COUNTY CLERK'S USE

CITY OF LOS ANGELES
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LOS ANGELES, CALIFORNIA 90012

CALIFORNIA ENVIRONMENTAL QUALITY ACT

NOTICE OF EXEMPTION

(PRC Section 21152; CEQA Guidelines Section 15062)

Filing of this form is optional. If filed, the form shall be filed with the County Clerk, 12400 E. Imperial Highway, Norwalk, CA 90650, pursuant to Public Resources Code Section 21152(b) and CEQA Guidelines Section 15062. Pursuant to Public Resources Code Section 21167 (d), the posting of this notice starts a 35-day statute of limitations on court challenges to reliance on an exemption for the project. Failure to file this notice as provided above, results in the statute of limitations being extended to 180 days.

PARENT CASE NUMBER(S) / REQUESTED ENTITLEMENTS
APCSV-2019-1481-SPE-SPP-CU-ZV / Specific Plan Exception, Project Permit Compliance, Conditional Use, and Variance

LEAD CITY AGENCY	CASE NUMBER
City of Los Angeles (Department of City Planning)	ENV-2019-1482-CE
PROJECT TITLE	COUNCIL DISTRICT
	2 – Krekorian

PROJECT LOCATION (Street Address and Cross Streets and/or Attached Map) ☒ Map attached.
4801 – 4815 N. Laurel Canyon Boulevard; 12107 – 12111 W. Riverside Drive

PROJECT DESCRIPTION: ☒ Additional page(s) attached.
See attachment

NAME OF APPLICANT / OWNER:
Nader Hattar, N&D Corporation

CONTACT PERSON (If different from Applicant/Owner above)	(AREA CODE) TELEPHONE NUMBER | EXT.
Ken Kang, MK Design	(626)374-3834

EXEMPT STATUS: (Check all boxes, and include all exemptions, that apply and provide relevant citations.)

STATE CEQA STATUTE & GUIDELINES

☐ STATUTORY EXEMPTION(S)

Public Resources Code Section(s) _____

☒ CATEGORICAL EXEMPTION(S) (State CEQA Guidelines Sec. 15301-15333 / Class 1-Class 33)

CEQA Guideline Section(s) / Class(es) **Section 15303, Class 3(a)**

☐ OTHER BASIS FOR EXEMPTION (E.g., CEQA Guidelines Section 15061(b)(3) or (b)(4) or Section 15378(b))

JUSTIFICATION FOR PROJECT EXEMPTION: ☒ Additional page(s) attached
See attached

☒ None of the exceptions in CEQA Guidelines Section 15300.2 to the categorical exemption(s) apply to the Project.

☐ The project is identified in one or more of the list of activities in the City of Los Angeles CEQA Guidelines as cited in the justification.

IF FILED BY APPLICANT, ATTACH CERTIFIED DOCUMENT ISSUED BY THE CITY PLANNING DEPARTMENT STATING THAT THE DEPARTMENT HAS FOUND THE PROJECT TO BE EXEMPT.
If different from the applicant, the identity of the person undertaking the project.

CITY STAFF USE ONLY:

CITY STAFF NAME AND SIGNATURE	STAFF TITLE
Andrew Jorgensen	City Planner

ENTITLEMENTS APPROVED
Specific Plan Exception, Project Permit Compliance, Conditional Use Permit, Variance

FEE:	RECEIPT NO.	REC'D. BY (DCP DSC STAFF NAME)
$5,774	0202611515	Sheila Toni

DISTRIBUTION: County Clerk, Agency Record

ENV-2019-1482-CE / Attachment "A" (Revised)

Project Address: 4801 – 4815 N. Laurel Canyon Boulevard; 12107 – 12111 W. Riverside Drive

Project Description: The project is the construction of a 736 square foot, self-operated car wash tunnel (17 ½ feet maximum height) to be operated from 7 a.m. to 10 p.m. daily, in conjunction with an existing gas station with convenience store, on an approximate 19,164 square foot commercial corner site. A total of 5 parking spaces will be provided. The car wash tunnel is proposed at the southwest corner of the site, adjacent to a commercial use. The car wash tunnel will be approximately 38 feet long and 16 feet wide and will be located at the southwest corner of the site, with the entrance from the rear/north end of the tunnel and exit at the south end facing Riverside Drive. The project includes new landscaping around the site, raising existing concrete masonry unit (CMU) walls of six feet in height (west property line) and four feet in height (north property line) by two feet each, the addition of 8 new on-site trees and 3 new street trees, four additional parking spaces, new lighting, two new signs, a new trash enclosure area, new air/water location and the addition of two coin operation vacuum hoses with sound dampeners. Access to the site will remain as is, which includes four driveway apron (two from each street frontage). Access to the carwash will be from the rear, north side of the tunnel, and exiting south near the Riverside Drive southwest driveway. The project includes the demolition of a small storage building (160 square feet), the removal of 9 palm trees (3 mature, 6 small) and grading of less than 500 cubic yards.

Notice of Exemption

The City of Los Angeles determined that based on the whole of the administrative record, that the Project is exempt from CEQA pursuant to CEQA Guidelines, Section 15303, Class 3 (*new construction of a small structure not exceeding 2,500 square feet*) and there is no substantial evidence demonstrating that an exception to a categorical exemption pursuant to CEQA Guidelines, Section 15300.2 applies.

There are six (6) Exceptions which must be considered in order to find a project exempt under Class 3: (a) Location, (b) Cumulative Impacts; (c) Significant Effect; (d) Scenic Highways; (d) Hazardous Waste Sites; and (f) Historical Resources.

(a) **Location.** *Classes 3, 4, 5, 6, and 11 are qualified by consideration of where the project is to be located. A project that is ordinarily insignificant in its effect on the environment may in* a *particularly sensitive environment be significant. Therefore, these classes may not be utilized where the project may impact on an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies.*

The project is the construction and operation of a 736 square foot self-service drive-through car wash tunnel on a commercial corner lot zoned [Q]C2-1VL, currently developed with a gas station and convenience store and gas station canopies. The remainder of the site is mostly covered with asphalt except for landscape planter areas along the perimeter of the site which include shrubs as well as 20 non-protected trees comprised of palm trees, junipers, and pygmy palms.

The site is located within a commercial area of Valley Village, at the intersection of Laurel Canyon Boulevard and Riverside Drive. Surrounding properties are similarly zoned [Q]C2-1VL and developed with one and two story commercial buildings. The west adjoining property is developed with a drive-thru dry cleaners; north adjoining property is developed with a one story bank and related surface parking lot; south abutting property is developed with a gas station, convenience store and drive-thru car

wash; east abutting property is developed with a multi-tenant commercial center which include sit down eateries and a coffee shop; and the southeast abutting corner is developed with a grocery store and large parking lot. The subject property is a level lot, located 3.24 kilometers from the Hollywood Fault and is within a Liquefaction Area. The site is located within an urban built up area and is not located on or near a designated sensitive environmental area. Thus exception (a) does not apply.

(b) **Cumulative Impact.** *The exception applies when, although* a *particular project may not have* a *significant impact, the impact of successive projects, of the same type, in the same place, over time is significant.*

Based on a review of databases including the City of Los Angeles Department of City Planning Zone Information Map Access System (ZIMAS) for nearby case approvals (http://zimas.lacity.org/), there is an existing gas station with convenience store and a drive-through car wash located across the street, at southwest corner of Laurel Canyon Boulevard and Riverside Drive. No other similar uses were found within a 500 foot radius of the subject site. In addition, the project is entirely consistent with the existing General Plan designation and zoning (other than the requested deviations), which accounts for the impacts of developments which are within their parameters. Any successive projects of the same type and nature would reflect a development that is consistent with the underlying land use designation and the LAMC, and thus would be subject to the same regulations and requirements, including development standards and environmental impacts. As such, the proposed project will not result in a significant cumulative impact. Thus, exception (b) does not apply.

(c) **Significant Effect Due To Unusual Circumstances.** *This exception applies when, although the project may otherwise be exempt, there is a reasonable possibility that the project will have a significant effect due to unusual circumstances.*

The site is located on a commercially zoned property that permits auto-related uses such as gas stations. The site is surrounded by properties zoned and developed with commercial uses. The closest residential properties are located on La Maida Street, approximately 80 feet northwest of the site. The project consists of commercial uses and operations that are compatible with the surrounding development and consistent with the underlying zone. The project site is in a long-established neighborhood, and the site has been developed as it currently exists since at least 1986 (according to Assessor's Records.) The site does not demonstrate any unusual circumstances, and the project will not generate significant impacts. There are no unusual circumstances that indicate this project would reasonably result in a significant effect on the environment.

Water Quality. The project is not adjacent to any water sources and construction of the project will not impact water quality. Construction activities would not involve any significant excavation near an identified water source. Wastewater generated by the proposed car wash will be treated before it is discharged to the City Bureau of Sanitation. An industrial waste permit will be issued, which will ensure compliance with all water quality regulations and requirements. Thus, the project is not expected to negatively impact water quality.

Furthermore, the project will comply with the City's stormwater management provisions per LAMC 64. 70. Best Management Practices would also be required during general operation of the project to ensure that stormwater runoff meets the established water quality standards and waste discharge requirements. Therefore, development of the

proposed project would not degrade the quality of stormwater runoff from the site and would not result in any significant effects relating to water quality.

Noise. Further, the project must comply with the City of Los Angeles Noise Ordinance No. 144,331 and 161,574 and any subsequent ordinances which prohibit the emission or creation of noise beyond certain levels, during both construction and ongoing operation. The Ordinances cover both operational noise levels (i.e. postconstruction), as well as any noise impact during construction. Section 41.40 of the LAMC regulates noise from demolition and construction activities and prohibits construction activity (including demolition) and repair work, where the use of any power tool, device, or equipment would disturb persons occupying sleeping quarters in any dwelling hotel, apartment, or other place of residence, between the hours of 9:00 p.m. and 7:00 a.m. Monday through Friday, and between 6:00 p.m. and 8:00 a.m. on Saturdays and holidays; all such activities are also prohibited on Sundays. Section 112.05 of the LAMC also specifies the maximum noise level of construction machinery that can be generated in any residential zone of the city or within 500 feet thereof. As the project is required to comply with the above ordinances and regulations, it will not result in any significant noise impacts.

Further, per the CNEL (Community Noise Equivalent Level) Sound Study prepared by MK Design, dated January 7, 2021, “by averaging the peak noise levels (with the Recommended Regulatory Compliance Measures in place) against the measured existing ambient noise levels our site meets the Minimum Ambient Noise Level (Sec 111.01(a)).” This study was voluntarily supplemented by the applicant with a Noise Study to supplement and clarify prior studies prepared by Omny Acoustics, dated December 7, 2021, which consisted of a detailed on-site noise survey and propagation modeling. In studying the existing ambient noise levels, the study found that on-site ambient noise levels from adjacent sources exceeded the composite limits generated by Omny based on several sources, including the LAMC and LA County Codes. The report notes that permanent future increases in operational noise when modeled shows full compliance with LAMC noise ordinances. Further, the report states that the Project’s CNEL levels are ”below existing ambient CNEL levels at all property adjacencies … [resulting] in a CNEL increase well below CEQA significance thresholds at all locations.” In further response to public comments received, the applicant has volunteered revised project features, which would be conditioned through entitlement approvals, such as operating standards to include daytime-only operations and the use of a vacuum system with sound dampeners. The site contains existing concrete masonry unit (CMU) walls of six feet in height (west property line) and four feet in height (north property line), which the project applicant voluntarily proposes to raise by two feet each, and which would further limit noise impacts. Thus, the project will not result in any significant effects relating to noise.

Therefore, the Project will not have a significant effect due to unusual circumstances.

(d) **Scenic Highways.** This exception applies when, although the project may otherwise be exempt, there may be damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway.

Based on a review of the California Scenic Highway Mapping System (http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/), subject site is not located along a State Scenic Highway, nor are there any designated State Scenic Highways located near the project site. Based on this, the proposed project will not result in damage to scenic resources including trees, historic buildings, rock outcroppings, or

similar resources, within a highway officially designated as a state scenic highway, and this exception does not apply.

(e) **Hazardous Waste Sites.** *Projects located on a site or facility listed pursuant to California Government Code 65962.5.*

Based on a review of the California Department of Toxic Substances Control "Envirostor Database" (http://www.envirostor.dtsc.ca.gov/public/), no known hazardous waste sites are located on or proximate to the project site. In addition, there is no evidence of historic or current use, or disposal of hazardous or toxic materials at this location. Based on this, the project will not result in a significant effect due hazardous waste and this exception does not apply.

(f) ***Historical Resources****. Projects that may cause a substantial adverse change in the significance of an historical resource.*

Neither the project site itself nor any of the existing structures on the project site have been identified as a historic resource by local or state agencies, and the project site has not been determined to be eligible for listing in the National Register of Historic Places, California Register of Historical Resources, the Los Angeles Historic-Cultural Monuments Register, and/or any local register. Further, the project site was not found to be a potential historic resource based on the City's HistoricPlacesLA website or SurveyLA, the citywide survey of Los Angeles. Neither the State nor the City choose to treat the site as a historic resource, therefore, the proposed project cannot cause a substantial adverse change in the significance of a historical resource and this exception does not apply.

In conclusion, since the project meets all of the requirements of the categorical exemption set forth at CEQA Guidelines, Section 15303 and none of the applicable exceptions to the use of the exemption apply to the project, it is appropriate to determine this project is categorically exempt from the requirements of CEQA.

NADER'S MOBIL REMODEL & CAR WASH
ENVIRONMENTAL NOISE IMPACT STUDY (REVISION 2)
REPORT 210902.03

07 DECEMBER 2021

TO: DEMA HATTAR, NADER'S MOBIL
IAN MARR, MK DESIGN
KEN KANG, MK DESIGN

Omny Acoustics ("Omny") hereby submits this revised draft report to Nader's Mobil ("Client") regarding our Environmental Noise Impact Study performed for the proposed Nader's Mobil Remodel & Car Wash project located at 4801 Laurel Canyon Boulevard, Valley Village, California ("Project"). This report is revised to incorporate revisions to the Project's design.

A. Executive Summary

Omny Acoustics has prepared this Environmental Noise Impact Report to identify and address any potential exceedances of local codes as well as *CEQA* significance thresholds. The study detailed herein is based on a detailed on-site noise survey, and a complete sound propagation modeling of the Project site and its surroundings. A brief summary of our findings is as follows:

- Due to high ambient site noise levels, property-line noise limits are controlled by the current ambient conditions at all property-line adjacencies (rather than by code-defined "minimum ambient" levels).
- Sound modeling shows full compliance of all Project noise sources with the project-specific limits specified in the *Los Angeles Municipal Code* and *Los Angeles County Code of Ordinances*.
- The highest possible Project CNEL noise impacts are below existing ambient CNEL levels at all property adjacencies. This results in a CNEL increase well below CEQA significance thresholds at all locations.
- Omny determines all *CEQA* noise impacts to fall under either the "Less Than Significant Impact" or the "No Impact" category under the project's current design.
- No noise mitigation is required.

B. Project Background

The Nader's Mobil gas station is currently operational on the Project site at 4801 Laurel Canyon Boulevard. The station owners wish to remodel, adding an automatic car wash tunnel and vacuum cleaners for customer use.

An initial sound study (*CNEL Sound Study: Final Report*, dated 01/07/2021) was issued by MK Design, and a subsequent peer review by MD Acoustics (*4801 Laurel Canyon Car Wash – Acoustical Peer Review – Los Angeles, CA*, dated 05/17/2021) identified issues with the initial study's methodology and conclusions. The goal of this study is to address these concerns; providing an updated, thorough, and complete Environmental Noise Impact Study satisfying all code requirements.

C. Responses to Peer Review Comments

Comments from MD Acoustics' peer review (5/17/21) of the Project's original noise impact study (1/7/21) are reproduced below, with Omny's response following each. To the best of our knowledge, Omny has performed

this new impact study in a manner satisfying all comments below, and to an overall level satisfactory to MD Acoustics' peer review.

7.0 Methodology

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1. Noise measurements were taken at a height of 36"-48" above finish grade. Section 111.02(a) of the Los Angeles Municipal Code states that the microphone shall be located four to five feet above the ground. Subsequently, the noise model should be calculated four to five feet above the ground.

Omny Comments: All noise modeling in this updated study utilizes a receiver elevation of 1.5 meters (approximately 4'11"), complying with the 4-5 foot requirement. While long-term unmanned measurements necessesitated higher meter elevations to prevent tampering, concurrent manned measurements were conducted at the 1.5m elevation to make the appropriate height adjustments. See Section H of this report.

2. The baseline measurements were based off 60 second samples. Section 111.01(a) of the Los Angeles Municipal Code states that ambient noise shall be averaged over a period of at least 15 minutes.

Omny Comments: Baseline ambient measurements were taken at one-second intervals, but were used to calculate hourly metrics (60-minute Leq's and percentiles) for the purposes of this study. See section H.1 for additional details.

3. Streets and roads were modelled as a "uniform sound wall" of 60 dBA or 70 dBA. It is unclear how the propagation of street noise was calculated. Line sources such as roads should have a 3 dB drop-off over a doubling of distance. There is no distance given for the 60 dBA and 70 dBA assumptions or reference for these levels. The modeling approach is unclear.

Omny Comments: Road noise in Omny's modeling was calculated via standard line sources (one per lane of traffic, with equal sound power magnitudes assumed between all lanes of the same street). Sound power magnitudes were specified in units of sound power (dB re:1pW RMS) per meter, and were determined from the results of our 72-hour noise survey at the Project site. See Section H.2 of this report for additional details.

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4. Peak is defined in the report as measurements of short duration. Peak sound pressure is a specific metric which is not generally analyzed for environmental noise. It appears that in this report, peak refers to the Leq levels measured during the loudest minute of the car wash cycle. The metrics should be more clearly defined to determine what each calculation and measurement is referring to.

Omny Comments: Omny has made efforts to increase clarity in this updated analysis. It is presented in terms of equivalent (Leq) and percentile (LN) metrics as defined in the codes and ordinances referenced.

5. Ambient Noise Level is defined in the report as levels averaged across 15 minutes. As stated in Section 111.01(a) of the Los Angeles Code, ambient noise is taken exclusive of the particular noise **sources to be measured. The report includes the operational noise within the ambient noise levels when only the existing road noise should be included. The metrics should be more clearly defined to determine what each calculation and measurement is referring to.**

Omny Comments: The *Los Angeles Municipal Code* defines Ambient Noise as being "averaged over a period of at least 15 minutes." This analysis uses hourly metrics, which are compliant with this definition. Our updated analysis also removes current operational noise from baseline ambient sound levels. See section I.1 for details.

6. **The equation presented appears to linearly average sound levels when they should be logarithmically averaged.**

Omny Comments: All averages and sums of decibel values are performed logarithmically in this updated study.

8.2 Samples Tables

Pg.13

7. **It appears that a sound level meter was not used which satisfies the requirements for a Type S2A meter as defined by ANSI S1.4. This type of meter is required by Section 111.01(l) of the Los Angeles Municipal Code. It appears that a sound level meter app and internal microphone was used which is insufficient at performing baseline readings as there is no method to calibrate an internal phone mic. ANSI standards are clear and specific on the use of pistonphone calibrators and use on Type 2 (or higher) hardware.**

Omny Comments: All sound level meters and calibrators used during this updated study are Type-2 / Class-2 instruments satisfying the equipment accuracy requirements of *LACCO* §12.08.340, *LAMC* §111.01(L), *LAMC* §111.01(H) [where applicable], and all ANSI standards referenced therein.

8. **The metric of CNEL is mentioned in this section and throughout the report, but CNEL levels are never calculated or presented.**

Omny Comments: As seen in Section I.2 and Table 8 of this report, CNEL levels are now calculated at all property line receptors for all Project sources.

9.1 Traffic Level Description

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9. There is no reference or distance given for the expected sound levels given based on traffic flow. It appears to be based on sampled data from Location 3. When comparing Location 3 traffic levels versus sound levels, this methodology is anywhere from 0.27 to 6.33 dB off from the measured data. In traffic noise, a difference of 6 dB corresponds to a quadrupling of cars. The standard Federal Highway Administration's Traffic Noise Model or a similar established standard should be used for predicting noise from traffic.

Omny Comments: This updated analysis uses site-specific traffic noise levels, measured directly during Omny's 72-hour site noise survey.

11.1 Traffic Level Description

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10. There is no source given for the blower and vacuum data. It is unknown if these levels refer to sound pressure or sound power levels. No distance is given in relation to these sources. It is not indicated if the reference level is for the vacuum nozzle or turbine. Blower noise levels can vary greatly depending on the manufacturer, so it is important to note which blowers are being modelled. It is also unknown how many blowers have been modeled and what height they are modeled at. These noise sources are the main noise producers on the project site and there is no way to determine if these noise sources were properly evaluated as no reference level has been provided.

Omny Comments: Omny has obtained manufacturer-provided sound data for the car wash blower system (four blowers in total, measured as a single composite unit), which has been used in our sound modeling. No data has been provided for the vacuums, so Omny has used a conservative value of 90 dBA at one meter, free-field, for combined turbine and nozzle noise (approx. 91 dBA PWL modeled as a point source). This is based on previous dBA readings taken at similar vacuum systems in the past. See Section I.2 for additional information on blower and vacuum modeling.

11.2 Noise Criteria

11. There is no mention of the Los Angeles Municipal Code, the Land Use Noise Compatibility Matrix, or CEQA in this section. These must be addressed as a part of a Los Angeles noise study. The CEQA assessment should include an analysis of both construction and operational noise. Construction noise is never mentioned in the report.

Omny Comments: All applicable codes and ordinances are referenced and discussed in this updated analysis. Construction noise is not a part of the current study's scope, although general information and guidelines for construction noise have been included in Section J of this report.

11.3 Proposed Site Plan – With implemented Regulatory Compliance Measures, Peak Noise Levels

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12. **The proposed 6' CMU wall appears to have a noise reduction of 50 dB which is a significant over assumption. Assuming a height of 3 ft for the vacuum, this wall would have a maximum reduction of 14 dB (See Appendix A). It appears that the STC rating of the wall was used to calculate overall reduction, which does not take into account sound that travels above the wall. More information on how to determine noise exposure based on distance and barrier insertion loss can be found within Federal Transit Authority Manual (Table 4-28) and HUD calculator.**

Omny Comments: This updated analysis utilizes NoiseTools.net sound modeling by MAS Environmental, which calculates barrier attenuation according to ISO-9613-2 methods.

12.0 Recommendations

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13. **The report states that 75 dBA is normally considered the upper threshold of acceptable noise at commercial structures, but no source is given. The threshold for powered equipment within 500 ft of a residence is given in Section 112.04 of the Los Angeles Municipal Code. Machinery may not cause the noise level on the premises of any other occupied property to exceed the ambient noise level by more than 5 decibels. CEQA also requires that operational noise must not increase by 3 dBA to or within the normally or clearly unacceptable categories or 5 dBA or greater. The report does not calculate the overall increase from the existing condition or the existing and operational CNEL levels.**

Omny Comments: A total level of no more than 5.0 dBA above ambient allows for an equipment level that is up to approximately 3.3 dBA higher than the ambient level, as $10*log_{10}(10^{L/10}+10^{(L+3.3)/10}) \approx L + 5$, for any hypothetical level "L." By ensuring that a Project noise source operating no more than "N" percent of any one hour does not exceed the corresponding "LN" percentile ambient level, the above ambient-plus-five condition is met automatically for summed ambient and equipment noise.

14. **The report does not clearly label the receptors at the commercial and residential sites or address all surrounding sites.**

Omny Comments: Receptor locations under each individual sound model are taken as being the point on the property line (at 1.5m elevation) having the greatest Project noise impact. When said location is occupied by one or more barrier wall(s), the location 1.0m away from the wall(s) on the receiving property's side is used. Exact locations of maximum impact along each property line vary slightly between models, but the results compared in this report are always those at the most-impacted point under each modeled condition. See Section H.2 for additional details.

13.0 Conclusions

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15. **It is unclear in this section how the report compares the operational noise levels to the existing condition. The report does not specify at which receptor the operational levels are averaged with the measured existing levels.**

Omny Comments: This report aims to clarify confusion on this matter, and to more clearly compare modeled Project-generated noise levels against existing ambient levels.

16. **Most of the measured existing levels (8/10) already exceed the Minimum Ambient Noise Level given by Section 111.03 of the Municipal Code. It is unclear what regulation the noise levels comply with.**

Omny Comments: This report aims to clarify confusion on this matter, and to more clearly compare modeled Project noise levels against existing ambient levels.

17. **The existing measurement in Location 5 was 65.8 dBA. The calculated noise levels at that location were 74 dBA. Adding that to the existing condition gives an operational maximum condition of 74.6 dBA. Assuming a condition of 65.8 dBA for 10 minutes and 74.6 dBA for 5 minutes as assumed in the report, the overall operational Leq level is 70.9 dBA, which is 5.1 dB over the existing condition. This calculation, however, cannot be verified as the assumptions used (which have been taken from the report) were not obtained by the required methods and standards.**

Omny Comments: This updated study compares the highest modeled Project noise impacts along each property line directly against baseline ambient levels at the same locations. Percentile "LN" levels are used to describe ambient conditions in this analysis, in order to suppress the effects of short-term high-level noises occurring regularly at the site, which could otherwise raise measured ambient levels unreasonably high under an "Leq" interpretation. In the case where a particular source will operate no more than "N" percent (cumulative) of any one-hour period, it is compared against the corresponding "LN" ambient level. By ensuring that a Project noise source operating no more than "N" percent of any one-hour period does not exceed the corresponding "LN" percentile ambient level of that same period, the ambient-plus-five (Leq) condition is met automatically.

D. Site Location, Layout, and Zoning

The 4801 Laurel Canyon Boulevard site is located on the Northwest corner of Laurel Canyon Boulevard and Riverside Drive. According to the *North Hollywood – Valley Village General Plan Land Use Map* (2009), the site is categorized as a Neighborhood Commercial zone. It is bordered by other similarly-zoned properties as well as one Low-Medium Density Residential property. Layout of the Project site (current "as-built") is illustrated in Figure 1 and Figure 2, with a zoning map of the site and surroundings provided in Figure 3.

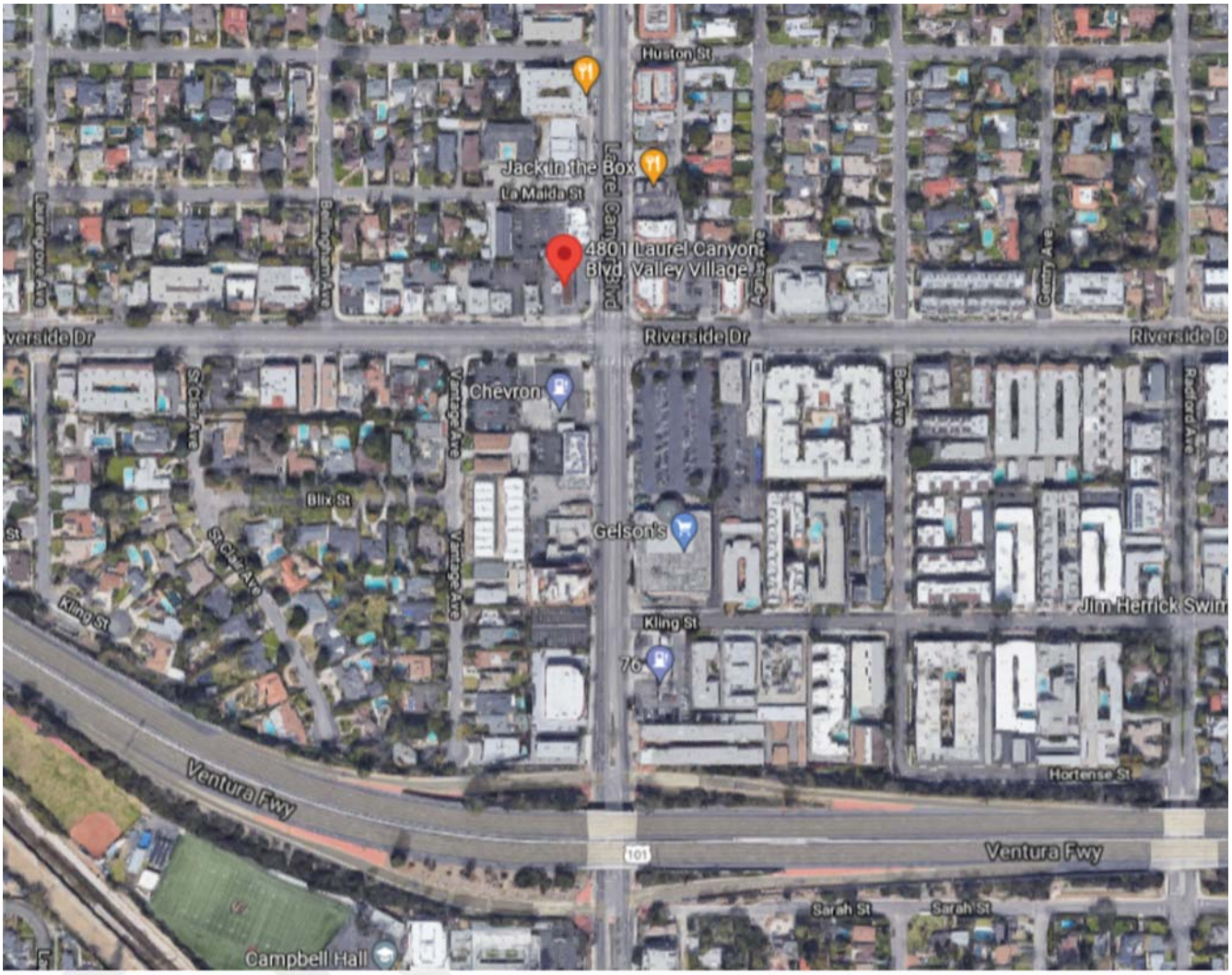

Figure 1: 4801 Laurel Canyon Blvd. Site (red marker) and general vicinity, with all major ambient noise sources included.

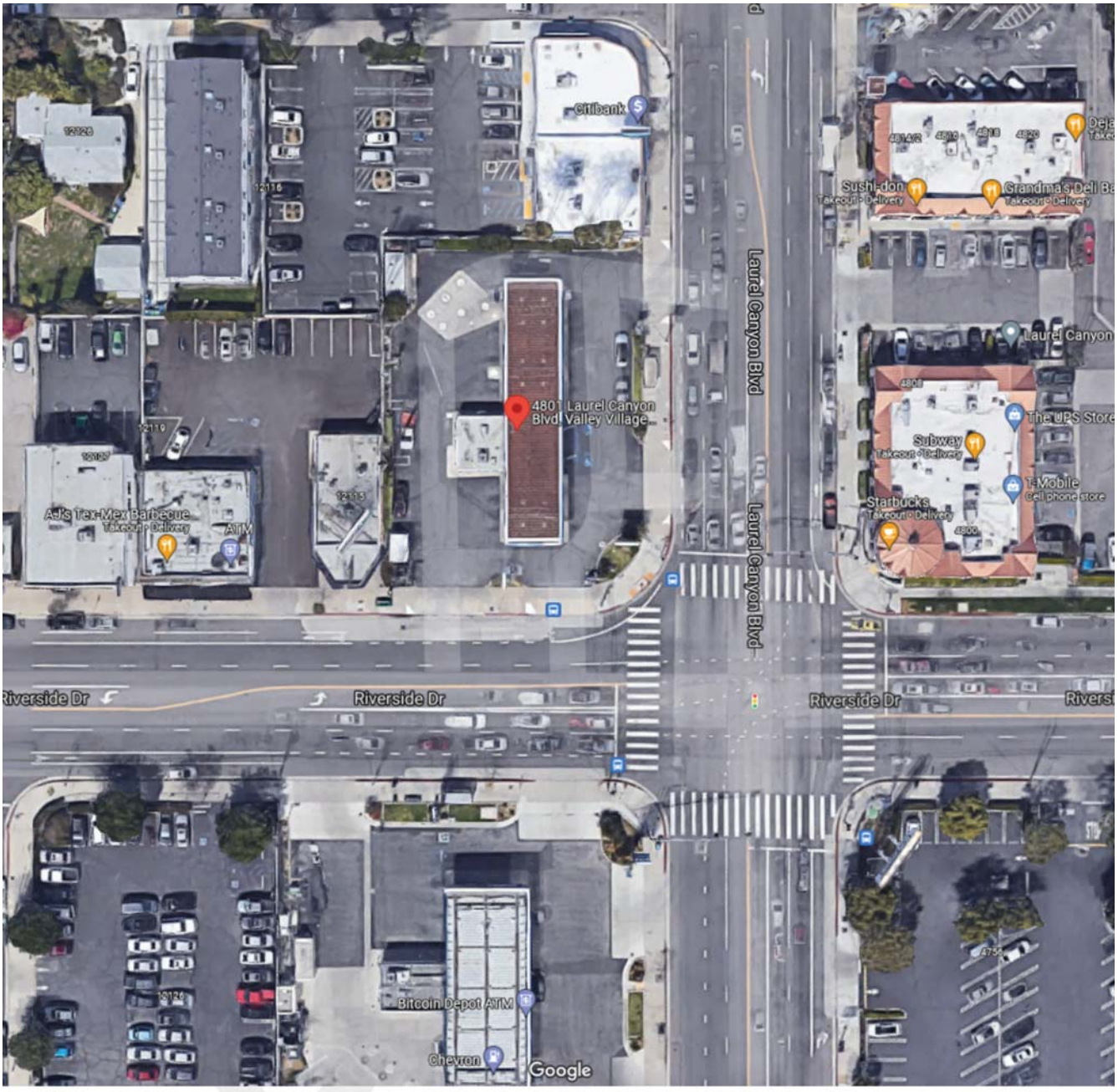

Figure 2: 4801 Laurel Canyon Blvd. site (red marker) and its direct adjacencies.

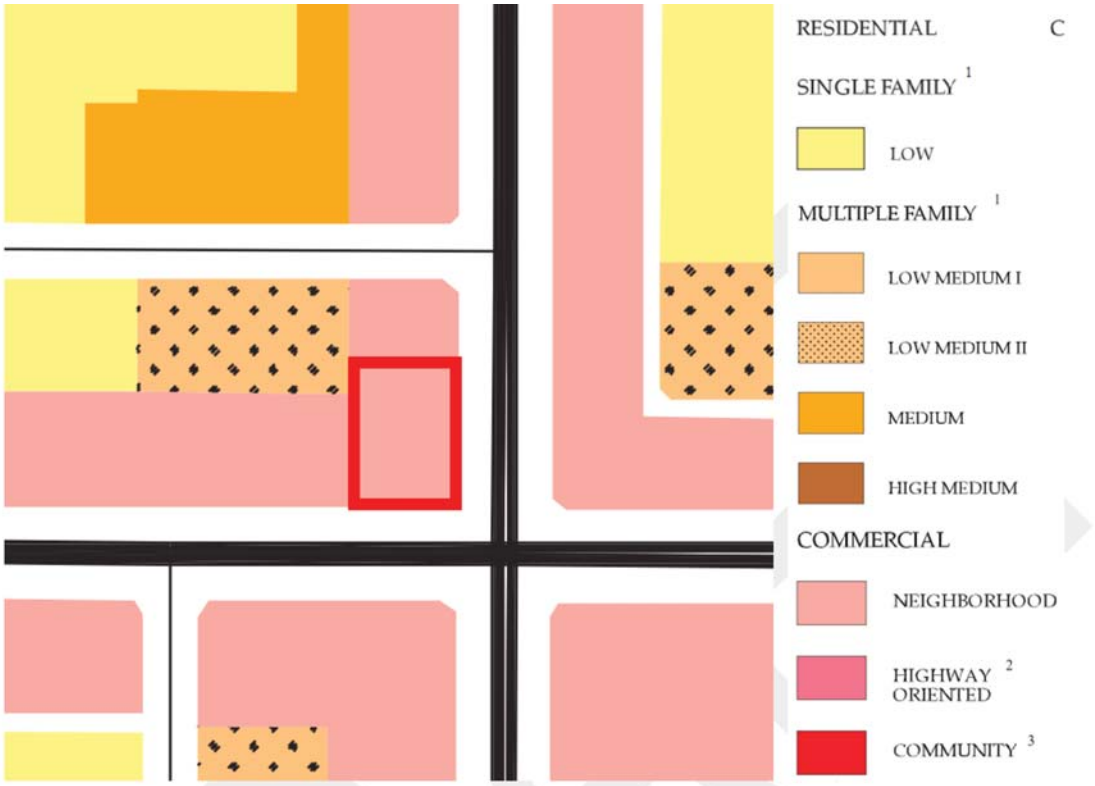

Figure 3: Land-use zoning map of 4801 Laurel Canyon Blvd. project site (red outline) and its immediate surroundings.

The relevant noise impacts generated by the Project will be those at the following neighboring properties. These property-line receiver locations are used as the primary subject of Omny's acoustical analysis for the remainder of this report.

- Townhouses at 12120 La Maida Street – low/medium residential property located Northwest of Project site; townhouse parking lot shares short section of Project's current West-facing 6-foot barrier wall.
- Citibank at 4821 Laurel Canyon Boulevard – neighborhood commercial property located North of Project site; bank building and parking lot share entire length of Project's Northern property line and current North-facing 4-foot barrier wall.
- Summit Kleanerette at 12115 Riverside Drive – neighborhood commercial property located West of Project site; building and parking lot share majority of Project site's Western property line and current West-facing 6-foot barrier wall.
- Chevron gas station at 4757 Laurel Canyon Boulevard – neighborhood commercial property located across Riverside Drive from Project and constituting Project's nearest Southern adjacency.
- Shopping Center at 4800-4808 Laurel Canyon Boulevard – neighborhood commercial property located across Laurel Canyon Boulevard from Project and constituting Project's nearest Eastern adjacency.

The Project site's entire North- and West-facing property lines – where such lines are not occupied by the facades of neighboring buildings – are covered by solid concrete masonry unit (CMU) barrier walls. The West-facing wall is an approximate height of 1.8m (6'0"), while the North-facing wall is an approximate height of 1.2m (4'0"). These walls currently serve as partial acoustical screens between receptor properties and Project-generated noise sources. Project drawings include plans to raise each of these walls by two feet (0.6m), raising the West-facing wall to a height of 2.4m (8'0") and the North-facing wall to a height of 1.8m (6'0"). This will provide additional acoustical screening beyond what exists at the current Project site.

E. Existing Ambient Noise Sources

The primary sources of existing ambient noise at the Project site are the vehicle traffic on its two major cross streets, which dominates the outdoor sound field at the site for the vast majority of the day. The Ventura Freeway (US-101, located approximately 350m to the South) is the site's secondary source, with near-constant distant traffic noise being audible from the freeway throughout the day and night.

Tertiary sound sources are stops on local bus lines and commuter airplane flyovers. The site includes two Metro bus stations – one on the East side of the property along Laurel Canyon Boulevard, and one on the South side along Riverside Drive – both of which provide significant short but periodically-repeating noise level contributions. Airplane flyovers are frequent and clearly audible, though they do not typically contribute noise levels comparable to street or freeway sources. The site is located in the vicinity of three small airports – Hollywood Burbank Airport approximately 5km away, Van Nuys Airport approximately 10km away, and Whiteman Airport approximately 11km away – but is not located within or near the 65dBA CNEL contours of any of the three Airports.

F. Remodel and Car Wash Tunnel Addition

The Nader's Mobil gas station is proposing a remodel, the two primary acoustical concerns of which are the future noise generated by (1) new coin-operated car vacuum cleaners to be installed near the Project site's Northwest corner and (2) new hot-air dryers (system of four) to be installed just inside the exit door of a new automated tunnel car wash system. According to Project plans and product submittals, the car vacuum cleaners will be equipped with a sound dampener system, and the hot-air dryers have the potential to be equipped with full-cover surrounds and/or silencer cones.

This report examines the predicted sound fields generated by these individual and combined noise sources, comparing them against the existing ambient levels (excluding current gas station contributions) determined in Omny's site noise survey.

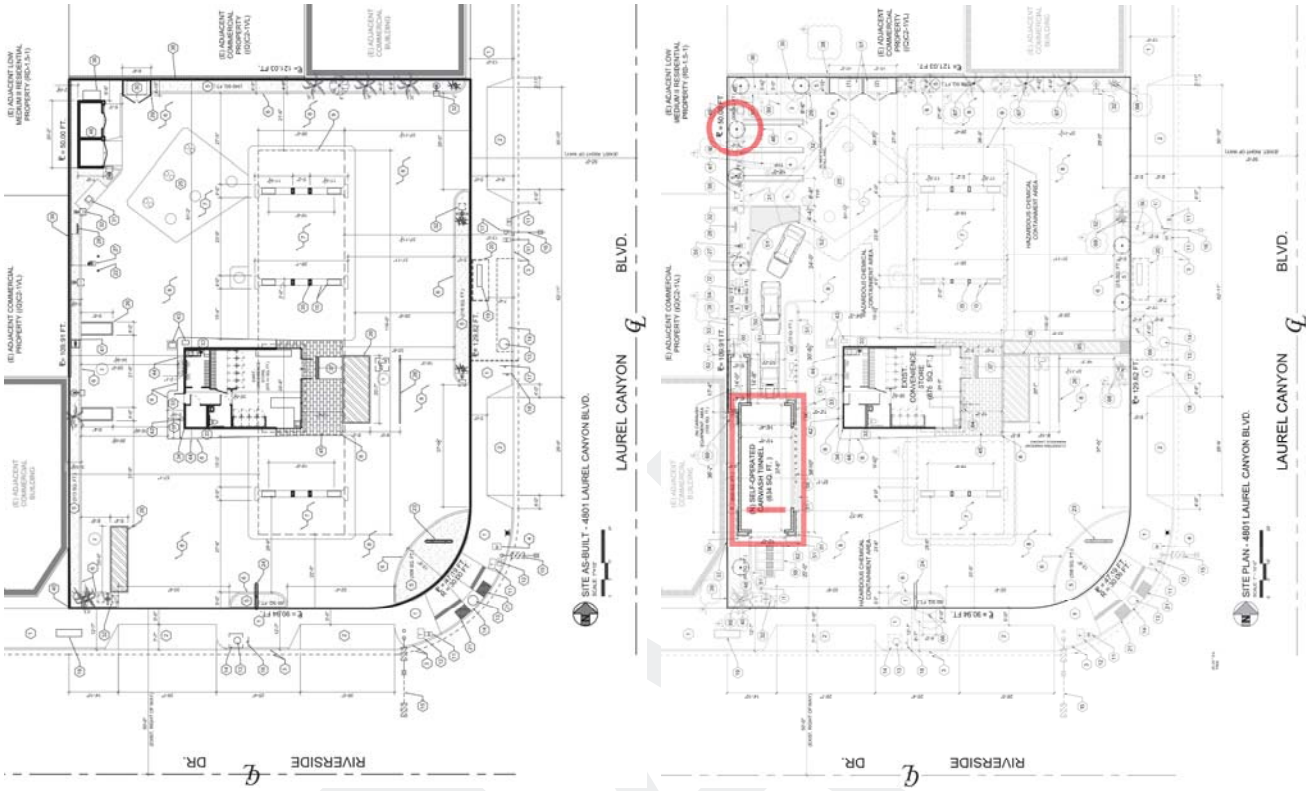

Figure 4: Project property as-built drawings (left, Drawing AB.1, 1/6/2021) vs. proposed site plan (right, Drawing A1.0, 11/9/2021) with new vacuum cleaner, car wash tunnel, and air-dryer locations indicated in red.

G. Codes and Ordinances

This section identifies and summarizes all known acoustical codes and ordinances which may be applicable to the Project. Relevant sections from each code document are summarized in the following subsections, and their composite requirements are detailed in Subsection G.5. Project-relevant text from each document is also directly quoted in Appendix A for reference.

1. Los Angeles County Code of Ordinances

Chapter 12.08 ("Noise Control") of the *Los Angeles County Code of Ordinances (LACCO)* allows a project to produce noise levels up to the following at neighboring property lines. Allowed noise levels are dependent upon the type of receptor property, the time of day, the existing ambient noise levels, and the cumulative duration of the noise produced by the Project.

Receptor property type:	Time of day:	*LACCO* Ch. 12.08 project noise limit:				
		30-60 min/hr:	15-30 min/hr:	5-15 min/hr:	1-5 min/hr:	< 1 min/hr:
Noise-sensitive area	24 hours	45 dBA or ambient L50[1]	50 dBA or ambient L25	55 dBA or ambient L8.3	60 dBA or ambient L1.7	65 dBA or ambient L0
Residential property	7:00 AM – 10:00 PM	50 dBA or ambient L50	55 dBA or ambient L25	60 dBA or ambient L8.3	65 dBA or ambient L1.7	70 dBA or ambient L0
	10:00 PM – 7:00 AM	45 dBA or ambient L50	50 dBA or ambient L25	55 dBA or ambient L8.3	60 dBA or ambient L1.7	65 dBA or ambient L0
Commercial property	7:00 AM – 10:00 PM	60 dBA or ambient L50	65 dBA or ambient L25	70 dBA or ambient L8.3	75 dBA or ambient L1.7	80 dBA or ambient L0
	10:00 PM – 7:00 AM	55 dBA or ambient L50	60 dBA or ambient L25	65 dBA or ambient L8.3	70 dBA or ambient L1.7	75 dBA or ambient L0
Industrial property	24 hours	70 dBA or ambient L50	75 dBA or ambient L25	80 dBA or ambient L8.3	85 dBA or ambient L1.7	90 dBA or ambient L0

Table 1: Project noise limits summarized from Chapter 12.08 of the Los Angeles County Code of Ordinances.

As can be seen in Table 1 above, the *LACCO* noise ordinance includes provisions for projects in areas having high ambient noise levels. In any case where the existing ambient noise levels (those when no Project noise sources are active) exceed a prescribed noise limit, the limit is replaced by the ambient level exceeded during the same cumulative portion of any one-hour period.

According to the *North Hollywood – Valley Village General Plan Land Use Map (2009)*, receptor properties in the vicinity of Nader's Mobil include only residential and commercial properties.

2. Los Angeles Municipal Code

Chapter XI ("Noise Regulation") of the *Los Angeles Municipal Code (LAMC)* allows a project to produce noise levels up to the following at neighboring property lines, as detailed in Table 2. As with those of *LACCO* Ch. 12.08, *LAMC* Ch. XI noise limits are dependent upon receptor property type, time of day, and cumulative duration of project-generated noise.

1 **LN or L_N (where N is a percentage value from 0 to 100) –** The sound pressure level exceeded during N percent of a measurement period. For example, the L25 level of a 60-second acoustic measurement is the level which is exceeded for a total of 15 seconds (25%) of that measurement.

Receptor property type:	Time of day:	*LAMC* Ch. XI project noise limit:		
		15-60 min/hr:	5-15 min/hr:	< 5 min/hr:
A1, A2, RA, RE, RS, RD, RW1, RW2, R1, R2, R3, R4, and R5	7:00 AM – 10:00 PM	50 dBA or ambient L25	55 dBA or ambient L8.3	60 dBA or ambient L1.7
	10:00 PM – 7:00 AM	40 dBA or ambient L25	45 dBA or ambient L8.3	50 dBA or ambient L1.7
P, PB, CR, C1, C1.5, C2, C4, C5, and CM	7:00 AM – 10:00 PM	60 dBA or ambient L25	65 dBA or ambient L8.3	70 dBA or ambient L1.7
	10:00 PM – 7:00 AM	55 dBA or ambient L25	60 dBA or ambient L8.3	65 dBA or ambient L1.7
M1, MR1, and MR2	7:00 AM – 10:00 PM	60 dBA or ambient L25	65 dBA or ambient L8.3	70 dBA or ambient L1.7
	10:00 PM – 7:00 AM	55 dBA or ambient L25	60 dBA or ambient L8.3	65 dBA or ambient L1.7
M2 and M3	7:00 AM – 10:00 PM	65 dBA or ambient L25	70 dBA or ambient L8.3	75 dBA or ambient L1.7
	10:00 PM – 7:00 AM	65 dBA or ambient L25	70 dBA or ambient L8.3	75 dBA or ambient L1.7

Table 2: Project noise limits summarized from Chapter XI of the Los Angeles Municipal Code.

Unlike *LACCO* Ch. 12.08, *LAMC* Ch. XI does not explicitly specify nor define a sound pressure level (SPL) metric for use in determining baseline ambient noise levels, and thus requires some interpretation. Further, *LAMC* does not include provisions for cases with existing ambient levels above code-specified "minimum ambient" levels. Thus, Omny interprets *LAMC* ambient levels using the methods of *LACCO*, and considers it reasonable to adjust duration-dependent noise limits using the corresponding ambient percentile (LN) levels as done in Table 2.

According to the *North Hollywood – Valley Village General Plan Land Use Map (2009)*, receptor properties in the vicinity of Nader's Mobil include low-density single-family residential (types RE9, RS, R1), low-medium-II multi-family residential (types RD2, RD1.5), medium-density multi-family residential (type R3), and neighborhood commercial (types CR, C1, C1.5, RAS3, RAS4.P).

3. Los Angeles General Plan

Exhibit I ("Guidelines for Noise Compatible Land Use") of the Noise Element of the *Los Angeles General Plan (LAGP)* gives the following guidelines for CNEL[2] noise levels deemed appropriate for various land uses. Although these levels are primarily used for determining suitability of sites for new construction, they can also be used to determine appropriate project CNEL noise limits. It should be a goal of the Project to prevent its noise impact from raising the CNEL at any point on a neighboring property to a level inappropriate for that property's land use category.

Exhibit I: Guidelines for Noise Compatible Land Use

(Based on the Governor's Office of Planning and Research, "General Plan Guidelines", 1990. To help guide determination of appropriate land use and mitigation measures vis-a-vis existing or anticipated ambient noise levels)

Land Use Category	Day-Night Average Exterior Sound Level (CNEL dB) 50	55	60	65	70	75	80
Residential Single Family, Duplex, Mobile Home	A	C	C	C	N	U	U
Residential Multi-Family	A	A	C	C	N	U	U
Transient Lodging, Motel, Hotel	A	A	C	C	N	U	U
School, Library, Church, Hospital, Nursing Home	A	A	C	C	N	N	U
Auditorium, Concert Hall, Ampitheater	C	C	C	C/N	U	U	U
Sports Arena, Outdoor Spectator Sports	C	C	C	C	C/U	U	U
Playground, Neighborhood Park	A	A	A	A/N	N	N/U	U
Golf Course, Riding Stable, Water Recreation, Cemetery	A	A	A	A	N	A/N	U
Office Building, Business, Commercial, Professional	A	A	A	A/C	C	C/N	N
Agriculture, Industrial, Manufacturing, Utilities	A	A	A	A	A/C	C/N	N

A = Normally acceptable. Specified land use is satisfactory, based upon assumption buildings involved are conventional construction, without any special noise insulation.

C = Conditionally acceptable. New construction or development only after a detailed analysis of noise mitigation is made and needed noise insulation features are included in project design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning normally will suffice.

N = Normally unacceptable. New construction or development generally should be discouraged. A detailed analysis of noise reduction requirements must be made and noise insulation features included in the design of a project.

U = Clearly unacceptable. New construction or development generally should not be undertaken.

Table 3: CNEL land-use guidelines taken from Exhibit I of the Los Angeles General Plan Noise Element (1999).

2 **CNEL (Community Noise Equivalent Level) –** A 24-hour, A-weighted, time-weighted, equivalent (Leq) noise level. Levels occurring from 7:00 AM – 7:00 PM are unweighted; levels occurring from 7:00 PM – 10:00 PM are assigned a penalty of +5dBA; and levels occurring from 10:00 PM – 7:00 AM are assigned a penalty of +10dBA.

4. California Environmental Quality Act

Appendix G of the *California Environmental Quality Act (CEQA) Statute and Guidelines (2021 edition)* provides three checklist questions to be addressed when determining the environmental noise impact of a new building project or renovation. The impact study checklist questions pertaining to noise (Subsection XIII) are quoted as follows. (Note that the most recent version of the *CEQA* noise checklist questionnaire has been condensed, with redundant questions from previous versions having been removed.)

> *XIII. NOISE. Would the project result in:*
>
> *a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*
>
> *b) Generation of excessive groundborne vibration or groundborne noise levels?*
>
> *c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?*

For each checklist question above, a determination of *Potentially Significant Impact*, *Less Than Significant* [Impact] *with Mitigation Incorporated*, *Less Than Significant Impact*, or *No Impact* may be made based on the results of an Environmental Noise Impact Study.

Chapter I.2 ("Operational Noise"), Section 2.A, of the *City of Los Angeles CEQA Thresholds Guide (2006)* provides the following significance threshold for a *Significant Impact* determination:

> *A project would normally have a significant impact on noise levels from project operations if the project causes the ambient noise level measured at the property line of affected uses to increase by 3 dBA in CNEL to or within the "normally unacceptable" or "clearly unacceptable" category, or any 5 dBA* [CNEL] *or greater noise increase (see the chart below).*

The guide then provides the following CNEL land-use compatibility table (reproduced in Table 4), similar to that found in Exhibit I of the *Los Angeles General Plan Noise Element* (reproduced in Table 3).

	Community Noise Exposure CNEL, db			
Land Use	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Single Family, Duplex, Mobile Homes	50 - 60	55 - 70	70 - 75	above 70
Multi-Family Homes	50 - 65	60 - 70	70 - 75	above 70
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 - 70	60 - 70	70 - 80	above 80
Transient Lodging - Motels, Hotels	50 - 65	60 - 70	70 - 80	above 80
Auditoriums, Concert Halls, Amphitheaters	-	50 - 70	-	above 65
Sports Arena, Outdoor Spectator Sports	-	50 - 75	-	above 70
Playgrounds, Neighborhood Parks	50 - 70	-	67 - 75	above 72
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 - 75	-	70 - 80	above 80
Office Buildings, Business and Professional Commercial	50 - 70	67 - 77	above 75	-
Industrial, Manufacturing, Utilities, Agriculture	50 - 75	70 - 80	above 75	-

Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.
Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
Clearly Unacceptable: New construction or development should generally not be undertaken.

Table 4: CNEL land-use compatibility table from Chapter I.2 of the City of Los Angeles CEQA Thresholds Guide.

5. PROJECT-SPECIFIC NOISE LIMITS

Based on the code requirements summarized in Subsections G.1 through G.4, and based on the ambient noise survey conducted at the Project site (see Subsection I.1), Omny determines the following composite noise limits for the Nader's Mobil remodel and car wash addition, shown in Table 5 below.

Receptor property:	Time of day:	Composite noise limit (dBA re:20μPa RMS):				
		30-60 min/hr	15-30 min/hr	5-15 min/hr	1-5 min/hr	24-hour CNEL
Townhouses 12120 La Maida	Daytime (7am-10pm)	60	63	66	70	71
	Nighttime (10pm-7am)	55	58	61	66	
Citibank 4821 Laurel Canyon	Daytime (7am-10pm)	60	62	65	70	73
	Nighttime (10pm-7am)	56	57	60	65	
Summit Kleanerette 12115 Riverside	Daytime (7am-10pm)	60	63	66	70	71
	Nighttime (10pm-7am)	55	58	61	66	
Chevron 4757 Laurel Canyon	Daytime (7am-10pm)	68	70	72	77	86
	Nighttime (10pm-7am)	62	64	67	71	
Shopping Center 4800-4808 Laurel Canyon	Daytime (7am-10pm)	69	72	75	79	82
	Nighttime (10pm-7am)	62	66	70	74	

Table 5: Composite limits for project-generated noise, categorized by receptor property. Composite limits are calculated based on LACCO, LAMC, LAGP, CEQA, and Omny Acoustics' site noise survey results.

H. Methodology

1. Site Noise Survey

To obtain accurate records of current ambient noise levels at the Project site, Omny performed a site noise survey from Tuesday, October 12th, 2021 through Friday, October 15th, 2021. Sound monitoring stations were installed at four locations on Project property lines, and these unmanned stations recorded sound pressure levels (SPLs) continuously for a period of just over 72 hours (three full days). Shorter-term manned measurements were also taken at these same locations, to measure the typical frequency content of ambient noise along each Project property line.

Monitoring locations are shown in Figure 5, with images of individual monitoring stations shown in Figure 6. Full measurement details for the survey are provided in Table 6.

Figure 5: 72-hour sound monitoring station locations along Project property lines.

Figure 6 (top-left to bottom-right): Ambient monitoring stations #1, #2, #3, and #4.

Location:	Measurement device:	Mounting description:	Duration:	Measurements taken:
Station #1	Reed SD-4023 Type-2 SLM (SN H342103)	Inside weatherproof case with windscreen, installed on Mobil sign near Riverside Drive along South property line, approx. 4.6m (15') above ground.	2021-10-12 14:19:07 – 2021-10-15 15:57:51	LAS every 1 second
	Casella CEL-63X Type-2 SLM (SN 0442238)	On tripod with windscreen, 1.5m (~4'11") above ground at bottom of Mobil sign.	2021-10-13 13:52:59 – 14:28:05	LAF, LAS, LAeq every 1 second; 1/3-octave LZeq every 1 minute
Station #2	Reed SD-4023 Type-2 SLM (SN H342115)	Inside weatherproof case with windscreen, installed on light pole near Laurel Canyon Boulevard along East property line, approx. 3.7m (12') above ground.	2021-10-12 15:03:21 – 2021-10-15 16:04:40	LAS every 1 second
	Casella CEL-63X Type-2 SLM (SN 0442238)	On tripod with windscreen, 1.5m (~4'11") above ground at bottom of light pole.	2021-10-13 14:33:58 – 15:06:08	LAF, LAS, LAeq every 1 second; 1/3-octave LZeq every 1 minute
Station #3	Casella CEL-63X Type-2 SLM (SN 0166060)	Inside weatherproof case with windscreen, installed on palm tree near Citibank building along North property line, approx. 5.5m (18') above ground.	2021-10-12 15:29:12 – 2021-10-15 16:11:31	LAS every 1 second
	Casella CEL-63X Type-2 SLM (SN 0442238)	On tripod with windscreen, 1.5m (~4'11") above ground at bottom of palm tree.	2021-10-13 15:10:58 – 15:45:03	LAF, LAS, LAeq every 1 second; 1/3-octave LZeq every 1 minute
Station #4	Reed SD-4023 Type-2 SLM (SN H339627)	Inside weatherproof case with windscreen, installed on light pole near Summit Kleanerette building along West property line, approx. 3.7m (12') above ground.	2021-10-12 16:00:34 – 2021-10-15 16:18:47	LAS every 1 second
	Casella CEL-63X Type-2 SLM (SN 0442238)	On tripod with windscreen, 1.5m (~4'11") above ground at bottom of light pole.	2021-10-13 15:49:59 – 16:22:03	LAF, LAS, LAeq every 1 second; 1/3-octave LZeq every 1 minute

Table 6: Summary of all on-site measurements performed for ambient noise survey at Project site.

All sound level meters used during the ambient noise survey are Type-2 / Class-2 meters satisfying the equipment accuracy requirements of *LACCO* §12.08.340, *LAMC* §111.01(L), *LAMC* §111.01(H) [where applicable], and the ANSI standards referenced therein. All one-second measurements were taken using a "slow response" measurement (exponential time weighting with one-second constant) and the "A" frequency weighting, matching the *LACCO* and *LAMC* definitions used for determining both ambient and intrusive noise levels.

All sound level meters were field-calibrated directly prior to measurement using either a Reed R8090 Type-2 calibrator (SN 190918598) at 94.0 dB for the Reed SD-4023 meters or a Casella CEL-120/2 Type-2 calibrator (SN 1012428) at 114.0 dB for the Casella CEL-63X meters. Installed 72-hour logging meters were checked and recalibrated once per day to account for any calibration drift; short-term measurement meters were recalibrated prior to measurement at each new location.

Hourly equivalent[3] A-weighted (LAeq) levels and hourly noise level percentiles (LN) were calculated from this collected one-second (LAS) data. Hourly data was then used to calibrate our sound propagation model (see next subjection), and was also used to compute ambient-dependent property-line noise limits for the Project. Since unattended logging meters needed to be installed at high elevations to prevent tampering (as the current gas station was fully operational during the study), short-term attended ground-level (1.5m) measurements were used to adjust all high-elevation measurements to the code-required elevation range.

2. Sound Modeling

Using measured sound pressure levels collected as described in the previous subsection, Omny has created a sound propagation model of the Project site to both fully model ambient site conditions and to predict future post-remodel environmental noise impacts. Equivalent and statistical noise levels were computed for each one-hour period, and for each one-octave frequency band[4], and were used to decompose the measured sound field into the following predominant noise sources: (1) Riverside Drive traffic, (2) Laurel Canyon Boulevard traffic, (3) Ventura Freeway and other distant area traffic, and (4) on-site gas station customer traffic. Propagation models and parameters were then adjusted to obtain the best possible fit between computer model and in-field measurements. Generated sound maps of both ambient and predicted post-remodel noise conditions are shown in Section I of this report.

Receptor locations under each sound model are taken as the point on each property line (at 1.5m elevation) having the greatest Project noise impact. When said location is occupied by one or more barrier walls, the location 1.0m away from the wall(s) on the receptor property side is used. Exact locations of maximum impact along each property line vary slightly between models, but the results compared in this report are always those at the most impacted point under each modeled condition.

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3 **Equivalent Noise Level (Leq or LAeq) –** The decibel level of a constant noise containing the same total acoustic energy as a fluctuating noise measured over the same time period.

4 **One-Octave Band –** A range of frequencies defined by a center frequency, a lower frequency, and an upper frequency; such that the upper frequency is twice the lower frequency, and the center frequency is the geometric mean of the lower and upper frequencies. The range of human hearing is typically analyzed in ten (10) one-octave frequency bands covering the approximate range of 20 Hz to 20 kHz.

I. Impact Study Results

1. Ambient Sound Field

Hourly statistical breakdowns of measured A-weighted sound pressure levels at each measurement station are shown in Figure 7 and Figure 8, with equivalent levels shown in Figure 9. All percentile levels are shown on the same time and decibel scale for ease of comparison.

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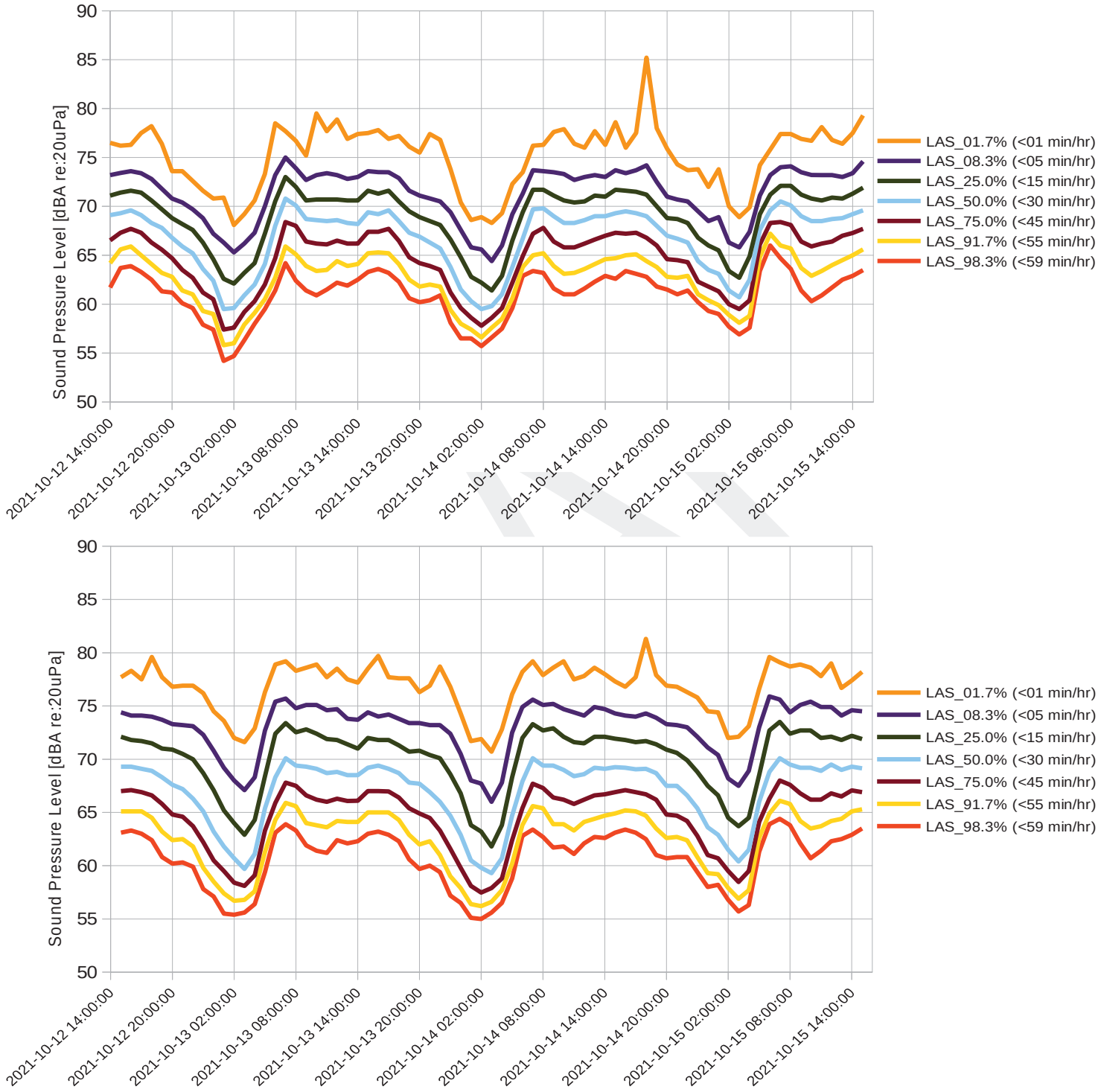


Figure 7: Hourly statistical (LN) A-weighted ambient noise levels measured at Station #1 (top) and Station #2 (bottom).

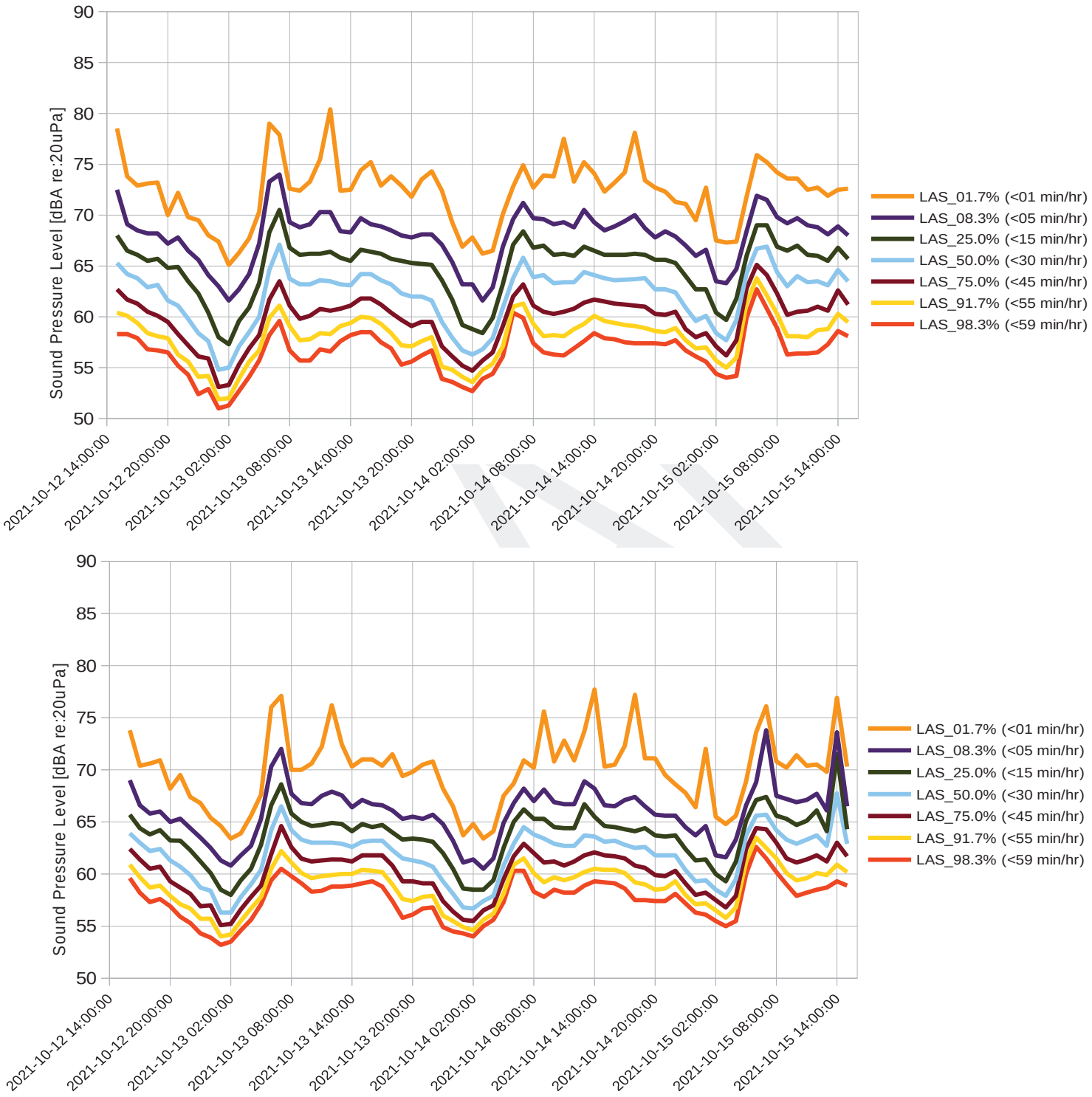


Figure 8: Hourly statistical (LN) A-weighted ambient noise levels measured at Station #3 (top) and Station #4 (bottom).

Figure 9: Hourly equivalent A-weighted (LAeq,1hr) ambient levels measured at 72-hour monitoring stations. High hourly equivalent levels at Station #1 are believed to be caused by loud braking of either Metro busses or garbage trucks, both of which were observed frequently on Riverside Drive.

Based on measured data shown in the previous plots, Omny calculates the following breakdown of typical ambient noise levels occurring at each property line (calculated/modeled at the points of greatest Project impact). Note that these levels are identical to those of Table 5 found in Section G.5 of this report.

Property line:	Time:	30-60 min/hr	15-30 min/hr	5-15 min/hr	1-5 min/hr	24-hour CNEL
Townhouses	Day	60	63	66	70	71
12120 La Maida St.	Night	55	58	61	66	
Citibank	Day	60	62	65	70	73
4821 Laurel Canyon Blvd.	Night	56	57	60	65	
Summit Kleanerette	Day	60	63	66	70	71
12115 Riverside Dr.	Night	55	58	61	66	
Chevron	Day	68	70	72	77	86
4757 Laurel Canyon Blvd.	Night	62	64	67	71	
Shopping Center	Day	69	72	75	79	82
4800-4808 Laurel Cyn. Blvd.	Night	62	66	70	74	

Table 7: Baseline ambient sound pressure levels (dBA) at points of highest Project impact along each property line.

Due to levels varying greatly throughout any typical operation day, the levels summarized in Table 7 are calculated using the typical lowest daytime and nighttime hourly statistical (LN) sound levels. Since the time of day at which the lowest levels occurs varies somewhat from day to day, the 3-hour daytime period from 7:00 PM – 10:00 PM and the 3-hour nighttime period from 1:00 AM – 4:00 AM have been used to calculate these levels, allowing a conservative calculation of a typical on-site ambient level distribution.

Even conservative selection of time periods results in the existing on-site ambient noise levels controlling the Project-generated noise limits, as they are higher than the "minimum ambient" levels prescribed in the relevant noise codes during all hours of the day. Ambient noise maps of the Project site and surrounding area are shown in Figure 10 (nighttime L50, dBA) and Figure 11 (24-hr CNEL, dBA) respectively.

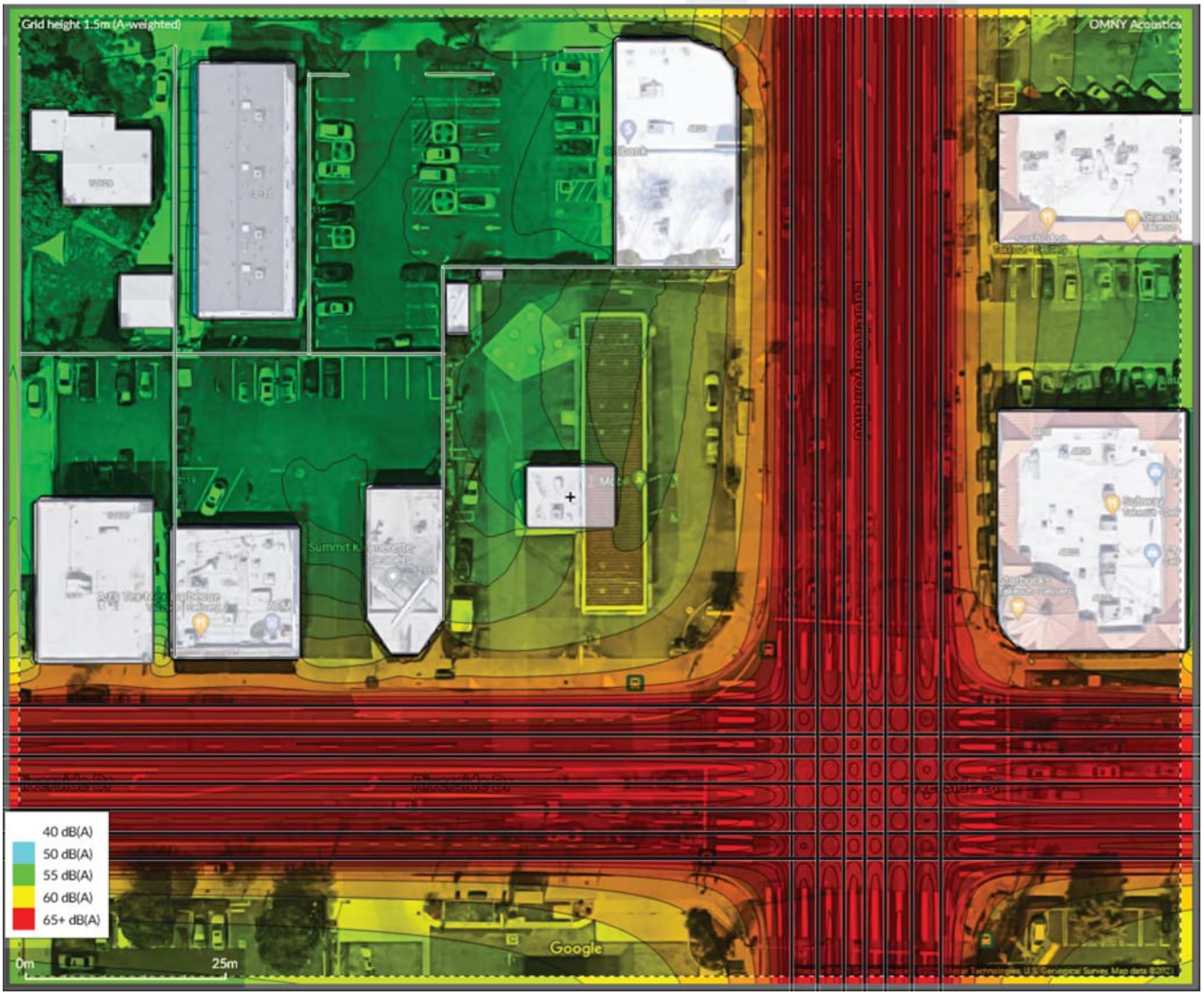


Figure 10: Contour map (1dBA contour lines) of typical nighttime L50 ambient noise levels.

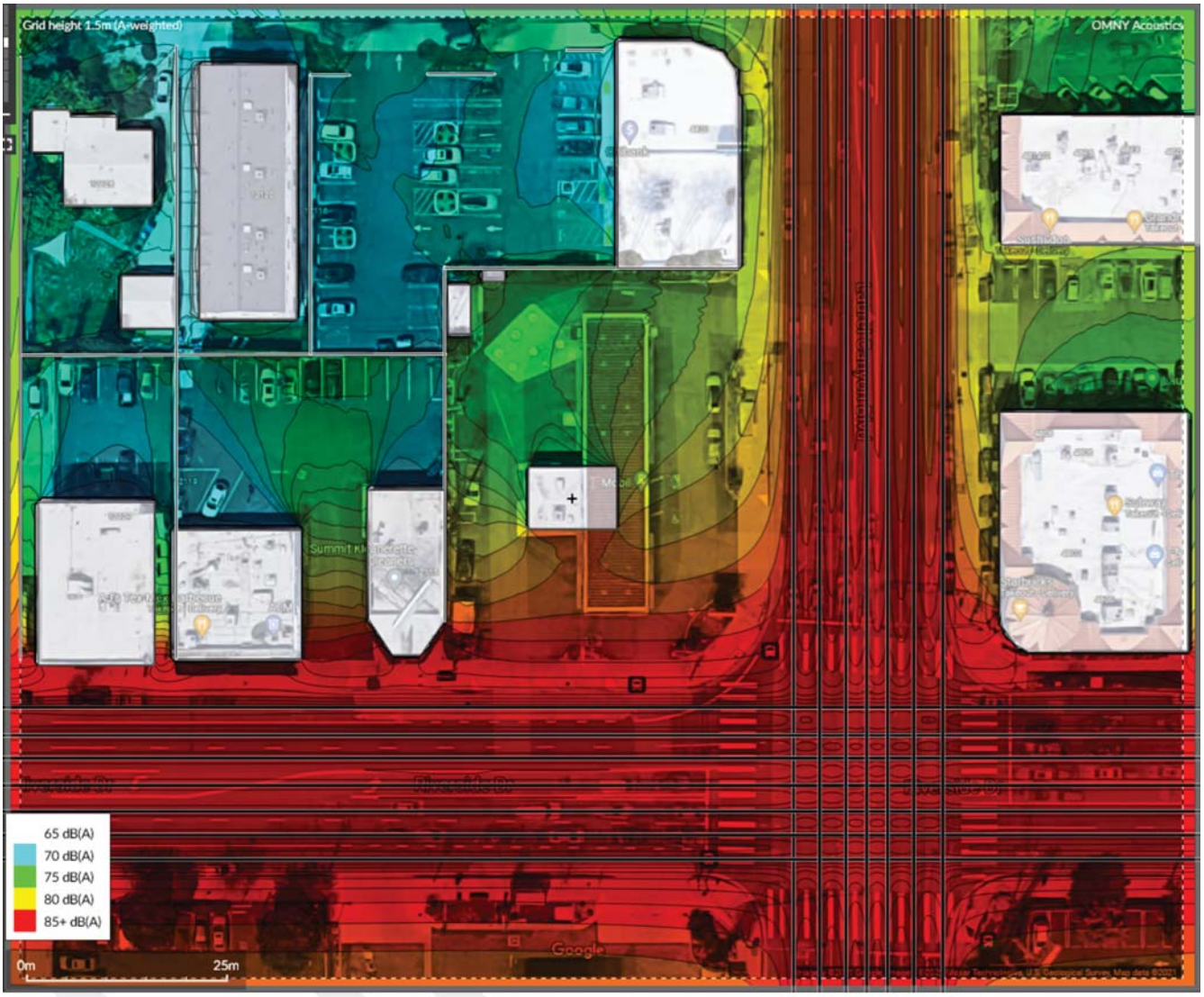


Figure 11: Contour map (1dBA contour lines) of typical ambient CNEL noise levels.

2. Project-Generated Noise Impacts

Project-generated noise impacts to the various receptor properties are modeled based on the following manufacturer data, site measurements, and assumptions.

- A-weighted sound pressure levels for the new 30HP Premier Touchless Drying System are provided in the product Owner's Manual and are reproduced in Figure 12 below. These are in-field readings taken from a similar tunnel-wash installation utilizing Premier plastic housings and no dryer-system surrounds or cone silencers. Equipment documentation claims a 4-5 dBA noise reduction resulting from

installation of these systems, but providese no further supporting data. As only single A-weighted values are provided, a "pink noise" spectrum of equal sound power per octave band is assumed for the purposes of frequency-dependent propagation and attenuation modeling. The dryer system is modeled as a single point source positioned approximately 1.4m (4'6") inside the exit door of the car-wash tunnel, at an approximate elevation of 2.3m (7'6"), based on scaled Project drawings and equipment submittal diagrams.

DISTANCE FROM BAY	30HP EXIT DOOR CLOSED	30 HP EXIT DOOR OPEN
10 FT.	76	89
20 FT.	72	87
30 FT.	70	82
40 FT.	66	78
50 FT.	66	78
60 FT.	64	75

Figure 12: Noise level readings for 30HP Premier Touchless Dryer System at various distances from tunnel exit.

- In the absence of any manufacturer noise data for the new vacuum cleaner system, an A-weighted level of 90dBA SPL at one meter (neglecting reflections) is assumed, equating to an approximate sound power level of 91dBA PWL. This is a conservative assumption based on firm experience and past measurement of systems believed to be similar. Project plans indicate a "sound dampener system" to be installed on the vacuums, but no further details are provided. A "pink noise" spectrum is assumed for frequency-dependent propagation and attenuation modeling. The vacuum system is modeled as a point source with a one-meter elevation above ground level.
- Sound spectra of station traffic noise (caused by cars and customers on the Project property itself) have been measured directly at the site as part of Omny's ambient site survey. Station traffic contributions to the overall sound field have been removed in ambient noise models (see Figures 10 and 11), but have been included in models of the Mobil station's traffic noise impacts. Equivalent (Leq) traffic noise levels are conservatively assumed to remain constant 24 hours per day in Omny's sound modeling. Station traffic noise is modeled as a series of equal-strength line sources oriented along the main driving paths at the gas station. Post-remodel traffic noise is assumed to increase from current levels, proportionally with respect to the added parking space count and total driving path-length added by the car wash tunnel and queue.

Omny's sound modeling of station traffic impacts is shown in Figure 13 and Figure 14, for current and estimated post-remodel conditions, respectively. Modeling results for car wash tunnel noise impacts – with tunnel doors closed and open – are illustrated in Figure 15 and Figure 16, respectively. Modeled noise impacts from the vacuum system are illustrated in Figure 17. Finally, a composite "worst case" scenario, including simultaneous open-door tunnel operation, vacuum system operation, and increased post-remodel traffic noise, is illustrated in Figure 18.

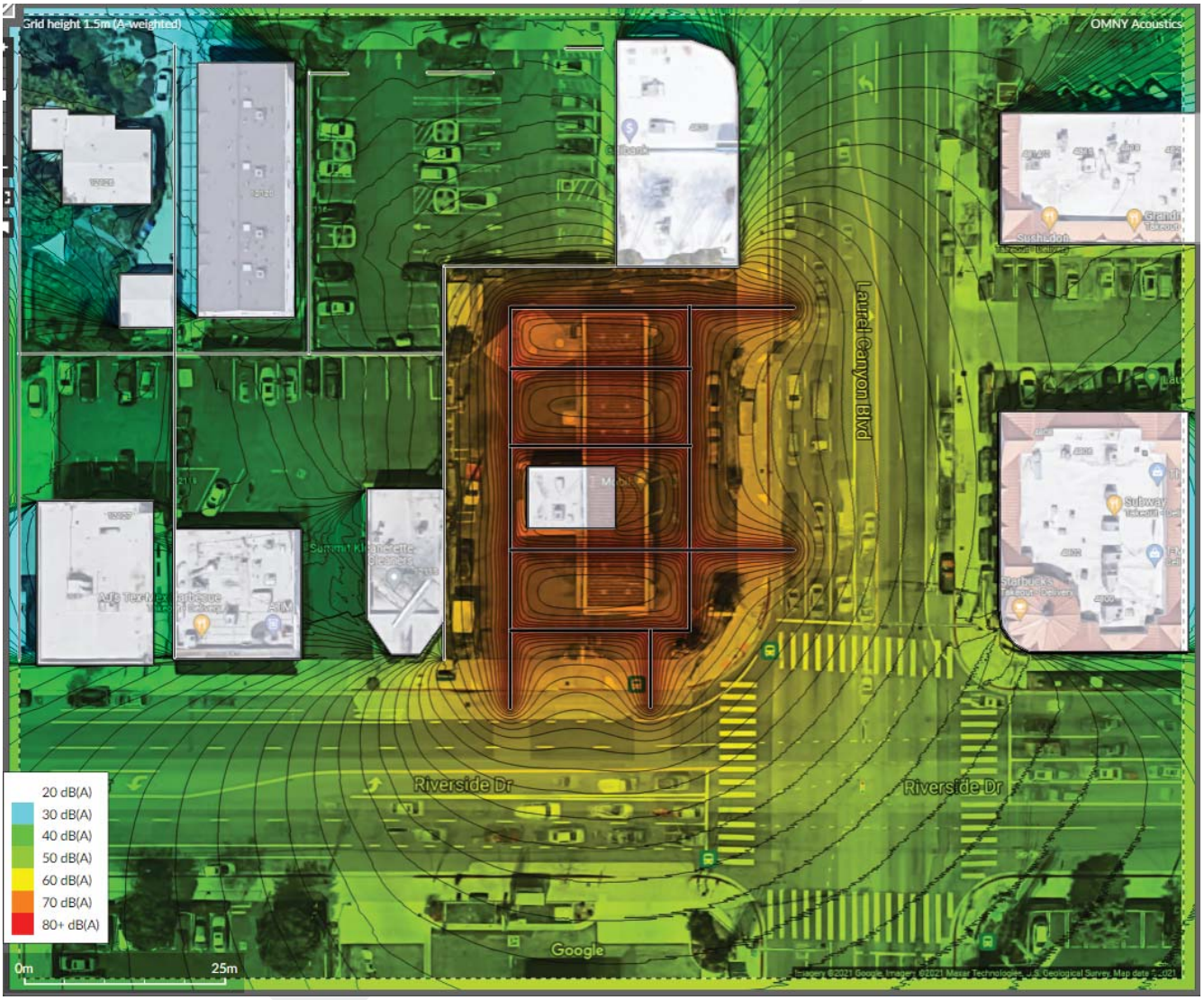


Figure 13: Contour map (1dBA contour lines) of current gas station traffic noise impact to surroundings.

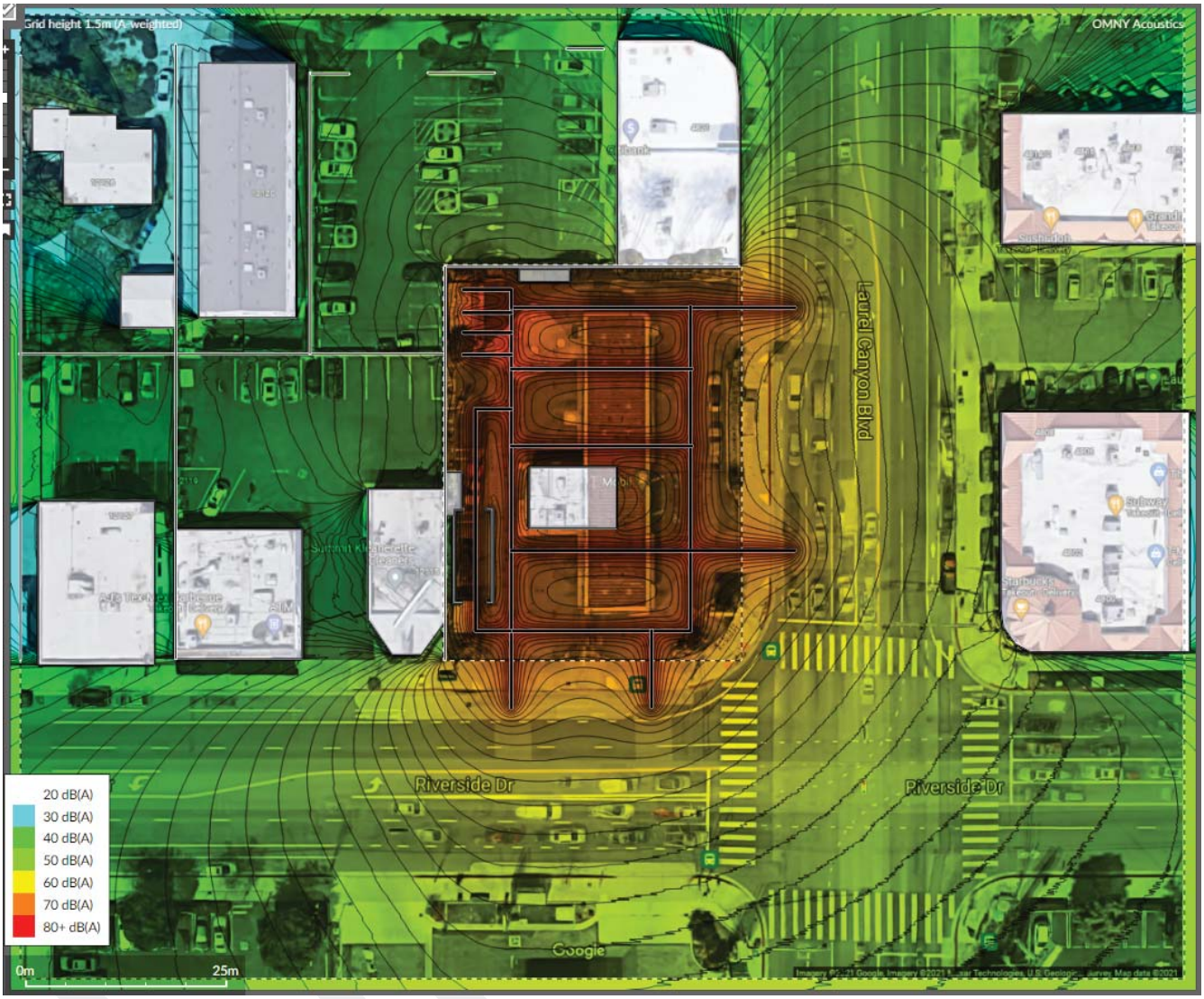


Figure 14: Contour map (1dBA contour lines) of predicted post-remodel gas station traffic noise impact to surroundings.

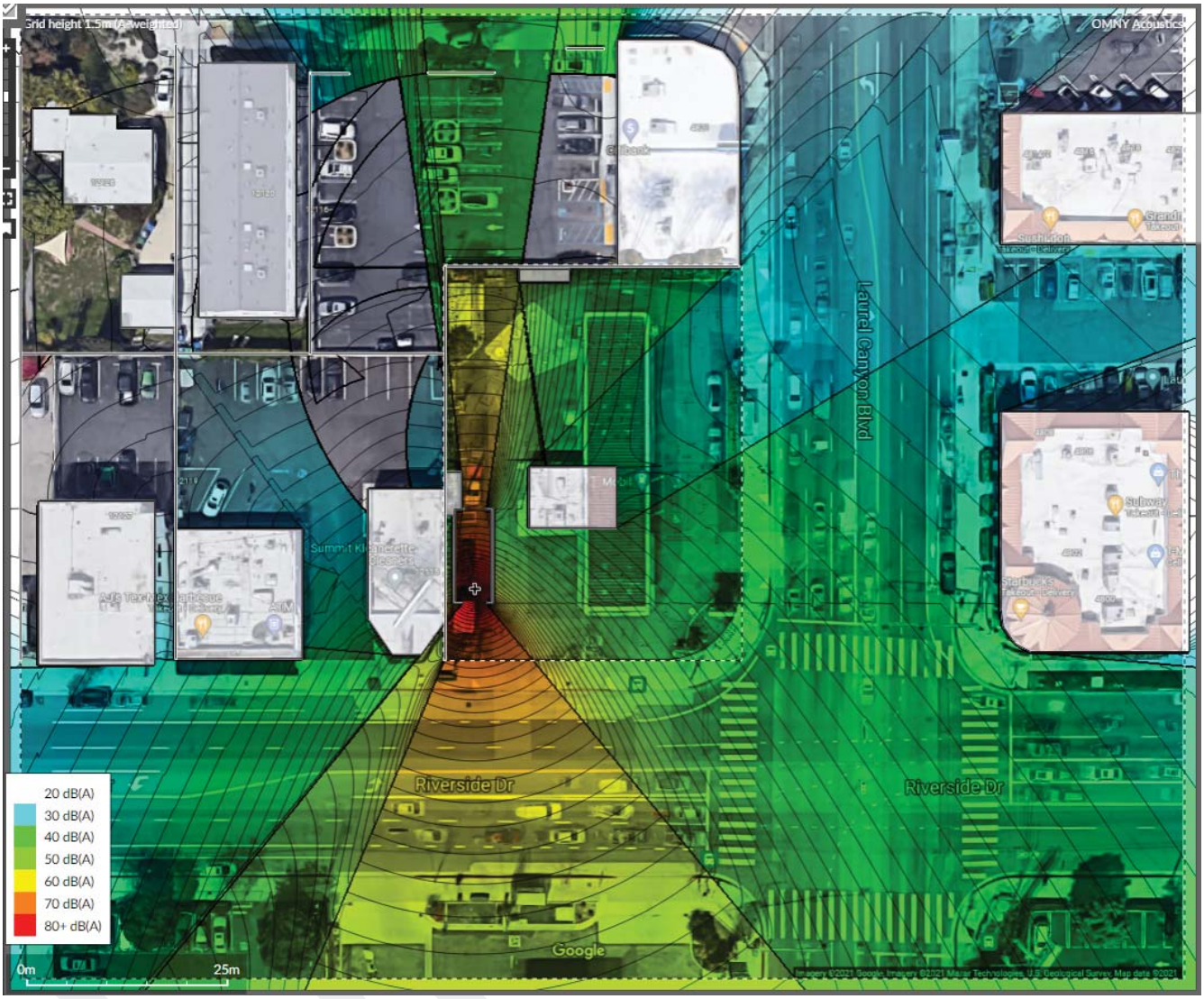


Figure 15: Contour map (1dBA contour lines) of predicted car wash noise impact to surroundings (with both tunnel doors closed).

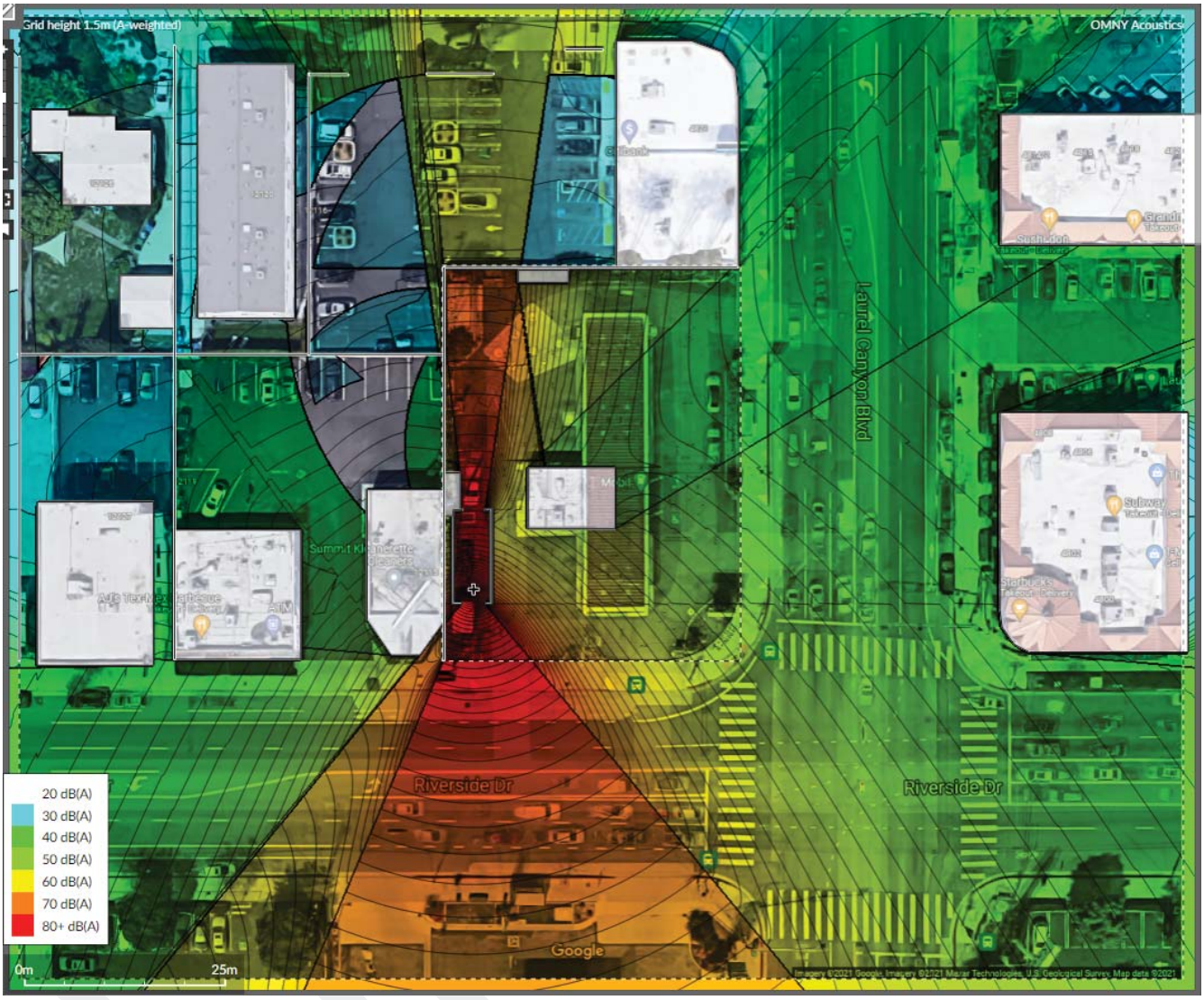


Figure 16: Contour map (1dBA contour lines) of predicted car wash noise impact to surroundings (with both tunnel doors open).

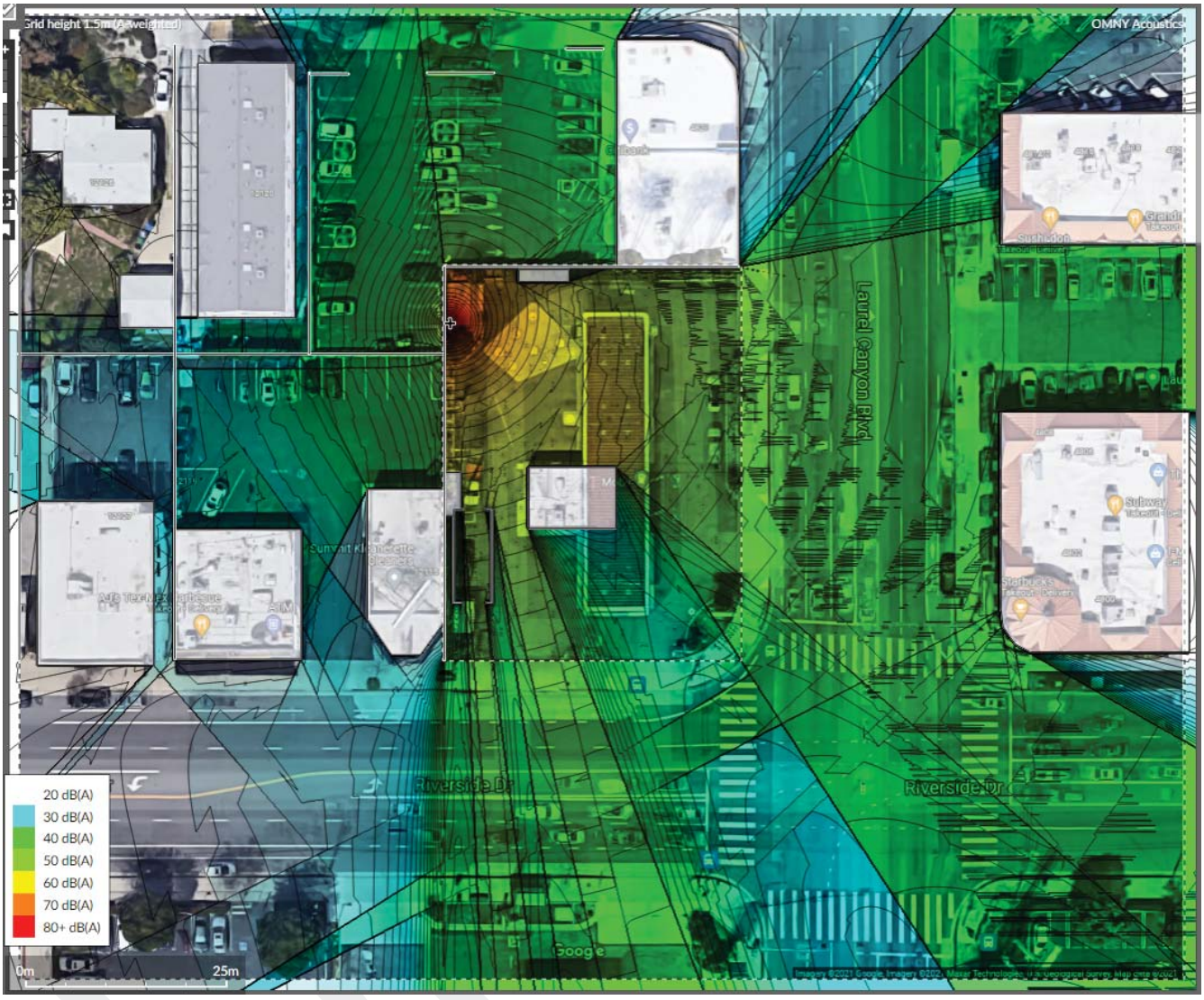


Figure 17: Contour map (1dBA contour lines) of predicted vacuum cleaner noise impacts to surroundings.

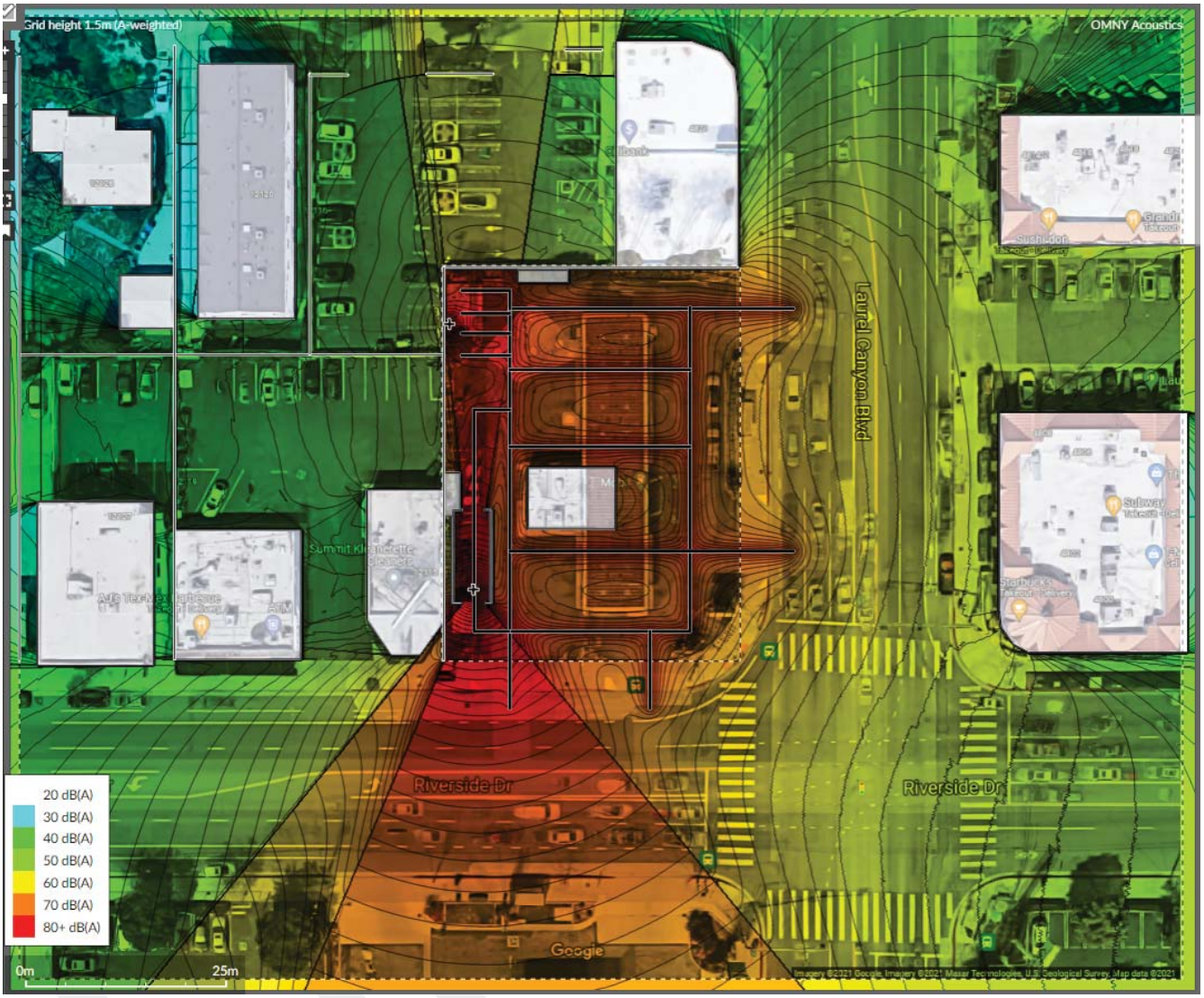


Figure 18: Contour map (1dBA contour lines) of predicted worst-case composite noise impact to surroundings (including simultaneous increased traffic, vacuum system operation, and open-door car wash operation).

A summary of the modeled gas station noise impacts at each property line and under various conditions can be seen in the following Table 8. These results can be compared against the composite property-line noise limits previously shown in Table 7. Note here that the tabulated CNEL impacts assume each source to be running continuously for 24 hours per day to determine its highest possible CNEL impact. As this is unlikely to occur, actual CNEL impacts will be lower than the maximum values shown here.

Project property line:	Modeled noise level (dBA Leq / dBA CNEL):									
	Station traffic		Vacuum cleaners		Car wash tunnel				Maximum Combined	
					Doors closed		Doors open			
	Leq	**CNEL**	**Leq**	**CNEL**	**Leq**	**CNEL**	**Leq**	**CNEL**	**Leq**	**CNEL**
Townhouses 12120 La Maida St.	**52**	**59**	**55**	**62**	**43**	**49**	**55**	**61**	**59**	**66**
Citibank 4821 Laurel Canyon Blvd.	**56**	**63**	**51**	**58**	**46**	**52**	**58**	**64**	**60**	**67**
Summit Kleanerette 12115 Riverside Dr.	**52**	**59**	**50**	**56**	**23**	**30**	**35**	**42**	**54**	**61**
Chevron 4757 Laurel Canyon Blvd.	**57**	**63**	**38**	**45**	**57**	**64**	**69**	**76**	**69**	**76**
Shopping Center 4800-4808 Laurel Canyon Blvd.	**57**	**64**	**46**	**52**	**33**	**40**	**46**	**52**	**58**	**64**

Table 8: Summary of modeled Leq (dBA) and CNEL (dBA) noise level impacts. Green-shaded levels are fully compliant at any time of day or night under the current Project designs. Red-shaded levels are those potentially in excess of property-line noise limits during particular conditions or during particular times of day. Circumstances causing red-shaded levels are discussed in the following text.

As seen in Table 8 above, there are a total of only four instances in which Leq noise levels generated by the Project have the potential to exceed the noise standards summarized previously in Table 7. These instances are explained in detail below. **All remaining conditions are fully compliant with all code limits during any time of day or night.**

1. **Impacts to Citibank Property from Car Wash.**

   Predictions show that noise impacts from the car wash tunnel when entrance doors are open (58 dBA) may be slightly in exceedance (+2 dBA) of continuous-noise nighttime limits (56 dBA).

   a) **Nighttime:** Gas station owners have agreed to limit car wash availability to daytime hours only, therefore this condition will not occur during nighttime.

   b) **Daytime:** This condition is fully compliant with all daytime noise limits (60+ dBA) for any cumulative operation times per hour.

   c) **24-Hour:** CNEL noise contributions (max. 64 dBA) are within property-line limits (73 dBA) and are fully compliant.

   d) **Conclusion:** Due to the factors explained above, **Omny finds this condition fully compliant.**

2. **Impacts to Citibank Property from Combined Sources.**

   Combined worst-case noise at this location is dominated by the car wash tunnel. The discussion and conclusions for this condition are the same as the previous condition. No exceedances occur due to any other sources operating simultaneously. **Omny finds this condition fully compliant.**

3. **Impacts to Chevron Property from Car Wash**

   Modeling shows that noise impacts from the car wash tunnel when doors are open (69 dBA) may be in exceedance (+7 dBA) of continuous-noise nighttime limits (62 dBA), and in slight exceedance (+1 dBA) of continuous-noise daytime limits (68 dBA).

   a) **Nighttime:** Gas station owners have agreed to limit car wash availability to daytime hours only, therefore this condition will not occur during nighttime.

   b) **Daytime:** This condition would not occur for more than 50% of any cumulative daytime hour, subjecting it to the raised limit of 70 dBA for noise occurring for 15-30 cumulative minutes per hour, and resulting in daytime compliance.

   c) **24-Hour:** CNEL noise contributions (max. 76 dBA) are within property-line limits (86 dBA) and are fully compliant.

   d) **Conclusion:** Due to the factors explained above, **Omny finds this condition fully compliant.**

4. **Impacts to Chevron Property from Combined Sources.**

   Combined worst-case noise at this location is dominated by the car wash tunnel. The discussion and conclusions for this condition are the same as the previous condition. No exceedances occur due to any other sources operating simultaneously. **Omny finds this condition fully compliant.**

J. Project Construction Noise

Construction noise impact is outside the scope of Omny's current study. However, general information and guidelines regarding construction noise control are included in this section.

Noise due to construction work is regulated by Section 41.40 of the *Los Angeles Municipal Code*. Project-relevant code sections are quoted below.

> *SEC. 41.40. NOISE DUE TO CONSTRUCTION, EXCAVATION WORK – WHEN PROHIBITED.*
>
> *(a) No person shall, between the hours of 9:00 P.M. and 7:00 A.M. of the following day, perform any construction or repair work of any kind upon, or any excavating for, any building or structure, where any of the foregoing entails the use of any power driven drill, riveting machine excavator or any other machine, tool, device or equipment which makes loud noises to the disturbance of persons occupying sleeping quarters in any dwelling hotel or apartment or other place of residence. In addition, the operation, repair or servicing of construction equipment and the job-site delivering of construction materials in such areas shall be prohibited during the hours herein specified. Any person who knowingly and wilfully violates the foregoing provision shall be*

deemed guilty of a misdemeanor punishable as elsewhere provided in this Code. (Amended by Ord. No. 158,587, Eff. 1/29/84.)

(c) (Amended by Ord. No. 166,170, Eff. 9/29/90.) No person, other than an individual homeowner engaged in the repair or construction of his single-family dwelling shall perform any construction or repair work of any kind upon, or any earth grading for, any building or structure located on land developed with residential buildings under the provisions of Chapter I of this Code, or perform such work within 500 feet of land so occupied, before 8:00 a.m. or after 6:00 p.m. on any Saturday or national holiday nor at any time on any Sunday. In addition, the operation, repair or servicing of construction equipment and the job-site delivering of construction materials in such areas shall be prohibited on Saturdays and on Sundays during the hours herein specified. The provisions of this subsection shall not apply to persons engaged in the emergency repair of:

1. *Any building or structure.*
2. *Earth supporting or endangering any building or structure.*
3. *Any public utility.*
4. *Any public way or adjacent earth.*

Noise impacts from construction are temporary, and are unavoidable. However, based on the above quoted information from *LAMC*, and our previous project experience, Omny recommends the following general guidelines for minimizing construction noise to the greatest extent feasible.

1. Limit construction activity to the hours of 7:00 AM to 9:00 PM on Monday through Friday, and 8:00 AM to 6:00 PM on Saturday, with no construction allowed on Sundays or holidays. This satisfies code-minimum scheduling requirements for Project construction. As an additional "good neighbor" policy, it may be advisable to further limit construction to the hours of 8:00 AM to 6:00 PM on Monday through Friday only, with no weekend or holiday construction.
2. Implement noise attenuation measures around the site perimeter to the extent feasible, which should include noise barriers and/or noise blankets. Particular attention should be paid to providing a noise barrier between construction activities and the residential property to the Northwest. Barrier material should have a minimum areal density of 2.0 pounds per square foot (2.0 lb/ft^2). Acceptable materials include 3/4" plywood, sheet metal with minimum 18-gauge thickness, or any solid masonry wall. Barrier wall(s) should be gapless to the extent possible to minimize acoustical leaks.
3. Provide advance notification to surrounding land uses disclosing the construction schedule, including the various types of activities that would be occurring throughout the duration of the construction period.
4. Schedule high noise-producing activities during times when they would be least likely to interfere with any scheduled noise-sensitive activities of the neighboring land uses.
5. Ensure that construction equipment is properly muffled according to industry standards.

6. Place noise-generating construction equipment and staging areas away from sensitive uses where feasible. Locate stationary noise-generating equipment as far away as is practical from sensitive receptors.
7. Discourage any unnecessary idling of internal combustion engines.
8. To the extent feasible, route all construction-related traffic along major roadways and away from sensitive noise receptors.

The construction for the Project is planned to last no longer than three months at maximum, with the potential to be completed in as little as six weeks. Omny expects no significant issues related to construction noise, as all noise impacts will be temporary and can be mitigated.

K. CEQA Significance Determinations

Based on the study results and accompanying recommendations outlined in previous sections of this report, Omny makes the following determinations for the *CEQA* noise questionnaire.

A. Question G.XIII.(a): Would the project result in: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Omny Determination: Less Than Significant Impact. Project operational noise is fully compliant with all relevant code limits under its current design and operation schedule, with no mitigation required. Construction noise is unavoidable, but will be short-term, and can be mitigated.

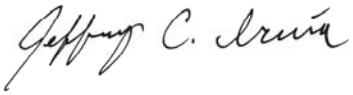
B. Question G.XIII.(b): Would the project result in: Generation of excessive groundborne vibration or groundborne noise levels?

Omny Determination: No Impact. The Project includes no significant sources of groundborne noise nor groundborne vibration during its typical operation. This type of project is not expected to include high-vibration-producing construction activities (e.g. pile-driving), and no vibration-sensitive operations are located in the Project vicinity.

C. Question G.XIII.(c): Would the project result in: For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Omny Determination: No Impact. This condition does not apply to the Project location.

This concludes our Environmental Noise Impact Report. Feel free to contact Omny Acoustics with any questions or concerns.



Jeffrey C. Irwin
Principal Engineer
Omny Acoustics
07 December 2021

Appendix A: Codes and Ordinances

1. Los Angeles County Code of Ordinances (LACCO)

Chapter 12.08 - NOISE CONTROL

12.08.030 - Terminology—Conformity with ANSI standards.

All terminology used in this chapter, not defined in this Part 2, shall be in conformance with applicable publications of the American National Standards Institute (ANSI) or its successor body.

12.08.040 - Definitions applicable.

The following words, phrases and terms as used in this chapter shall have the meanings as indicated in this Part 2.

12.08.060 - Ambient noise histogram.

"Ambient noise histogram" means the composite of all noise from sources near and far, excluding the alleged intrusive noise source. In this context, the ambient noise histogram shall constitute the normal or existing level of environmental noise at a given location.

12.08.070 - A-weighted sound level.

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

12.08.080 - Commercial property.

"Commercial property" means a parcel of real property which is developed and used either in part or in whole for commercial purposes. In cases of multiple land uses of any property, the county zoning classification of such property pursuant to county Ordinance 1494, as amended, shall be applicable. (See Title 22 of this code.)

12.08.090 - Construction.

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

12.08.110 - Decibel.

"Decibel" means a unit for measuring the amplitude of a sound, equal to 20 times the logarithm to the base of 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals.

12.08.120 - Dwelling unit.

"Dwelling unit" means a single unit providing complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking and sanitation.

12.08.150 - Fixed noise source.

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

12.08.190 - Impulsive noise.

"Impulsive noise" means a sound of short duration, usually less than one second and of high intensity, with an abrupt onset and rapid decay.

12.08.210 - Intrusive noise.

"Intrusive noise" means that alleged offensive noise which intrudes over and above the existing ambient noise at the receptor property.

12.08.230 - Noise disturbance.

"Noise disturbance" means an alleged intrusive noise which violates an applicable noise standard as set forth in this chapter.

12.08.240 - Noise histogram.

"Noise histogram" means a graphical representation of the distribution of frequency of occurrence of all noise levels near and far measured over a given period of time.

12.08.250 - Noise level (L).

"Noise level (LN)" means that noise level expressed in decibels which exceeds the specified (LN) value as a percentage of total time measured. For instance, an L25 noise level means that noise level which is exceeded 25 percent of the time measured.

12.08.320 - Real property boundary.

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

12.08.330 - Residential property.

"Residential property" means a parcel of real property which is developed and used either in part or in whole for residential purposes, other than transient uses such as hotels and motels. In cases of multiple land uses of any property, the county zoning classification of such property pursuant to county Ordinance 1494, as amended, shall be applicable.

12.08.340 - Sound level meter.

"Sound level meter" means an instrument, including a microphone, an amplifier, an output meter and frequency weighting network, for the measurement of sound levels, which satisfies the requirements pertinent

for Type S2A meters in American National Standards Institute specifications for sound level meters, S1.4-1971, or the most recent revision thereof.

Part 3 - COMMUNITY NOISE CRITERIA

12.08.370 - Decibel measurement — Basis.

Any decibel measurement made pursuant to the provisions of this chapter shall be based on a reference sound-pressure of 20 micropascals, as measured with a sound level meter using the A-weighted network (scale) at slow response, or at the fast response when measuring impulsive sound levels and vibrations.

12.08.380 - Noise zones designated.

Receptor properties described hereinafter in this chapter are hereby assigned to the following noise zones:

Noise Zone I — Noise-sensitive area; Noise Zone II — Residential properties; Noise Zone III — Commercial properties; Noise Zone IV — Industrial properties.

12.08.390 - Exterior noise standards — Citations for violations authorized when.

A. Unless otherwise herein provided, the following exterior noise levels shall apply to all receptor properties within a designated noise zone:

Noise Zone	Designated Noise Zone Land Use	Time Interval	Exterior Noise Level (dB)
I	Noise-sensitive area	Anytime	45
II	Residential properties	10:00 pm to 7:00 am (nighttime)	45
		7:00 am to 10:00 pm (daytime)	50
III	Commercial properties	10:00 pm to 7:00 am (nighttime)	55
		7:00 am to 10:00 pm (daytime)	60
IV	Industrial properties	Anytime	70

B. Unless otherwise herein provided, no person shall operate or cause to be operated, any source of sound at any location within the unincorporated county, or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person which causes the noise level, when measured on any other property either incorporated or unincorporated, to exceed any of the following exterior noise standards:

Standard No. 1 shall be the exterior noise level which may not be exceeded for a cumulative period of more than 30 minutes in any hour. Standard No. 1 shall be the applicable noise level from subsection A of this section; or, if the ambient L50 exceeds the foregoing level, then the ambient L50 becomes the exterior noise level for Standard No. 1.

Standard No. 2 shall be the exterior noise level which may not be exceeded for a cumulative period of more than 15 minutes in any hour. Standard No. 2 shall be the applicable noise level from subsection A of this section plus 5dB; or, if the ambient L25 exceeds the foregoing level, then the ambient L25 becomes the exterior noise level for Standard No. 2.

Standard No. 3 shall be the exterior noise level which may not be exceeded for a cumulative period of more than five minutes in any hour. Standard No. 3 shall be the applicable noise level from subsection A of this section plus 20dB **[Note: this is believed to be a typo and should read 10dB, not 20dB. The more conservative 10dB interpretation is used in this study.]**; or, if the ambient L8.3 exceeds the foregoing level, then the ambient L8.3 becomes exterior noise level for Standard No. 3.

Standard No. 4 shall be the exterior noise level which may not be exceeded for a cumulative period of more than one minute in any hour. Standard No. 4 shall be the applicable noise level from subsection A of this section plus 15dB; or, if the ambient L1.7 exceeds the foregoing level, then the ambient L1.7 becomes the exterior noise level for Standard No. 4.

Standard No. 5 shall be the exterior noise level which may not be exceeded for any period of time. Standard No. 5 shall be the applicable noise level from subsection A of this section plus 20dB; or, if the ambient L0 exceeds the foregoing level then the ambient L0 becomes the exterior noise level for Standard No. 5.

C. If the measurement location is on a boundary property between two different zones, the exterior noise level utilized in subsection B of this section to determine the exterior standard shall be the arithmetic mean of the exterior noise levels in subsection A of the subject zones. Except as provided for above in this subsection C, when an intruding noise source originates on an industrial property and is impacting another noise zone, the applicable exterior noise level as designated in subsection A shall be the daytime exterior noise level for the subject receptor property.

D. The ambient noise histogram shall be measured at the same location along the property line utilized in subsection B of this section, with the alleged intruding noise source inoperative. If for any reason the alleged intruding noise source cannot be turned off, the ambient noise histogram will be estimated by performing a measurement in the same general area of the alleged intruding noise source but at a sufficient distance such that the noise from the alleged intruding noise source is at least 10dB below the ambient noise histogram in order that only the actual ambient noise histogram be measured. If the difference between the ambient noise histogram and the alleged intruding noise source is 5 to 10dB, then the level of the ambient noise histogram itself can be reasonably determined by subtracting a one-decibel correction to account for the contribution of the alleged intruding noise source.

12.08.400 - Interior noise standards.

A. No person shall operate or cause to be operated within a dwelling unit, any source of sound, or allow the creation of any noise, which causes the noise level when measured inside a neighboring receiving dwelling unit to exceed the following standards:

Standard No. 1 The applicable interior noise level for cumulative period of more than five minutes in any hour; or

Standard No. 2 The applicable interior noise level plus 5dB for a cumulative period of more than one minute in any hour; or

Standard No. 3 The applicable interior noise level plus 10dB or the maximum measured ambient noise level for any period of time.

B. The following interior noise levels for multifamily residential dwellings shall apply, unless otherwise specifically indicated, within all such dwellings with windows in their normal seasonal configuration.

Noise Zone	Designated Land Use	Time Interval	Allowable Interior Noise Level (dB)
All	Multifamily	10 pm—7 am	40
	Residential	7 am—10 pm	45

C. If the measured ambient noise level reflected by the L50 exceeds that permissible within any of the interior noise standards in subsection A of Section 12.08.390, the allowable interior noise level shall be increased in 5dB increments in each standard as appropriate to reflect said ambient noise level (L50).

12.08.420 - Measurement methods.

A. Utilizing the A-weighting scale of the sound-level meter and the "slow" meter response (use "fast" response for impulsive type sounds), the noise level shall be measured at a position or positions at any point on the receiver's property.

B. In general, the microphone shall be located four to five feet above the ground; 10 feet or more from the nearest reflective surface, where possible. However, in those cases where another elevation is deemed appropriate, the latter shall be utilized.

2. Los Angeles Municipal Code (LAMC)

CHAPTER XI

NOISE REGULATION

ARTICLE 1

GENERAL PROVISIONS

SEC. 111.01. DEFINITIONS.

Unless the context otherwise clearly indicates, the words and phrases used in this chapter are defined as follows:

(a) "Ambient Noise" is the composite of noise from all sources near and far in a given environment, exclusive of occasional and transient intrusive noise sources and of the particular noise source or sources to be measured. Ambient noise shall be averaged over a period of at least 15 minutes at a location and time of day comparable to that during which the measurement is taken of the particular noise source being measured.

(c) "Decibel" (dB) is a unit of level which denotes the ratio between two (2) quantities which are proportional to power; the number of decibels corresponding to the ratio of two (2) amounts of power is ten (10) times the logarithm to the base (10) of this ratio.

(h) "Octave Band Noise Analyzer" is an instrument for measurement of sound levels in octave frequency bands which satisfies the pertinent requirements for Class II octave band analyzers of the American National Standard Specifications for Octave, Half-Octave, and Third-Octave Band Filters, S1.11-1966 or the most recent revision thereof.

(l) "Sound Level Meter" is an instrument including a microphone, an amplifier, an output meter, and "A" frequency weighting network for the measurement of sound levels which satisfies the pertinent requirements for Type S2A meters in American Standard Specifications for sound level meters in S1.4-1971 or the most recent revision thereof.

SEC. 111.02. SOUND LEVEL MEASUREMENT PROCEDURE AND CRITERIA.

(a) Any sound level measurement made pursuant to the provisions of this chapter shall be measured with a sound level meter using the "A" weighting and response as indicated in Section 111.01(k) of this article.

Except when impractical, the microphone shall be located four to five feet above the ground and ten feet or more from the nearest reflective surface. However, in those cases where another elevation is deemed appropriated, the latter shall be utilized.

Calibration of the sound level meter, utilizing an acoustic calibrator shall be performed immediately prior to recording any sound level data. The ambient noise level and the level of a particular noise being measured shall be the numerical average of noise measurements taken at a given location during a given time period.

(b) Where the sound alleged to be offending is of a type or character set forth below, the following values shall be added to the sound level measurement of the offending noise:

1. Except for noise emanating from any electrical transformer or gas metering and pressure control equipment existing and installed prior to the effective date of the ordinance enacting this chapter, any steady tone with audible fundamental frequency or overtones have 200 Hz..... +5

2. Repeated impulsive noise..... +5

3. Noise occurring more than 5 but less than 15 minutes in any period of 60 consecutive minutes between the hours of 7:00 a.m. and 10:00 p.m. of any day..... -5

4. Noise occurring five minutes or less in any period of 60 consecutive minutes, between the hours of 7:00 a.m. and 10:00 p.m. of any day..... -5 **[Note: this is believed to be a typo and should read -10dB rather than -5dB. The more conservative -10dB interpretation is used in this study.]**

SEC. 111.03. MINIMUM AMBIENT NOISE LEVEL.

Where the ambient noise level is less than the presumed ambient noise level designated in this section, the presumed ambient noise level in this section shall be deemed to be the minimum ambient noise level for purposes of this chapter.

TABLE II

SOUND LEVEL "A" DECIBELS

(In this chart, daytime levels are to be used from 7:00 a.m. to 10:00 p.m. and nighttime levels from 10:00 p.m. to 7:00 a.m.)

PRESUMED AMBIENT NOISE LEVEL (dB(A))		
ZONE	**DAY**	**NIGHT**
A1, A2, RA, RE, RS, RD, RW1, RW2, R1, R2, R3, R4, and R5	50	40
P, PB, CR, C1, C1.5, C2, C4, C5, and CM	60	55
M1, MR1, and MR2	60	55
M2 and M3	65	65

At the boundary line between two zones, the presumed ambient noise level of the quieter zone shall be used.

SEC. 112.03. CONSTRUCTION NOISE.

Noise due to construction or repair work shall be regulated as provided by Section 41.40 of this Code. (Amended by Ord. No. 161,574, Eff. 9/8/86.)

SEC. 112.04. POWERED EQUIPMENT INTENDED FOR REPETITIVE USE IN RESIDENTIAL AREAS AND OTHER MACHINERY, EQUIPMENT, AND DEVICES.

(Title and Section Amended by Ord. No. 161,574, Eff 9/8/86.)

(a) Between the hours of 10:00 p.m and. 7:00 a.m. of the following day, no person shall operate any lawn mower, backpack blower, lawn edger, riding tractor, or any other machinery, equipment, or other mechanical or electrical device, or any hand tool which creates a loud, raucous or impulsive sound, within any residential zone or within 500 feet of a residence.

(b) Except as to the equipment and operations specifically mentioned and related elsewhere in this Chapter or for emergency work as that term is defined in Section 111.01(d), and except as to aircraft, tow tractors, aircraft auxiliary power units, trains and motor vehicles in their respective operations governed by State or federal regulations, no person shall operate or cause to be operated any machinery, equipment, tools, or other mechanical or electrical device, or engage in any other activity in such manner as to create any noise which would cause the noise level on the premises of any other occupied property, or, if a condominium, apartment house, duplex, or attached business, within any adjoining unit, to exceed the ambient noise level by more than five (5) decibels.

(c) Notwithstanding the provisions of Subsection (a) above, no gas powered blower shall be used within 500 feet of a residence at anytime. Both the user of such a blower as well as the individual who contracted for the services of the user, if any, shall be subject to the requirements of and penalty provisions for this ordinance. Violation of the provisions of this subsection shall be punishable as an infraction in an amount not to exceed One Hundred Dollars ($100.00), notwithstanding the graduated fines set forth in LAMC § 11.00(m). (Amended by Ord. No. 171,890, Eff. 2/13/98.)

3. Los Angeles General Plan (LAGP)

From the Noise Element of the *Los Angeles General Plan (1999)*:

Exhibit I: Guidelines for Noise Compatible Land Use

(Based on the Governor's Office of Planning and Research, "General Plan Guidelines", 1990. To help guide determination of appropriate land use and mitigation measures vis-a-vis existing or anticipated ambient noise levels)

Land Use Category	Day-Night Average Exterior Sound Level (CNEL dB)						
	50	55	60	65	70	75	80
Residential Single Family, Duplex, Mobile Home	A	C	C	C	N	U	U
Residential Multi-Family	A	A	C	C	N	U	U
Transient Lodging, Motel, Hotel	A	A	C	C	N	U	U
School, Library, Church, Hospital, Nursing Home	A	A	C	C	N	N	U
Auditorium, Concert Hall, Ampitheater	C	C	C	C/N	U	U	U
Sports Arena, Outdoor Spectator Sports	C	C	C	C	C/U	U	U
Playground, Neighborhood Park	A	A	A	A/N	N	N/U	U
Golf Course, Riding Stable, Water Recreation, Cemetery	A	A	A	A	N	A/N	U
Office Building, Business, Commercial, Professional	A	A	A	A/C	C	C/N	N
Agriculture, Industrial, Manufacturing, Utilities	A	A	A	A	A/C	C/N	N

A = Normally acceptable. Specified land use is satisfactory, based upon assumption buildings involved are conventional construction, without any special noise insulation.

C = Conditionally acceptable. New construction or development only after a detailed analysis of noise mitigation is made and needed noise insulation features are included in project design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning normally will suffice.

N = Normally unacceptable. New construction or development generally should be discouraged. A detailed analysis of noise reduction requirements must be made and noise insulation features included in the design of a project.

U = Clearly unacceptable. New construction or development generally should not be undertaken.

4. California Environmental Quality Act (CEQA)

From Appendix G of the *California Environmental Quality Act (CEQA) Statute and Guidelines (2021)*:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. NOISE. Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☐

From Section 2 of *Los Angeles CEQA Thresholds Guide (2005)*:

2. DETERMINATION OF SIGNIFICANCE

A. Significance Threshold

A project would normally have a significant impact on noise levels from project operations if the project causes the ambient noise level measured at the property line of affected uses to increase by 3 dBA in CNEL to or within the "normally unacceptable" or "clearly unacceptable" category, or any 5 dBA or greater noise increase (see the chart below).

	Community Noise Exposure CNEL, db			
Land Use	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Single Family, Duplex, Mobile Homes	50 - 60	55 - 70	70 - 75	above 70
Multi-Family Homes	50 - 65	60 - 70	70 - 75	above 70
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 - 70	60 - 70	70 - 80	above 80
Transient Lodging - Motels, Hotels	50 - 65	60 - 70	70 - 80	above 80
Auditoriums, Concert Halls, Amphitheaters	-	50 - 70	-	above 65
Sports Arena, Outdoor Spectator Sports	-	50 - 75	-	above 70
Playgrounds, Neighborhood Parks	50 - 70	-	67 - 75	above 72
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 - 75	-	70 - 80	above 80
Office Buildings, Business and Professional Commercial	50 - 70	67 - 77	above 75	-
Industrial, Manufacturing, Utilities, Agriculture	50 - 75	70 - 80	above 75	-

Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.
Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
Clearly Unacceptable: New construction or development should generally not be undertaken.

Source: California Department of Health Services (DHS).

CNEL Sound Study

Community Noise Equivalent Level (CNEL)

N & D Oil Corp.

4801 Laurel Canyon Blvd.
Los Angeles, CA 91607

Final Report

Jan 7, 2021

1.0 Introduction

N & D Oil Corp. Sept 2, 2019
4801 Laurel Canyon Blvd.
Los Angeles, CA 91607

Attn: Nader Hattar

Subject: CNEL sound study at 4801 Laurel Canyon Blvd., Los Angeles

In accordance with your request, MK Design has prepared this CNEL sound study report for the proposed development at the subject site. The purpose of this report was to evaluate sound levels, construction and mitigation measures for the proposed construction.

Based upon the findings and observations during our investigation, we believe that sufficient information has been disclosed to allow for city staff to make their decisions.

This opportunity to be of service is sincerely appreciated. If you have any questions pertaining to this report, please call the under signed.

Respectfully submitted,

MK Design

_____

Ian Marr

2.0 Table of Contents

3.0 Project Description

The proposed project is a gas station convenience store with a new carwash building located within the city of Los Angeles, CA. (APN: 2356-008-021). A new carwash tunnel is proposed.

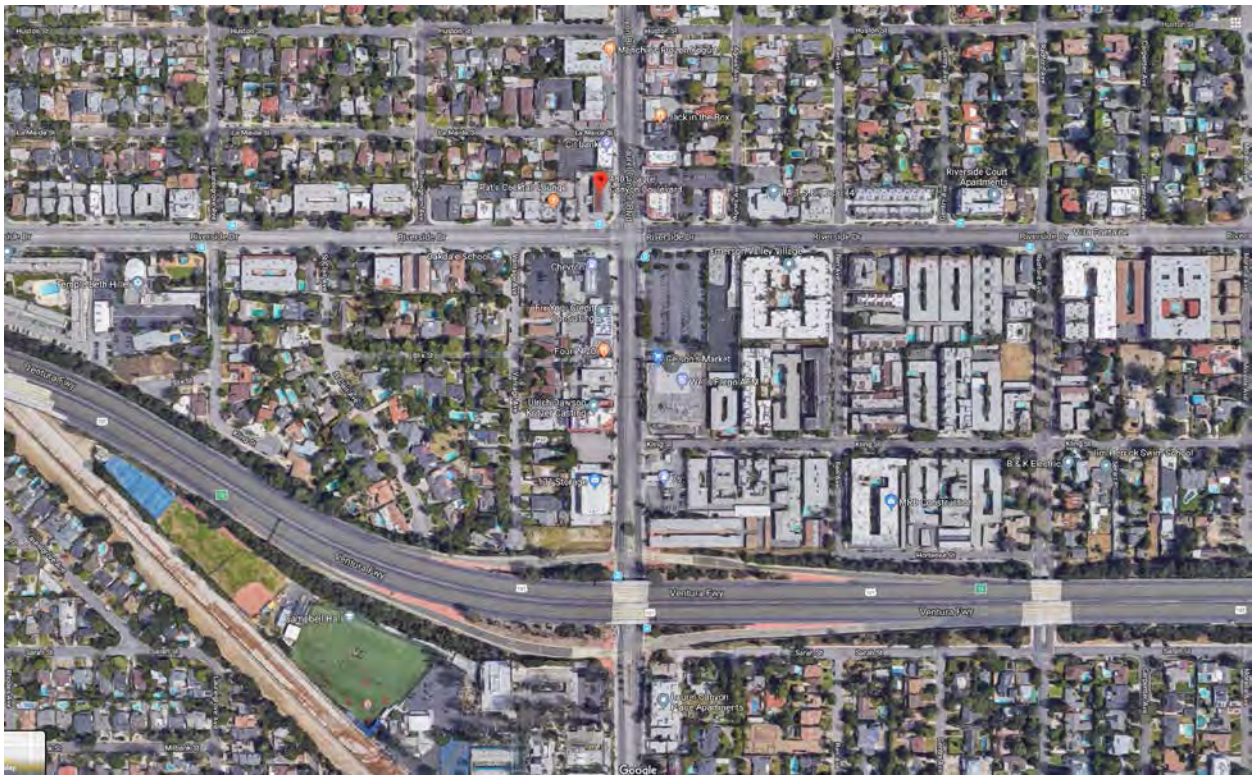
The general area is subject to a sound study per criteria required by planning department staff. As such a composite dB(A) sound level study will be provided by this report. No baseline was provided by the city of Los Angeles so site measurements and standard road sound wall will be used as the baseline.

As the project is not noted as located within the established sound bands provided by the city no loss or attenuation calculations are being provided. Additionally, given the city provided no parameters no reductions have been calculated for elevation changes, obstacles or absorption so that all sound levels within the provided bands are calculated as uniformly that sound level along the road sound wall. Reflective sound is considered to provide less than +3dB, and thusly was ignored.

The project details are as follows:

Site area:	19,164.3 sqft (0.44 acres)
Building area:	1,709 sqft
Stories:	1 story (max height 21'-11")
Project address:	4801 Laurel Canyon Blvd. Los Angeles, CA 91607
APN:	2356-008-021
Parking provided:	5 spaces
Zone:	(Q) C-2 -1VL (Commercial)
Construction Type:	V-B
Occupancy Type:	M

4.0 Vicinity Map



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CALE 1" = 60'

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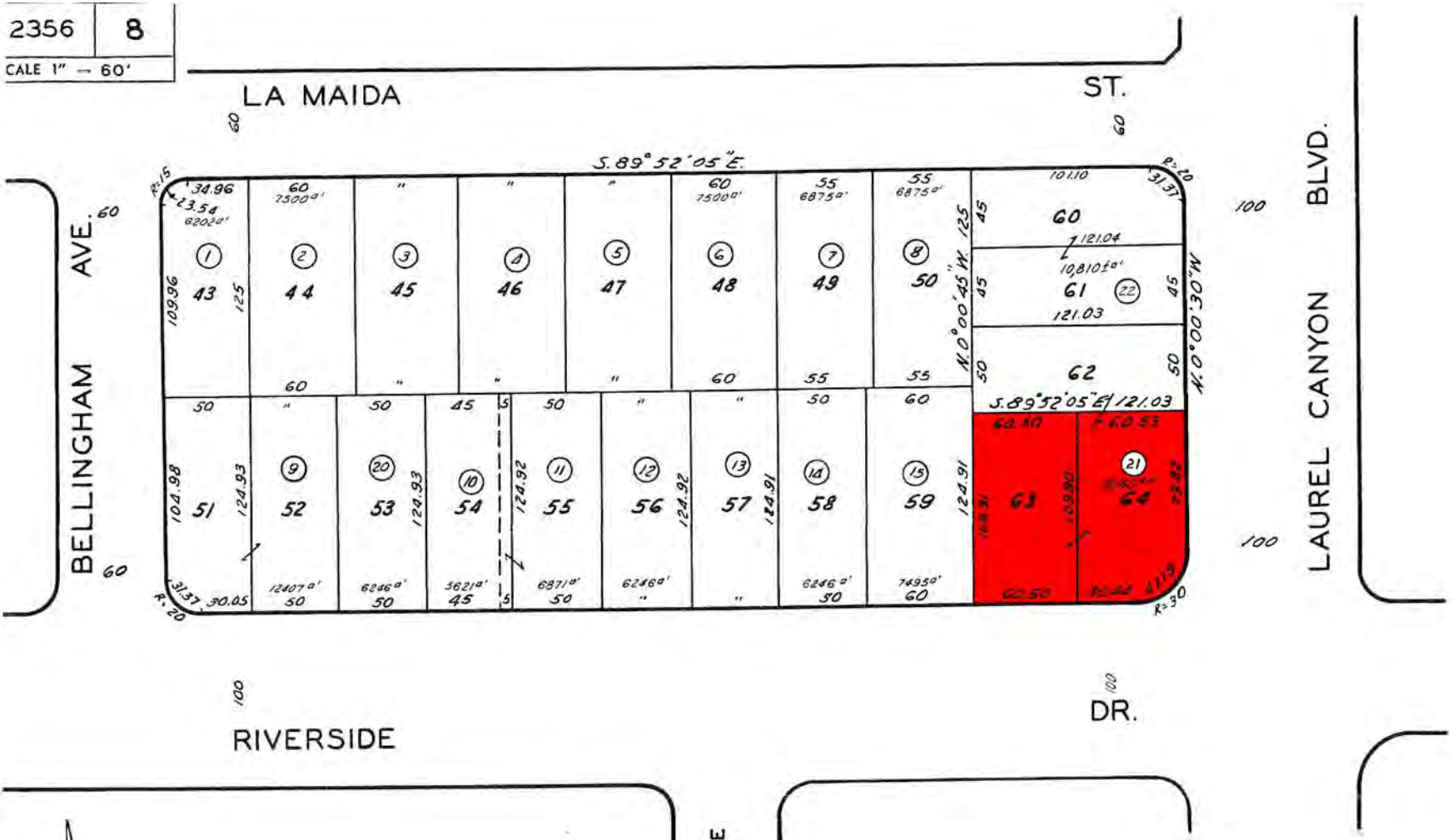
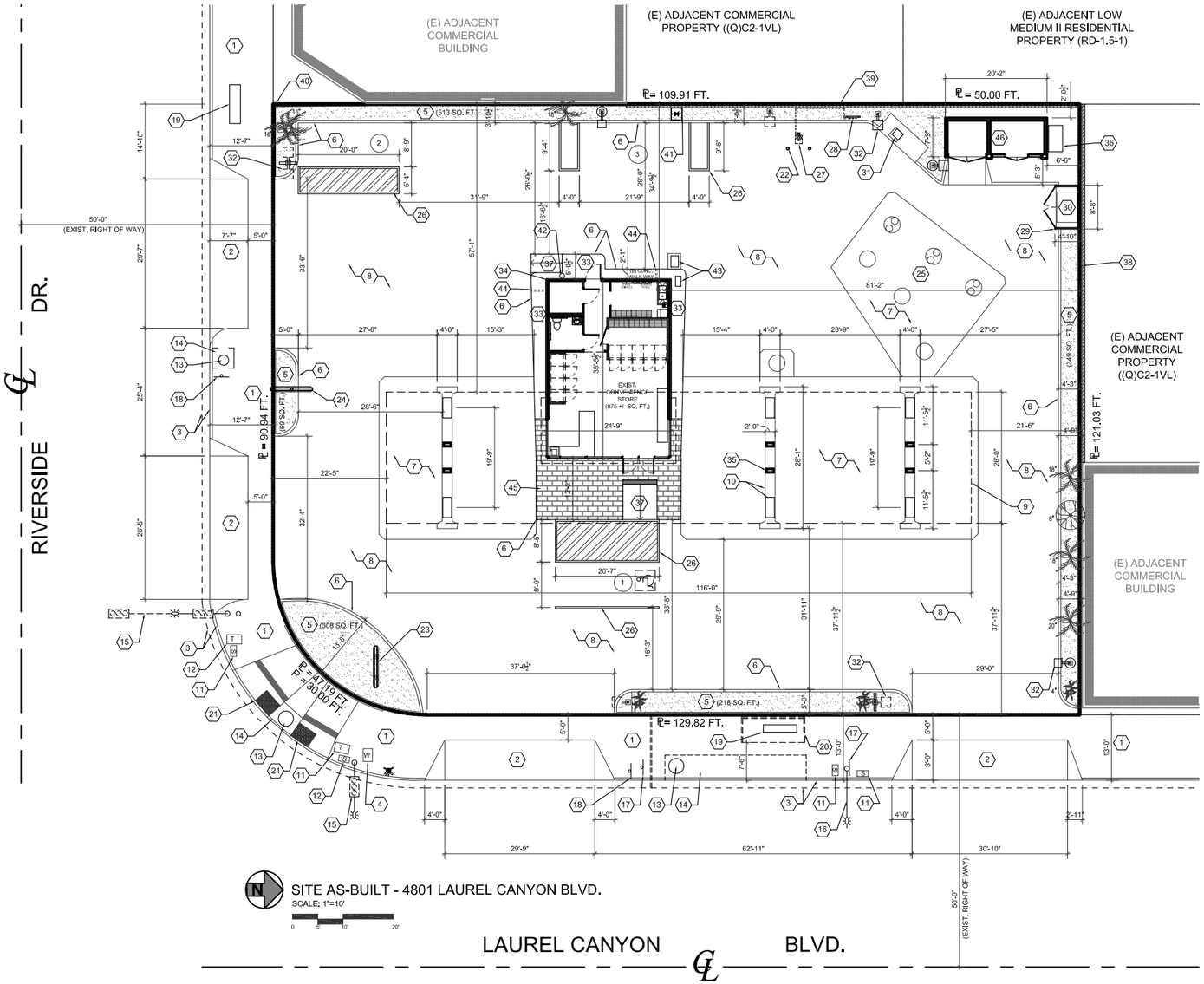


ASSESSOR'S MAP
COUNTY OF LOS ANGELES, CALIF.



LEGEND

(#) NOTES

(#) PARKING SPACE NUMBER

SITE NOTES

1. EXIST. CONC. SIDE WALK
2. EXIST. CONC. DRIVEWAY
3. EXIST. CONC. CURB & GUTTER
4. EXIST. WATER METER
5. EXIST. LANDSCAPE PLANTER
6. EXIST. 6" CONC. CURB - TYP.
7. EXIST. CONC. PAVING
8. EXIST. ASPHALTIC CONC. PAVING
9. EXIST. MTL. FUELING CANOPY (26' X 116')
10. EXIST. FUELING DISPENSER W/ 6" HIGH CONC. ISLAND - TYP.
11. EXIST. TRAFFIC SIGNAL PULL VAULT
12. EXIST. STREET LIGHT PULL VAULT
13. EXIST. EXIST. MANHOLE
14. EXIST. CATCH BASIN
15. EXIST. TRAFFIC SIGNAL & STREET LIGHT POLE
16. EXIST. STREET LIGHT POLE
17. EXIST. STREET -TRAFFIC SIGNAGE
18. EXIST. STREET BUS SIGNAGE
19. EXIST. EXIST. BUS STOP BENCH
20. EXIST. EXIST. BUS STOP STRUCTURE
21. EXIST. STREET INTERSECTION ADA HANDICAP RAMP
22. EXIST. 6" DIA. MTL. BOLLARD - TYP.
23. EXIST. POLE MAIN-PRICE SIGN 1 - REFER. TO SHT. AB4
24. EXIST. POLE PRICE SIGN 2 - REFER. TO SHT. AB4
25. EXIST. UNDERGROUND STORAGE FUEL TANKS W/ CONC. PAD
26. EXIST. PARKING PAINT STRIPING (4" WIDE) - TYP.
27. EXIST. FUEL VAPOR UNIT CARBON CANISTER W/ MTL. ENCLOSURE
28. EXIST. MTL. FUEL VENT - TYP.
29. EXIST. MTL. TRASH ENCLOSURE AREA (4'-10" X 8'-8")
30. EXIST. MTL. TRASH DUMPSTER
31. EXIST. EXIST. AIR / WATER
32. EXIST. L.E.D. ON SITE PARKING LIGHTING-TYP
33. EXIST. CONC. WALK WAY
34. EXIST. BUILDING (24'-9" X 35'-5½")
35. EXIST. (8" X 17") CANOPY MTL. STEEL COLUMN - TYP.
36. EXIST. MAIN SWITCH ELEC. CABINET
37. EXIST. HANDICAP ACCESS RAMP
38. EXIST. 6" CMU BOUNDARY WALL - 6' HIGH AVG. AT ADJACENT COMMERCIAL SIDE OF PROPERTY AND 4' HIGH ON OUR NORTH SIDE OF PROPERTY -TYP.
39. EXIST. 6' HIGH - 8" CMU BOUNDARY WALL - TYP.
40. EXIST. 4' HIGH - 6" CMU BOUNDARY WALL - TYP.
41. EXIST. IRRIGATION BACK FLOW DEVICE W/ MTL. CAGE ENCLOSURE
42. EXIST. SEWER VALVE
43. EXIST. WATER VALVE/CONTROLS
44. EXIST. 3" DRAIN
45. EXIST. 12" X 24" TILE PAVING
46. EXIST. STORAGE STRUCTURE

GENERAL NOTES

1. ASPHALT PAVING IN PARKING LOT OVER 95% COMPACT SUBGRADE PER ASTM D-1557-78. PROVIDE A.C. PAVING OVER BASE UNLESS NOTED OTHERWISE.
2. 9' X 18' HANDICAP STALL TO HAVE REQUIRED STRIPPING AND SIGNAGE WITH ¼" PER FOOT MAXIMUM SLOPE IN ANY DIRECTION.
3. EXISTING DRIVEWAYS COMPLY WITH CITY OF LOS ANGELES.

GENERAL INFORMATION

PROPERTY OWNER:
4801 LAUREL CANYON LLC
ATT: HATTAR, NADER
4801 LAUREL CANYON BLVD.
LOS ANGELES, CA 91607
TEL: (818) 980-1366
EMAIL: NadersMobil@gmail.com

PROJECT OWNER / APPLICANT:
4801 LAUREL CANYON LLC
ATT: HATTAR, NADER
4801 LAUREL CANYON BLVD.
LOS ANGELES, CA 91607
TEL: (818) 980-1366
EMAIL: NadersMobil@gmail.com

REPRESENTATIVES / DESIGNERS:
MK DESIGN
KANG & IAN MARR
535 W. ALLEN AVE., UNIT 23
SAN DIMAS, CA 91773
TEL: KEN: 626-374-3834
Email:kangdesign@hotmail.com
TEL: IAN:619-913-2751
Email: iamarr@hotmail.com

SITE-ASSESSOR'S PARCEL NUMBER:
APN: 2356-008-021

PROJECT SITE ADDRESS:
4801 LAUREL CANYON BLVD.
LOS ANGELES, CA 91607

TOTAL LOT AREA:
LOT 62: 6,051.4 SQ. FT.
LOT 63: 6,651.9 SQ. FT.
LOT 64: 6,461.0 SQ. FT.

LOT 62(6,051.4 SQ. FT.)+63(6,651.9 SQ. FT.)+64(6,461.0 SQ. FT.) = 19,164.3 SQ. FT.

TOTAL LOT AREA: 19,164.3 SQ. FT. / 0.44 ACRES

LEGAL DESCRIPTION:
TRACT NO 7808 LOTS 62, 63 AND
LOT 64

APN: 2356-008-021

TRACT: TR 7808

ZONING: (Q) C-2 -1VL
(COMMERCIAL)

LANDUSE: NEIGHBORHOOD OFFICE COMMERCIAL

SPECIFIC PLAN AREA: VALLEY VILLAGE

BUILDING CODE USED: 2016 C.B.C.

TYPE OF CONSTRUCTION: Type V B

OCCUPANCY TYPE: M

EXISTING NUMBER OF STORIES: 1
EXISTING BUILDING MAX. HEIGHT: 10'-11" +/-
EXISTING BUILDING AVG. HEIGHT: 10'-11"+/-

EXIST. LANDSCAPING:
TOTAL EXIST. LANDSCAPE: 1,448.00 SQ. FT../
19,164.30 SQ. FT.
TOTAL LANDSCAPE PERCENTAGE PROVIDED: .075= 8%

PARKING REQUIRED:
EXIST. CONVENIENCE STORE (875 SQ. FT.)

EXIST. C-STORE PARKING REQUIRED 2 BY SAME AS BEFORE 1985 C-STORE PARKING AGREEMENT:2
TOTAL STALLS REQUIRED: 2 STALLS

EXIST. STANDARD PARKING: 2
EXIST. HANDICAP STALL: 1

TOTAL EXIST. PARKING STALLS PROVIDED: 3

EXISTING SIGNAGE:
POLE SIGN (1): 129.2 SQ. FT. TOTAL
POLE SIGN (2): 91.5 SQ. FT. TOTAL

2 BUILDING HALLMARK SIGNAGE (MOBIL LOGO): 35.1 SQ. FT. TOTAL
BUILDING MOBIL ENTRY SIGNAGE: 11 SQ. FT.

FUEL CANOPY HALLMARK SIGNAGE (3-WEST, EAST, & SOUTH FACADES): 35.1 SQ. FT. TOTAL

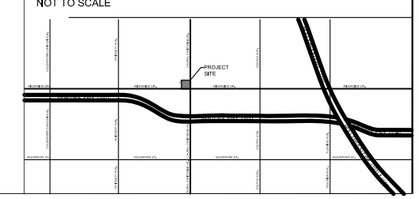
TOTAL EXISTING SIGNAGE SQ. FT.: 266.8 S.Q. FT.

SPRINKLERED

NO KNOW EASEMENTS

VICINITY MAP

NOT TO SCALE



NADER'S MOBIL GAS STATION REMODEL / CARWASH PROJECT PROJ.
4801 LAUREL CANYON BLVD., LOS ANGELES, CA 91607

MK Design
535 W. ALLEN AVE., UNIT 23 SAN DIMAS, CA 91773

Date 1/06/2021
Scale 1" = 10'-0"
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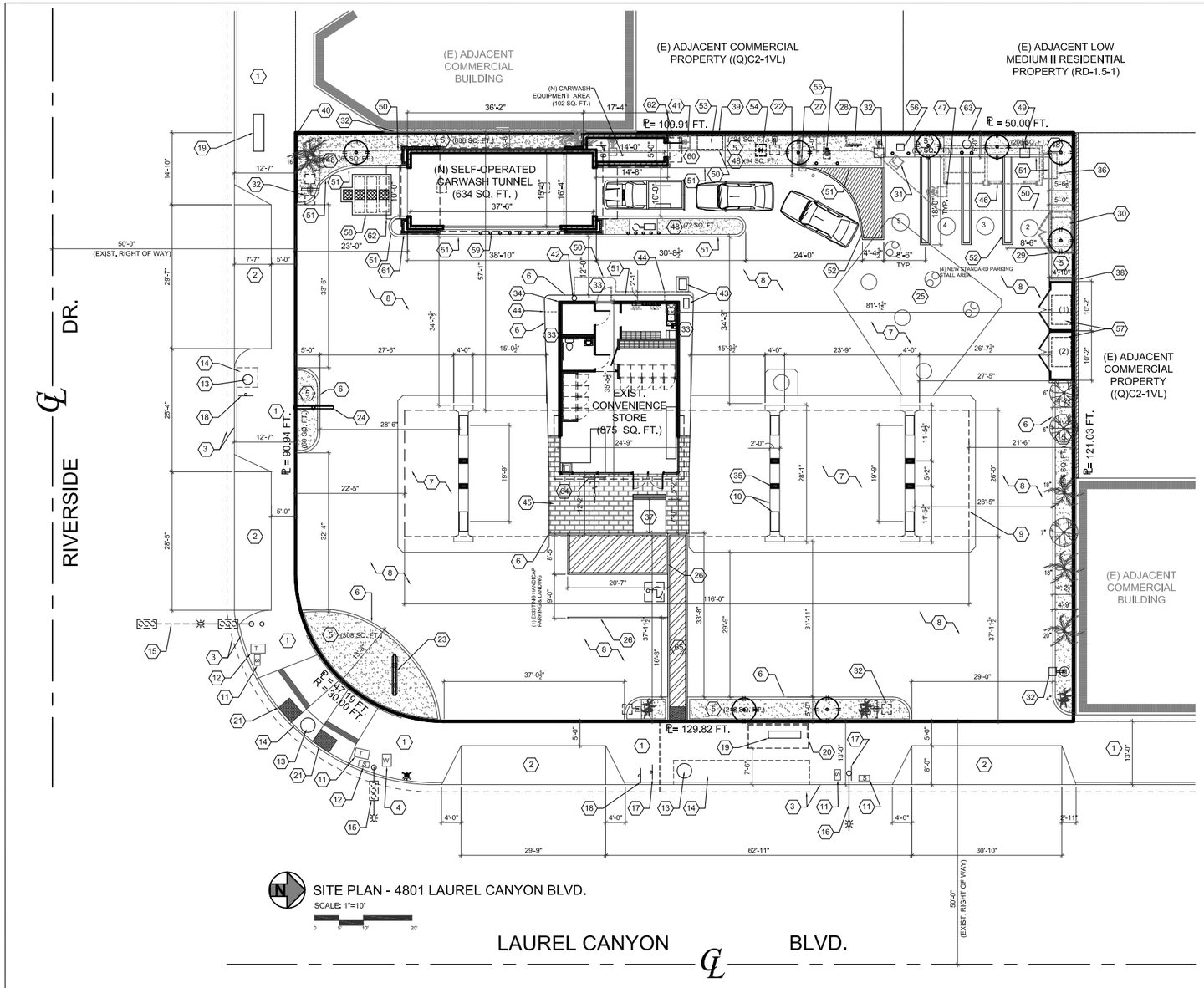
Job
Sheet 8
AB1



LEGEND

- (#) NOTES
- (#) PARKING SPACE NUMBER

SITE NOTES

1. EXIST. CONC. SIDE WALK
2. EXIST. CONC. DRIVEWAY
3. EXIST. CONC. CURB & GUTTER
4. EXIST. WATER METER
5. EXIST. LANDSCAPE PLANTER
6. EXIST. 6" CONC. CURB - TYP.
7. EXIST. CONC. PAVING
8. EXIST. ASPHALTIC CONC. PAVING
9. EXIST. MTL. FUELING CANOPY (26' X 116')
10. EXIST. FUELING DISPENSER W/ 6" HIGH CONC. ISLAND - TYP.
11. EXIST. TRAFFIC SIGNAL PULL VAULT
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16. EXIST. STREET LIGHT POLE
17. EXIST. STREET -TRAFFIC SIGNAGE
18. EXIST. STREET BUS SIGNAGE
19. EXIST. EXIST. BUS STOP BENCH
20. EXIST. EXIST. BUS STOP STRUCTURE
21. EXIST. STREET INTERSECTION ADA HANDICAP RAMP
22. EXIST. 6" DIA. MTL. BOLLARD - TYP.
23. EXIST. MAIN FREESTANDING POLE MOBILE / PRICE SIGN 1- REFER TO SHT. C03
24. EXIST. POLE PRICE SIGN 2 - REFER TO SHT. C03
25. EXIST. UNDERGROUND STORAGE FUEL TANKS W/ CONC. PAD
26. EXIST. PARKING PAINT STRIPING (4" WIDE) - TYP.
27. EXIST. FUEL VAPOR CARBON CANISTER W/ MTL. ENCLOSURE
28. EXIST. MTL. FUEL VENT - TYP.
29. EXIST. MTL. TRASH ENCLOSURE AREA (4'-10" X 8'-8")
30. EXIST. MTL. TRASH DUMPSTER
31. EXIST. AIR / WATER TO BE RELOCATED
32. EXIST. L.E.D. ON SITE PARKING LIGHTING-TYP
33. EXIST. CONC. WALK WAY
34. EXIST. BUILDING (24'-9" X 35'-5½")
35. EXIST. (8" X 17") CANOPY MTL. STEEL COLUMN - TYP.
36. EXIST. MAIN SWITCH ELEC. CABINET TO BE RELOCATED
37. EXIST. HANDICAP ACCESS RAMP
38. EXIST. 6" CMU BOUNDARY WALL - 6' HIGH AVG. AT ADJACENT COMMERCIAL SIDE OF PROPERTY AND 4' HIGH ON OUR NORTH SIDE OF PROPERTY -TYP.
39. EXIST. 6' HIGH - 8" CMU BOUNDARY WALL - TYP.
40. EXIST. 4' HIGH - 6" CMU BOUNDARY WALL - TYP.
41. EXIST. IRRIGATION BACK FLOW DEVICE W/ MTL. CAGE ENCLOSURE TO BE RELOCATED
42. EXIST. SEWER VALVE
43. EXIST. WATER VALVE/CONTROLS
44. EXIST. 3" DRAIN
45. EXIST. 12" X 24" TILE PAVING
46. EXIST. STORAGE STRUCTURE TO BE REMOVED
47. EXIST. L.E.D. ON SITE PARKING LIGHTING TO BE REMOVED
48. NEW LANDSCAPE PLANTER
49. NEW L.E.D. ON SITE PARKING LIGHTING
50. EXIST. 6" CONC. CURB TO BE REMOVED -TYP.
51. NEW 6" CONC. CURB - TYP.
52. NEW PARKING AND SITE PAINT STRIPING - TYP.
53. NEW MAIN SWITCH ELECT. CABINET LOCATION
54. NEW RRIGATION BACK FLOW DEVICE W/ MTL. CAGE ENCLOSURE LOCATION
55. NEW LOCATION FOR THE EXIST. FUEL VAPOR CARBON CANISTER W/ MTL. ENCLOSURE
56. NEW AIR / WATER LOCATION
57. NEW MTL. TRASH ENCLOSURE W/ EXTERIOR TILE - LIGHT WOOD GRAIN FINISH - ARIZONA TILE: SAV WOOD- 2 X (4'-10" X 10'-2") W/ TRASH (1) & RECYCLE (2) DUMPSTER-REFER TO SHT. C01
58. NEW 1,500 GAL. CARWASH CLARIFIER
59. NEW 6" DIA. MTL. BOLLARDS - TYP.
60. NEW CONC. WALK WAY
61. NEW ROOF LINE
62. NEW MTL. AWNING / WALL CANOPY (GREY/METALLIC FINISH) W/ 4" DIA. ULTRA RT 4 LED W/ NICKEL TRIM FINISH - DOWN LIGHTING @ 20" O.C. - TYP.
63. NEW COIN OPERATED - 2 HOSE VACUUM
64. NEW (3) BIKE TUBE STEEL SERPINE RACK, PAINTED GREEN
65. NEW NEW PEDESTRIAN WALK WAY

LEGEND

PEDESTRIAN WALKWAY | EXISTING LANDSCAPE | NEW LANDSCAPE

GENERAL NOTES

1. SITE PAVING PER PLANS.
2. EXIST.ASPHALTIC CONCRETE. NOT SHOWN TO BE ALTERED, REQUIRES PERMISSION FROM PUBLIC WORKS PRIOR TO ANY RESURFACING ACTIVITIES.
3. 9' X 18' HANDICAP STALL TO HAVE REQUIRED STRIPPING AND SIGNAGE WITH ¼" PER FOOT MAXIMUM SLOPE IN ANY DIRECTION.
4. EXISTING DRIVEWAYS COMPLY WITH CITY OF LOS ANGELES.
5. EXISTING PERIMETER MASONRY WALLS SHALL BE REPAIRED AS NECESSARY.
6. ALL NEW UTILITY SERVICES SHALL BE UNDERGROUND.
7. THESE PLANS ARE COMPLIANT W/ ADA & CBC ACCESSIBILITY STANDARDS.
8. MINIMUM VERTICAL CLEARANCE OF 25' AT THE STAGING AREA FOR BIN SERVICE CLEARANCE. MINIMUM 13' VERTICAL CLEARANCE FOR SCOOP TRUCK.
9. ALL DRIVEWAY AND STAGING AREAS MUST BE ABLE TO SUSTAIN A MINIMUM GROSS WEIGHT OF 60,000 LBS. PER VEHICLE.
10. ALL STAGING AREAS ARE TO BE ONSITE. NO STREET STAGING IS PERMITTED
11. VISUAL CLEARANCE TO HAVE 7,5' TRIANGULAR CLEARANCE ON BOTH END OF DRIVEWAYS & AT INTERSECTIONS, IT IS 15' TRIANGULAR CLEARANCE WITH VERTICAL CLEARANCE OF OBSTRUCTIONS NO HIGHER THAN 3 FEET.
12. ALL WORK WITHIN THE PUBLIC RIGHT OF WAY REQUIRES A SEPARATE PUBLICWORKS/ENGINEERING DEPARTMENT ENCROACHMENT PERMIT.
13. GENERAL CONTRACTOR TO BE RESPONSIBLE FOR MAINTAINING AND ENFORCING SAFETY STANDARDS, CONDITIONS AND EQUIPMENT AS REQUIRED BY OSHA.

GENERAL INFORMATION

PROPERTY OWNER:
N & D OIL CORP.
ATT: HATTAR, NADER
9431 BRANDON CT.
NORTHRIDGE, CA 9125
TEL: (818) 980-1366
EMAIL: NadersMobil@gmail.com

PROJECT OWNER / APPLICANT:
N & D OIL CORP.
ATT: HATTAR, NADER
4801 N. LAUREL CANYON BLVD.
LOS ANGELES, CA 91607
TEL: (818) 980-1366
EMAIL: NadersMobil@gmail.com

REPRESENTATIVES / DESIGNERS:
MK DESIGN
KANG & IAN MARR
535 W. ALLEN AVE., UNIT 23
SAN DIMAS, CA 91773
TEL: KEN: 626-374-3834
Email:kangdesign@hotmail.com
TEL: IAN:619-913-2751
Email: lamarr@hotmail.com

SITE-ASSESSOR'S PARCEL NUMBER:
APN: 2356-008-021

PROJECT SITE ADDRESS:
4801 N. LAUREL CANYON BLVD.
LOS ANGELES, CA 91607

TOTAL LOT AREA: 19,164.3 SQ. FT. / 0.44 ACRES

LEGAL DESCRIPTION:
LOTS 62, 63, AND 64 OF TRACT NO. 7808, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORED IN BOOK 115 PAGE 44 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

APN: 2356-008-021

TRACT: TR 7808

ZONING: (Q) C-2 -1VL
(COMMERCIAL)

LANDUSE: NEIGHBORHOOD OFFICE COMMERCIAL

SPECIFIC PLAN AREA: VALLEY VILLAGE

BUILDING CODE USED: 2016 C.B.C.

TYPE OF CONSTRUCTION: Type V B

OCCUPANCY TYPE: M

EXISTING NUMBER OF STORIES: 1
(EXISTING BUILDING MAX. HEIGHT: 21'-11" +/-)

EXISTING NUMBER OF STORIES: 1
EXISTING BUILDING MAX. HEIGHT: 10'-11" +/-
EXISTING BUILDING AVG. HEIGHT: 10'-11"+/-

EXISTING STRUCTURES SITE COVERAGE:
CONVENIENCE STORE: 875+/- SQ. FT.

FUEL CANOPY 1 (26'-0" X 116'-0"): 3,016+/- SQ. FT

TRASH ENCLOSURE (4'-10" X 8 '-8"): 42+/- SQ. FT.
EXISTING STRUCTURES TOTAL: 3,933+/- SQ. FT.

EXIST. LANDSCAPING:
TOTAL EXIST. LANDSCAPE: 1,448,00 SQ. FT./ 19,164,30 SQ. FT.
TOTAL EXISTING LANDSCAPE PERCENTAGE PROVIDED: .075= 8%

TOTAL NEW LANDSCAPE PERCENTAGE PROPOSED: 434 SQ.FT. / 2,3%

TOTAL LANDSCAPE: 1,882 SQ. FT. / 19,164.30 SQ.FT. = 0,098 = 10%

PARKING REQUIRED:
EXIST. CONVENIENCE STORE (875 SQ. FT.)

EXIST. C-STORE PARKING REQUIRED 2 BY SAME AS BEFORE 1985 C-STORE PARKING AGREEMENT:2
TOTAL STALLS REQUIRED: 2 STALLS

EXIST. STANDARD PARKING: 2
EXIST. HANDICAP STALL: 1
TOTAL EXIST. PARKING STALLS PROVIDED: 3
NEW PARKING REQUIRED: 736 SQ. FT./250 = 2,94 = 3

NEW PARKING REQUIRED: EXIST. REQUIRED FOR C-STORE AND SERVICE STATION (1985 C-STORE PARKING AGREEMENT):2
NEW SMALL CARWASH TUNNEL AND EQUIPMENT STORAGE
PARKING REQUIRED: 3

NEW TOTAL PARKING REQUIRED: 5
NEW TOTAL PARKING PROVIDED: 5

PROPOSED PROJECT:
A NEW SMALL SELF OPERATED EXPRESS CARWASH (634 SQ. FT.) + CARWASH STORAGE (102)= 736 SQ. FT. MINOR SITE MODIFICATIONS (MODIFICATION TO EXISTING LANDSCAPE AND PARKING). IN ADDITON, NEW EXTERIOR TILE FINISH AT THE CURRENT BRICK VENEER FINISH AREA, ONLY, TO THE EXISTING C-STORE (875 SQ. FT.) TO MATCH THE PROPOSED CARWASH FINISH. IN ADDITION, NEW CARWASH SIGNAGE AT THE ENTRY AND EXIT OF THE TUNNEL (50 SQ. FT. TOTAL), AND THE EXISTING SIGNAGE TOTAL IS 253,4 SQ. FT.; THUS, THE TOTAL IS 303,4 SQ. FT. AND NEW TRASH/RECYCLING ENCLOSURE (98 SQ. FT.), AND IT'S EXTERIOR FINISH TO MATCH BUILDING (LIGHT WOOD GRAIN TILE). IN ADDITION, EXISTING FUEL CANOPY TO HAVE NEW FINISH (LIGHT WOOD GRAIN TILE) AT THE EXISTING COLUMNS TO MATCH BUILDINGS. THE PROJECT REQUIRES A PROJECT PERMIT COMPLIANCE (VALLEY VILLAGE SPECIFIC PLAN), CONDITIONAL USE PERMIT FOR CARWASH, AND A COMMERCIAL CORNER/MINI SHOPPING CENTER CONDITIONAL USE PERMIT.

NEW STRUCTURES:
* SELF OPERATED CARWASH (634 SQ. FT.)
+ CARWASH STOR. (102 SQ. FT.): 736 SQ. FT.
* NEW TRASH ENCLOSURE: 98 SQ. FT.
TOTAL: 834 SQ. FT.

NEW LANDSCAPING AREA:
* PROPOSED NEW AREA: 437,00 SQ.FT.
* EXISTING AREA: 1,655,00 SQ.FT.
TOTAL AREA: 2,092,00 SQ.FT./ 19,164,30 SQ. FT.

TOTAL LANDSCAPE PERCENTAGE PROVIDED: .109 = 11%
(TOTAL DOES NOT INCLUDE LANDSCAPING AT THE RIGHT OF WAY AREA)

NEW PARKING REQUIRED:
* EXIST. C-STORE PARKING REQUIRED 2 BY SAME AS BEFORE 1985 C-STORE PARKING AGREEMENT: 2 STALLS REQUIRED

* NEW CARWASH BAY (634 SQ. FT.) + CARWASH STORAGE (102 SQ. FT.):
736/250 = 2,94 = 3 STALLS

TOTAL STALLS REQUIRED: 5 STALLS

NEW PARKING: 4 STANDARD STALLS
EXIST. HANDICAP STALL: 1

TOTAL: 5 PARKING STALLS PROVIDED

LOT COVERAGE:
* NEW AND EXISTING STRUCTURES: 3,989,00 SQ.FT./
* LOT SIZE: 19,164,30 SQ. FT.
TOTAL LOT COVERAGE: .21 = 21%

ESTIMATED TOTAL SIGNAGE:

POLE SIGNAGE:
EXIST. POLE SIGNAGE (1): 129,2 SQ. FT.
EXIST. POLE SIGNAGE (2): 91,5 SQ. FT.
TOTAL POLE SIGN SQ. FT. FOR BOTH SIDES: 220,7 SQ. FT.

EXIST. CANOPY MOBIL HALLMARK SIGNAGE:
EAST SIGNAGE: 11,7 SQ. FT.
WEST SIGNAGE: 11,7 SQ. FT.
SOUTH SIGANGE: 11,7 SQ. FT.
TOTAL SQUARE FOOTAGE: 35,1 SQ. FT.

EXIST. CONVENIENCE STORE ENTRY SIGNAGE:
MOBIL SIGNAGE (EAST SIDE OF BUILDING FACADE): 11,0 SQ. FT.

TOTAL EXISTING SIGNAGE AREA: 266,8 SQ. F.T

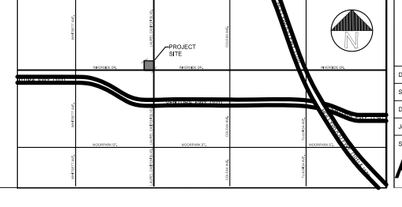
NEW SIGNAGE:
SOUTH/CARWASH CHANNEL EXIT SIGNAGE: 25,0 SQ. FT.
NORTH/CARWASH CHANNEL ENTRY SIGNAGE: 25,0 SQ. FT.
TOTAL NEW SIGNAGE SQUARE FOOTAGE: 50,0 SQ. FT.

TOTAL SIGANGE AREA:266,8 + 50,0 = 316,8 SQ. FT.

FIRE SPRINKLERED
NO KNOWN EASEMENTS

VICINITY MAP

NOT TO SCALE



NADER'S MOBIL GAS STATION REMODEL / CARWASH PROJECT PROJ.
4801 N. LAUREL CANYON BLVD., LOS ANGELES, CA 91607

MK Design
535 W. ALLEN AVE., UNIT 23, SAN DIMAS, CA 91773

Date 1/06/2021
Scale 1"=10'-0"
Drawn KK
Job
Sheet 9
A1.0

7.0 Methodology

Sampling:

Initial sampling is conducted on-site with a technician familiar with the measuring devices. All equipment has been factory calibrated within a 3 year time span and is field calibrated before each sampling session. Calibration samples at three different decibel levels will be selected by the technician. Provided all samples register within 1.5 decibels the sampling device is considered calibrated. All samples are taken with an omni-directional microphone for 60 seconds at a height of 36”-48” above finish grade. Samples are taken at an “A” weighted decibel scale. Measurements are provided for minimums, maximums and averaged values. Given the nature of the environment no weighting or noting is given to temperature, humidity or elevation.

Measurements were taken 9/3/2019 starting at 10am. At each location a total of three 60 second measurements were taken. The middle was selected each time based off of the Max dbA recorded. These measurements were used to establish the sound map and profile for the site.

An analytics module was secured at location 3. The module was set to trigger every 15 minutes for 30 seconds on recording with A-weighted Max, Min and Avg levels logged. This was the data used in addition to Google’s Traffic API to establish the traffic level chart and general 24 hour levels. The module logged from 9/3 3:15pm to 9/13 11am.

General sound mapping:

Sampling points or proposed points are to be located per field data. Streets and roads are to use a uniform sound wall of 60 dbA unless a high or greater traffic level is established which will use a 70 dbA sound wall.

Sound level propagation is calculated along a flat plane unless the average site slope exceeds 25% for more than 200 sqft along an area of significance to the study. This plane is assumed to occur roughly between 36”-48” above the finish grade relative to the local position of the measurement.

Window and door openings are calculated as if they are composed of the adjacent material. Openings are only calculated when they are at least 12” wide. All corners, despite radius, are treated as an incidence of occurrence. Unless specifically noted all walls are expected to have an additive reflectance of less than 3 decibels.

All instances of occurrence that are 6 decibels or less than the calculated sound pressure are ignored as an insignificant additive source.

Interior sound levels caused by exterior sound levels are labeled at each contour.

Hot Spot maps vs Persistence map. These are two different methods of representing the sound measurements across a site. A “Hot Spot” map acts as if the measurement was loudest point of the sound with the map interpreted from there. They tend to show sound levels lower than actual. A “Persistence” map takes sound measurements as points on a landscape similar to how surveyors take

points and show a topographic map. They tend to show levels higher than actual. As such, both models were shown for reference.

It should be noted that sound maps represent the worst-case scenario at the time when all sound generating sources are in operation. When these sound generators are not in operation the noise levels will be comparable to existing levels.

Ambient Noise Levels:

Sound measurements, unless otherwise noted, are assumed to be peak or measurements of short duration. For purposes of this report Ambient Noise Levels are those that have been averaged across a fifteen (15) minute time span in one (1) minute increments.

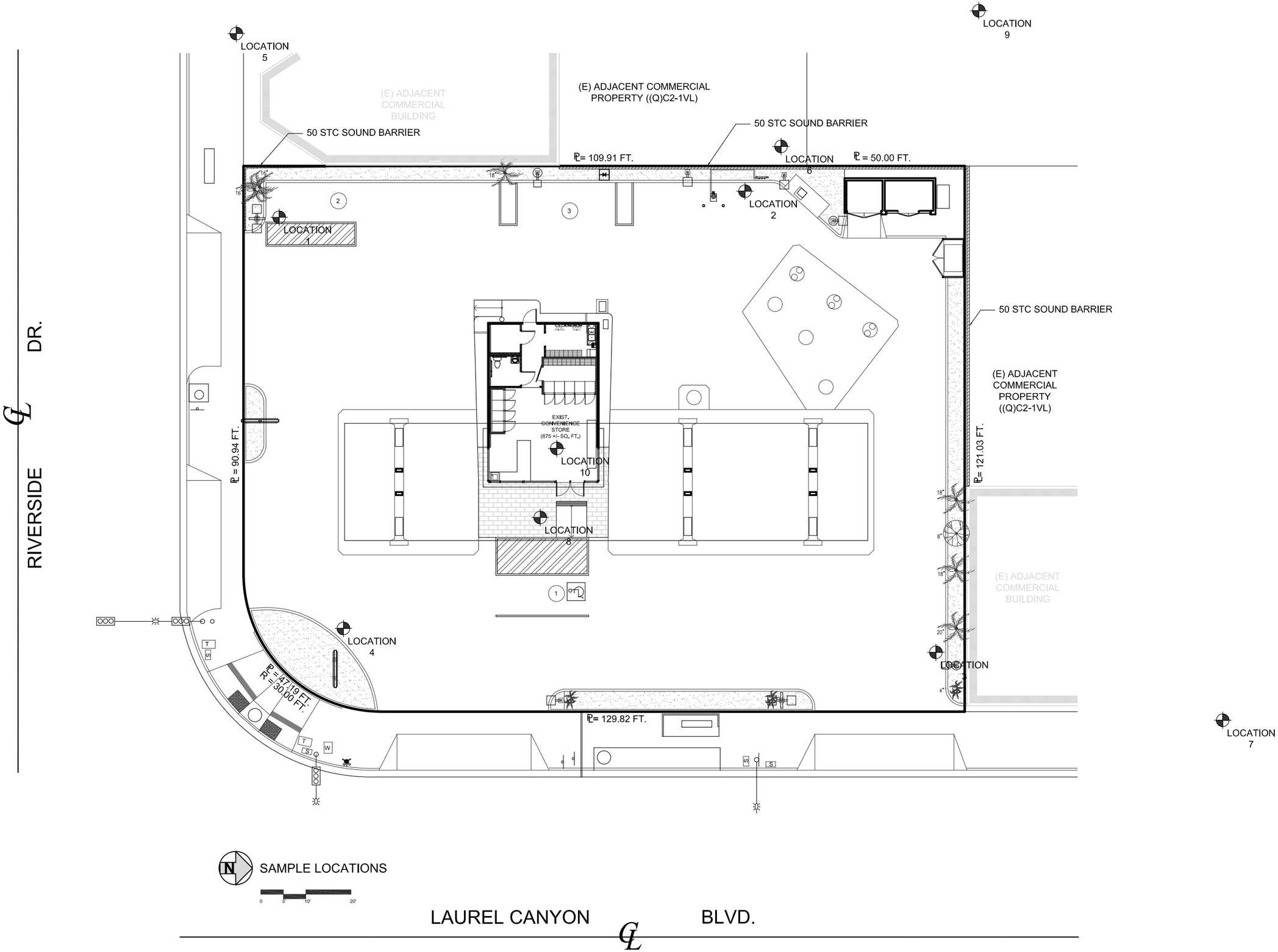
For this model it is assumed that the greatest Ambient Noise Level occurs during the last minute of each activity cycle hence the shortest activity cycle is three (3) minutes long. This gives a increment ratio of 5 peak increments to 10 non-peak increments. As it was found that non-peak increments were at or below the existing Ambient Noise Levels recorded, those will used in place of non-peak increments.

Therefor for purposes of this model Ambient Noise Levels will use the following equation for Ambient Noise Levels:

$$\frac{\sum_P(P > 0) + \sum_{Pn}(Pn > 0)}{\sum_n} = Ambient\ Noise\ Level$$

Sound barriers:

When are recommended or provided measurements will be provided as both a line of site, sound penetration, calculation and as a point of incidence. Lines of site provide sound levels at the sound walls opposite side where as a point of incidence calculation will provide the shortest line of travel around the sound wall to first object of significant incidence unless otherwise noted.


RIVERSIDE DR.
LOCATION 5
(E) ADJACENT COMMERCIAL BUILDING
(E) ADJACENT COMMERCIAL PROPERTY ((Q)C2-1VL)
50 STC SOUND BARRIER
℄= 109.91 FT.
LOCATION 6
℄ = 50.00 FT.
LOCATION 9
LOCATION 2
LOCATION 1
50 STC SOUND BARRIER
EXIST. CONVENIENCE STORE (875 +/- SQ. FT.)
LOCATION 10
℄= 90.94 FT.
(E) ADJACENT COMMERCIAL PROPERTY ((Q)C2-1VL)
℄= 121.03 FT.
LOCATION 8
(E) ADJACENT COMMERCIAL BUILDING
LOCATION 4
℄= 147.19 FT.
R= 30.00 FT.
LOCATION
℄= 129.82 FT.
LOCATION 7
SAMPLE LOCATIONS
0 5' 10' 20'
LAUREL CANYON BLVD.

8.2 Samples Tables

Samples were taking on site using a Samsung thin-film non-directional microphone ((2) 1.2 mm aperture). Recordings were processed with Sound Analyzer SLM – Spectrum Analyzer. Per CNEL standards all readings were A-weighted (ANSI S1.4) for human hearing reproduction.

Temperature 87F

Humidity 25%

Barometer 29.83 in

Primary sampling

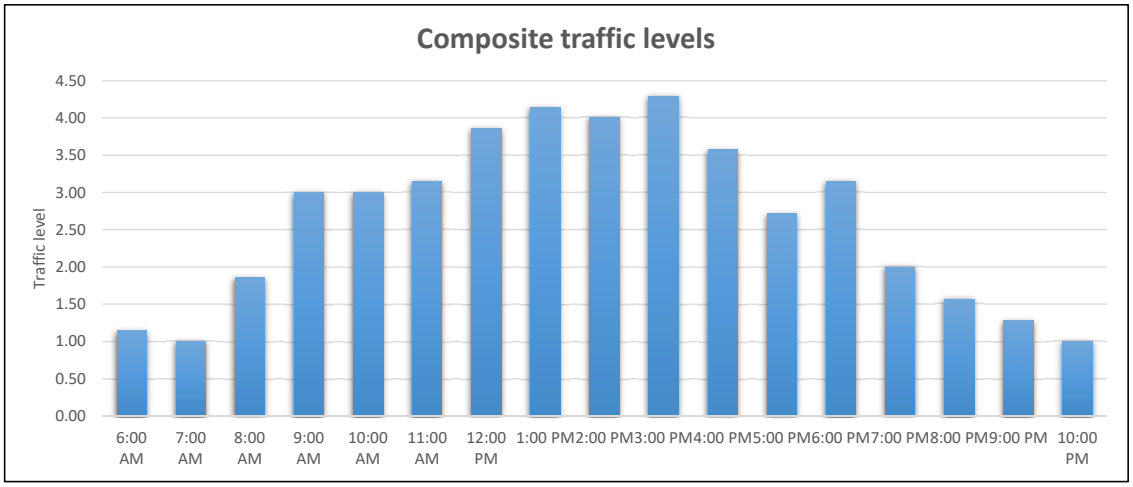
Location	Max dbA	Min dbA	LAF dbA	LAeq dbA
1	74.7	62.9	63.8	67.8
2	78.1	56.0	61.6	65.6
3	75.2	59.2	66.4	67.5
4	85.4	61.2	63.2	71.7
5	72.7	57.9	60.7	65.8
6	65.5	55.1	60.5	58.5
7	82.6	60.1	72.3	71.0
8	79.8	62.9	69.5	71.1
9	64.3	50.1	53.8	55.1
10	77.7	58.7	60.7	64.5

9.0 Traffic Levels Analysis

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday		avg	med
6:00 AM	1	1	1	2	1	1	1	**8**	1.14	1
7:00 AM	1	1	1	1	1	1	1	**7**	1.00	1
8:00 AM	1	2	2	3	2	2	1	**13**	1.86	2
9:00 AM	1	4	4	4	4	2	2	**21**	3.00	4
10:00 AM	1	4	3	4	4	3	2	**21**	3.00	3
11:00 AM	2	3	4	3	3	4	3	**22**	3.14	3
12:00 PM	2	3	4	5	5	5	3	**27**	3.86	4
1:00 PM	1	4	5	5	5	5	4	**29**	4.14	5
2:00 PM	2	4	5	4	5	5	3	**28**	4.00	4
3:00 PM	3	3	5	5	5	5	4	**30**	4.29	5
4:00 PM	1	4	3	5	5	5	2	**25**	3.57	4
5:00 PM	1	3	3	4	3	3	2	**19**	2.71	3
6:00 PM	1	3	5	4	4	4	1	**22**	3.14	4
7:00 PM	1	2	2	3	2	3	1	**14**	2.00	2
8:00 PM	1	2	3	2	1	1	1	**11**	1.57	1
9:00 PM	1	2	2	1	1	1	1	**9**	1.29	1
10:00 PM	1	1	1	1	1	1	1	**7**	1.00	1
	22	**46**	**53**	**56**	**52**	**51**	**33**	**313**		

avg	1.29	2.71	3.12	3.29	3.06	3.00	1.94
med	1	3	3	4	3	3	2

Highest traffic day: Wednesday
Lowest traffic day: Sunday
Highest traffic hour: 2pm
Lowest traffic hour: 7am, 10pm
Average traffic level: 2.63 low
Median traffic level: 2 low



Traffic level scale from 1 (low) to 13 (very high).
Google Traffic Services API map data 2019
Data module point 5J53+57 Los Angeles, California

9.1 Traffic Level Description

Traffic levels are used to calculate the street sound wall used in proposed calculations. Depending on the type of analysis the sound wall can be used as a termination point or as a generator.

Traffic levels are a composite description of traffic per direction or the combined tally of traffic directions along the perimeter of the test site. Traffic is graded between 1 (low) to 4 (very high). All data is pulled from Google's Traffic Estimator API in increments as described in the testing data. In cumulative analysis site with one side facing traffic will have two directions, sites with two sides will have four as so on.

Levels are weighted for signal lighting, and are described and awarded values as follows:

1 (low) – Little to freely moving traffic with three or more car lengths typically between vehicles. Vehicles are moving at the posted speed. Expected sound level: 60 dbA.

2 (medium) – Dense traffic moving at the posted speed with one or less car lengths between vehicles. Expected sound level: 70 dbA.

3 (high) – Dense traffic requiring vehicles to periodically come to a full stop. Expected sound level: 65 dbA.

4 (very high) – Dense traffic requiring vehicles to frequently stop or remain stopped for periods of 30 seconds or more. Expected sound level: 70 dbA.

Contour (dbA)	Area (sqft)
72.00	2,025.51
71.00	2,755.99
70.00	2,432.93
68.00	2,554.96
67.00	4,743.72
66.00	3,412.79
65.00	135.02

Average	68.43 dbA
weighted average	68.51 dbA

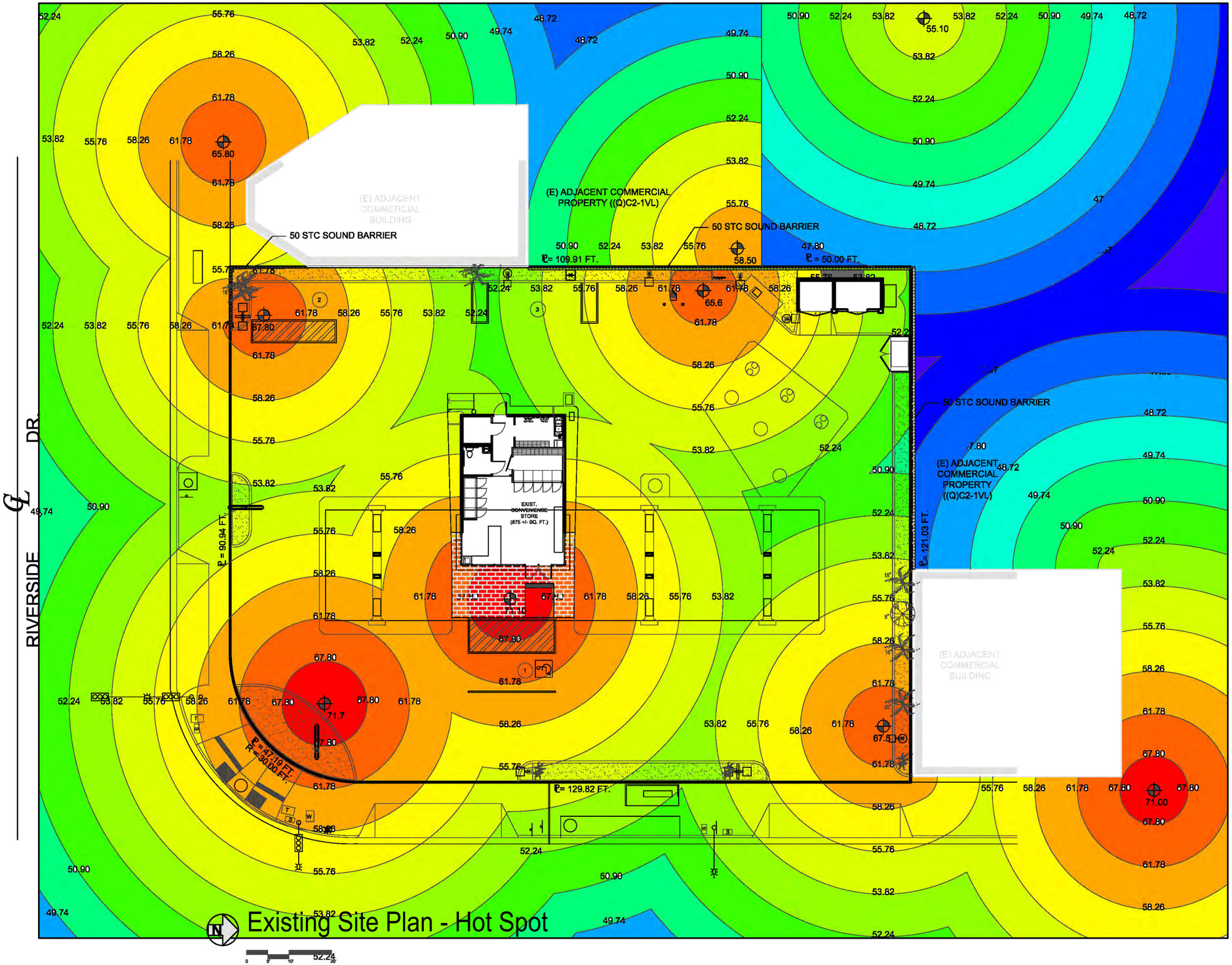
Table limited to property boundries.

Existing Site Plan - Persistance map

Contour (dbA)	Area (sqft)
67.80	608.95
61.78	2,241.87
58.26	3,397.57
55.76	2,622.30
53.82	3,864.85
52.24	4,893.57
50.90	973.31
49.74	50.14

Average	56.29 dbA
Weighted average	55.74 dbA

Table limited to property boundries.



Existing Site Plan - Hot Spot

Existing Sound Levels (dbA)

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday		avg	med
6:00 AM	62.47	63.18	63.73	63.67	62.59	63.92	63.67	**443.23**	63.32	63.67
7:00 AM	63.71	62.63	62.61	63.69	62.44	62.47	62.46	**440.01**	62.86	62.61
8:00 AM	63.99	65.38	64.11	66.95	65.17	65.27	62.48	**453.35**	64.76	65.17
9:00 AM	62.46	69.67	68.27	68.36	68.46	64.91	64.61	**466.74**	66.68	68.27
10:00 AM	62.41	67.17	66.34	67.49	68.39	67.18	64.85	**463.83**	66.26	67.17
11:00 AM	65.37	65.27	68.74	67.32	66.55	68.48	67.73	**469.46**	67.07	67.32
12:00 PM	66.01	66.38	68.47	70.19	72.45	70.43	68.79	**482.72**	68.96	68.79
1:00 PM	64.59	68.36	75.12	76.43	73.32	72.42	69.1	**499.34**	71.33	72.42
2:00 PM	64.78	68.94	74.56	69.47	71.28	73.69	66.34	**489.06**	69.87	69.47
3:00 PM	66.85	67.39	73.4	71.24	74.55	72.41	67.81	**493.65**	70.52	71.24
4:00 PM	62.5	68.29	66.96	70.97	72.39	73.47	65.83	**480.41**	68.63	68.29
5:00 PM	63.26	66.91	66.88	68.82	68.43	66.57	64.61	**465.48**	66.50	66.88
6:00 PM	62.91	67.7	76.13	68.48	67.78	65.96	63.68	**472.64**	67.52	67.7
7:00 PM	63.68	65.71	65.75	67.84	65.04	67.04	62.41	**457.47**	65.35	65.71
8:00 PM	63.27	66.8	67.38	63.79	63.94	63.88	62.37	**451.43**	64.49	63.88
9:00 PM	63.55	65.29	63.89	62.84	62.78	62.98	62.44	**443.77**	63.40	62.98
10:00 PM	63.69	62.72	62.41	63.95	62.52	63.21	62.49	**440.99**	63.00	62.72
11:00 PM	60.46	62.53	64.51	65.38	63.49	63.52	61.73	**441.62**	63.09	63.49
12:00 AM	60.35	60.31	60.82	62.72	64.38	63.72	62.94	**435.24**	62.18	62.72
1:00 AM	59.28	59.57	60.47	60.73	60.16	58.49	58.42	**417.12**	59.59	59.57
2:00 AM	60.62	57.32	58.93	57.29	60.37	58.23	57.79	**410.55**	58.65	58.23
3:00 AM	52.86	56.83	58.35	57.26	56.72	57.47	55.02	**394.51**	56.36	56.83
4:00 AM	57.29	60.31	59.27	61.36	59.38	58.72	56.19	**412.52**	58.93	59.27
5:00 AM	63.26	62.69	63.84	63.73	63.59	62.89	60.37	**440.37**	62.91	63.26
	1499.62	**1547.35**	**1580.94**	**1579.97**	**1576.17**	**1567.33**	**1514.13**	**10865.51**		
Daily										
avg	62.48	64.47	65.87	65.83	65.67	65.31	63.09	**64.68**		
med	63.68	66.8	66.96	67.84	67.78	66.57	64.61	**66.32**		
Average										
Day	63.94	66.54	68.19	67.99	67.84	67.52	64.88	**66.70**		
Night	59.57	60.34	61.24	61.52	61.34	60.87	59.52	**60.63**		

Day 7am-10pm
Night 10pm-7am

11.1 Proposed Condition Description

11.1.1 PROPOSED AND EXISTING CONTRIBUTING ELEMENTS

Noise generators

- Carwash dryer blowers. Located on the street side "exit" of the carwash about 7'-10' within the structure. It will be assumed that the point source will at 90 dbA, as described by manufacturer vendors.
- Vacuums. Located along the west property line about 2/3's into the property. It will be assumed that the point source will at 85 dbA, as described by manufacturer vendors.
- The Laurel Canyon/Riverside sound wall. Sound coming from both Laurel Canyon Blvd. and Riverside Dr. constitute a significant source of noise within the site.

Non-building sound barriers

- Masonry wall located at "exit" of carwash. Estimated STC: 50.
- Masonry wall located along the West property line. Estimated STC: 50.
- Masonry wall located along the North property line. Estimated STC: 50.

11.1.2 NOISE CRITERIA

Exterior Noise Levels – Residential

Existing on-site noise levels were established by on site samplings. A sound map was developed from this material to extend nearby residential locations as required by city planning staff. As this map contained all onsite generating elements to create a standard baseline noise level.

As the only significant variable remaining, a table was developed that used both the on-site noise level and traffic dependent noise levels to create the required Residential Noise Level. This was made possible by data from Google on the traffic levels, and was averaged into 1-hour steps across a typical week in a typical year.

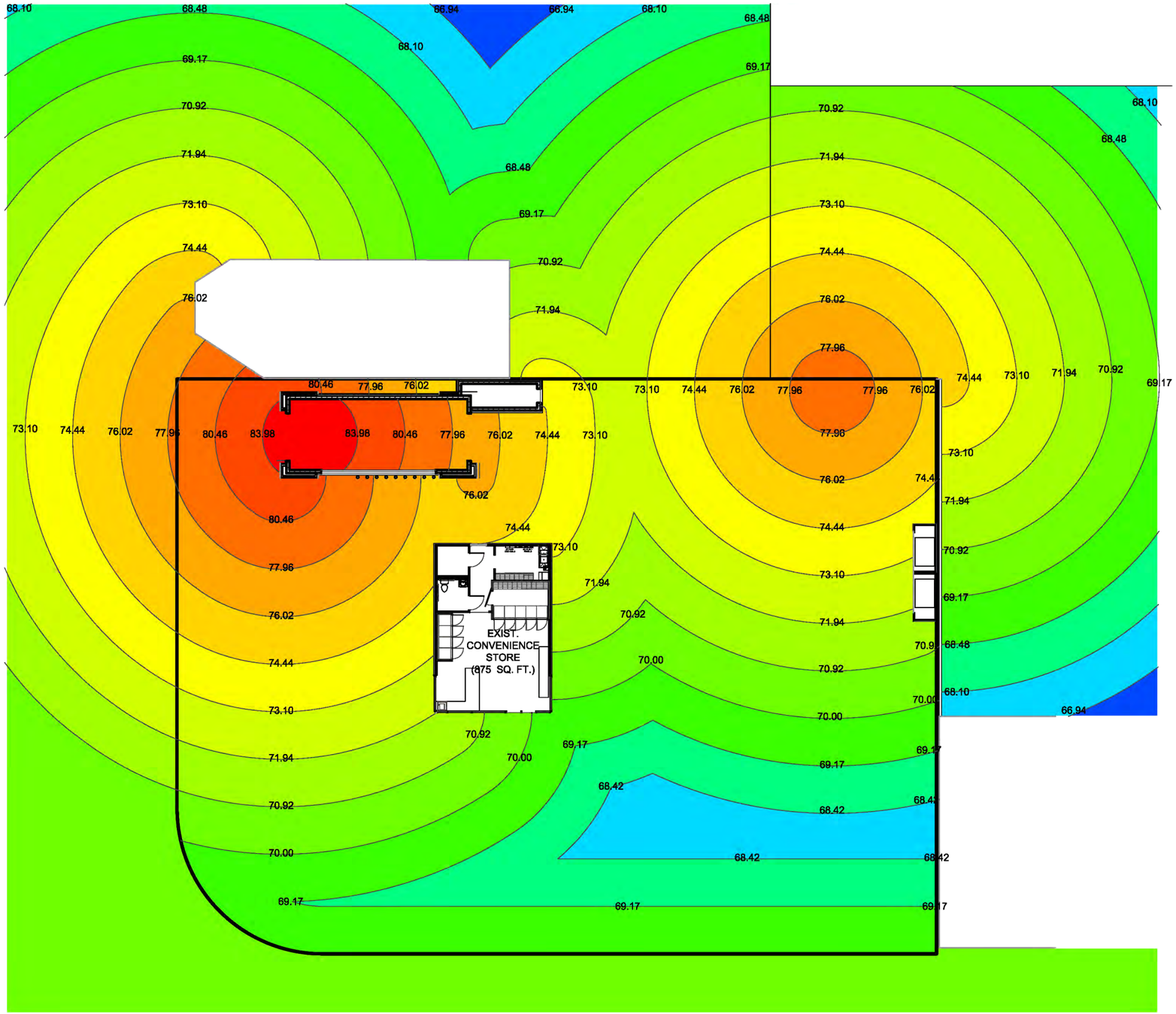
CALGreen – Non-residential

Section 5.507.4.2 of the 2016 California Green Building Code stipulates that for buildings exposed to a noise level of 65 dB or more when measured as a 1-hour Equivalent Sound Level (Leq), the building façade, including walls, windows, and roofs, shall provide enough sound insulation so that the interior sound level from exterior sources does not exceed 50 dBA during any hour of operation. This applies to non-residential spaces such as retail space, leasing, and amenities. hour of operation. This applies to non-residential spaces such as retail space, leasing, and amenities.

Contour (dbA)	Area (sqft)
83.98	259.66
80.46	548.16
77.96	986.10
76.02	1,314.27
74.44	1,769.51
73.10	1,725.18
71.94	1,758.48
70.92	1,566.02
70.00	1,673.82
69.17	3,212.46
68.42	2,144.06
67.72	910.00

Average	73.68	dbA
Weighted average	71.96	dbA

Table limited to property boundries.



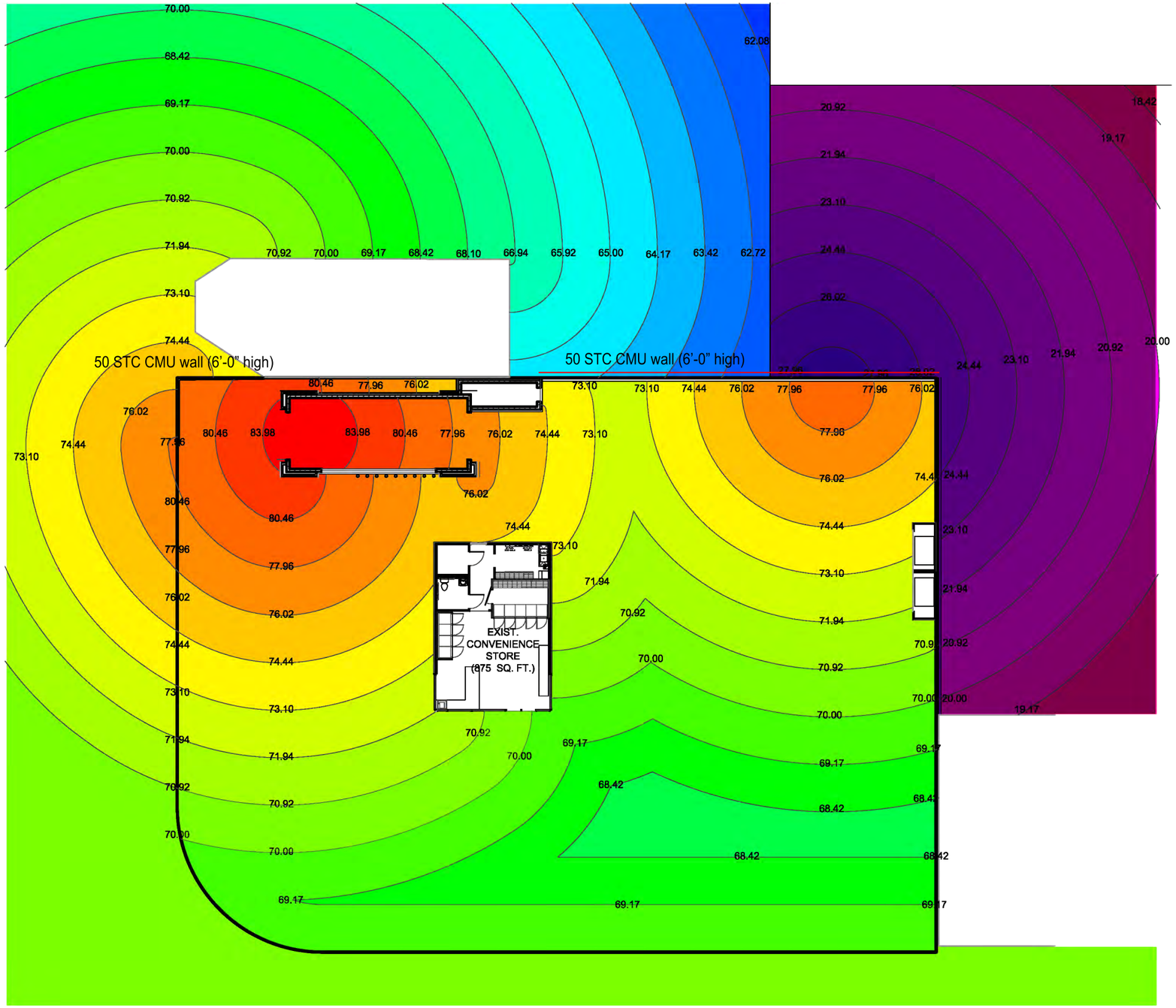
Proposed Site Plan - No implemented measures

Peak Noise Levels

Contour (dbA)	Area (sqft)
83.98	259.66
80.46	548.16
77.96	986.10
76.02	1,314.27
74.44	1,769.51
73.10	1,725.18
71.94	1,758.48
70.92	1,566.02
70.00	1,673.82
69.17	3,212.46
68.42	2,144.06
67.72	910.00

Average	73.68	dbA
Weighted average	71.96	dbA

Table limited to property boundries.



Proposed Site Plan - With implemented Regulatory Compliance Measures

Peak Noise Levels

12.0 Recommendations

Upon reviewing the data and relevant documents MK Design is able to make the following recommendations as a result of the above CNEL Sound study.

During the study it was found that the greatest existing noise element was generated from the Laurel Canyon Blvd./ Riverside Dr. sound wall. During the proposed analysis it was found to be a secondary noise source which still dominated or equaled 25% of the site.

Of the new proposed noise sources only one presented a noise increase off-site, which was the carwash dryer blowers. Most of the noise was already mitigated by the carwash structure and by the sound barrier wall located near the carwash "exit".

The harshest effect from the noise generation occurs at the commercial building frontage located to the west of the property. Peaks calculated at 74 dbA were found with the noise decreasing to about 70 dbA by their driveway. 75 dbA is normally considered the upper threshold of acceptable noise at commercial structures.

The closest residential structure, located to the northwest, is of sufficient distance that street noise was largely dominant over noise generated from the project site with less than 30 dbA contributing at a distance more than 50'.

Recommended Regulatory Compliance Measures

- The sound barrier located near the carwash 'exit' to be increased in height to 1' greater than the carwash exit opening to eliminate all line-of-sight sound propagation. The last 36" near the driveway should be no taller than 36" to along for traffic sighting.
- The sound barrier located near the carwash 'exit' to be planted as much as possible with 42" high leafy plants, on both side, to minimize "wall crawl" sound propagation.
- Carwash dryer blower should employ any muffler, damper or sound attenuator the carwash manufacturer has available to reduce the initial sound source.
- The sound barrier located along the west property line to be increased to a height of 6' to eliminate all line-of-sight sound propagation.

The net result upon making all Recommended Regulatory Compliance Measures permanent project design features is as follows:

- Noise levels brought on by the new carwash and vacuums will be brought down to acceptable levels in the residential areas during their operation.
- All commercial areas will have acceptable noise levels during carwash and vacuum operation, but not to same extent as residential areas.

- Adjacent commercial and residential uses should actually notice real noise level reduction when carwash and vacuum activities are not taking place, especially at night, as the Recommended Regulatory Compliance Measures would reduce existing traffic noise traveling across the site.

13.0 Conclusion

Per the stated recommendations, the carwash equipment and vacuums will be equipped with all manufacturer available options to damper, muffle and otherwise decrease the generated noise, which will bring the dryer blowers and vacuum systems into industry standard noise producing ranges. By implementing the Recommended Regulatory Compliance Measures, which consist of constructing masonry walls along the property edge, the noise levels to adjacent properties will be dramatically reduced.

The closest commercial structure will experience a 7.36 dbA reduction of peak noise levels. This represents a real world reduction of nearly 60%. Non-operation noise levels will also be reduced by about 2 dbA below pre-construction site conditions.

The closest residential structure will experience a 7.11 dbA reduction of peak noise levels. Again, this is a decrease of roughly 60%. Noise levels when neither the carwash or vacuums are operating will have a 2.5 dbA reduction of general noise.

The Recommended Regulatory Compliance Measures reduce the peak noise levels by roughly 60% by the time reaches the property edges.

By averaging the peak noise levels (with the Recommended Regulatory Compliance Measures in place) against the measured existing ambient noise levels our site meets the Minimum Ambient Noise Level (Sec 111.01(a)). As such, we can agree that the project with the Recommended Regulatory Compliance Measures in place does not significantly impact the Ambient Noise Level of the surrounding properties.

14.0 Bibliography

Google Traffic Estimator API

Owens Corning, “Construction Designs for Acoustical Control”

DuPree, Russell B., “Catalog of STC and IIC Ratings for Wall and Floor/Ceiling Assemblies,” California Department of Health Services: 1980

Jonathan Sterne (2003), The Audible Past

Holger Schulze (2008), Sound Studies

R. Murray Schafer (1977), The Tuning of the World

Landrum & Brown (2018), Environmental Impact Report #627, Appendix H, Noise Analysis Technical Report

Appendix A

LIST OF ACRONYMS AND DEFINITIONS

A-Weighting

A frequency-weighting network used to account for changes in human auditory sensitivity as a function of frequency.

Abatement

The method of reducing the degree of intensity of noise and the use of such a method.

Airport Environmental Design Tool (AEDT)

The Federal Aviation Administration's (FAA), Office of Environment and Energy (AEE-100) has developed the Airport Environmental Design Tool (AEDT) for evaluating aircraft noise impacts in the vicinity of airports. The AEDT replaced the Integrated Noise Model (INM) and has been the FAA's standard tool since 2015 for determining the predicted noise impact in the vicinity of airports. The FAA requires airports use the INM in assessing environmental impacts for soundproofing, evaluating physical improvements to the airfield, analyzing changes to existing or new procedures and in assessing land use compatibility. AEDT utilizes flight track information, aircraft fleet mix, standard and user defined aircraft profiles and terrain as inputs. AEDT produces noise exposure contours that are used for land use compatibility maps. The AEDT program includes built-in tools for comparing contours and utilities that facilitate easy export to commercial Geographic Information Systems. The model also calculates predicted noise at specific sites such as hospitals, schools or other sensitive locations.

Annoyance

Any bothersome or irritating occurrence.

CNEL

Community Noise Equivalent Level. Used in California and is nearly identical to DNL, except that CNEL includes a 5 dB penalty for the evening time period from 7 pm to 10 pm and a 10 dB penalty for the nighttime hours of 10 pm to 7 am.

Day-Night Average Sound Level
(Abbreviation DNL, denoted by the symbol Ldn)

Twenty-four hour average sound level for a given day, after addition of 10 decibels to levels from midnight to 0700 hours and from 2200 hours to midnight. Ldn is computed as follows:
Ldn = LAE + 10*log10(Nday + 10*Nnight) - 49.4 (dB)
where:
LAE = Sound exposure level in dB (also known as SEL);
Nday = Number of noise events between 0700 and 2200 hours;
Nnight = Number of noise events between 2200 and 0700 hours; and 49.4 = A normalization constant which spreads the acoustic energy associated with noise events over a 24-hour period, i.e., 10*log10(86,400 seconds per day) = 49.4 dB.

dBA

The A-weighted Decibel (dBA) is the most common unit used for measuring environmental sound levels. It adjusts, or weights, the frequency components of sound to conform to the normal response of the human ear at conversational levels. dBA is an international metric that is used for assessing environmental noise exposure of all noise sources.

Decibel (dB)

The Decibel (dB) is the unit used to measure the magnitude or intensity of sound. Decibel means 1/10 of Bel (named after Alexander Graham Bell). The decibel uses a logarithmic scale to cover the very large range of sound pressures that can be heard by the human ear. Under the decibel unit of measure, a 10 dB increase will be perceived by most people to be a doubling in loudness, i.e., 80 dB seems twice as loud as 70 dB.

Equivalent Sound Level
(abbreviation TEQ, denoted by the symbol LAeqT or Leq)

Ten times the logarithm to the base ten of the ratio of time-mean-squared instantaneous A-weighted sound pressure, during a stated time interval T, to the square of the standard reference sound pressure. LAeqT is related to LAE by the following equation:
LAeqT = LAE - 10*log10(t2-t1) (dB)
where,
LAE = Sound exposure level in dB

FAA

Federal Aviation Administration

GIS

Geographic Information Systems. A computer software program to analyze spatial data. Can be especially useful in examining noise distribution over a geographic area.

Hertz (Hz)

The Hertz is a unit of measurement of frequency, numerically equal to cycles per second of the measure of the rate of the vibration of the sound. High frequencies can be thought of as having a high pitch; like a whistle; low frequency sounds are more like a rumble of a truck or airplane.

Intensity

The sound energy flow through a unit area in a unit time.

LAE

See Sound Exposure Level

Leq or Laeq

See Equivalent Sound Level

Ldn

See Day-Night Average Sound Level

Line-of-sight

A direct line between a target and a source. An unobstructed line would be considered having line-of-sight while obstructions would disrupt the line-of-sight.

Lmax

See Maximum Noise Level

Maximum Noise Level

The maximum noise level, in A-weighted decibels, occurring during an loud single exposure event, e.i. aircraft flyover.

NMS

Noise Monitoring Station (locations).

Noise

1. Unwanted sound. 2. Any sound not occurring in the natural environment, such as sounds emanating from aircraft, highways, industrial, commercial and residential sources. 3. An erratic, intermittent, or statistically random oscillation.

Noise Level

For airborne sound, unless specified to the contrary, the A-weighted sound level.

Noise Contour

A Noise Contour is a line on a map that represents equal levels of noise exposure.

SEL

See Sound Exposure Level

SENEL

Single Event Noise Exposure Level same as Sound Exposure Level

Sound Exposure Level (abbreviation SEL, denoted by the symbol LAE)

Over a stated time interval, T (where T=t2-t1), ten times the base-10 logarithm of the ratio of a given time integral of squared instantaneous A-weighted sound pressure, and the product of the reference sound pressure of 20 micropascals, the threshold of human hearing, and the reference duration of 1 sec. The time interval, T, must be long enough to include a majority of the sound source's acoustic energy. As a minimum, this interval should encompass the 10 dB down points. In addition, LAE is related to LAeqT by the following equation:

LAE = LAeqT + 10*log10(t2-t1) (dB)

where, LAeqT = Equivalent sound level in dB (see definition above, also Leq).

Sound Wall Barrier

A wall constructed or used in which sound penetration is the primary method of sound propagation. Walls should be tall enough to prevent line-of-sight to sensitive locations.

Sound Wall Generator

A linear field or object considered to act as a uniform noise source.

Sound Wall terminator

A linear field or object considered to have a uniform noise contour or sound pressure level at which all sound contours or sound pressure levels equal or less than the field end.

Appendix B

BACKGROUND INFORMATION

1 INTRODUCTION

This section presents background information on the characteristics of noise and summarizes federal, state and local noise/land use compatibility guidelines. This section also provides the reader with an understanding of the metrics used to assess noise impacts. This section is divided as follows:

- Properties of sound that are important for technically describing sound.
- Acoustic factors influencing human subjective response to sound.
- Potential disturbances to humans and health effects due to sound.
- Sound rating scales used in this study.
- Summary of noise assessment criteria.

2 CHARACTERISTICS OF SOUND

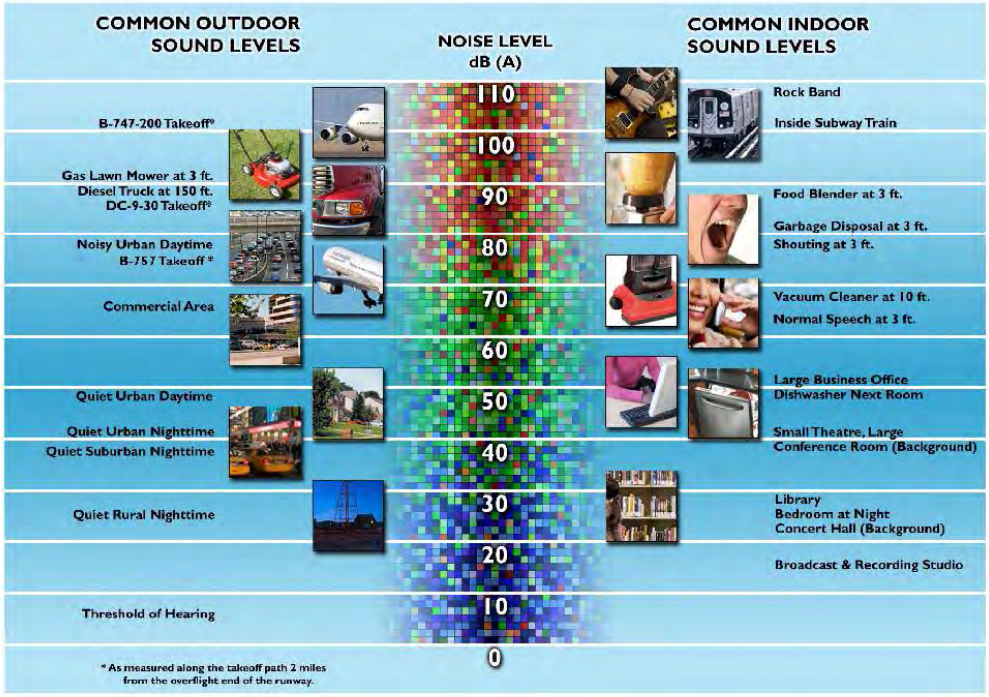
2.1 SOUND LEVEL AND FREQUENCY

Sound can be technically described in terms of the sound pressure (amplitude) and frequency (similar to pitch).

Sound pressure is a direct measure of the magnitude of a sound without consideration for other factors that may influence its perception. The range of sound pressures that occur in the environment is so large that it is convenient to express these pressures as sound pressure levels on a logarithmic scale that compresses the wide range of sound pressures to a more usable range of numbers. The standard unit of measurement of sound is the Decibel (dB), which describes the pressure of a sound relative to a reference pressure.

The frequency (pitch) of a sound is expressed as Hertz (Hz) or cycles per second. The normal audible frequency for young adults is 20 Hz to 20,000 Hz. Community noise, including aircraft and motor vehicles, typically ranges between 50 Hz and 5,000 Hz. The human ear is not equally sensitive to all frequencies, with some frequencies judged to be louder for a given signal than others. As a result of this, various methods of frequency weighting have been developed. The most common weighting is the A-weighted noise curve. The A-weighted decibel scale (dBA) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. In the A-weighted decibel, everyday sounds normally range from 30 dBA (very quiet) to 100 dBA (very loud). Most community noise analyses are based upon the A-weighted decibel scale. Examples of various sound environments, expressed in dBA, are presented in Figure 1.

Figure 1 Typical A-Weighted Noise Levels



Source: Landrum & Brown, 1974.

2.2 PROPAGATION OF NOISE

Outdoor sound levels decrease as the distance from the source to the receiver increases. This decrease in sound level is a result of wave divergence, atmospheric absorption, and ground attenuation. Sound radiating from a source in an undisturbed manner travels in spherical waves. As the sound wave travels away from the source, the sound energy is dispersed over a greater area, decreasing the sound power of the wave. Spherical spreading of the sound wave reduces the noise level at a rate of 6 dB per doubling of the distance.

Atmospheric absorption also influences the sound levels received by the observer.
The greater the distance traveled, the greater the influence of the atmosphere and the resultant fluctuations. Atmospheric absorption becomes important at distances of greater than 1,000 feet. The degree of absorption varies depending on the frequency of the sound, as well as the humidity and temperature of the air. For example, atmospheric absorption is lowest (i.e., sound carries farther) at high humidity and high temperatures. Absorption effects in the atmosphere vary with frequency. Higher frequencies are more readily absorbed than lower frequencies. Over large distances, lower frequencies become the dominant sound as the higher frequencies are attenuated. Turbulence and gradients of wind, temperature, and humidity also play a significant role in determining the degree of attenuation.
Certain conditions, such as inversions, can channel or focus the sound waves resulting in higher noise levels than would result from simple spherical spreading.

In addition to atmospheric absorption, aircraft noise can also be affected by the physical properties of the surrounding terrain. The magnitude of this terrain-related absorption varies with the angle of the aircraft above the horizon as measured from the observer to the aircraft. Lateral attenuation is influenced by ground reflection, refraction, aircraft shielding, and engine aircraft installation effects. In general, the lower an aircraft is, the greater the lateral attenuation. Lateral attenuation is not considered to be a factor if the angle between the observer and

aircraft, as measured from the horizon, is greater than 60°. In this case, the aircraft is essentially overhead the observer.

2.3 DURATION OF SOUND

Annoyance from a noise event increases with increased duration of the noise event, i.e., the longer the noise event, the more annoying it is. The "effective duration" of a sound is the time between when a sound rises above the background sound level until it drops back below the background level. Psycho-acoustic studies have determined the relationship between duration and annoyance and the amount a sound must be reduced to be judged equally annoying for increased duration. Duration is an important factor in describing sound in a community setting. The relationship between duration and noise level is the basis of the equivalent energy principal of sound exposure. Reducing the acoustic energy of a sound by one-half results in a 3 dB reduction. Doubling the duration of the sound increases the total energy of the event by 3 dB. This equivalent energy principal is based upon the premise that the potential for a noise to impact a person is dependent on the total acoustical energy content of the noise. Defined in subsequent sections of this study, noise metrics such as CNEL, DNL, LEQ and SENEL are all based upon the equivalent energy principle.

2.4 CHANGE IN NOISE

The concept of change in ambient sound levels can be understood with an explanation of the hearing mechanism's reaction to sound. The human ear is a far better detector of relative differences in sound levels than absolute values of levels. Under controlled laboratory conditions, listening to a steady unwavering pure tone sound that can be changed to slightly different sound levels, a person can just barely detect a sound level change of approximately one decibel for sounds in the mid-frequency region. When ordinary noises are heard, a young healthy ear can detect changes of two to three decibels. A five decibel change is readily noticeable while a 10 decibel change is judged by most people as a doubling or a halving of the loudness of the sound. It is typical in environmental documents to consider a 3 dB change as potentially discernable.

2.5 MASKING EFFECT

The ability of one sound to limit a listener from hearing another sound is known as the masking effect. The presence of one sound effectively raises the threshold of audibility for the hearing of a second sound. For a signal to be heard, it must exceed the threshold of hearing for that particular individual and exceed the masking threshold for the background noise.

The masking characteristics of sound depend on many factors including the spectral (frequency) characteristics of the two sounds, the sound pressure levels and the relative start time of the sounds. Masking effect is greatest when the frequencies of the two sounds are similar or when low frequency sounds mask higher frequency sounds. High frequency sounds do not easily mask low frequency sounds.

3 FACTORS INFLUENCING HUMAN RESPONSE TO SOUND

Many factors influence sound perception and annoyance. This includes not only physical characteristics of the sound but also secondary influences such as sociological and external factors. Molino, in the Handbook of Noise Control describes human response to sound in terms of both acoustic and non-acoustic factors. These factors are summarized in Table 1.

Sound rating scales are developed in reaction to the factors affecting human response to sound. Nearly all of these factors are relevant in describing how sounds are perceived in the community. Many non-acoustic parameters play a prominent role in affecting individual response to noise. Background sound, an additional acoustic factor not specifically listed, is also important in describing sound in rural settings. Fields, in his analysis of the effects of

personal and situational variables on noise annoyance, has identified a clear association of reported annoyance and various other individual perceptions or beliefs. In particular, Fields stated:

“There is therefore firm evidence that noise annoyance is associated with: (1) the fear of an aircraft crashing or of danger from nearby surface transportation; (2) the belief that aircraft noise could be prevented or reduced by designers, pilots or authorities related to airlines; and (3) an expressed sensitivity to noise generally.”

Thus, it is important to recognize that non-acoustic factors such as the ones described above as well as acoustic factors contribute to human response to noise.

Table 1 Factors that Affect Individual Annoyance to Noise

Primary Acoustic Factors
- Sound Level
- Frequency
- Duration

Secondary Acoustic Factors
- Spectral Complexity
- Fluctuations in Sound Level
- Fluctuations in Frequency
- Rise-time of the Noise
- Localization of Noise Source

Non-acoustic Factors
- Physiology
- Adaptation and Past Experience
- How the Listener's Activity Affects Annoyance
- Predictability of When a Noise will Occur
- Is the Noise Necessary?
- Individual Differences and Personality

Source: C. Harris, 1979

4 SOUND RATING SCALES

The description, analysis, and reporting of community sound levels is made difficult by the complexity of human response to sound and myriad of sound-rating scales and metrics developed to describe acoustic effects. Various rating scales approximate the human subjective assessment to the "loudness" or "noisiness" of a sound. Noise metrics have been developed to account for additional parameters such as duration and cumulative effect of multiple events.

Noise metrics are categorized as single event metrics and cumulative metrics. Single event metrics describe the noise from individual events, such as one aircraft flyover. Cumulative metrics describe the noise in terms of the total noise exposure throughout the day. Noise metrics used in this study are summarized below:

4.1 SINGLE EVENT METRICS

 Frequency Weighted Metrics (dBA). In order to simplify the measurement and computation of sound loudness levels, frequency-weighting networks have obtained wide acceptance. The A-weighting (dBA) scale has become the most prominent of these scales and is widely used in community noise analysis. Its advantages are

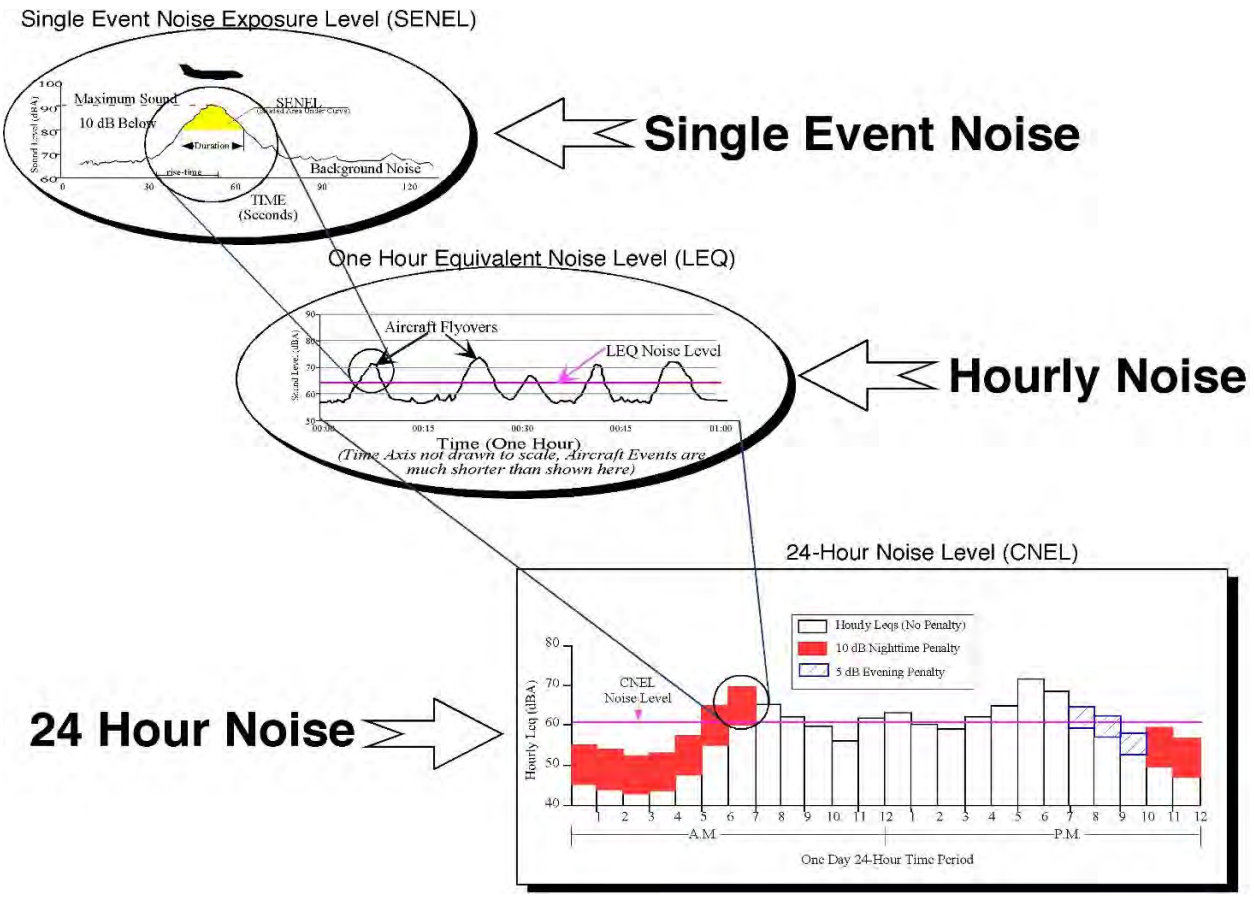
that it has shown good correlation with community response and is easily measured. The metrics used in this study are all based upon the dBA scale.

 Maximum Noise Level. The highest noise level reached during a noise event is called the "Maximum Noise Level," or Lmax. For example, as an aircraft approaches, the sound of the aircraft begins to rise above ambient noise levels. The closer the aircraft gets the louder it is until the aircraft is at its closest point directly overhead. Then, as the aircraft passes, the noise level decreases until the sound level again settles to ambient levels. Such a history of a flyover is plotted at the top of Figure 3. It is this metric to which people generally instantaneously respond when an aircraft flyover occurs.

 Single Event Noise Exposure Level (SENEL) or Sound Exposure Level (SEL). Another metric that is reported for aircraft flyovers is the Single Event Noise Exposure Level (SENEL). This metric is essentially equivalent to the Sound Exposure Level (SEL) metric. It is computed from dBA sound levels. Referring again to the top of Figure 3, the shaded area, or the area within 10 dB of the maximum noise level, is the area from which the SENEL is computed. The SENEL value is the integration of all the acoustic energy contained within the event. Speech and sleep interference research can be assessed relative to Single Event Noise Exposure Level data.

The SENEL metric takes into account the maximum noise level of the event and the duration of the event. For aircraft flyovers, the SENEL value is typically about 10 dBA higher than the maximum noise level. Single event metrics are a convenient method for describing noise from individual aircraft events. This metric is useful in that airport noise models contain aircraft noise curve data based upon the SENEL metric. In addition, cumulative noise metrics such as LEQ, CNEL and DNL can be computed from SENEL data.

Figure 2 Single & Cumulative Noise Metric Definitions



Source: L&B (2014)

4.2 CUMULATIVE METRICS

Cumulative noise metrics assess community response to noise by including the loudness of the noise, the duration of the noise, the total number of noise events and the time of day these events occur in one single number rating scale.

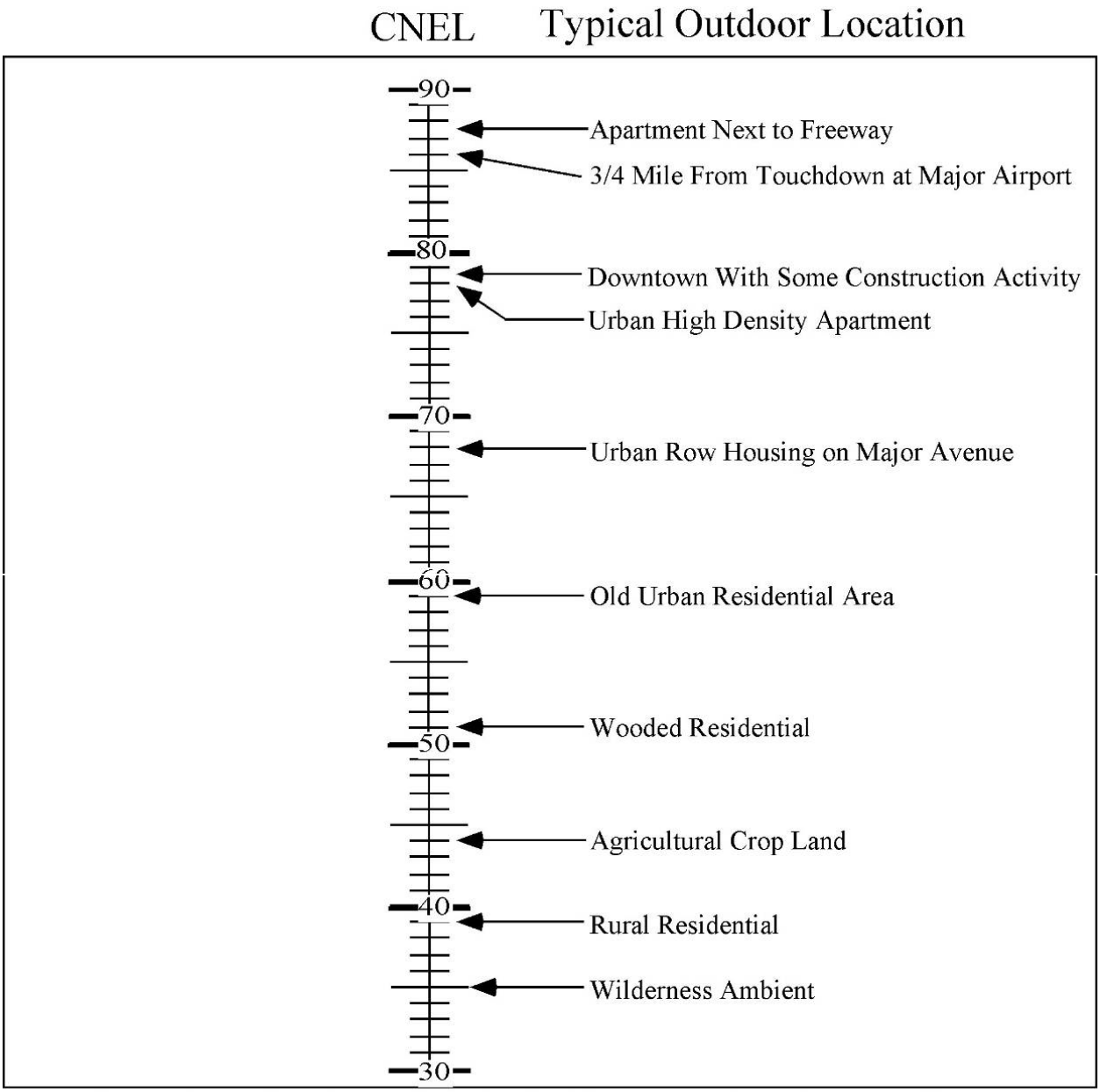
Equivalent Noise Level (Leq). Leq is the sound level corresponding to a steady-state, A-weighted sound level containing the same total energy as several SEL events during a given sample period. Leq is the "energy" average noise level during the time period of the sample. It is based on the observation that the potential for noise annoyance is dependent on the total acoustical energy content of the noise. This is graphically illustrated in the middle graph of Figure 3. Leq can be measured for any time period, but is typically measured for 15 minutes, 1 hour or 24-hours. Leq for a one-hour period is used by the Federal Highway Administration for assessing highway noise impacts. Leq for one hour is called Hourly Noise Level (HNL) in the California Airport Noise Regulations and is used to develop Community Noise Equivalent Level (CNEL) values for aircraft operations.

Community Noise Equivalent Level (CNEL). CNEL is a 24-hour, time-weighted energy average noise level based on the A-weighted decibel. It is a measure of the overall noise experienced during an entire day. The term “time-weighted” refers to the penalties attached to noise events occurring during certain sensitive time periods. In the CNEL scale, noise occurring between the hours of 7 pm and 10 pm is penalized by approximately 5 dB. This penalty accounts for the greater potential for noise to cause communication interference during these hours, as well as typically lower ambient noise levels during these hours. Noise that takes place during the night (10 pm to 7 am) is penalized by 10 dB. This penalty was selected to attempt to account for the higher sensitivity to noise in the nighttime and the expected further decrease in background noise levels that typically occur in the nighttime.

CNEL is graphically illustrated in the bottom of Figure 2. Examples of various noise environments in terms of CNEL are presented in Figure 3. CNEL is specified for use in the California Airport Noise Regulations and is used by local planning agencies in their General Plan Noise Element for land use compatibility planning.

Day Night Noise Level (DNL). The DNL index is very similar to CNEL but does not include the evening (7 pm to 10 pm) penalty that is included in CNEL. It does include the nighttime (10 pm to 7 am) penalty. Typically, DNL is about 1 dB lower than CNEL, although the difference may be greater if there is an abnormal concentration of noise events in the 7 to 10 pm time period. DNL is specified by the Federal Aviation Administration (FAA) for airport noise assessment and by the Environmental Protection Agency (EPA) for community noise and airport noise assessment. The FAA guidelines (described later) allow for the use of CNEL as a substitute to DNL.

Figure 3 Typical Outdoor Noise Levels



Source: Adapted from "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare With an Adequate Margin of Safety", EPA, 1974

4.3 EFFECTS OF NOISE ON HUMANS

Noise, often described as unwanted sound, is known to have several adverse effects on humans. From these known adverse effects of noise, criteria have been established to help protect the public health and safety and prevent disruption of certain human activities. These criteria are based on effects of noise on people such as hearing loss (not a factor with typical community noise), communication interference, sleep interference, physiological responses and annoyance. Each of these potential noise impacts on people are briefly discussed in the following narrative:

Hearing Loss is generally not a concern in community noise problems, even very near a major airport or a major freeway. The potential for noise induced hearing loss is more commonly associated with occupational noise exposures in heavy industry, very noisy work environments with long term exposure, or certain very loud recreational activities such as target shooting, motorcycle or car racing, etc. The Occupational Safety and Health Administration (OSHA) identifies a noise exposure limit of 90 dBA for 8 hours per day to protect from hearing loss (higher limits are allowed for shorter duration exposures). Noise levels in neighborhoods, even in very noisy neighborhoods, are not sufficiently loud to cause hearing loss.

Communication Interference is one of the primary concerns in environmental noise problems. Communication interference includes speech interference and interference with activities such as watching television. Normal conversational speech is in the range of 60 to 65 dBA and any noise in this range or louder may interfere with speech. There are specific methods of describing speech interference as a function of distance between speaker and listener and voice level. Figure 5 shows the relation of quality of speech communication with respect to various noise levels.

Sleep Interference is a major noise concern in noise assessment and, of course, is most critical during nighttime hours. Sleep disturbance is one of the major causes of annoyance due to community noise. Noise can make it difficult to fall asleep, create momentary disturbances of natural sleep patterns by causing shifts from deep to lighter stages, and cause awakening. Noise may even cause awakening, which a person may, or may not, be able to recall.

Extensive research has been conducted on the effect of noise on sleep disturbance.
Recommended values for desired sound levels in residential bedroom space range from 25 to 45 dBA, with 35 to 40 dBA being the norm. Some years ago, the National Association of Noise Control Officials published data on the probability of sleep disturbance with various single event noise levels. Based on laboratory experiments conducted in the 1970s, it was determined that a noise event with an interior noise exposure of 75 dBA interior will cause noise induced awakening in 30 percent of the cases.

However, research first published in Britain in the 1990s has shown that the probability for sleep disturbance, when measured in an in-home setting is much less than what had been reported in earlier research that was based on laboratory studies. This research showed that once a person was asleep, it is much more unlikely that they will be awakened by a noise. The significant difference in the British studies is the use of actual in-home sleep disturbance patterns as opposed to laboratory data that had been the historic basis for predicting sleep disturbance. Some of this research has been criticized because it was conducted in areas where subjects had become habituated to aircraft noise. On the other hand, some of the earlier laboratory sleep studies had been criticized because of the extremely small sample sizes of most laboratory studies and because the laboratory was not necessarily a representative sleep environment. A 1994 British sleep study compared the various causes of sleep disturbance using in-home sleep studies. This field study assessed the effects of nighttime aircraft noise on sleep in 400 people (211 women and 189 men; 20-70 years of age; one per household) habitually living at eight sites adjacent to four U.K. airports, with different levels of nighttime flying. The main finding was that only a minority of aircraft noise events affected sleep, and, for most subjects, that domestic and other non-aircraft factors had much greater effects. As shown in the Figure 6, aircraft noise was a minor contributor among a host of other factors that lead to awakening response.

The Federal Interagency Committee on Noise (FICON) in 1992, in a document entitled Federal Interagency Review of Selected Airport Noise Analysis Issues, recommended an interim dose-response curve for sleep disturbance based on laboratory studies of sleep disturbance. In June of 1997, the Federal Interagency Committee on Aviation Noise (FICAN) updated the FICON recommendation with an updated curve based on the more recent in-home sleep disturbance studies which show lower rates of awakening compared to the laboratory studies. The FICAN recommended a curve based on the upper limit of the data presented and therefore considers the curve to

represent the “maximum percent of the exposed population expected to be behaviorally awakened,” or the “maximum awakened.”

Physiological Responses are those measurable effects of noise on people, which are realized as changes in pulse rate, blood pressure, etc. While such effects can be induced and observed, the extent is not known to which these physiological responses cause harm or are a sign of harm. Generally, physiological responses are a reaction to a loud short-term noise such as a rifle shot or a very loud jet over flight.

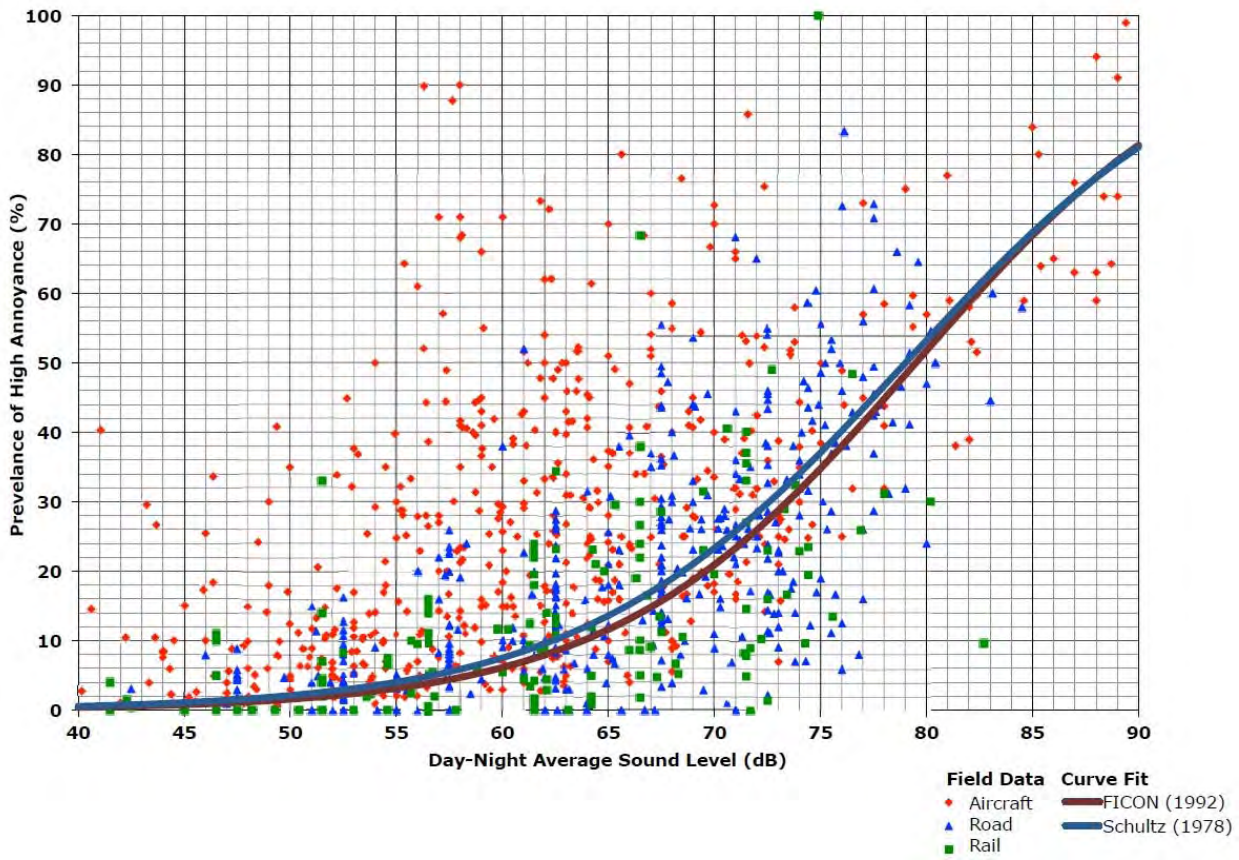
Health effects from noise have been studied around the world for nearly thirty years. Scientists have attempted to determine whether high noise levels can adversely affect human health—apart from auditory damage—which is amply understood. These research efforts have covered a broad range of potential impacts from cardiovascular response to fetal weight and mortality. Yet, while a relationship between noise and health effects seems plausible, it has remained a difficult effect to quantify--that is, shown in a manner that can be repeated by other researchers while yielding similar results.

While annoyance and sleep/speech interference have been acknowledged, health effects are also associated with a wide variety of other environmental stressors, including air pollution. Isolating the effects of aircraft noise alone as a source of long-term physiological change has proved to be almost impossible as the effects associated with noise are also the same well-known effects of air pollution. In a review of 30 studies conducted worldwide between 1993 and 1998 [17], a team of international researchers concluded that, while some findings suggest that noise can affect health, improved research concepts and methods are needed to verify or discredit such a relationship. They called for more study of the numerous environmental and behavioral factors than can confound, mediate or moderate survey findings. In 2008, the Airport Cooperative Research Board (ACRP), a part of the National Academies, published a synthesis on the effects of aircraft noise.
The ACRP synthesis concluded, “Despite decades of research, including review of old data and new research efforts, health effects of aviation noise continues to be an enigma. Most, if not all, current research concludes that it is yet impossible to determine causal relations between health disorders and noise exposure, despite well-founded hypotheses."

Annoyance is the most difficult of all noise responses to describe. Annoyance is a very individual characteristic and can vary widely from person to person. What one person considers tolerable can be quite unbearable to another of equal hearing capability. The level of annoyance, of course, depends on the characteristics of the noise (i.e.; loudness, frequency, time, and duration), and how much activity interference (e.g. speech interference and sleep interference) results from the noise. However, the level of annoyance is also a function of the attitude of the receiver. Personal sensitivity to noise varies widely. It has been estimated that 2 to 10 percent of the population is highly susceptible to annoyance from any noise not of their own making, while approximately 20 percent are unaffected by noise. Attitudes are affected by the relationship between the person and the noise source (Is it our dog barking or the neighbor's dog?). Whether we believe that someone is trying to abate the noise will also affect the level of annoyance.

Annoyance levels have been correlated to CNEL levels. Figure 4 relates DNL noise levels to community response from two of these surveys. One of the survey curves presented in Figure 4 is the well-known Schultz curve, developed by Theodore Schultz. It displays the percent of a populace that can be expected to be annoyed by various DNL (CNEL in California) values for residential land use with outdoor activity areas. At 65 dB DNL, the Schultz curve predicts approximately 14 percent of the exposed population reporting themselves to be “highly annoyed.” At 60 dB DNL, this decreases to approximately 8 percent of the population. However, Figure 4 shows that the data used to determine the Schultz curve and updates have a very wide range of scatter, with communities near some airports reporting much higher percentages of population highly annoyed at these noise exposure levels. Annoyance levels have never been correlated statistically to single event noise exposure levels in airport-related studies.

Figure 4 Percent of Population Highly Annoyed as a Function of DNL



Source: Schultz (1978) & FICON (1992)

In recent years, there has been the suggestion in Europe and by researchers in the US that the noise dose, response curve for annoyance from aircraft noise is different for aviation noise than it is for road and rail noise. In these studies, it has been suggested that the percentage of the population highly annoyed at 65 DNL is closer to 30 percent of the population and not the 14 percent as suggested by the Schultz curve. The US studies go on further to describe that communities form unique attitudes about noise and differing communities show a wide range of annoyance response for the same noise exposure that can be attributed to non-acoustic factors.

School Room Effects. Interference with classroom activities and learning from aircraft noise is an important consideration and the subject of much recent research. Studies from around the world indicate that vehicle traffic, railroad, and aircraft noise can have adverse effects on reading ability, concentration, motivation, and long term learning retention. A complicating factor in this research is the extent of background noise from within the classroom itself. The studies indicating the most adverse effects examine cumulative noise levels equivalent to 65 CNEL or higher and single event maximum noise levels ranging from 85 to 95 dBA. In other studies, the level of noise is unstated or ambiguous. According to these studies, a variety of adverse school room effects can be expected from interior noise levels equal to or exceeding 65 CNEL, and/or 85 dBA SEL.

Some interference with classroom activities can be expected with noise events that interfere with speech. As discussed in other sections of this report, speech interference begins at 65 dBA, which is the level of normal conversation. Typical construction attenuates outdoor noise by 20 dBA with windows closed and 12 dBA with

windows open. Thus, some interference of classroom activities can be expected at outdoor levels of 77 to 85 dBA, the latter being the noise level for the SENEL contours.