ground)	20	83
Compressor (air)	40	78
Concrete Mixer Truck	40	79
Concrete Pump Truck	20	81
Concrete Saw	20	90
Crane	16	81
Dozer	40	82
Drill Rig Truck	20	84
Drum Mixer	50	80
Dump Truck	40	76
Excavator	40	81
Flat Bed Truck	40	74
Front End Loader	40	79
Generator	50	81
Generator (<25KVA, VMS Sign)	50	73
Gradall	40	83
Grader	40	85
Jackhammer	20	89
Man Lift	20	75
Mounted Impact Hammer (hoe ram)	20	90
Paver	50	77
Pneumatic Tools	50	85
Pump	50	81
Roller	20	80
Scraper	40	84
Trenching Machine	50	80
Tractor	40	84
Vacuum Street Sweeper	10	82
Welders	40	74

Source: FHWA Roadway Construction Noise Model User's Guide, 2006.

The 8-hour $L_{eq(8\text{-}hr)}$ should be calculated for all equipment anticipated to be used for each phase of construction using Equation 1 above.

In addition, the noise level for the loudest equipment operating for some period of time at the nearest distance to the receptor should be calculated using Equation 2 below.

EQUATION 2: $L_{eq(8\text{-}hr)} = L_{max}$ at 50 feet - 20log(D/50) + 10log(UF) + 10log(T/8) + 10Glog(D/50)

Where:

$L_{eq(8\text{-}hr)}$ = calculated noise level, $L_{eq(8\text{-}hr)}$, at a receptor from the operation of a single loudest piece of equipment, dBA.

L_{max} at 50 feet = noise emission level of the construction equipment at the reference distance of 50 feet, dBA (from Table 1).

D = distance from the receptor to the construction equipment, feet

To represent the noise level from the loudest equipment, the distance (D) is to be from perimeter of the project construction site (or, if known, as close to the perimeter as on-site conditions physically allow and/or based on nearest expected work/activity proximity of the loudest equipment piece) to the to the receptor location.

UF = usage factor is the percentage of time during a construction noise operation that a piece of construction equipment is operating at full power.

T = number of hours (within an 8-hour period) that the loudest equipment would be operating at the distance "D" above. For example, for one hour, T would equal one (1). If T is unknown, assume one hour for purposes of this calculation.

G = a constant that accounts for topography and ground effects.

For general assessment, assumed G = 0 assuming free-field conditions and without ground effects. If ground effects are of specific importance, use the FTA procedure for calculating G.[3]

This additional loudest-equipment calculation reflects consideration for such a potentially dominant acoustical contributor to overall construction noise for a defined phase to be closer to the studied off-site receptor than the approximate geographic center of the Project site per Equation 1.

Combine the individually calculated noise levels, using Equation 1 and Equation 2, from all construction equipment within each phase of construction, using the Equation 3, below:

EQUATION 3: $L_{eq(8\text{-}hr)\ total} = 10\log\left[\sum_{all\ sources} 10^{Leq(8\text{-}hr)/10}\right]$

[3] FTA, Transit Noise and Vibration Impact Assessment Manual, Table 4-26, September 2018

An alternative calculation to the $L_{eq(8\text{-}hr)}$ noise level can be made using an area source method, using a computer prediction model, such as, SoundPLAN, CadnaA, or comparable software tools or emulators. The area source calculation method would provide a more refined calculation of the spatial average of the construction equipment over the project site. (See, e.g., attached Sample Noise Calculations Attached for the alternative calculation.)

Nighttime Construction Noise Calculations

For the nighttime construction noise, calculate the one-hour $L_{eq(1\text{-}hr)\ total}$ using above Equations 1 and 2 for the expected operating on-site equipment during a nighttime hour of interest. Then, logarithmically combine these results with Equation 4 below:

EQUATION 4: $L_{eq(1\text{-}hr)\ total} = 10\log\left[\sum_{all\ sources} 10^{Leq(1\text{-}hr)/10}\right]$

Finally, calculate the composite construction plus ambient noise level, using Equation 5 below:

EQUATION 5: $L_{eq(composite)} = 10\log\left[10^{Leq(1\text{-}hr)\ total/10} + 10^{Leq(ambient)/10}\right]$

Determine the potential noise impact by comparing the composite construction noise level from Equation 5 with the measured nighttime ambient noise levels. Noise impact is considered significant if the composite construction noise levels (project construction noise plus nighttime ambient) is 5 dBA or higher than the nighttime ambient noise level.

Vibration Calculations

Vibration levels at the receptor locations are to be calculated based on the Caltrans published standard vibration velocities for various construction equipment operations, as provided in Table 2.

Table 2

Construction Equipment Reference Vibration Source Levels

EQUIPMENT	REFERENCE PPV AT 25 FEET (IN/SEC)
Vibratory Roller	0.210
Large Bulldozer	0.089
Caisson Drilling	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozer	0.003

Source: Caltrans, Transportation and Construction Vibration Guidance Manual, 2020.

The vibration velocities at a receptor can be calculated based on a point source with standard distance propagation conditions, pursuant to Caltrans procedures, using Equation 6, below.

EQUATION 6: $PPV_{Equipment} = PPV_{Ref} (25/D)^n$ (in/sec)

Where:

$PPV_{Equipment}$ = calculated vibration level at a receptor from the operation of a single piece of equipment.

PPV_{Ref} = reference vibration level (PPV) of the construction equipment at the reference distance of 25 feet, dBA (from Table 2).

D = distance from the receptor to the construction equipment, feet

n = 1.1 (the value related to the attenuation rate through ground)

Caltrans suggests a value of 1.1 for "n" because vibration from construction equipment originates primarily near the ground surface. A higher value of "n" based on site-specific soil conditions could be used for a less-conservative estimation of vibration level, such as 1.5 as used by FTA or per Table 3 from the Caltrans 2020 *Transportation and Construction Vibration Guidance Manual*.

Sample Noise Calculations:

Project 1 (Large Project): 1111 Sunset Project EIR

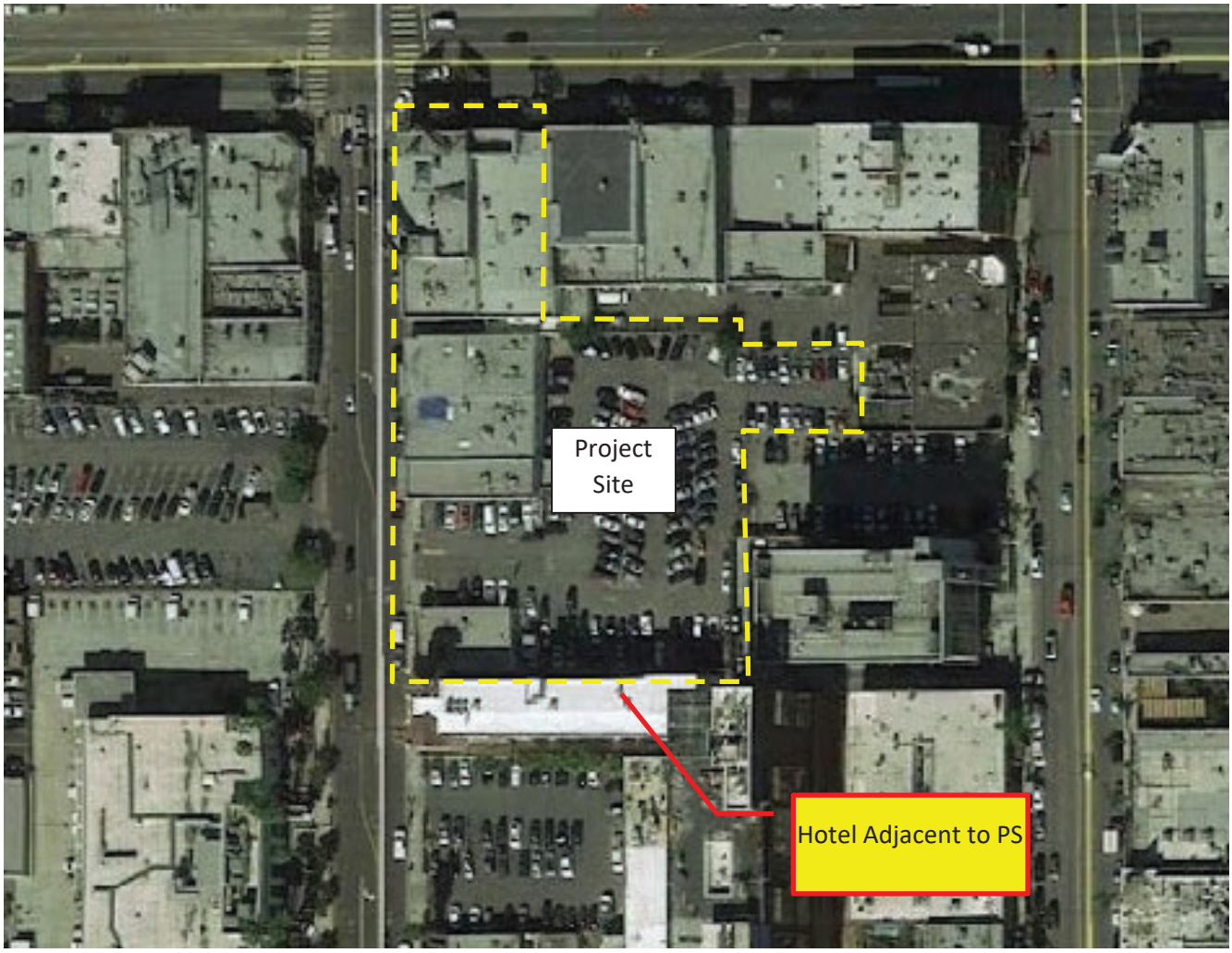
Project 2 (Medium Project): Hollywood & Wilcox Project EIR

Project 3 (Small Project): 8000 W 3rd Street Project MND

PROJECT 1: 8-Hour Leq Construction Noise Calculations - 1111 Sunset Project EIR

Calculation Method (With all equipment operating 8 hours)	Estimated Noise Levels at Nearest Receptor, dBA Leq(8-hr)	
	Demolition/Grading Phase	Grading/Excavation Phase
1. All equipment at center of Project Site (approximately 300 feet), with one noisiest piece near the receptor (70 feet) for one hour. *Calculation using Excel spreadsheet.*	77	75
2. All equipment spatially spread across entire site (modelled as an area source). *Calculation using SoundPLAN computer prediction model.*	72	71
Assumptions: – Demo/Grading Phase: (3) bore/drill rigs, (2) cement and mortar mixers, (4) excavator, (2) plate compactor, (1) generator, (1) rough terrain forklift, (4) rubber-tired loaders, (2) skid steer loaders, (2) tractor/loader/backhoes, (3) water trucks, (3) welders, (1) air compressor, (1) concrete saw. – Grading/Excavation Phase: (3) bore/drill rigs, (2) cement and mortar mixers, (4) excavator, (2) plate compactor, (1) generator, (1) rough terrain forklift, (4) rubber-tired loaders, (2) skid steer loaders, (2) tractor/loader/backhoes, (3) water trucks, (3) welders.		

PROJECT 2: 8-Hour Leq Construction Noise Calculations - Hollywood & Wilcox Project EIR



Calculation Method (With all equipment operating 8 hours)	Estimated N oise Levels at Nearest Receptor, dBA Leq(8-hr)	
	Demolition Phase	Grading Phase
1. All equipment at center of Project Site (approximately 150 feet), with one noisiest piece near the receptor (10 feet) for one hour. *Calculation using Excel spreadsheet.*	88	83
2. All equipment spatially spread across entire site (modelled as an area source). *Calculation using SoundPLAN computer prediction model.*	80	80
Assumptions: - Demo Phase: (1) concrete saw, (2) excavators, (1) front end loader, (1) bobcat, (1) water truck, (1) air compressor. – Grading Phase: (2) bore/drill rigs, (1) plate compactor, (1) excavator, (1) front end loader, (2) tieback drill rigs, (1) air compressor, (2) concrete trucks, (1) crane, (4) welders.		

PROJECT 3: 8-Hour L_{eq} Construction Noise Calculations - 8000 W 3rd Street Project MND

Calculation Method (With all equipment operating 8 hours)	Estimated Noise Levels at Nearest Receptor, dBA Leq(8-hr)	
	Demolition Phase	Grading Phase
1. All equipment at center of Project Site (approximately 75 feet), with one noisiest piece near the receptor (75 feet) for one hour. *Calculation using Excel spreadsheet.*	84	82
2. All equipment spatially spread across entire site (modelled as an area source). *Calculation using SoundPLAN computer prediction model.*	79	78
Assumptions: – Demo Phase: (1) concrete saw, (1) excavators, (2) tractor/loader/backhoe, (1) air compressor. – Grading Phase: (1) bore/drill rigs, (2) excavators, (2) tractor/loader/backhoe, (1) pump, (1) crane, (1) welder.		

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/16/2025
Case Description: ONT-09 Demolition

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Receptor at 50 ft	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	50.0	0.0
Dozer	No	40		81.7	50.0	0.0
Front End Loader	No	40		79.1	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	81.7	81.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/16/2025
Case Description: ONT-09 Site Preparation

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Receptor at 50 ft	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	50.0	0.0
Tractor	No	40	84.0		50.0	0.0

Results

		Noise Limits (dBA)				Noise Limit Exceedance (dBA)			
Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	84.0	82.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/16/2025
Case Description: ONT-09 Grading

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Receptor at 50 ft	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		50.0	0.0
Excavator	No	40		80.7	50.0	0.0
Dozer	No	40		81.7	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	85.0	83.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/16/2025
Case Description: ONT-09 Building Construction

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Receptor at 50 ft	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	50.0	0.0
Generator (<25KVA, VMS signs)	No	50		72.8	50.0	0.0
Welder / Torch	No	40		74.0	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	80.6	72.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator (<25KVA, VMS signs)	72.8	69.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch	74.0	70.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	80.6	75.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/16/2025
Case Description: ONT-09 Paving

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Receptor at 50 ft	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	50.0	0.0
Roller	No	20		80.0	50.0	0.0
Pavement Scarafier	No	20		89.5	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	77.2	74.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	80.0	73.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pavement Scarafier	89.5	82.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	89.5	83.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/16/2025
Case Description: ONT-09 Architectural Coating

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Receptor at 50 ft	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	50.0	0.0
Compressor (air)	No	40		77.7	50.0	0.0
Compressor (air)	No	40		77.7	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	77.2	74.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compressor (air)	77.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compressor (air)	77.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	77.7	78.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

ONT-09 - Construction Noise Modeling Attenuation Calculations

Levels in dBA Leq

Phase	RCNM Reference Noise Level	Receptor at	Receptor at	Receptor at	Receptor at
Distance in feet	*50*	*100*	*200*	*300*	*400*
Demolition	81	75	69	66	63
Site Prep	82	76	70	66	64
Grading	84	78	72	68	66
Building Construction	76	70	64	60	58
Paving	84	77	71	68	65
Architectural Coating	79	73	67	63	61

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

Based on equipment list shown in Table 2-10 of the SEIR.

ONT-09 - Vibration Damage Attenuation Calculations

Levels, PPV (in/sec)

Distance in feet	**Vibration Reference Level at *25 feet***	**Receptor to North** *50*	**Receptor to East** *100*	**Receptor to South** *150*	**Receptor to West** *200*
Pile Driver, Impact (Upper Range)	1.518	0.537	0.190	0.103	0.067
Pile Driver, Impact (Typical)	0.644	0.228	0.081	0.044	0.028
Pile Driver, Sonic (Upper Range)	0.734	0.260	0.092	0.050	0.032
Pile Driver, Sonic (Typical)	0.17	0.060	0.021	0.012	0.008
Vibratory Roller	0.21	0.074	0.026	0.014	0.009
Clam shovel	0.202	0.071	0.025	0.014	0.009
Hoe Ram	0.089	0.031	0.011	0.006	0.004
Large Bulldozer	0.089	0.031	0.011	0.006	0.004
Caisson Drilling	0.089	0.031	0.011	0.006	0.004
Loaded Trucks	0.076	0.027	0.010	0.005	0.003
Jackhammer	0.035	0.012	0.004	0.002	0.002
Small Bulldozer	0.003	0.001	0.000	0.000	0.000

Traffic Noise Calculator: FHWA 77-108 — **ONT-09 Ontario Policy Plan Amendment SEIR - Existing Traffic Noise**

	Output						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
1	58.8	61.6	62.3	15	33	71	Benson Ave South of fourth	4,490	35	0.0%	97.6%	0.9%	1.5%	75.0%	15.0%	10.0%	2	Soft	50
2	55.9	58.7	59.4	10	21	45	D Street East of Benson	2,498	35	0.0%	98.2%	0.7%	1.1%	75.0%	15.0%	10.0%	2	Soft	50
3	68.4	71.2	71.9	66	143	308	Holt Blvd E/o Benson	20,471	45	0.0%	97.0%	1.0%	2.0%	75.0%	15.0%	10.0%	4	Soft	50
4	63.7	66.5	67.2	33	70	151	San Antonio Ave South of fourth	13,034	35	0.0%	97.4%	0.9%	1.6%	75.0%	15.0%	10.0%	4	Soft	50
5	67.8	70.6	71.3	61	131	282	Mountain Ave s/o Fourth St	23,863	40	0.0%	97.2%	0.9%	1.9%	75.0%	15.0%	10.0%	4	Soft	50
6	48.4	51.2	51.8	3	7	14	I St e/o Benson Ave	455	35	0.0%	98.3%	0.7%	1.0%	75.0%	15.0%	10.0%	2	Soft	50
7	58.0	60.8	61.5	13	29	63	I St e/o Euclid Ave	3,784	35	0.0%	97.8%	0.9%	1.4%	75.0%	15.0%	10.0%	2	Soft	50
8	57.6	60.4	61.1	13	28	59	G St e/o Benson Ave	3,063	40	0.0%	99.0%	0.5%	0.5%	75.0%	15.0%	10.0%	2	Soft	50
9	57.9	60.7	61.4	13	29	62	G St e/o Euclid Ave	4,141	35	0.0%	98.5%	0.6%	0.9%	75.0%	15.0%	10.0%	2	Soft	50
10	45.5	48.3	49.0	2	4	9	Sultana Ave S/O Fourth St	286	35	0.0%	99.4%	0.3%	0.3%	75.0%	15.0%	10.0%	2	Soft	50
11	57.6	60.4	61.1	13	28	59	W G St e/o Benson	3,063	40	0.0%	99.0%	0.5%	0.5%	75.0%	15.0%	10.0%	2	Soft	50
12	68.9	71.7	72.3	72	154	333	Euclid Ave s/o 4th St	30,861	40	0.0%	97.7%	0.8%	1.5%	75.0%	15.0%	10.0%	6	Soft	50
13	58.3	61.1	61.8	14	30	66	Campus Ave South of I Street	4,464	35	0.0%	98.3%	0.7%	1.0%	75.0%	15.0%	10.0%	2	Soft	50
14	67.5	70.3	71.0	58	125	270	Grove Ave s/o Fourth St	20,535	40	0.0%	96.5%	1.1%	2.4%	75.0%	15.0%	10.0%	4	Soft	50
15	66.1	68.9	69.6	47	101	218	Holt Blvd e/o Euclid	17,596	35	0.0%	95.7%	1.3%	3.0%	75.0%	15.0%	10.0%	4	Soft	50
16	70.9	73.7	74.4	98	210	453	Holt Blvd e/o Grove Ave	24,546	50	0.0%	95.9%	1.3%	2.8%	75.0%	15.0%	10.0%	6	Soft	50
17	58.0	60.8	61.5	13	29	63	D Street e/o Euclid	4,116	35	0.0%	98.3%	0.7%	1.0%	75.0%	15.0%	10.0%	2	Soft	50
18	72.4	75.2	75.9	124	266	574	Airport Dr e/o Grove	36,261	45	0.0%	93.8%	1.7%	4.6%	75.0%	15.0%	10.0%	6	Soft	50
19	72.9	75.7	76.4	133	286	617	Vineyard Ave s/o Fourth St	35,795	50	0.0%	94.9%	1.4%	3.7%	75.0%	15.0%	10.0%	6	Soft	50
20	71.1	73.9	74.6	101	217	467	Vineyard Ave s/o I-10	36,311	40	0.0%	94.7%	1.4%	3.8%	75.0%	15.0%	10.0%	6	Soft	50
21	64.5	67.3	68.0	37	79	171	Guasti Rd e/o Holt Blvd	10,543	40	0.0%	96.7%	1.1%	2.2%	75.0%	15.0%	10.0%	4	Soft	50
22	53.3	56.1	56.8	7	14	31	Guasti Rd e/o Archibald Ave	624	40	0.0%	93.7%	2.5%	3.8%	75.0%	15.0%	10.0%	4	Soft	50
23	72.8	75.6	76.3	131	283	610	Holt Blvd E/o Vineyard	31,737	50	0.0%	93.7%	1.5%	4.8%	75.0%	15.0%	10.0%	6	Soft	50
24	62.9	65.6	66.3	28	61	132	Convention Center Way e/o Vineyard	6,479	40	0.0%	95.9%	1.2%	2.9%	75.0%	15.0%	10.0%	4	Soft	50
25	60.5	63.3	64.0	20	43	92	Inland Empire Blvd e/o Vineyard Ave	4,193	45	0.0%	98.8%	0.4%	0.8%	75.0%	15.0%	10.0%	2	Soft	50
26	63.9	66.7	67.4	34	72	156	Inland Empire Blvd e/o Haven Ave	7,987	45	0.0%	97.8%	0.7%	1.5%	75.0%	15.0%	10.0%	4	Soft	50
27	69.3	72.0	72.7	76	164	353	Ontario Mills Pwy e/o Milliken	13,373	45	0.0%	88.4%	2.9%	8.7%	75.0%	15.0%	10.0%	2	Soft	50
28	62.0	64.8	65.4	25	53	115	Concourse St e/o Haven Ave	11,460	30	0.0%	97.6%	0.8%	1.6%	75.0%	15.0%	10.0%	6	Soft	50
29	72.3	75.1	75.8	122	262	565	Fourth St e/o Vineyard Ave	27,937	50	0.0%	92.6%	1.8%	5.6%	75.0%	15.0%	10.0%	4	Soft	50
30	70.8	73.5	74.2	96	206	444	Fourth St e/o Archibald Ave	20,589	50	0.0%	94.1%	1.6%	4.3%	75.0%	15.0%	10.0%	6	Soft	50
31	70.3	73.1	73.8	90	193	416	Fourth St e/o Haven Ave	19,435	50	0.0%	94.5%	1.6%	3.8%	75.0%	15.0%	10.0%	6	Soft	50
32	72.8	75.5	76.2	130	280	604	Fourth St e/o Miliken Ave	31,867	50	0.0%	93.8%	1.6%	4.6%	75.0%	15.0%	10.0%	6	Soft	50
33	68.0	70.8	71.5	63	135	291	Archibald Ave s/o Fourth St	15,375	45	0.0%	95.6%	1.3%	3.1%	75.0%	15.0%	10.0%	6	Soft	50
34	70.6	73.4	74.1	93	201	432	Archibald Ave s/o Inland Empire Blvd	29,888	45	0.0%	96.3%	1.1%	2.5%	75.0%	15.0%	10.0%	6	Soft	50
35	57.6	60.4	61.1	13	28	59	Turner Ave s/o 4th St	2,139	45	0.0%	98.8%	0.6%	0.6%	75.0%	15.0%	10.0%	4	Soft	50
36	72.1	74.9	75.6	118	255	549	Haven St s/o Fourth St	41,456	40	0.0%	93.7%	1.6%	4.8%	75.0%	15.0%	10.0%	6	Soft	50
37	73.1	75.9	76.5	136	294	633	Haven St s/o I-10	51,281	40	0.0%	93.7%	1.5%	4.8%	75.0%	15.0%	10.0%	6	Soft	50
38	73.5	76.3	77.0	146	315	678	Miliken Ave s/o Fourth St	32,727	50	0.0%	91.5%	2.3%	6.2%	75.0%	15.0%	10.0%	6	Soft	50
39	73.9	76.6	77.3	154	332	714	Miliken Ave s/o I-10	34,028	45	0.0%	87.7%	3.0%	9.2%	75.0%	15.0%	10.0%	6	Soft	50
40	68.2	71.0	71.7	64	139	299	Edison Ave e/o Euclid	12,979	50	0.0%	95.9%	1.1%	3.0%	75.0%	15.0%	10.0%	6	Soft	50
41	62.3	65.1	65.8	26	56	121	Ecaluptus Ave e/o Euclid	3,816	50	0.0%	96.9%	0.7%	2.4%	75.0%	15.0%	10.0%	4	Soft	50
42	49.7	52.5	53.1	4	8	17	Bon View Ave s/o Chino	244	45	0.0%	95.4%	1.5%	3.1%	75.0%	15.0%	10.0%	2	Soft	50
43	60.4	63.1	63.8	19	42	90	Grove Ave s/o Chino Rd	2,273	45	0.0%	93.1%	2.0%	5.0%	75.0%	15.0%	10.0%	4	Soft	50
44	60.9	63.7	64.3	21	45	97	Grove Ave s/o Edison Rd	2,211	45	0.0%	91.0%	2.4%	6.6%	75.0%	15.0%	10.0%	4	Soft	50
45	64.8	67.6	68.3	38	83	179	Archibald Ave s/o Chino Rd	6,547	55	0.0%	99.6%	0.2%	0.2%	75.0%	15.0%	10.0%	6	Soft	50
46	69.8	72.6	73.3	83	178	384	Archibald Ave s/o Ontario Ranch Rd	14,831	55	0.0%	95.4%	1.4%	3.2%	75.0%	15.0%	10.0%	6	Soft	50
47	73.7	76.4	77.1	149	322	693	Euclid Ave s/o schaefer	32,112	55	0.0%	93.9%	1.5%	4.7%	75.0%	15.0%	10.0%	6	Soft	50
48	57.4	60.2	60.9	12	26	57	State St e/o Benson Ave	1,607	45	0.0%	97.0%	0.9%	2.1%	75.0%	15.0%	10.0%	4	Soft	50
49	59.2	62.0	62.7	16	35	76	State St e/o Mountain Ave	2,422	45	0.0%	96.7%	1.1%	2.2%	75.0%	15.0%	10.0%	4	Soft	50
50	56.9	59.7	60.4	11	25	53	State St e/o San Antonio Ave	1,934	35	0.0%	94.9%	1.5%	3.6%	75.0%	15.0%	10.0%	4	Soft	50
51	56.9	59.7	60.4	11	25	53	State St e/o Vine Ave	1,934	35	0.0%	94.9%	1.5%	3.6%	75.0%	15.0%	10.0%	4	Soft	50

52	56.3	59.1	59.8	10	23	49	State St e/o Euclid Ave	1,662	35	0.0%	94.8%	1.5%	3.7%	75.0%	15.0%	10.0%	4	Soft	50
53	59.0	61.8	62.5	16	34	73	State St e/o Sultana Ave	3,303	35	0.0%	95.4%	1.4%	3.2%	75.0%	15.0%	10.0%	4	Soft	50
54	59.3	62.1	62.8	17	36	77	State St e/o Campus Ave	3,427	35	0.0%	95.1%	1.4%	3.5%	75.0%	15.0%	10.0%	4	Soft	50
55	62.5	65.3	66.0	27	58	125	State St e/o Bon View Ave	4,780	35	0.0%	90.9%	2.4%	6.7%	75.0%	15.0%	10.0%	4	Soft	50
56	57.9	60.6	61.3	13	28	61	Ontario Blvd e/o Campus Ave	3,204	35	0.0%	97.0%	1.0%	2.1%	75.0%	15.0%	10.0%	2	Soft	50
57	69.5	72.3	73.0	79	171	368	Mountain Ave s/o Holt Blvd	27,704	45	0.0%	97.4%	0.9%	1.7%	75.0%	15.0%	10.0%	4	Soft	50
58	61.9	64.7	65.3	24	53	113	San Antonio Ave s/o Holt Blvd	8,345	35	0.0%	97.3%	1.0%	1.7%	75.0%	15.0%	10.0%	4	Soft	50
59	53.2	55.9	56.6	6	14	30	Sultana Ave s/o Holt Blvd	1,349	35	0.0%	98.4%	0.6%	1.1%	75.0%	15.0%	10.0%	2	Soft	50
60	61.8	64.6	65.3	24	52	113	Campus Ave s/o Holt Blvd	8,001	35	0.0%	97.1%	1.0%	1.9%	75.0%	15.0%	10.0%	4	Soft	50
61	53.5	56.3	57.0	7	15	32	Bon View Ave s/o Holt Blvd	722	35	0.0%	92.7%	1.9%	5.4%	75.0%	15.0%	10.0%	2	Soft	50
62	68.2	71.0	71.7	65	140	301	Grove Ave s/o Holt Blvd	21,320	40	0.0%	95.9%	1.2%	2.9%	75.0%	15.0%	10.0%	6	Soft	50
63	72.5	75.3	76.0	125	269	579	Grove Ave s/o Airport Dr	55,507	35	0.0%	93.3%	1.8%	4.9%	75.0%	15.0%	10.0%	6	Soft	50
64	62.6	65.4	66.0	27	59	127	Fourth St e/o Benson Ave	8,746	40	0.0%	98.4%	0.6%	0.9%	75.0%	15.0%	10.0%	2	Soft	50
65	57.8	60.6	61.3	13	28	61	Fourth St e/o Euclid Ave	4,193	35	0.0%	98.6%	0.6%	0.8%	75.0%	15.0%	10.0%	2	Soft	50
66	66.1	68.9	69.6	47	101	218	Fourth St e/o Grove Ave	19,232	35	0.0%	96.5%	1.0%	2.5%	75.0%	15.0%	10.0%	4	Soft	50
67	60.6	63.4	64.0	20	43	93	G St e/o Grove Ave	7,430	35	0.0%	98.3%	0.7%	1.0%	75.0%	15.0%	10.0%	2	Soft	50
68	64.3	67.1	67.8	36	77	165	Campus Ave s/o Philadephia	6,984	45	0.0%	95.6%	1.4%	3.0%	75.0%	15.0%	10.0%	4	Soft	50
69	58.5	61.3	62.0	15	31	68	Campus Ave South of Riverside Dr	1,782	45	0.0%	95.4%	1.4%	3.3%	75.0%	15.0%	10.0%	4	Soft	50
70	59.2	62.0	62.7	16	35	76	Sixth St e/o Grove Ave	4,434	40	0.0%	99.0%	0.4%	0.5%	75.0%	15.0%	10.0%	2	Soft	50
71	60.8	63.6	64.3	21	45	96	Francis e/o Euclid	4,984	35	0.0%	95.3%	1.3%	3.5%	75.0%	15.0%	10.0%	2	Soft	50
72	71.1	73.9	74.5	100	216	466	Mission Blvd e/o Benson	26,609	50	0.0%	95.8%	1.2%	3.0%	75.0%	15.0%	10.0%	4	Soft	50
73	71.1	73.9	74.6	101	217	468	Mission Blvd e/o Euclid	31,089	45	0.0%	94.9%	1.4%	3.7%	75.0%	15.0%	10.0%	4	Soft	50
74	66.2	68.9	69.6	47	102	219	Mission Blvd e/o Grove	10,584	45	0.0%	95.6%	1.2%	3.2%	75.0%	15.0%	10.0%	4	Soft	50
75	70.3	73.0	73.7	89	191	411	Mission e/o Archibald	12,047	55	0.0%	88.8%	3.3%	7.9%	75.0%	15.0%	10.0%	4	Soft	50
76	71.7	74.5	75.2	110	238	512	Mission e/o Haven	20,868	55	0.0%	93.1%	2.0%	5.0%	75.0%	15.0%	10.0%	4	Soft	50
77	57.5	60.2	60.9	12	27	58	Benson s/o Mission	2,389	40	0.0%	97.6%	0.9%	1.6%	75.0%	15.0%	10.0%	2	Soft	50
78	52.6	55.4	56.0	6	13	27	Benson s/o Francis	882	40	0.0%	98.5%	0.7%	0.9%	75.0%	15.0%	10.0%	2	Soft	50
79	63.1	65.9	66.6	29	64	137	Benson s/o I-10	8,769	40	0.0%	97.5%	1.0%	1.5%	75.0%	15.0%	10.0%	2	Soft	50
80	45.6	48.4	49.1	2	4	9	Philips e/o Benson	423	25	0.0%	97.6%	0.9%	1.5%	75.0%	15.0%	10.0%	2	Soft	50
81	61.4	64.2	64.8	23	49	105	Philips e/o Mountain	6,838	40	0.0%	98.6%	0.6%	0.8%	75.0%	15.0%	10.0%	2	Soft	50
82	57.9	60.7	61.4	13	29	62	Philips e/o San Antonio	3,025	40	0.0%	98.5%	0.6%	0.8%	75.0%	15.0%	10.0%	2	Soft	50
83	60.1	62.9	63.6	19	40	86	Philips e/o Euclid	4,558	40	0.0%	97.9%	0.8%	1.3%	75.0%	15.0%	10.0%	2	Soft	50
84	66.9	69.7	70.4	53	114	245	Vineyard Ave s/o SR-60	12,408	45	0.0%	95.0%	2.0%	3.0%	75.0%	15.0%	10.0%	4	Soft	50

Traffic Noise Calculator: FHWA 77-108 **ONT-09 Ontario Policy Plan Amendment SEIR - No Project Traffic Noise**

	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 From	Segment To	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	61.9	64.7	65.4	49	106	228	8th Street	the West	Grove Ave	14,888	45	0.0%	97.5%	1.4%	1.0%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
2	61.7	64.4	65.1	47	102	220	8th Street	Grove Ave	Baker Ave	14,459	45	0.0%	97.6%	1.5%	0.9%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
3	61.0	63.8	64.5	43	93	200	8th Street	Baker Ave	Vineyard Ave	12,654	45	0.0%	97.7%	1.4%	0.8%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
4	61.1	63.9	64.6	44	94	202	8th Street	Vineyard Ave	the East	10,200	45	0.0%	95.3%	2.4%	2.3%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
5	66.5	69.3	70.0	100	215	462	4th Street	Grove Ave	Baker Ave	39,497	35	0.0%	92.2%	2.6%	5.2%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
6	67.1	69.9	70.6	109	234	505	4th Street	Baker Ave	Vineyard Ave	32,545	40	0.0%	91.0%	2.7%	6.2%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
7	69.1	71.9	72.5	148	318	685	4th Street	Vineyard Ave	Hellman Ave	40,701	50	0.0%	93.0%	2.9%	4.1%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
8	68.8	71.6	72.2	141	304	654	4th Street	Hellman Ave	Archibald Ave	39,737	50	0.0%	93.5%	2.8%	3.6%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
9	68.6	71.3	72.0	137	294	634	4th Street	Archibald Ave	Turner Ave	37,535	50	0.0%	93.1%	3.3%	3.6%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
10	68.0	70.8	71.4	125	269	579	4th Street	Turner Ave	Haven Ave	33,138	50	0.0%	93.0%	3.7%	3.3%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
11	69.8	72.6	73.3	165	356	767	4th Street	Haven Ave	Cleveland Ave	52,405	50	0.0%	94.4%	3.1%	2.5%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
12	69.9	72.7	73.4	168	361	778	4th Street	Cleveland Ave	Milliken Ave	53,429	50	0.0%	94.4%	3.1%	2.5%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
13	70.6	73.3	74.0	186	400	861	4th Street	Milliken Ave	I-15 Ontario Fwy	54,108	50	0.0%	92.4%	3.6%	3.9%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
14	69.6	72.4	73.0	159	344	740	4th Street	I-15 Ontario Fwy	Santa Ana Ave	39,722	50	0.0%	90.9%	4.4%	4.7%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
15	70.0	72.8	73.5	171	368	793	4th Street	Santa Ana Ave	Etiwanda Ave	35,427	55	0.0%	88.6%	5.9%	5.4%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
16	68.0	70.8	71.5	126	271	583	Holt Boulevard	Grove Ave	Vineyard Ave	36,601	50	0.0%	94.7%	2.5%	2.7%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
17	70.0	72.8	73.4	170	366	788	Holt Boulevard	Vineyard Ave	D St	48,340	50	0.0%	92.7%	3.0%	4.3%	75.0%	15.0%	10.0%	5	Soft	100	0.5	56
18	67.8	70.6	71.2	121	260	561	Airport Drive	Haven Ave	Carnegie Ave	35,601	45	0.0%	91.9%	4.2%	3.9%	75.0%	15.0%	10.0%	5	Soft	100	0.5	56
19	66.8	69.5	70.2	104	223	481	Airport Drive	Carnegie Ave	Dupont Ave	24,509	45	0.0%	89.4%	6.0%	4.6%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
20	67.1	69.9	70.6	109	236	508	Airport Drive	Dupont Ave	Milliken Ave	25,318	45	0.0%	88.2%	6.8%	5.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
21	67.3	70.0	70.7	112	241	519	Airport Drive	Milliken Ave	Rockfeller Ave	23,909	45	0.0%	86.2%	6.9%	6.9%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
22	66.6	69.4	70.1	102	219	472	Airport Drive	Rockfeller Ave	I-15 Ontario Fwy	19,988	45	0.0%	85.2%	7.5%	7.3%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
23	65.9	68.7	69.4	91	196	423	Airport Drive	I-15 Ontario Fwy	Wineville Ave	16,406	45	0.0%	83.4%	8.7%	7.9%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
24	66.4	69.1	69.8	97	210	452	Airport Drive	Wineville Ave	Etiwanda Ave	17,081	45	0.0%	82.7%	9.1%	8.3%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
25	68.5	71.3	72.0	136	294	633	Jurupa Street	Archibald Ave	Turner Ave	31,286	45	0.0%	85.0%	8.0%	7.0%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
26	70.3	73.1	73.8	179	385	829	Jurupa Street	Turner Ave	Haven Ave	42,161	45	0.0%	83.0%	9.0%	8.0%	75.0%	15.0%	10.0%	5	Soft	100	0.5	56
27	68.3	71.1	71.7	131	282	607	Jurupa Street	Haven Ave	Commerce Pkwy	24,418	45	0.0%	81.0%	10.0%	9.0%	75.0%	15.0%	10.0%	5	Soft	100	0.5	56
28	69.8	72.6	73.2	164	354	763	Jurupa Street	Commerce Pkwy	Milliken Ave	42,975	45	0.0%	87.0%	7.0%	6.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
29	71.3	74.0	74.7	206	445	958	Jurupa Street	Milliken Ave	I-15/Ontario Fwy	56,385	45	0.0%	86.0%	7.0%	7.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
30	69.4	72.2	72.9	156	335	722	Jurupa Street	I-15/Ontario Fwy	Auto Center Dr	34,626	40	0.0%	80.0%	10.0%	10.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
31	69.2	72.0	72.7	151	325	700	Jurupa Street	Auto Center Dr	Etiwanda Ave	24,812	50	0.0%	81.0%	10.0%	9.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
32	68.4	71.2	71.8	133	286	616	Jurupa Street	Etiwanda Ave	the East	25,588	45	0.0%	81.0%	10.0%	9.0%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
33	66.6	69.4	70.1	101	217	468	Mission Boulevard	Benson Ave	Mountain Ave	41,505	40	0.0%	94.3%	3.0%	2.7%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
34	65.6	68.4	69.1	87	188	405	Mission Boulevard	Mountain Ave	San Antonio Ave	41,394	35	0.0%	93.8%	3.3%	3.0%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
35	65.7	68.5	69.2	88	189	408	Mission Boulevard	San Antonio Ave	Euclid Ave	40,321	35	0.0%	93.2%	3.7%	3.1%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
36	66.4	69.2	69.9	98	212	456	Mission Boulevard	Euclid Ave	Sultana Ave	46,291	35	0.0%	93.0%	3.6%	3.4%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
37	66.4	69.2	69.9	98	212	456	Mission Boulevard	Sultana Ave	Campus Ave	45,379	35	0.0%	92.7%	3.9%	3.5%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
38	66.1	68.9	69.6	93	201	434	Mission Boulevard	Campus Ave	Bon View Ave	40,794	35	0.0%	92.3%	4.1%	3.6%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
39	66.3	69.1	69.8	97	209	450	Mission Boulevard	Bon View Ave	Grove Ave	43,538	35	0.0%	92.2%	4.2%	3.5%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
40	68.2	70.9	71.6	128	277	596	Mission Boulevard	Grove Ave	Baker Ave	50,860	40	0.0%	91.9%	4.5%	3.7%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
41	69.9	72.7	73.3	167	360	776	Mission Boulevard	Baker Ave	Vineyard Ave	48,340	50	0.0%	91.5%	4.8%	3.7%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
42	69.7	72.5	73.2	163	350	755	Mission Boulevard	Vineyard Ave	Hellman Ave Ave	43,153	50	0.0%	90.1%	5.6%	4.3%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
43	69.7	72.5	73.1	162	349	752	Mission Boulevard	Hellman Ave Ave	Archibald Ave	42,912	50	0.0%	90.1%	5.6%	4.3%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
44	69.5	72.3	72.9	157	338	729	Mission Boulevard	Archibald Ave	Haven Ave	30,929	50	0.0%	83.6%	9.0%	7.4%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
45	69.4	72.2	72.9	155	334	720	Mission Boulevard	Haven Ave	Milliken Ave	30,097	50	0.0%	84.5%	8.8%	6.7%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
46	68.5	71.3	72.0	136	293	632	Mission Boulevard	Milliken Ave	I-15 Ontario Fwy	30,649	50	0.0%	88.7%	6.1%	5.2%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
47	60.3	63.1	63.8	38	83	178	Francis Street	Euclid Ave	Sultana Ave	14,638	35	0.0%	96.0%	2.0%	2.1%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
48	59.5	62.3	63.0	34	74	159	Francis Street	Sultana Ave	Campus Ave	11,225	35	0.0%	95.0%	2.5%	2.5%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
49	61.0	63.8	64.5	43	92	198	Francis Street	Campus Ave	Bon View Ave	16,367	35	0.0%	95.4%	2.3%	2.3%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
50	62.1	64.9	65.6	51	109	236	Francis Street	Bon View Ave	Cucamonga Ave	17,333	35	0.0%	93.0%	3.7%	3.3%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
51	63.6	66.4	67.1	64	137	296	Francis Street	Cucamonga Ave	Grove Ave	16,462	40	0.0%	90.5%	5.4%	4.1%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
52	67.2	69.9	70.6	110	237	511	Francis Street	Grove Ave	Parco Ave	24,026	50	0.0%	90.3%	5.3%	4.4%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
53	67.7	70.5	71.1	119	257	553	Francis Street	Parco Ave	Baker Ave	27,308	50	0.0%	90.0%	5.8%	4.1%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
54	67.7	70.5	71.1	119	257	553	Francis Street	Baker Ave	Vineyard Ave	26,471	50	0.0%	89.1%	6.6%	4.3%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
55	68.4	71.2	71.9	133	287	619	Francis Street	Vineyard Ave	Hellman Ave	28,791	50	0.0%	87.7%	6.9%	5.4%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
56	68.6	71.4	72.1	138	298	643	Francis Street	Hellman Ave	Archibald Ave	28,196	50	0.0%	86.0%	7.8%	6.2%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
57	67.5	70.3	71.0	117	251	541	Philadelphia Street	Grove Ave	Parco Ave	25,583	50	0.0%	90.7%	4.2%	5.1%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
58	61.5	64.3	65.0	46	99	214	Philadelphia Street	Parco Ave	Baker Ave	6,339	50	0.0%	90.5%	4.4%	5.1%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
59	67.2	70.0	70.7	111	240	516	Philadelphia Street	Baker Ave	Vineyard Ave	24,764	50	0.0%	91.2%	4.2%	4.6%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
60	66.0	68.8	69.5	92	199	428	Philadelphia Street	Vineyard Ave	Hellman Ave	19,535	50	0.0%	91.7%	3.9%	4.4%	75.0%	15.0%	10.0%	3	Soft	100	0.5	32
61	67.4	70.2	70.9	115	248	534	Philadelphia Street	Hellman Ave	Archibald Ave	26,972	50	0.0%	91.6%	4.2%	4.2%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
62	64.3	67.1	67.8	71	153	330	Philadelphia Street	Archibald Ave	Business Pkwy	23,767	40	0.0%	93.9%	3.1%	3.0%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44

Traffic Noise Calculator: FHWA 77-108 **ONT-09 Ontario Policy Plan Amendment SEIR - No Project Traffic Noise**

	Output						Inputs														Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour																		
ID	$L_{eq-24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	Segment From	Segment To	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
63	64.6	67.4	68.1	75	161	347	Philadelphia Street	Business Pkwy	Exisce Ave	24,961	40	0.0%	93.5%	3.4%	3.1%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
64	66.4	69.1	69.8	97	210	452	Philadelphia Street	Exisce Ave	Haven Ave	27,355	45	0.0%	92.4%	4.4%	3.2%	75.0%	15.0%	10.0%	5	Soft	100	0.5	56
65	64.6	67.4	68.1	74	160	344	Philadelphia Street	Haven Ave	Mission Blvd	13,377	45	0.0%	87.1%	6.3%	6.6%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
66	66.0	68.8	69.5	93	200	430	Philadelphia Street	Milliken Ave	I-15 Ontario Fwy	13,500	45	0.0%	77.8%	11.1%	11.1%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
67	64.8	67.6	68.3	77	166	358	Philadelphia Street	I-15 Ontario Fwy	Wineville Ave	9,844	45	0.0%	76.3%	12.1%	11.6%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
68	63.8	66.6	67.3	66	143	308	Philadelphia Street	Wineville Ave	Vintage Ave	8,231	45	0.0%	77.5%	11.7%	10.8%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
69	64.3	67.1	67.8	71	153	330	Philadelphia Street	Vintage Ave	Etiwanda Ave	10,148	45	0.0%	81.0%	9.9%	9.1%	75.0%	15.0%	10.0%	3	Soft	100	0.5	32
70	68.4	71.2	71.8	133	286	615	Edison Ave	the West	Euclid Ave	39,157	50	0.0%	94.6%	2.5%	2.9%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
71	67.0	69.8	70.4	107	230	497	Edison Ave	Euclid Ave	Campus Ave	32,844	50	0.0%	96.3%	1.7%	2.0%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
72	66.2	69.0	69.7	95	205	443	Edison Ave	Campus Ave	Bon View Ave	26,624	50	0.0%	95.7%	2.1%	2.2%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
73	66.2	69.0	69.7	95	206	443	Edison Ave	Bon View Ave	Grove Ave	26,620	50	0.0%	95.5%	2.3%	2.2%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
74	66.3	69.1	69.8	96	208	447	Edison Ave	Grove Ave	Walker Ave	26,858	50	0.0%	95.5%	2.2%	2.2%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
75	67.2	70.0	70.7	111	240	517	Edison Ave	Walker Ave	Vineyard Ave	29,345	50	0.0%	92.4%	4.9%	2.7%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
76	67.1	69.9	70.6	110	236	509	Edison Ave	Vineyard Ave	Ontario Ave	27,256	50	0.0%	91.6%	5.3%	3.2%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
77	67.5	70.3	71.0	117	252	542	Edison Ave	Ontario Ave	Archibald Ave	32,179	50	0.0%	92.9%	4.5%	2.6%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
78	69.7	72.5	73.2	164	353	761	Edison Ave	Archibald Ave	Turner Ave	43,617	50	0.0%	90.0%	5.7%	4.3%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
79	52.1	54.9	55.5	11	23	50	Edison Ave	the West	Haven Ave	1,454	50	0.0%	99.9%	0.0%	0.0%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
80	59.6	62.4	63.1	34	74	160	Edison Ave	Haven Ave	Cleveland Ave	11,082	45	0.0%	100.0%	0.0%	0.0%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
81	68.7	71.5	72.2	140	301	648	Ontario Ranch Road	Turner Ave	Haven Ave	43,297	45	0.0%	91.2%	4.4%	4.3%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
82	69.0	71.8	72.5	146	315	678	Ontario Ranch Road	Haven Ave	Cleveland Ave	44,570	45	0.0%	89.8%	5.8%	4.4%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
83	69.1	71.9	72.6	150	322	694	Ontario Ranch Road	Cleveland Ave	Milliken Ave	48,459	45	0.0%	90.7%	5.3%	4.0%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
84	65.6	68.4	69.1	87	186	402	Eucalyptus Avenue	the West	Euclid Ave	23,287	45	0.0%	93.1%	3.3%	3.7%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
85	64.2	66.9	67.6	70	150	323	Eucalyptus Avenue	Euclid Ave	Campus Ave	22,441	50	0.0%	99.5%	0.2%	0.3%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
86	63.6	66.4	67.0	64	137	295	Eucalyptus Avenue	Campus Ave	Bon View Ave	19,724	50	0.0%	99.6%	0.2%	0.2%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
87	62.1	64.8	65.5	50	108	233	Eucalyptus Avenue	Bon View Ave	Grove Ave	18,570	45	0.0%	99.5%	0.2%	0.3%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
88	60.2	63.0	63.7	38	82	176	Eucalyptus Avenue	Grove Ave	Walker Ave	17,072	40	0.0%	99.6%	0.2%	0.2%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
89	59.8	62.6	63.3	36	77	165	Eucalyptus Avenue	Walker Ave	Vineyard Ave	15,253	40	0.0%	99.4%	0.3%	0.2%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
90	59.8	62.6	63.3	36	77	165	Eucalyptus Avenue	Vineyard Ave	Ontario Ave	15,253	40	0.0%	99.4%	0.3%	0.2%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
91	67.5	70.2	70.9	115	248	535	Merrill Avenue	Euclid Ave	Campus Ave	23,420	50	0.0%	87.7%	6.6%	5.7%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
92	67.2	70.0	70.7	111	240	517	Merrill Avenue	Campus Ave	Bon View Ave	20,593	50	0.0%	85.4%	8.2%	6.4%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
93	67.5	70.3	71.0	117	252	542	Merrill Avenue	Bon View Ave	Grove Ave	22,587	50	0.0%	85.9%	8.0%	6.1%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
94	67.6	70.4	71.1	118	255	550	Merrill Avenue	Grove Ave	Walker Ave	23,254	50	0.0%	85.5%	8.8%	5.7%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
95	65.8	68.6	69.3	89	192	415	Merrill Avenue	Walker Ave	Vineyard Ave	18,520	45	0.0%	85.5%	9.0%	5.5%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
96	64.3	67.1	67.8	71	154	331	Merrill Avenue	Vineyard Ave	Ontario Ave	14,844	45	0.0%	88.4%	6.9%	4.7%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
97	65.7	68.5	69.2	88	190	410	Merrill Avenue	Ontario Ave	Archibald Ave	25,032	45	0.0%	92.0%	5.1%	3.0%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
98	61.6	64.3	65.0	47	101	217	Merrill Avenue	Archibald Ave	Bellegrave Ave	16,953	45	0.0%	99.7%	0.2%	0.1%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20

Traffic Noise Calculator: FHWA 77-108 **ONT-09 Ontario Policy Plan Amendment SEIR - No Project Traffic Noise**

	Output						Inputs																Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour																				
ID	$L_{eq-24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	Segment From	Segment To	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	68.5	71.3	72.0	135	292	628	Mountain Avenue	the North	6th St	49,176	45	0.0%	94.5%	2.3%	3.2%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
2	65.9	68.7	69.3	90	195	420	Mountain Avenue	6th St	5th St	36,251	45	0.0%	97.6%	1.4%	1.1%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
3	64.6	67.4	68.1	75	161	347	Mountain Avenue	5th St	4th St	36,815	40	0.0%	97.7%	1.4%	1.0%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
4	64.3	67.1	67.8	71	153	330	Mountain Avenue	4th St	I St	34,436	40	0.0%	97.7%	1.4%	0.9%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
5	64.7	67.5	68.2	76	163	351	Mountain Avenue	I St	G St	38,122	40	0.0%	97.8%	1.3%	0.9%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
6	64.6	67.4	68.1	74	160	346	Mountain Avenue	G St	D St	37,214	40	0.0%	97.8%	1.4%	0.9%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
7	64.5	67.3	68.0	73	158	339	Mountain Avenue	D St	Holt Blvd	35,971	40	0.0%	97.7%	1.4%	0.9%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
8	66.6	69.4	70.1	101	219	471	Mountain Avenue	Holt Blvd	State St	44,261	45	0.0%	97.7%	1.4%	0.9%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
9	66.9	69.7	70.4	106	228	490	Mountain Avenue	State St	Mission Blvd	45,364	45	0.0%	97.4%	1.6%	1.1%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
10	66.9	69.7	70.3	105	227	489	Mountain Avenue	Mission Blvd	Phillips St	43,667	45	0.0%	97.2%	1.5%	1.3%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
11	68.3	71.1	71.7	131	281	606	Mountain Avenue	Phillips St	Francis St	44,973	50	0.0%	96.8%	1.6%	1.6%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
12	67.7	70.5	71.2	120	258	556	Mountain Avenue	Francis St	Philadelphia St	38,465	50	0.0%	96.5%	1.7%	1.8%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
13	66.3	69.1	69.7	96	207	447	Mountain Avenue	Philadelphia St	SR 60 Pomona Fwy	46,653	40	0.0%	96.6%	1.6%	1.8%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
14	64.7	67.5	68.2	76	164	353	Euclid Avenue	Mission Blvd	Phillips St	25,533	45	0.0%	96.7%	1.7%	1.6%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
15	64.7	67.5	68.2	76	163	352	Euclid Avenue	Phillips St	Francis St	23,983	45	0.0%	96.1%	1.8%	2.0%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
16	64.8	67.6	68.3	77	166	359	Euclid Avenue	Francis St	Philadelphia St	23,008	45	0.0%	95.4%	2.1%	2.5%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
17	65.9	68.7	69.4	91	196	423	Euclid Avenue	Philadelphia St	SR 60 Pomona Fwy	28,143	45	0.0%	94.8%	2.4%	2.9%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
18	66.8	69.6	70.3	105	226	486	Euclid Avenue	SR 60 Pomona Fwy	Walnut St	35,225	45	0.0%	95.0%	2.2%	2.8%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
19	67.3	70.1	70.8	113	243	523	Euclid Avenue	Walnut St	Riverside Dr	31,422	45	0.0%	92.2%	3.9%	3.9%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
20	69.0	71.8	72.4	145	313	675	Euclid Avenue	Rivderside Dr	Chino Ave	30,162	55	0.0%	90.9%	4.3%	4.8%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
21	69.0	71.8	72.5	147	316	681	Euclid Avenue	Chino Ave	Schaefer Ave	31,058	55	0.0%	91.2%	4.2%	4.6%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
22	70.9	73.7	74.3	195	419	903	Euclid Avenue	Schaefer Ave	Ontario Ranch Rd	49,336	55	0.0%	92.1%	3.7%	4.2%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
23	71.2	74.0	74.6	204	439	946	Euclid Avenue	Ontario Ranch Rd	Eucalyptus Ave	48,393	55	0.0%	90.4%	4.4%	5.2%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
24	70.4	73.2	73.9	181	391	841	Euclid Avenue	Eucalyptus Ave	Merrill Ave	45,579	55	0.0%	92.7%	3.3%	4.0%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
25	64.9	67.7	68.4	78	168	361	Grove Avenue	the North	8th St	41,969	40	0.0%	98.3%	1.0%	0.7%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
26	65.7	68.5	69.1	88	189	407	Grove Avenue	8th St	7th St	37,045	45	0.0%	98.3%	1.0%	0.7%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
27	65.2	68.0	68.7	82	176	380	Grove Avenue	7th St	6th St	33,967	45	0.0%	98.4%	1.0%	0.6%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
28	63.9	66.7	67.4	67	144	311	Grove Avenue	6th St	5th St	34,163	40	0.0%	98.4%	1.0%	0.6%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
29	58.8	61.6	62.2	30	65	141	Grove Avenue	5th St	4th St	10,527	40	0.0%	98.5%	0.9%	0.6%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
30	65.9	68.7	69.4	91	197	424	Grove Avenue	4th St	I St	48,943	40	0.0%	98.0%	1.2%	0.8%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
31	65.0	67.8	68.5	80	172	370	Grove Avenue	I St	G ST	40,214	40	0.0%	98.1%	1.1%	0.8%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
32	64.9	67.7	68.3	78	167	360	Grove Avenue	G ST	D ST	38,574	40	0.0%	98.1%	1.1%	0.8%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
33	64.8	67.6	68.3	77	166	359	Grove Avenue	D St	Holt Blvd	38,503	40	0.0%	98.2%	1.0%	0.8%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
34	65.1	67.8	68.5	80	172	371	Grove Avenue	Holt Blvd	Airport Dr	38,481	40	0.0%	97.7%	1.3%	1.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
35	68.9	71.7	72.4	144	309	667	Grove Avenue	Airport Dr	Mission Blvd	91,096	35	0.0%	94.9%	2.5%	2.5%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
36	67.9	70.7	71.4	124	268	577	Grove Avenue	Mission Blvd	Belmont Ave	75,738	35	0.0%	95.3%	2.4%	2.4%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
37	67.5	70.3	70.9	116	249	537	Grove Avenue	Belmont Ave	Francis St	67,509	35	0.0%	95.2%	2.3%	2.4%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
38	70.9	73.7	74.4	196	422	908	Grove Avenue	Francis St	Philadelphia St	59,898	50	0.0%	93.4%	2.6%	4.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
39	71.9	74.7	75.4	229	492	1061	Grove Avenue	Philadelphia St	SR 60 Pomona Fwy	68,584	50	0.0%	92.1%	2.8%	5.2%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
40	62.8	65.6	66.3	56	121	261	Walker Avenue	Ontario Ranch Rd	Eucalyptus Ave	16,642	50	0.0%	99.7%	0.2%	0.2%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
41	60.9	63.7	64.3	42	90	195	Walker Avenue	Eucalyptus Ave	Merrill Ave	14,395	45	0.0%	99.7%	0.2%	0.2%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
42	65.6	68.4	69.1	87	186	402	Walker Avenue	Merrill Ave	the South	24,274	45	0.0%	92.0%	5.0%	3.0%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
43	66.4	69.2	69.8	98	210	453	Vineyard Avenue	the North	8th St	39,842	45	0.0%	97.0%	2.0%	1.0%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
44	67.7	70.5	71.2	121	260	560	Vineyard Avenue	8th St	6th St	37,690	50	0.0%	96.0%	2.0%	2.0%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
45	68.1	70.8	71.5	126	273	587	Vineyard Avenue	6th St	4th St	38,343	50	0.0%	96.0%	2.0%	2.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
46	69.1	71.9	72.6	149	321	692	Vineyard Avenue	4th St	Inland Empire Blvd	49,102	50	0.0%	96.0%	2.0%	2.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
47	67.3	70.1	70.8	113	243	523	Vineyard Avenue	Inland Empire Blvd	G St	57,174	40	0.0%	96.0%	2.0%	2.0%	75.0%	15.0%	10.0%	3	Soft	100	0.5	32
48	68.5	71.3	71.9	135	290	626	Vineyard Avenue	G St	E St	62,829	40	0.0%	95.0%	2.0%	3.0%	75.0%	15.0%	10.0%	5	Soft	100	0.5	56
49	66.6	69.4	70.1	102	219	472	Vineyard Avenue	E St	Holt Blvd	36,499	40	0.0%	94.0%	2.0%	4.0%	75.0%	15.0%	10.0%	5	Soft	100	0.5	56
50	69.0	71.8	72.5	147	317	682	Vineyard Avenue	Holt Blvd	Airport Dr	53,770	40	0.0%	92.0%	3.0%	5.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
51	65.4	68.2	68.9	85	182	393	Vineyard Avenue	Mission Blvd	Francis St	12,352	50	0.0%	86.0%	7.0%	7.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
52	68.3	71.1	71.8	132	284	612	Vineyard Avenue	Francis St	Philadelphia St	27,415	50	0.0%	90.0%	4.0%	6.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
53	68.3	71.1	71.8	132	284	612	Vineyard Avenue	Philadelphia St	SR 60 Pomona Fwy	35,083	45	0.0%	91.0%	3.0%	6.0%	75.0%	15.0%	10.0%	5	Soft	100	0.5	56
54	56.9	59.7	60.4	23	50	107	Ontario Avenue	Eucalyptus Ave	Merrill Ave	6,065	45	0.0%	100.0%	0.0%	0.0%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
55	67.7	70.4	71.1	119	256	552	Archibald Avenue	the North	4th St	35,737	45	0.0%	92.2%	3.8%	4.0%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
56	67.1	69.9	70.6	109	236	508	Archibald Avenue	4th St	Inland Empire Blvd	34,046	45	0.0%	92.9%	3.9%	3.2%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
57	68.9	71.7	72.4	144	311	670	Archibald Avenue	Inland Empire Blvd	I-10 San Bernardino Fwy	58,589	45	0.0%	95.4%	2.6%	1.9%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
58	69.7	72.5	73.2	163	352	759	Archibald Avenue	1-10 San Bernardino Fwy	Guasti Rd	71,689	45	0.0%	96.0%	2.0%	2.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
59	67.8	70.6	71.3	122	263	566	Archibald Avenue	Jurupa St	Mission Blvd	30,542	40	0.0%	84.2%	7.8%	8.0%	75.0%	15.0%	10.0%	3	Soft	100	0.5	32
60	69.1	71.9	72.6	149	320	689	Archibald Avenue	Mission Blvd	Francis St	48,634	40	0.0%	88.6%	5.6%	5.8%	75.0%	15.0%	10.0%	5	Soft	100	0.5	56
61	66.5	69.2	69.9	99	213	459	Archibald Avenue	Francis St	Cedar Ave	29,726	40	0.0%	91.0%	4.0%	5.0%	75.0%	15.0%	10.0%	5	Soft	100	0.5	56
62	67.3	70.1	70.8	113	242	522	Archibald Avenue	Cedar Ave	Philadelphia St	31,964	40	0.0%	90.0%	4.0%	6.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68

Traffic Noise Calculator: FHWA 77-108 **ONT-09 Ontario Policy Plan Amendment SEIR - No Project Traffic Noise**

	Output						Inputs																Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour																				
ID	$L_{eq-24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	Segment From	Segment To	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
63	69.0	71.8	72.5	146	315	679	Archibald Avenue	Philadelphia St	SR 60 Pomona Fwy	66,414	40	0.0%	94.0%	3.0%	3.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
64	70.6	73.4	74.1	187	403	868	Archibald Avenue	SR 60 Pomona Fwy	Riverside Dr	68,926	50	0.0%	96.0%	2.0%	2.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
65	68.4	71.2	71.9	134	288	620	Archibald Avenue	Riverside Dr	Chino Ave	42,923	50	0.0%	96.0%	2.0%	2.0%	75.0%	15.0%	10.0%	5	Soft	100	0.5	56
66	67.4	70.2	70.9	115	248	535	Archibald Avenue	Chino Ave	Schaefer Ave	39,308	50	0.0%	97.0%	2.0%	1.0%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
67	67.3	70.1	70.8	113	244	526	Archibald Avenue	Schaefer Ave	Ontario Ranch Rd	38,347	50	0.0%	97.0%	2.0%	1.0%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
68	68.4	71.2	71.9	134	288	620	Archibald Avenue	Ontario Ranch Rd	Eucalyptus Ave	37,467	50	0.0%	93.0%	4.0%	3.0%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
69	67.9	70.7	71.4	123	266	573	Archibald Avenue	Eucalyptus Ave	Merrill Ave	37,743	50	0.0%	95.0%	3.0%	2.0%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
70	64.5	67.3	67.9	73	157	338	Archibald Avenue	Merrill Ave	the South	32,774	35	0.0%	94.0%	3.0%	3.0%	75.0%	15.0%	10.0%	2	Soft	100	0.5	20
71	71.2	73.9	74.6	203	438	944	Haven Avenue	the North	4th St	62,846	50	0.0%	93.0%	3.0%	4.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
72	69.1	71.9	72.6	149	322	693	Haven Avenue	4th St	Concours	68,425	40	0.0%	94.0%	3.0%	3.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
73	69.3	72.1	72.7	152	328	707	Haven Avenue	Concours	Inland Empire Blvd	73,187	40	0.0%	95.0%	2.0%	3.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
74	69.7	72.4	73.1	162	348	750	Haven Avenue	Inland Empire Blvd	1-10 San Bernardino Fwy	76,962	40	0.0%	94.0%	3.0%	3.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
75	69.9	72.6	73.3	167	359	773	Haven Avenue	1-10 San Bernardino Fwy	Guasti Rd	80,650	40	0.0%	94.0%	3.0%	3.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
76	70.2	73.0	73.7	176	379	817	Haven Avenue	Guasti Rd	Airport Dr	87,624	40	0.0%	94.0%	3.0%	3.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
77	72.2	75.0	75.7	239	515	1109	Haven Avenue	Airport Dr	Jurupa St	87,294	50	0.0%	94.0%	3.0%	3.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
78	71.7	74.5	75.2	222	478	1029	Haven Avenue	Jurupa St	Francis St	78,125	50	0.0%	94.0%	3.0%	3.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
79	72.0	74.8	75.4	231	497	1071	Haven Avenue	Francis St	Mission Blvd	82,924	50	0.0%	94.0%	3.0%	3.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
80	69.5	72.2	72.9	157	338	727	Haven Avenue	Mission Blvd	Philadelphia St	73,580	40	0.0%	94.0%	3.0%	3.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
81	69.3	72.1	72.8	153	331	712	Haven Avenue	Philadelphia St	SR 60 Pomona Fwy	63,576	40	0.0%	93.0%	3.0%	4.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
82	64.2	67.0	67.6	70	150	323	Commerce Parkway	Airport Dr	Santa Ana St	22,987	40	0.0%	94.0%	3.0%	3.0%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
83	63.7	66.5	67.2	65	140	301	Commerce Parkway	Santa Ana St	Jurupa St	19,927	40	0.0%	93.0%	4.0%	3.0%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
84	70.6	73.4	74.1	186	402	866	Milliken Avenue	the North	4th St	55,176	50	0.0%	93.0%	3.0%	4.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
85	70.2	73.0	73.7	177	381	821	Milliken Avenue	4th St	I-10 San Bernardino Fwy	67,254	45	0.0%	93.0%	4.0%	3.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
86	66.2	69.0	69.6	95	204	439	Milliken Avenue	1-10 San Bernardino Fwy	Airport Dr	21,307	45	0.0%	90.0%	5.0%	5.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
87	69.2	72.0	72.7	151	326	702	Milliken Avenue	Airport Dr	Santa Ana St	43,037	45	0.0%	90.0%	5.0%	5.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
88	63.5	66.3	67.0	63	136	292	Milliken Avenue	Santa Ana St	Jurupa St	11,568	45	0.0%	90.0%	5.0%	5.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
89	65.7	68.5	69.2	88	189	407	Milliken Avenue	Jurupa St	Francis St	15,626	50	0.0%	90.0%	5.0%	5.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
90	71.7	74.5	75.2	221	475	1024	Milliken Avenue	Francis St	Mission Blvd	60,780	50	0.0%	89.0%	6.0%	5.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
91	65.3	68.1	68.8	83	180	387	Milliken Avenue	Mission Blvd	SR 60 Pomona Fwy	14,462	45	0.0%	86.0%	7.0%	7.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
92	71.4	74.2	74.9	213	458	987	Milliken Avenue	SR 60 Pomona Fwy	Riverside Dr	58,322	45	0.0%	85.0%	7.0%	8.0%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
93	67.7	70.5	71.2	120	259	558	Milliken Avenue	Riverside Dr	Chino Ave	31,417	45	0.0%	89.0%	6.0%	5.0%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
94	61.8	64.5	65.2	48	104	223	Milliken Avenue	Chino Ave	Ontario Ranch Rd	8,151	45	0.0%	90.0%	5.0%	5.0%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
95	67.3	70.1	70.8	113	244	525	Milliken Avenue	Ontario Ranch Rd	Eucalyptus Ave	40,938	45	0.0%	95.0%	3.0%	2.0%	75.0%	15.0%	10.0%	5	Soft	100	0.5	56
96	67.8	70.6	71.3	122	263	567	Milliken Avenue	Eucalyptus Ave	Bellegrave Ave	44,611	45	0.0%	95.0%	3.0%	2.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
97	70.1	72.9	73.6	174	374	806	Etiwanda Avenue	the North	4th St	35,032	55	0.0%	88.0%	6.0%	6.0%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
98	69.0	71.8	72.5	146	315	679	Etiwanda Avenue	4th St	Ontario Mills Pky	33,302	45	0.0%	85.0%	7.0%	8.0%	75.0%	15.0%	10.0%	4	Soft	100	0.5	44
99	70.7	73.5	74.2	190	408	880	Etiwanda Avenue	Ontario Mills Pky	1-10 San Bernardino Fwy	42,865	45	0.0%	83.0%	8.0%	9.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
100	71.3	74.1	74.8	208	449	967	Etiwanda Avenue	1-10 San Bernardino Fwy	Airport Dr	48,163	45	0.0%	82.0%	8.0%	10.0%	75.0%	15.0%	10.0%	5	Soft	100	0.5	56
101	70.3	73.0	73.7	177	382	823	Etiwanda Avenue	Airport Dr	Santa Ana St	38,808	45	0.0%	83.0%	8.0%	9.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
102	69.8	72.5	73.2	164	354	762	Etiwanda Avenue	Santa Ana St	Jurupa Ave	33,901	45	0.0%	82.0%	9.0%	9.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
103	71.7	74.5	75.1	220	474	1021	Etiwanda Avenue	Jurupa Ave	Francis St	47,891	50	0.0%	84.0%	8.0%	8.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
104	72.5	75.3	76.0	251	541	1166	Etiwanda Avenue	Francis St	Philadelphia St	49,584	55	0.0%	84.0%	8.0%	8.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68
105	72.2	75.0	75.7	239	514	1107	Etiwanda Avenue	Philadelphia St	the South	51,154	50	0.0%	83.0%	8.0%	9.0%	75.0%	15.0%	10.0%	6	Soft	100	0.5	68