

Initial Study PROJ-2024-00004

Vernaci Properties

APNs 0230-101-012, 0230-101-013, 0230-101-014, 0230-101-034

April 2026

Appendix H: Noise Report



December 5, 2023

Robert M. Beers
RMB Consulting
8175 Limonite Avenue, Suite "E"
Jurupa Valley, CA 92509

**Subject: County of San Bernardino – Proposed Whittram Avenue Truck Trailer Parking Project
Noise Technical Memorandum.**

Dear Mr. Beers:

Vista Environmental has conducted this analysis to evaluate the potential construction and operational noise impacts that would be created from development of the proposed Whittram Avenue Truck Trailer Parking Project. This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000, et seq.).

Project Location

The project site is located in an unincorporated area of San Bernardino County (County). The approximately 5.22-acre project site is currently mostly vacant except for four structures that total approximately 3,600 square feet of building space in the southwest corner of the project site. The project site is bounded by two single-family homes located adjacent to the north and west sides of the project site. In addition, there are industrial uses to the north, Banana Avenue and industrial uses to the east, Whittram Avenue and a detention basin to the south, and Calabash Avenue and industrial uses to the west. The project study area is shown in Figure 1 attached to this Memo.

Sensitive Receptors in Project Vicinity

The nearest sensitive receptors to the project site are residents at the single-family homes located as near as seven feet northwest of the project site. There are also additional homes interspersed with industrial uses along Calabash Avenue, north of the project site. In addition, there is a small mobile home park located as near as 900 feet east of the project site. The nearest school is Almond Elementary School that is located as near as 0.6 mile north of the project site.

Project Description

The proposed project consists of demolition of the existing structures on the project site and construction of a truck trailer storage yard with 156 spaces for truck trailers and 11 spaces for tractor rigs. There would also be 3,000 square foot office building located on the eastern portion of the project site and a 4,500 square foot maintenance shop located west of the office building and a 17 space auto parking lot would be located between the two structures. Approximately 39,290 square feet of the project site would be landscaped, with most landscaping located around the perimeter of the project site. The proposed site plan is shown in Figure 2 attached to this Memo.

The proposed site plan also shows that an 8 foot high block wall will be constructed on the shared property line with the two homes that are adjacent to the northwest corner of the project site and there is an existing 6 foot high block wall on the north side of the project site.



County of San Bernardino Noise and Vibration Regulations

The County of San Bernardino General Plan and Municipal Code establishes the following applicable policies related to noise and vibration.

County of San Bernardino General Plan

The following applicable goals and policies to the proposed project are from the Noise Element of the General Plan.

Goal N 1: The County will abate and avoid excessive noise exposures through noise mitigation measures incorporated into the design of new noise-generating and new noise-sensitive land uses, while protecting areas within the County where the present noise environment is within acceptable limits.

Policies

N 1.1 Designate areas within San Bernardino County as "noise impacted" if exposed to existing or projected future exterior noise levels from mobile or stationary sources exceeding the standards listed in Chapter 83.01 of the Development Code.

N 1.3 When industrial, commercial, or other land uses, including locally regulated noise sources, are proposed for areas containing noise-sensitive land uses, noise levels generated by the proposed use will not exceed the performance standards of Table N-2 within outdoor activity areas. If outdoor activity areas have not yet been determined, noise levels shall not exceed the performance standards listed in Chapter 83.01 of the Development Code at the boundary of areas planned or zoned for residential or other noise-sensitive land uses.

N 1.5 Limit truck traffic in residential and commercial areas to designated truck routes; limit construction, delivery, and through-truck traffic to designated routes; and distribute maps of approved truck routes to County traffic officers.

N 1.6 Enforce the hourly noise-level performance standards for stationary and other locally regulated sources, such as industrial, recreational, and construction activities as well as mechanical and electrical equipment.

N 1.7 Prevent incompatible land uses, by reason or excessive noise levels, from occurring in the future.

County of San Bernardino Municipal Code

The County of San Bernardino Municipal Code establishes the following applicable standards related to noise and vibration.

83.01.010 Purpose

The purpose of this of this Chapter is to establish uniform performance standards for development within the County that promotes compatibility with surrounding areas and land uses.

Performance standards are designed to mitigate the environmental impacts of existing and proposed land uses within a community. Environmental impacts include air quality, glare, heat, noise, runoff control, and waste disposal. These general performance standards are intended to protect the health and safety of businesses, nearby residents, and workers and to prevent damaging effects to surrounding properties.

83.01.080 Noise.

This Section establishes standards concerning acceptable noise levels for both noise-sensitive land uses and for noise-generating land uses.

- (a) *Noise Measurement.* Noise shall be measured:
 - (1) At the property line of the nearest site that is occupied by, and/or zoned or designated to allow the development of noise sensitive land uses;
 - (2) With a sound level meter that meets the standard of the American National Standards Institute (ANSI Section S14-1979, Type 1 or Type 2);
 - (3) Using the “A” weighted sound pressure level scale in decibels (ref. pressure = 20 micronewtons per meter squared). The unit of measure shall be designated as dB(A).

- (b) *Noise Impacted Areas.* Areas within the County shall be designated as “noise-impacted” if exposed to existing or projected future exterior noise levels from mobile or stationary sources exceeding the standards listed in Subdivision (d) (Noise Standards for Stationary Noise Sources) and Subdivision (e) (Noise Standards for Adjacent Mobile Noise Sources), below. New development of residential or other noise-sensitive land uses shall not be allowed in noise-impacted areas unless effective mitigation measures are incorporated into the project design to reduce noise levels to these standards. Noise-sensitive land uses shall include residential uses, schools, hospitals, nursing homes, religious institutions, libraries, and similar uses.

- (c) *Noise Standards for Stationary Noise Sources.*
 - (1) *Noise Standards.* Table 83-2 (Noise Standards for Stationary Noise Sources) describes the noise standard for emanations from a stationary noise source, as it affects adjacent properties:

Table A – County of San Bernardino Noise Standards for Stationary Noise Sources

Affected Land Uses (Receiving Noise)	7 a.m. – 10 p.m. Leq	10 p.m. – 7 p.m. Leq
Residential	55 dB(A)	45 dB(A)
Professional Services	55 dB(A)	55 dB(A)
Other Commercial	60 dB(A)	60 dB(A)
Industrial	70 dB(A)	70 dB(A)

Note:

Leq = (Equivalent Energy Level). The sound level corresponding to a steady-state sound level containing the same total energy as a time varying signal over a given sample period, typically 1, 8 or 24 hours.

dB(A) = (A-weighted Sound Pressure Level). The sound pressure level, in decibels, as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound, placing greater emphasis on those frequencies within the sensitivity range of the human ear.

Ldn = (Day-Night Noise Level). The average equivalent A-weighted sound level during a 24-hour day obtained by adding 10 decibels to the hourly noise levels measured during the night (from 10 pm to 7 am). In this way Ldn takes into account the lower tolerance of people for noise during nighttime periods.

Source: County of San Bernardino, 2020.

- (2) *Noise Limit Categories.* No person shall operate or cause to be operated a source of sound at a location or allow the creation of noise on property owned, leased, occupied, or

otherwise controlled by the person, which causes the noise level, when measured on another property, either incorporated or unincorporated, to exceed any one of the following:

- (A) The noise standard for the receiving land use as specified in Subdivision (b) (Noise-Impacted Areas), above, for a cumulative period of more than 30 minutes in any hour.
- (B) The noise standard plus five dB(A) for a cumulative period of more than 15 minutes in any hour.
- (C) The noise standard plus ten dB(A) for a cumulative period of more than five minutes in any hour.
- (D) The noise standard plus 15 dB(A) for a cumulative period of more than one minute in any hour.
- (E) The noise standard plus 20 dB(A) for any period of time.

(d) *Noise Standards for Adjacent Mobile Noise Sources.* Noise from mobile sources may affect adjacent properties adversely. When it does, the noise shall be mitigated for any new development to a level that shall not exceed the standards described in the following Table 83-3 (Table BC - Noise Standards for Adjacent Mobile Noise Sources).

Table B – County of San Bernardino Noise Standards for Mobile Noise Sources

Land Use		Ldn (or CNEL) dB(A)	
Categories	Uses	Interior ⁽¹⁾	Exterior ⁽²⁾
Residential	Single and multi-family, duplex, mobile homes	45	60 ⁽³⁾
	Hotel, motel, transient housing	45	60 ⁽³⁾
Commercial	Commercial, retail, bank, restaurant	50	N/A
	Office building, research and development, professional offices	45	65
	Amphitheater, concert hall, auditorium, movie theater	45	65
Institutional/Public	Hospital, nursing home, school classroom, religious institution, library	45	65
Open Space	Park	N/A	65

Notes:

(1) The indoor environment shall exclude bathrooms, kitchens, toilets, closets and corridors.

(2) The outdoor environment shall be limited to: Hospital/office building patios, Hotel and motel recreation areas, Mobile home parks, Multi-family private patios or balconies, Park picnic areas, Private yard of single-family dwellings, School playgrounds

(3) An exterior noise level of up to 65 dB(A) (or CNEL) shall be allowed provided exterior noise levels have been substantially mitigated through a reasonable application of the best available noise reduction technology, and interior noise exposure does not exceed 45 dB(A) (or CNEL) with windows and doors closed. Requiring that windows and doors remain closed to achieve an acceptable interior noise level shall necessitate the use of air conditioning or mechanical ventilation.

CNEL = (Community Noise Equivalent Level). The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7 p.m. to 10 a.m. and 10 decibels to sound levels in the night from 10:00 p.m. to 7:00 a.m.

Source: County of San Bernardino, 2020.

(e) *Increases in Allowable Noise Levels.* If the measured ambient level exceeds any of the first four noise limit categories in Subdivision (d)(2), above, the allowable noise exposure standard shall be increased to reflect the ambient noise level. If the ambient noise level exceeds the fifth noise limit

category in Subdivision (d)(2), above, the maximum allowable noise level under this category shall be increased to reflect the maximum ambient noise level.

- (f) *Reductions in Allowable Noise Levels.* If the alleged offense consists entirely of impact noise or simple tone noise, each of the noise levels in Table 83-2 (Noise Standards for Stationary Noise Sources) shall be reduced by five dB(A).
- (g) *Exempt Noise.* The following sources of noise shall be exempt from the regulations of this Section:
 - (1) Motor vehicles not under the control of the commercial or industrial use.
 - (2) Emergency equipment, vehicles and devices.
 - (3) Temporary construction, maintenance, repair, or demolition activities between 7:00 a.m. and 7:00 p.m., except Sundays and Federal holidays.
- (h) *Noise Standards for Other Structures.* All other structures shall sound attenuated against the combined input of all present and projected exterior noise to not exceed the criteria.

Table C – County of San Bernardino Noise Standards for Other Structures

Typical Uses	12-Hour Equivalent Sound Level (Interior) in dBA Ldn
Education, institutions, libraries, meeting facilities, etc.	45
General office, reception, etc.	50
Retail stores, restaurants, etc.	55
Other areas for manufacturing, assembly, testing, warehousing, etc.	65

Source: County of San Bernardino, 2020.

In addition, the average of the maximum levels on the loudest intrusive sounds occurring during a 24-hour period shall not exceed 65 dBA interior.

83.01.090 Vibration.

- (a) *Vibration Standard.* No ground vibration shall be allowed that can be felt without the aid of instruments at or beyond the lot line, nor shall any vibration be allowed which produces a particle velocity greater than or equal to two-tenths inches per second measured at or beyond the lot line.
- (b) *Vibration Measurement.* Vibration velocity shall be measured with a seismograph or other instrument capable of measuring and recording displacement and frequency, particle velocity, or acceleration. Readings shall be made at points of maximum vibration along any lot line next to a parcel within a residential, commercial and industrial land use zoning district.
- (c) *Exempt Vibrations.* The following sources of vibration shall be exempt from the regulations of this Section.
 - (1) Motor vehicles not under control of the subject use.
 - (2) Temporary construction, maintenance, repair, or demolition activities between 7:00 a.m. and 7:00 p.m., except Sundays and Federal holidays.

Existing Noise Conditions

To determine the existing noise levels, noise measurements have been taken in the vicinity of the project site. The field survey noted that noise within the proposed project area is generally characterized by vehicles operating on Whittam Avenue and Calabash Avenue as well as from equipment operating at the nearby industrial uses.

The noise measurements were taken using a Larson-Davis Model 831 Type 1 precision sound level meter programmed in “slow” mode to record noise levels in “A” weighted form as well as the frequency spectrum of the noise broken down into 1/3 octaves. The sound level meter and microphone were mounted on a tripod five feet above the ground and were equipped with a windscreen during all measurements. The sound level meter was calibrated before and after the monitoring using a Larson-Davis calibrator, Model CAL 200. The results of the noise level measurements are presented in Table DE and the noise monitoring data printouts are attached to this Memo.

Table D – Existing (Ambient) Noise Measurement Results

Site No.	Description	Primary Noise Source	Start Time of Measurement	Measured Noise Level	
				dBA Leq	dBA Lmax
1	Located on east side of the project site, approximately 80 feet west of Banana Avenue centerline and 50 feet north of Whittam Avenue centerline.	Vehicles on Whittam Avenue	2:30 p.m.	69.1	83.5
2	Located west of project site on shared property line between homes at 8705 and 8715 Calabash Avenue, approximately 25 feet east of Calabash Avenue centerline.	Vehicles on Calabash Avenue	2:49 p.m.	63.4	82.5

Notes: Noise measurements taken with a Larson-Davis Model 831 Type 1 precision sound level meter on Thursday, October 19, 2023.

Construction Noise

Construction Noise Modeling

The noise impacts from construction of the proposed project have been analyzed through use of the FHWA’s Roadway Construction Noise Model (RCNM). The FHWA compiled noise measurement data regarding the noise generating characteristics of several different types of construction equipment used during the Central Artery/Tunnel project in Boston. Table EF below provides a list of the construction equipment anticipated to be used for each phase of construction as detailed in the *Air Quality, Energy, Greenhouse Gas Emissions and Health Risk Assessment Impact Analysis Whittam Avenue Truck Trailer Parking Project* (Air Quality Analysis), prepared by Vista Environmental, November 30, 2023.

Table E – Construction Equipment Noise Emissions and Usage Factors

Equipment Description	Number of Equipment	Acoustical Use Factor¹ (percent)	Spec 721.560 Lmax at 50 feet² (dBA, slow³)	Actual Measured Lmax at 50 feet⁴ (dBA, slow³)
Demolition				
Concrete/Industrial Saw	1	40	85	82
Excavators	3	40	85	81
Rubber Tired Dozers	2	40	85	82
Site Preparation				
Rubber Tired Dozers	3	40	85	82
Backhoe	1	40	80	78
Front End Loader	1	40	80	79
Tractor	2	40	84	N/A
Grading				
Excavators	2	40	85	81
Grader	1	40	85	83
Rubber Tired Dozer	1	40	85	82
Backhoe	1	40	80	78
Front End Loader	1	40	80	79
Tractor	1	40	84	N/A
Building Construction				
Crane	1	16	85	81
Forklift (Gradall)	3	40	85	83
Generator	1	50	82	81
Backhoe	1	40	80	78
Front End Loader	1	40	80	79
Tractor	1	40	84	N/A
Welder	1	40	73	74
Paving				
Pavers	2	50	85	77
Paving Equipment	2	50	85	77
Rollers	2	20	85	80
Architectural Coating				
Air Compressor	1	40	80	78

Notes:

¹ Acoustical use factor is the percentage of time each piece of equipment is operational during a typical workday.

² Spec 721.560 is the equipment noise level utilized by the RCNM program.

³ The “slow” response averages sound levels over 1-second increments. A “fast” response averages sound levels over 0.125-second increments.

⁴ Actual Measured is the average noise level measured of each piece of equipment during the Central Artery/Tunnel project in Boston, Massachusetts primarily during the 1990s.

Source: Federal Highway Administration, 2006.

Table EF also shows the associated measured noise emissions for each piece of equipment from the RCNM model and measured percentage of typical equipment use per day. Construction noise impacts to the nearby sensitive receptors have been calculated according to the equipment noise levels and usage factors listed in Table EF and through use of the RCNM. For each phase of construction, all



construction equipment was analyzed based on being placed in the middle of the project site, which is based on the analysis methodology detailed in the *Transit Noise and Vibration Impact Assessment Manual* (FTA Manual), prepared by the FTA, September 2018, for a General Assessment. However, in order to provide a conservative analysis, all equipment was analyzed, instead of just the two noisiest pieces of equipment as detailed in the FTA Manual.

Construction Noise Impacts

The construction activities for the proposed project are anticipated to include demolition of the existing structures on the project site, site preparation and grading of the 5.22-acre project site, building construction of the maintenance shop and office building, paving of the truck trailer storage yard and auto parking area, and application of architectural coatings. The nearest sensitive receptors to the project site are residents at the single-family homes located as near as seven feet northwest of the project site. There are also additional homes interspersed with industrial uses along Calabash Avenue, north of the project site. In addition, there is a small mobile home park located as near as 900 feet east of the project site.

Section 83.01.080(g)(3) of the County’s Municipal Code exempts temporary construction activities from the County noise standards provided that construction activities occur between 7:00 a.m. and 7:00 p.m., except Sundays and Federal holidays. However, the County construction noise standards do not provide any limits to the noise levels that may be created from construction activities and even with adherence to the County standards, the resultant construction noise levels may result in a significant substantial temporary noise increase to the nearby residents.

In order to determine if the proposed construction activities would create a significant substantial temporary noise increase, the construction noise standards provided in the FTA Manual (FTA, 2018), has been utilized, since this is the only guidance document from a government agency that defines what constitutes a significant construction noise impact from implementing a project. The FTA Manual details that a significant construction noise impact would occur if construction noise exceeds 80 dBA Leq over an 8-hour workday at any of the nearby homes.

Construction noise impacts to the nearby sensitive receptors have been calculated through use of the RCNM and the parameters and assumptions are detailed above. The results are shown below in Table FG and the RCNM printouts are attached to this Memo.

Table F – Construction Noise Levels at the Nearby Sensitive Receptors

Construction Phase	Construction Noise Level (dBA Leq) at:	
	Nearest Homes to Northwest ¹	Nearest Homes to North ²
Demolition	68	72
Site Preparation	68	71
Grading	68	71
Building Construction	69	72
Paving	64	67
Painting	56	59
FTA Construction Noise Threshold³	80	80
Exceed Threshold?	No	No

¹ The nearest homes to the northwest are located as near as 400 feet from the middle of project site to the property line for the homes.

² The nearest homes to the north are located as near as 280 feet from the middle of project site to the property line for the homes.

³ The FTA Construction noise threshold for residential uses obtained from the FTA Manual (FTA, 2018).

Source: RCNM, Federal Highway Administration, 2006

Table FG shows that the greatest noise impacts would be as high as 72 dBA Leq during the demolition and building construction phases at the nearest homes to the north. All calculated construction noise levels shown in Table FG are within the FTA daytime construction noise standard of 80 dBA averaged over eight hours. Therefore, through adherence to the limitation of allowable construction times provided in Section 83.01.080(g)(3) of the Municipal Code, construction-related noise levels would not exceed any standards established in the General Plan or Noise Ordinance nor would construction activities create a substantial temporary increase in ambient noise levels from construction of the proposed project. Impacts would be less than significant.

Operational Noise

The proposed project would consist of the development of a truck trailer parking facility. Potential noise impacts would be from project-generated vehicular traffic on the nearby roadways and from onsite activities, which have been analyzed separately below.

Roadway Vehicular Noise

Vehicle noise is a combination of the noise produced by the engine, exhaust and tires. The level of traffic noise depends on three primary factors (1) the volume of traffic, (2) the speed of traffic, and (3) the number of trucks in the flow of traffic. The proposed project does not propose any uses that would require a substantial number of truck trips and the proposed project would not alter the speed limit on any existing roadway so the proposed project's potential offsite noise impacts have been focused on the noise impacts associated with the change of volume of traffic that would occur with development of the proposed project.

The General Plan Noise Element Goal N 1, requires the avoidance of excessive noise exposure to noise sensitive land uses. However, the General Plan does not quantify what is a significant roadway noise increase. As such, the roadway noise threshold utilized in the *San Bernardino Countywide Plan Final Program Environmental Impact Report* (Countywide Plan FPEIR), prepared by Placeworks, August 2020, has been utilized, which details that a significant noise increase would occur when the traffic noise increases by 3 dBA CNEL.

According to the *Whittram Avenue Truck Trailer Parking Lot Project Trip Generation and VMT Screening Analysis, County of San Bernardino* (Traffic Analysis), prepared by RK Engineering Group, Inc., August 29, 2023, the operation of the proposed project would generate 1713 daily trips, of which 125 would be from trucks. According to the *City of Rancho Cucamonga General Plan Update & Climate Action Plan Draft Environmental Impact Report*, September 2021, the average daily traffic volume on Arrow Route east of Etiwanda Avenue (nearest roadway with available ADT volumes) is 20,140 ADT. The proposed project would contribute up to 0.85 percent of the daily trips on Arrow Route. In order for project-generated vehicular traffic to increase the noise level on any of the nearby roadways by 3 dB, the ADT would have to double, or by 1.5 dB, the ADT would have to increase by 50 percent. As such, the proposed project's roadway noise impacts would be well below the County's 3 dBA roadway noise increase threshold. Therefore, operational roadway noise impacts to the nearby sensitive receptors would be less than significant.

Onsite Noise Impacts

The operation of the proposed project may create an increase in onsite noise levels from truck operations, including truck loading/unloading activities, rooftop mechanical equipment, and automobile parking lot activities. Section 83.01.080(c) of the County’s Development Code limits the noise created from stationary sources, such as rooftop mechanical equipment to 55 dBA between 7 a.m. and 10 p.m. and to 45 dBA between 10 p.m. and 7 a.m. Section 83.01.080(d) of the County’s Development Code limits the noise created from mobile noise sources, such as trucks and automobiles operating onsite to 60 dBA at the exterior of the nearest homes.

In order to determine the noise impacts from the operation of rooftop mechanical equipment, automobile parking lots, and truck loading/unloading activities, reference noise measurements were taken of each noise source and the reference noise measurements output files are provided in Appendix D. The noise levels at the nearby sensitive receptors were calculated based on standard geometric spreading of noise, which provides an attenuation rate of 6 dB per doubling the distance between source and receptor. In order to account for the noise reduction provided by the proposed building walls that will shield rooftop mechanical equipment and the existing and proposed property line walls that will shield the onsite truck activities and auto activities from the nearby homes, the wall attenuation equations from the *Technical Noise Supplement to the Traffic Noise Analysis Protocol* (TeNS), prepared by Caltrans, September 2013, was utilized and the noise calculation spreadsheet along with the reference noise measurements are attached to this Memo. It should be noted that the TeNS details that when multiple noise sources are added to together, if one source is 10 dB or more higher than the other sources, the resultant combined noise will be the value of the highest source. The operational noise levels were calculated at representative sensitive receptors and the results are shown in Table G.

Table G – Onsite Operational Noise Levels at the Nearby Sensitive Receptors

Noise Source	Operational Noise Levels ¹ (dBA Leq) at:			County Noise Standard ² (Day/Night)	Exceed Standard?
	Homes to Northwest	Homes to North	Mobile Homes to East		
Rooftop Equipment ³	19	29	15	55/45	No/No
Auto Parking Lot ⁴	8	16	10	60/60	No/No
Onsite Truck Operations ⁵	58	40	20	60/60	No/No

Notes:

¹ The noise levels were calculated through use of standard geometric spreading of noise from a point source with a drop-off rate of 6 dB for each doubling of the distance between the source and receiver and accounts for the noise reduction provided by the existing and proposed sound walls.

² From Section 83.01.080 of the County’s Development Code

³ Rooftop equipment is based on a reference noise measurement of 65.1 dBA at 6 feet.

⁴ Parking lot is based on a reference noise measurement of 63.1 dBA at 5 feet.

⁵ Onsite truck operations is based on a reference noise measurement of 63.3 dBA at 10 feet.

Table G shows that the proposed project’s onsite operational noise from the anticipated noise sources would not exceed the applicable noise standards for each stationary and mobile noise source. Therefore, operational onsite noise impacts would be less than significant.

Vibration Impacts

The proposed project would not expose persons to or generation of excessive groundborne vibration or groundborne noise levels. The following section analyzes the potential vibration impacts associated with the construction and operations of the proposed project.

Construction-Related Vibration Impacts

The construction activities for the proposed project are anticipated to include demolition of the existing structures on the project site, site preparation and grading of the 5.22-acre project site, building construction of the maintenance shop and office building, paving of the truck trailer storage yard and auto parking area, and application of architectural coatings. Vibration impacts from construction activities associated with the proposed project would typically be created from the operation of heavy off-road equipment. The nearest sensitive receptors to the project site are residents at the single-family homes located as near as seven feet northwest of the project site.

Section 83.01.090 of the County's Municipal Code restricts the creation of vibration which produces a particle velocity greater than 0.2 inch-per-second PPV. The primary source of vibration during construction would be from the operation of a bulldozer. From the FTA Manual (FTA, 2018), a large bulldozer would create a vibration level of 0.089 inch per second PPV at 25 feet. Based on typical propagation rates, the vibration level at the nearest offsite structure (7 feet from property line or 13 feet from middle of dozer) would be 0.17 inch per second PPV. The vibration level at the nearest home from operation of a dozer would be below the County's 0.2 inch per second PPV threshold.

In addition, a vibratory roller may be used during the laying of the asphalt pavement. From the FTA Manual (FTA, 2018), a vibratory roller would create a vibration level of 0.21 inch per second PPV at 25 feet. As shown on the Site Plan, there would be a 3 foot wide landscape strip and then 21 foot wide parking spaces poured in concrete, which results in 31 feet between the nearest home and asphalt pavement. Based on typical propagation rates, the vibration level at the nearest offsite structure would be 0.17 inch per second PPV. The vibration level at the nearest home from operation of a vibratory roller would be below the County's 0.2 inch per second PPV threshold.

Therefore, impacts associated with construction vibration would be less than significant and no mitigation measures are required.

Operations-Related Vibration Impacts

The proposed project would consist of the development of a truck trailer parking facility. The proposed project would result in the operation of trucks on the project site, which are a known source of vibration. The nearest vibration sensitive receptors to the project site are residents at the single-family homes located as near as seven feet northwest of the project site or as near as 38 feet from the nearest onsite travel lane.

Caltrans has done extensive research on vibration level created along freeways and State Routes and their vibration measurements of roads have never exceeded 0.08 inches per second PPV at 15 feet from the center of the nearest lane, with the worst combinations of heavy trucks. Truck travel activities would occur onsite as near as 38 feet from the nearest home. Based on typical propagation rates, the vibration level at the nearest home would be 0.029 inch per second PPV. Therefore, vibration created from operation of the proposed project would be well below the County's 0.2 inch per second PPV threshold. Impacts would be less than significant.

Aircraft Noise

The proposed project would not expose people residing or working in the project area to excessive noise levels from aircraft. The nearest airport is Ontario International Airport that is located as near as five miles southwest of the project site. The project site is located outside of the 60 dBA CNEL noise contours of Ontario International Airport. No impacts would occur from aircraft noise.



Summary of Analysis Results

The following is a summary of the proposed project's impacts with regard to the State CEQA Guidelines noise checklist questions.

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?

Less than significant impact.

Generation of excessive groundborne vibration or groundborne noise levels?

Less than significant impact.

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?

No impact.

Please let me know if you have any questions or need additional information with regard to the above analysis. I can be reached at (949) 510-5355, or email me at greg@vistalb.com.

Sincerely,

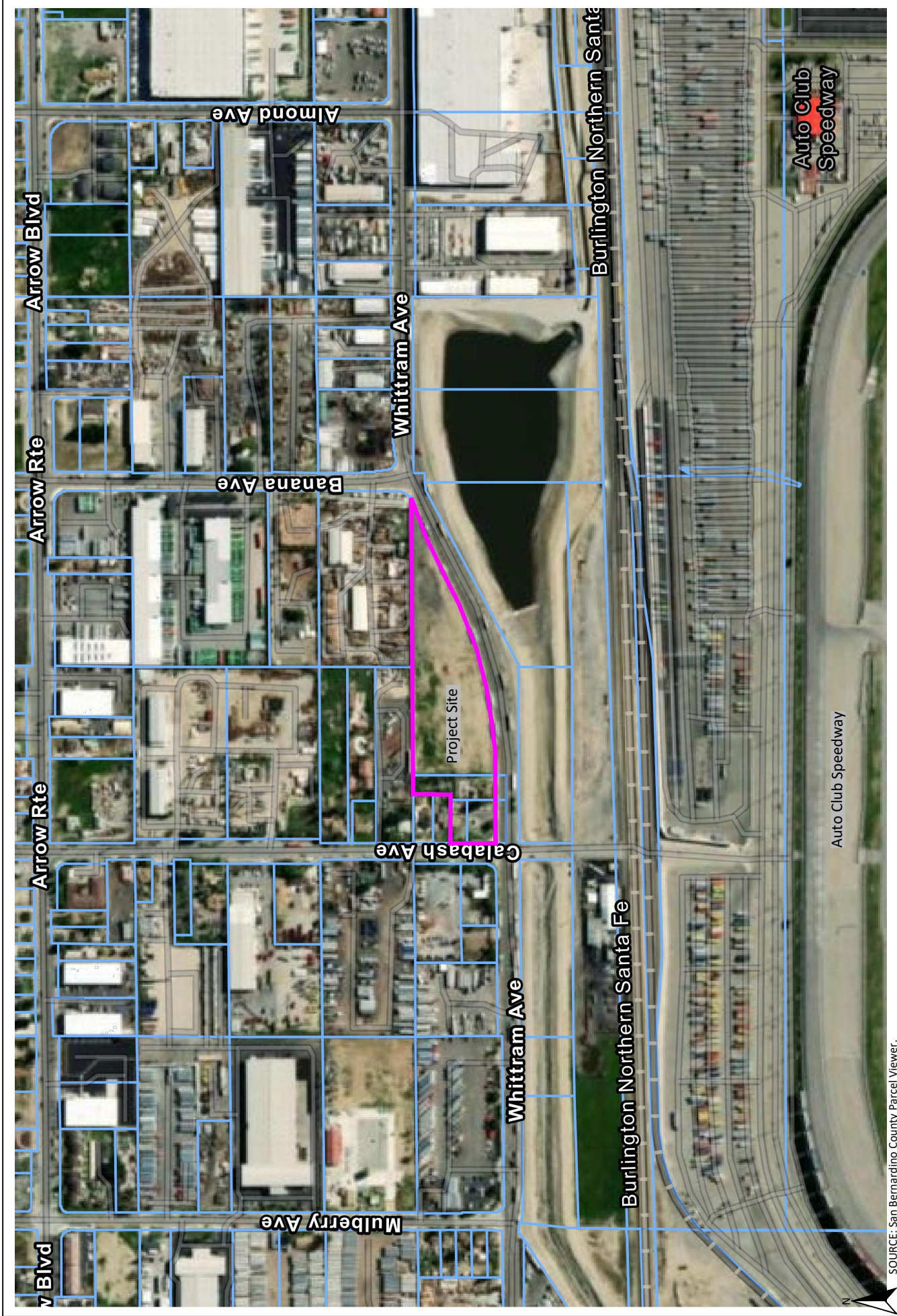
Greg Tonkovich, INCE

Senior Analyst

Vista Environmental

949 510 5355

- Encl.:
- Figure 1 – Project Study Area
 - Figure 2 – Proposed Site Plan
 - Photo Index of Noise Measurements
 - Noise Measurement Printouts
 - RCNM Model Construction Noise Calculation Printouts
 - Operational Reference Noise Measurements Printouts



SOURCE: San Bernardino County Parcel Viewer.



Figure 1
Project Study Area



Figure 2
Proposed Site Plan

SOURCE: RMB Consulting.





Noise Measurement Site 1 - looking north



Noise Measurement Site 1 - looking northeast



Noise Measurement Site 1 - looking east



Noise Measurement Site 1 - looking southeast



Noise Measurement Site 1 - looking south



Noise Measurement Site 1 - looking southwest



Noise Measurement Site 1 - looking west



Noise Measurement Site 1 - looking northwest



Noise Measurement Site 2 - looking north



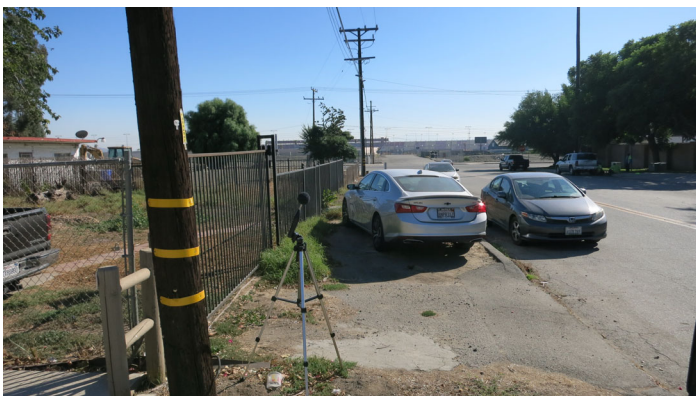
Noise Measurement Site 2 - looking northeast



Noise Measurement Site 2 - looking east



Noise Measurement Site 2 - looking southeast



Noise Measurement Site 2 - looking south



Noise Measurement Site 2 - looking southwest



Noise Measurement Site 2 - looking west



Noise Measurement Site 2 - looking northwest

Measurement Report

Report Summary

Meter's File Name	831_Data.001	Computer's File Name	SLM_0002509_831_Data
Meter	831		
Firmware	2.403		
User	GT		Location
Description	SB Co - Whittram Truck Trailer Storage		
Note	Located on East Side of Project Site. Approx 50 ft north of Whittram Ave CL and 80 ft west of Banana Ave CL		
Start Time	2023-10-19 14:30:16	Duration	0:15:00.0
End Time	2023-10-19 14:45:16	Run Time	0:15:00.0
		Pause Time	0:00:00.0

Results

Overall Metrics

LA _{eq}	69.1 dB		
LAE	98.7 dB	SEA	--- dB
EA	816.4 µPa²h		
LZ _{peak}	103.0 dB	2023-10-19 14:42:53	
LAS _{max}	83.5 dB	2023-10-19 14:41:35	
LAS _{min}	47.7 dB	2023-10-19 14:39:11	
LA _{eq}	69.1 dB		
LC _{eq}	75.4 dB	LC _{eq} - LA _{eq}	6.2 dB
LAI _{eq}	70.7 dB	LAI _{eq} - LA _{eq}	1.6 dB

Exceedances

	Count	Duration
LAS > 65.0 dB	41	0:08:29.5
LAS > 85.0 dB	0	0:00:00.0
LZ _{peak} > 135.0 dB	0	0:00:00.0
LZ _{peak} > 137.0 dB	0	0:00:00.0
LZ _{peak} > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight	
69.1 dB	69.1 dB	0.0 dB	
LDEN	LDay	LEve	LNight
69.1 dB	69.1 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L _{eq}	69.1 dB		75.4 dB		82.5 dB	
LS _(max)	83.5 dB	2023-10-19 14:41:35	90.4 dB	2023-10-19 14:34:58	92.9 dB	2023-10-19 14:42:48
LF _(max)	85.9 dB	2023-10-19 14:41:35	93.4 dB	2023-10-19 14:34:57	97.4 dB	2023-10-19 14:42:04
LI _(max)	87.2 dB	2023-10-19 14:41:34	94.3 dB	2023-10-19 14:34:57	99.9 dB	2023-10-19 14:30:16
LS _(min)	47.7 dB	2023-10-19 14:39:11	62.8 dB	2023-10-19 14:32:20	67.9 dB	2023-10-19 14:32:15
LF _(min)	46.9 dB	2023-10-19 14:32:21	60.7 dB	2023-10-19 14:32:20	65.6 dB	2023-10-19 14:32:15
LI _(min)	47.4 dB	2023-10-19 14:32:21	63.8 dB	2023-10-19 14:32:23	69.0 dB	2023-10-19 14:32:14
L _{Peak(max)}	96.8 dB	2023-10-19 14:41:35	103.1 dB	2023-10-19 14:34:57	103.0 dB	2023-10-19 14:42:53

Overloads

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

Statistics

LAS 5.0	74.6 dB
LAS 10.0	72.8 dB
LAS 33.3	68.6 dB
LAS 50.0	65.2 dB
LAS 66.6	61.2 dB
LAS 90.0	53.7 dB

Measurement Report

Report Summary

Meter's File Name	831_Data.002	Computer's File Name	SLM_0002509_
Meter	831		
Firmware	2.403		
User	GT		Location
Description	SB Co - Whittram Truck Trailer Storage		
Note	Located near west side on property line between 8705 and 8715 Calabash Ave. Approx 30 ft east of Calabash Ave CL		
Start Time	2023-10-19 14:49:50	Duration	0:15:00.0
End Time	2023-10-19 15:04:50	Run Time	0:15:00.0
		Pause Time	0:00:00.0

Results

Overall Metrics

LA _{eq}	63.4 dB		
LAE	92.9 dB	SEA	--- dB
EA	216.7 µPa²h		
LZ _{peak}	100.8 dB	2023-10-19 15:02:23	
LAS _{max}	82.5 dB	2023-10-19 14:52:51	
LAS _{min}	49.0 dB	2023-10-19 15:00:25	
LA _{eq}	63.4 dB		
LC _{eq}	73.0 dB	LC _{eq} - LA _{eq}	9.6 dB
LAI _{eq}	65.8 dB	LAI _{eq} - LA _{eq}	2.4 dB

Exceedances

	Count	Duration
LAS > 65.0 dB	21	0:02:22.4
LAS > 85.0 dB	0	0:00:00.0
LZ _{peak} > 135.0 dB	0	0:00:00.0
LZ _{peak} > 137.0 dB	0	0:00:00.0
LZ _{peak} > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight	
63.4 dB	63.4 dB	0.0 dB	
LDEN	LDay	LEve	LNight
63.4 dB	63.4 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L _{eq}	63.4 dB		73.0 dB		75.1 dB	
LS _(max)	82.5 dB	2023-10-19 14:52:51	89.6 dB	2023-10-19 15:02:23	92.2 dB	2023-10-19 14:49:50
LF _(max)	84.7 dB	2023-10-19 14:52:50	92.9 dB	2023-10-19 15:02:23	94.6 dB	2023-10-19 14:49:50
LI _(max)	85.4 dB	2023-10-19 14:52:50	93.8 dB	2023-10-19 15:02:23	97.3 dB	2023-10-19 14:49:50
LS _(min)	49.0 dB	2023-10-19 15:00:25	62.1 dB	2023-10-19 14:59:57	66.0 dB	2023-10-19 14:58:43
LF _(min)	48.3 dB	2023-10-19 15:00:23	60.2 dB	2023-10-19 14:59:57	63.8 dB	2023-10-19 14:58:41
LI _(min)	48.8 dB	2023-10-19 15:00:25	63.1 dB	2023-10-19 14:58:43	67.2 dB	2023-10-19 14:58:43
L _{Peak(max)}	95.7 dB	2023-10-19 14:52:50	101.3 dB	2023-10-19 15:02:23	100.8 dB	2023-10-19 15:02:23

Overloads

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

Statistics

LAS 5.0	68.6 dB
LAS 10.0	66.2 dB
LAS 33.3	58.7 dB
LAS 50.0	56.1 dB
LAS 66.6	54.4 dB
LAS 90.0	51.3 dB

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 12/4/2023
 Case Description: Whittram Ave Truck Trailer Parking - Demolition

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Homes to Northwest	Residential	63.4	63.4	63.4

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	400	0
Excavator	No	40		80.7	400	0
Excavator	No	40		80.7	400	0
Excavator	No	40		80.7	400	0
Dozer	No	40		81.7	400	0
Dozer	No	40		81.7	400	0

Equipment	Calculated (dBA)		Results			
	*Lmax	Leq	Day		Evening	
			Lmax	Leq	Lmax	Leq
Concrete Saw	71.5	64.5	N/A	N/A	N/A	N/A
Excavator	62.6	58.7	N/A	N/A	N/A	N/A
Excavator	62.6	58.7	N/A	N/A	N/A	N/A
Excavator	62.6	58.7	N/A	N/A	N/A	N/A
Dozer	63.6	59.6	N/A	N/A	N/A	N/A
Dozer	63.6	59.6	N/A	N/A	N/A	N/A
Total	72	68	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 12/4/2023

Case Description: Whittram Ave Truck Trailer Parking - Demolition

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Homes to North	Residential	63.4	63.4	63.4

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	280	0
Excavator	No	40		80.7	280	0
Excavator	No	40		80.7	280	0
Excavator	No	40		80.7	280	0
Dozer	No	40		81.7	280	0
Dozer	No	40		81.7	280	0

Equipment	Calculated (dBA)		Results			
	*Lmax	Leq	Day		Evening	
			Lmax	Leq	Lmax	Leq
Concrete Saw	74.6	67.6	N/A	N/A	N/A	N/A
Excavator	65.7	61.8	N/A	N/A	N/A	N/A
Excavator	65.7	61.8	N/A	N/A	N/A	N/A
Excavator	65.7	61.8	N/A	N/A	N/A	N/A
Dozer	66.7	62.7	N/A	N/A	N/A	N/A
Dozer	66.7	62.7	N/A	N/A	N/A	N/A
Total	75	72	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 12/4/2023

Case Description: Whittram Ave Truck Trailer Parking - Site Preparation

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)	
		Daytime	Evening
Homes to Northwest	Residential	63.4	63.4

Night
63.4

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	400	0
Dozer	No	40		81.7	400	0
Dozer	No	40		81.7	400	0
Backhoe	No	40		77.6	400	0
Front End Loader	No	40		79.1	400	0
Tractor	No	40	84		400	0
Tractor	No	40	84		400	0

Equipment	Calculated (dBA)		Results			
	*Lmax	Leq	Day Lmax	Leq	Noise Limits (dBA)	
					Evening Lmax	Leq
Dozer	63.6	59.6	N/A	N/A	N/A	N/A
Dozer	63.6	59.6	N/A	N/A	N/A	N/A
Dozer	63.6	59.6	N/A	N/A	N/A	N/A
Backhoe	59.5	55.5	N/A	N/A	N/A	N/A
Front End Loader	61.0	57.1	N/A	N/A	N/A	N/A
Tractor	65.9	62.0	N/A	N/A	N/A	N/A
Tractor	65.9	62.0	N/A	N/A	N/A	N/A
Total	66	68	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/4/2023

Case Description: Whittram Ave Truck Trailer Parking - Site Preparation

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		Night
		Daytime	Evening	
Homes to North	Residential	63.4	63.4	63.4

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	280	0
Dozer	No	40		81.7	280	0
Dozer	No	40		81.7	280	0
Backhoe	No	40		77.6	280	0
Front End Loader	No	40		79.1	280	0
Tractor	No	40	84		280	0
Tractor	No	40	84		280	0

Equipment	Calculated (dBA)		Results			
	*Lmax	Leq	Day Lmax	Leq	Noise Limits (dBA)	
					Evening Lmax	Leq
Dozer	66.7	62.7	N/A	N/A	N/A	N/A
Dozer	66.7	62.7	N/A	N/A	N/A	N/A
Dozer	66.7	62.7	N/A	N/A	N/A	N/A
Backhoe	62.6	58.6	N/A	N/A	N/A	N/A
Front End Loader	64.1	60.2	N/A	N/A	N/A	N/A
Tractor	69.0	65.1	N/A	N/A	N/A	N/A
Tractor	69.0	65.1	N/A	N/A	N/A	N/A
Total	69	71	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 12/4/2023
 Case Description: Whittram Ave Truck Trailer Parking - Grading

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Homes to Northwest	Residential	63.4	63.4	63.4

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	400	0
Excavator	No	40		80.7	400	0
Grader	No	40	85		400	0
Dozer	No	40		81.7	400	0
Backhoe	No	40		77.6	400	0
Front End Loader	No	40		79.1	400	0
Tractor	No	40	84		400	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq
Excavator	62.6	58.7	N/A	N/A	N/A	N/A
Excavator	62.6	58.7	N/A	N/A	N/A	N/A
Grader	66.9	63.0	N/A	N/A	N/A	N/A
Dozer	63.6	59.6	N/A	N/A	N/A	N/A
Backhoe	59.5	55.5	N/A	N/A	N/A	N/A
Front End Loader	61.0	57.1	N/A	N/A	N/A	N/A
Tractor	65.9	62.0	N/A	N/A	N/A	N/A
Total	67	68	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 12/4/2023

Case Description: Whittram Ave Truck Trailer Parking - Grading

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Homes to North	Residential	63.4	63.4	63.4

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Excavator	No	40		80.7	280	0
Excavator	No	40		80.7	280	0
Grader	No	40	85		280	0
Dozer	No	40		81.7	280	0
Backhoe	No	40		77.6	280	0
Front End Loader	No	40		79.1	280	0
Tractor	No	40	84		280	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq
Excavator	65.7	61.8	N/A	N/A	N/A	N/A
Excavator	65.7	61.8	N/A	N/A	N/A	N/A
Grader	70.0	66.1	N/A	N/A	N/A	N/A
Dozer	66.7	62.7	N/A	N/A	N/A	N/A
Backhoe	62.6	58.6	N/A	N/A	N/A	N/A
Front End Loader	64.1	60.2	N/A	N/A	N/A	N/A
Tractor	69.0	65.1	N/A	N/A	N/A	N/A
Total	70	71	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 12/4/2023
 Case Description: Whittram Ave Truck Trailer Parking - Building Construction

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Homes to Northwest	Residential	63.4	63.4	63.4

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Crane	No	16		80.6	400	0
Gradall	No	40		83.4	400	0
Gradall	No	40		83.4	400	0
Gradall	No	40		83.4	400	0
Generator	No	50		80.6	400	0
Backhoe	No	40		77.6	400	0
Front End Loader	No	40		79.1	400	0
Tractor	No	40	84		400	0
Welder / Torch	No	40		74	400	0

Equipment	Calculated (dBA)		Results				
	*Lmax	Leq	Day		Noise Limits (dBA)		
			Lmax	Leq	Evening		
Crane	62.5	54.5	N/A	N/A	N/A	N/A	N/A
Gradall	65.3	61.4	N/A	N/A	N/A	N/A	N/A
Gradall	65.3	61.4	N/A	N/A	N/A	N/A	N/A
Gradall	65.3	61.4	N/A	N/A	N/A	N/A	N/A
Generator	62.6	59.6	N/A	N/A	N/A	N/A	N/A
Backhoe	59.5	55.5	N/A	N/A	N/A	N/A	N/A
Front End Loader	61.0	57.1	N/A	N/A	N/A	N/A	N/A
Tractor	65.9	62.0	N/A	N/A	N/A	N/A	N/A
Welder / Torch	55.9	52.0	N/A	N/A	N/A	N/A	N/A
Total	66	69	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/4/2023

Case Description: Whittram Ave Truck Trailer Parking - Building Construction

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Homes to North	Residential	63.4	63.4	63.4

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Crane	No	16		80.6	280	0
Gradall	No	40		83.4	280	0
Gradall	No	40		83.4	280	0
Gradall	No	40		83.4	280	0
Generator	No	50		80.6	280	0
Backhoe	No	40		77.6	280	0
Front End Loader	No	40		79.1	280	0
Tractor	No	40	84		280	0
Welder / Torch	No	40		74	280	0

Equipment	Calculated (dBA)		Results			
	*Lmax	Leq	Day		Noise Limits (dBA)	
			Lmax	Leq	Lmax	Leq
Crane	65.6	57.6	N/A	N/A	N/A	N/A
Gradall	68.4	64.5	N/A	N/A	N/A	N/A
Gradall	68.4	64.5	N/A	N/A	N/A	N/A
Gradall	68.4	64.5	N/A	N/A	N/A	N/A
Generator	65.7	62.7	N/A	N/A	N/A	N/A
Backhoe	62.6	58.6	N/A	N/A	N/A	N/A
Front End Loader	64.1	60.2	N/A	N/A	N/A	N/A
Tractor	69.0	65.1	N/A	N/A	N/A	N/A
Welder / Torch	59.0	55.1	N/A	N/A	N/A	N/A
Total	69	72	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/4/2023
 Case Description: Whittram Ave Truck Trailer Parking - Paving

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Homes to Northwest	Residential	63.4	63.4	63.4

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	400	0
Paver	No	50		77.2	400	0
Paver	No	50		77.2	400	0
Paver	No	50		77.2	400	0
Roller	No	20		80	400	0
Roller	No	20		80	400	0

Equipment	Calculated (dBA)		Results			
	*Lmax	Leq	Day Lmax	Leq	Noise Limits (dBA) Evening	
Paver	59.2	56.1	N/A	N/A	N/A	N/A
Paver	59.2	56.1	N/A	N/A	N/A	N/A
Paver	59.2	56.1	N/A	N/A	N/A	N/A
Paver	59.2	56.1	N/A	N/A	N/A	N/A
Roller	61.9	54.9	N/A	N/A	N/A	N/A
Roller	61.9	54.9	N/A	N/A	N/A	N/A
Total	62	64	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/4/2023
 Case Description: Whittram Ave Truck Trailer Parking - Paving

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Homes to North	Residential	63.4	63.4	63.4

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	280	0
Paver	No	50		77.2	280	0
Paver	No	50		77.2	280	0
Paver	No	50		77.2	280	0
Roller	No	20		80	280	0
Roller	No	20		80	280	0

Equipment	Calculated (dBA)		Results			
	*Lmax	Leq	Day		Noise Limits (dBA)	
			Lmax	Leq	Lmax	Leq
Paver	62.3	59.2	N/A	N/A	N/A	N/A
Paver	62.3	59.2	N/A	N/A	N/A	N/A
Paver	62.3	59.2	N/A	N/A	N/A	N/A
Paver	62.3	59.2	N/A	N/A	N/A	N/A
Roller	65.0	58.0	N/A	N/A	N/A	N/A
Roller	65.0	58.0	N/A	N/A	N/A	N/A
Total	65	67	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 12/4/2023
 Case Description: Whittram Ave Truck Trailer Parking - Painting

---- Receptor #1 ----

		Baselines (dBA)						
Description	Land Use	Daytime	Evening	Night				
Homes to Northwest	Residential	63.4	63.4	63.4				
					Equipment			
Description		Impact			Spec	Actual	Receptor	Estimated
		Device	Usage(%)		Lmax	Lmax	Distance	Shielding
Compressor (air)		No	40		(dBA)	(dBA)	(feet)	(dBA)
						77.7	400	0
					Results			
		Calculated (dBA)			Noise Limits (dBA)			
Equipment		*Lmax	Leq	Day	Leq	Evening	Leq	
Compressor (air)		59.6	55.6	Lmax	Lmax	Lmax	Leq	
				N/A	N/A	N/A	N/A	
	Total	60	56	N/A	N/A	N/A	N/A	

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)						
Description	Land Use	Daytime	Evening	Night				
Homes to North	Residential	63.4	63.4	63.4				
					Equipment			
Description		Impact			Spec	Actual	Receptor	Estimated
		Device	Usage(%)		Lmax	Lmax	Distance	Shielding
Compressor (air)		No	40		(dBA)	(dBA)	(feet)	(dBA)
						77.7	280	0
					Results			
		Calculated (dBA)			Noise Limits (dBA)			
Equipment		*Lmax	Leq	Day	Leq	Evening	Leq	
Compressor (air)		62.7	58.7	Lmax	Lmax	Lmax	Leq	
				N/A	N/A	N/A	N/A	
	Total	63	59	N/A	N/A	N/A	N/A	

*Calculated Lmax is the Loudest value.

General Information

Serial Number	02509
Model	831
Firmware Version	2.112
Filename	831_Data.005
User	GT
Job Description	Northwest Fresno Walmart Relocation
Location	Rooftop HVAC Unit
Measurement Description	
Start Time	Saturday, 2013 July 27 18:31:43
Stop Time	Saturday, 2013 July 27 18:41:44
Duration	00:10:01.1
Run Time	00:10:01.1
Pause	00:00:00.0
Pre Calibration	Saturday, 2013 July 27 17:53:07
Post Calibration	None
Calibration Deviation	---

Note

Located 10 feet southeast of rooftop HVAC Unit 14 located on western side of roof
94 F, 30% Hu., 29.45 in Hg, no wind, partly cloudy

Overall Data

LAeq		66.6	dB
LASmax	2013 Jul 27 18:33:16	67.6	dB
LApeak (max)	2013 Jul 27 18:32:17	81.6	dB
LASmin	2013 Jul 27 18:41:08	65.8	dB
LCeq		75.8	dB
LAeq		66.6	dB
LCeq - LAeq		9.2	dB
LAIeq		67.2	dB
LAeq		66.6	dB
LAIeq - LAeq		0.6	dB
Ldn		66.6	dB
LDay 07:00-23:00		66.6	dB
LNight 23:00-07:00		---	dB
Lden		66.6	dB
LDay 07:00-19:00		66.6	dB
LEvening 19:00-23:00		---	dB
LNight 23:00-07:00		---	dB
LAE		94.4	dB
# Overloads		0	
Overload Duration		0.0	s
# OBA Overloads		0	
OBA Overload Duration		0.0	s

Statistics

LAS5.00	67.0	dBA
LAS10.00	66.9	dBA
LAS33.30	66.7	dBA
LAS50.00	66.6	dBA
LAS66.60	66.5	dBA
LAS90.00	66.3	dBA
LAS > 65.0 dB (Exceedence Counts / Duration)	1 / 601.1	s
LAS > 85.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0 / 0.0	s

Settings

RMS Weight	A Weighting	
Peak Weight	A Weighting	
Detector	Slow	
Preamp	PRM831	
Integration Method	Linear	
OBA Range	Normal	
OBA Bandwidth	1/1 and 1/3	
OBA Freq. Weighting	Z Weighting	
OBA Max Spectrum	Bin Max	
Gain	+0	dB
Under Range Limit	26.2	dB
Under Range Peak	75.8	dB
Noise Floor	17.1	dB
Overload	143.4	dB

1/1 Spectra

Freq. (Hz):	8.0	16.0	31.5	63.0	125	250	500	1k	2k	4k	8k	16k
LZeq	70.9	64.4	61.4	74.2	68.2	64.9	66.3	61.7	55.1	49.9	44.3	44.0
LZSmax	83.8	78.9	70.0	78.4	72.3	66.1	67.8	63.1	56.9	53.2	46.7	45.4
LZSmin	53.2	56.5	56.7	67.7	66.1	63.5	65.0	60.7	53.9	48.4	43.2	43.7

1/3 Spectra

Freq. (Hz):	6.3	8.0	10.0	12.5	16.0	20.0	25.0	31.5	40.0	50.0	63.0	80.0
LZeq	68.1	65.7	63.2	61.0	58.0	59.3	56.0	57.8	55.8	69.7	72.0	59.3
LZSmax	82.3	79.5	78.7	77.2	72.8	72.3	67.9	63.5	64.0	74.2	76.1	72.0
LZSmin	41.9	46.3	48.8	48.7	46.5	49.7	50.1	51.8	41.2	63.9	67.9	54.5
Freq. (Hz):	100	125	160	200	250	315	400	500	630	800	1k	1.25k
LZeq	61.6	63.7	64.5	59.0	58.7	60.9	63.2	60.8	59.9	59.2	56.1	54.6
LZSmax	71.3	68.0	67.3	61.6	61.7	64.1	65.5	64.2	62.0	60.7	57.6	58.6
LZSmin	52.9	60.0	57.2	45.1	56.0	58.9	61.1	58.4	58.4	57.1	54.9	53.3
Freq. (Hz):	1.6k	2k	2.5k	3.15k	4k	5k	6.3k	8k	10k	12.5k	16k	20k
LZeq	52.0	49.8	48.4	46.4	45.4	42.8	41.1	38.6	38.5	38.4	39.0	40.2
LZSmax	54.4	52.3	51.2	50.2	49.7	45.7	45.4	41.6	40.4	40.4	41.4	41.3
LZSmin	50.9	48.4	46.9	45.0	43.7	41.4	39.6	37.5	37.9	38.0	38.7	39.9

Calibration History

Preamp	Date	dB re. 1V/Pa
PRM831	27 Jul 2013 17:53:07	-25.9
PRM831	27 Jul 2013 13:36:08	-25.6
PRM831	28 Apr 2013 15:34:24	-25.9
PRM831	23 Apr 2013 10:17:33	-25.0
PRM831	27 Feb 2013 19:15:30	-25.7
PRM831	24 Jan 2013 12:00:16	-25.6
PRM831	15 Jan 2013 07:50:44	-26.2
PRM831	04 Jan 2013 13:47:46	-26.5

Summary

File Name 831_Data.002
Serial Number 0002509
Model Model 831
Firmware Version 2.301
User GT
Location At 7080 Mayten Ave - Edge of MFR Parking Lot
Job Description Mayten & Foothill

Note

Measurement Description

Start 2015-09-10 15:54:09
Stop 2015-09-10 16:10:10
Duration 0:16:00.5
Run Time 0:16:00.5
Pause 0:00:00.0

Pre Calibration 2015-09-10 15:32:49
Post Calibration None
Calibration Deviation ---

Overall Settings

RMS Weight A Weighting
Peak Weight A Weighting
Detector Slow
Preamp PRM831
Microphone Correction Off
Integration Method Linear
OBA Range High
OBA Bandwidth 1/1 and 1/3
OBA Freq. Weighting Z Weighting
OBA Max Spectrum Bin Max
Gain 0.0 dB
Overload 143.1 dB

	A	C	Z
Under Range Peak	75.6	72.6	77.6 dB
Under Range Limit	26.1	26.4	31.8 dB
Noise Floor	17.0	17.3	22.5 dB

Results

LAeq 52.1 dB
LAE 81.9 dB
EA 17.242 $\mu\text{Pa}^2\text{h}$
LApeak (max) 2015-09-10 16:03:36 98.6 dB
LASmax 2015-09-10 16:03:36 74.6 dB
LASmin 2015-09-10 15:54:57 41.3 dB
SEA -99.9 dB

LAS > 65.0 dB (Exceedance Counts / Duration) 6 11.6 s

LAS > 85.0 dB (Exceedance Counts / Duration)	0	0.0 s
LApeak > 135.0 dB (Exceedance Counts / Duration)	0	0.0 s
LApeak > 137.0 dB (Exceedance Counts / Duration)	0	0.0 s
LApeak > 140.0 dB (Exceedance Counts / Duration)	0	0.0 s

Community Noise	Ldn	:00-23:00	:3:00-07:00	Lden
	52.1	52.1	-99.9	52.1
LCeq	65.0 dB			
LAeq	52.1 dB			
LCeq - LAeq	12.9 dB			
LAlaq	61.6 dB			
LAeq	52.1 dB			
LAlaq - LAeq	9.5 dB			
# Overloads	0			
Overload Duration	0.0 s			
# OBA Overloads	0			
OBA Overload Duration	0.0 s			

Statistics	
LAS5.00	55.0 dB
LAS10.00	53.4 dB
LAS33.30	49.1 dB
LAS50.00	47.1 dB
LAS66.60	45.8 dB
LAS90.00	43.9 dB

Calibration History			
Preamp		Date re. 1V/Pa	6.3
PRM831	2015-09-10 15:32:49	-25.6	73.9
PRM831	2015-08-14 17:54:36	-26.3	36.4
PRM831	2015-08-05 20:29:18	-24.7	64.2
PRM831	2015-07-24 14:47:10	-25.6	60.9
PRM831	2015-05-05 14:56:20	-25.8	61.2
PRM831	2015-04-22 8:42:55	-26.3	58.2
PRM831	2015-04-17 11:29:03	-26.3	21.3
PRM831	2015-04-17 9:59:48	-26.0	30.6
PRM831	2015-04-17 8:00:28	-26.0	9.4
PRM831	2061-08-11 15:40:00	-26.0	44.2
PRM831	2014-10-15 14:30:38	-26.0	72.4

File Translated: Z:\Vista Env\2008\081101-Los Banos Wal-Mart\Noise Measurements\5.slmddl
 Model/Serial Number: 824 / A3176
 Firmware/Software Revs: 4.272 / 3.120
 Name: Vista Environmental
 Descr1: 1021 Didrikson Way
 Descr2: Laguna Beach, CA 92651
 Setup/Setup Descr: slm&rt.a.ssa / SLM & Real-Time Analyzer
 Location: 10 feet south of Walmart truck loading area
 Notel: Noise from a truck unloading and trailer transfer and from mechanical push sweeper
 Note2:

Overall Any Data

Start Time: 20-Jan-2009 14:40:19
 Elapsed Time: 00:10:00.6

	A Weight	C Weight	Flat
Leq:	63.3 dBA	68.8 dBC	69.5 dBF
SEL:	91.1 dBA	96.6 dBC	97.3 dBF
Peak:	90.1 dBA	93.2 dBC	93.2 dBF
20-Jan-2009 14:43:19	20-Jan-2009 14:41:22	20-Jan-2009 14:41:22	
Lmax (slow):	76.4 dBA	79.3 dBC	80.2 dBF
20-Jan-2009 14:43:19	20-Jan-2009 14:43:19	20-Jan-2009 14:43:19	
Lmin (slow):	41.0 dBA	58.0 dBC	59.7 dBF
20-Jan-2009 14:41:35	20-Jan-2009 14:42:11	20-Jan-2009 14:42:11	
Lmax (fast):	77.4 dBA	81.6 dBC	83.2 dBF
20-Jan-2009 14:43:19	20-Jan-2009 14:43:19	20-Jan-2009 14:43:19	
Lmin (fast):	39.8 dBA	56.9 dBC	58.8 dBF
20-Jan-2009 14:42:33	20-Jan-2009 14:42:11	20-Jan-2009 14:42:08	
Lmax (impulse):	78.8 dBA	84.7 dBC	85.3 dBF
20-Jan-2009 14:44:25	20-Jan-2009 14:41:22	20-Jan-2009 14:41:22	
Lmin (impulse):	41.1 dBA	58.5 dBC	61.0 dBF
20-Jan-2009 14:42:11	20-Jan-2009 14:42:11	20-Jan-2009 14:42:08	

Spectra

Date: 20-Jan-2009
 Time: 14:40:19
 Run Time: 00:10:00.6

Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1	Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1
12.5	52.8		65.8		31.8		630	56.0		68.6		27.4	
16.0	53.6	59.3	65.4	71.2	36.1	39.5	800	54.3		67.2		27.6	
20.0	56.3		67.7		35.1		1000	52.9	58.3	67.4	72.1	26.7	31.6
25.0	56.1		77.1		39.3		1250	53.4		67.3		26.2	
31.5	60.2	63.4	77.3	81.5	38.9	44.9	1600	53.8		69.4		25.0	
40.0	58.8		75.6		41.6		2000	53.2	57.7	68.0	72.7	21.3	27.2
50.0	58.3		68.8		45.6		2500	51.6		65.7		18.9	
63.0	58.5	64.0	67.2	73.0	44.9	49.8	3150	48.5		62.2		17.4	
80.0	60.6		68.4		44.4		4000	45.9	51.7	59.8	65.8	15.8	21.0
100	57.5		67.8		40.1		5000	45.8		60.9		15.0	
125	57.0	61.7	70.6	73.4	41.3	45.1	6300	43.6		58.4		14.7	
160	56.3		66.2		39.5		8000	41.9	46.8	54.6	61.2	15.0	19.9
200	52.9		61.5		35.0		10000	39.9		55.3		15.5	
250	52.8	56.9	62.3	66.4	34.4	38.4	12500	37.2		52.9		15.9	
315	50.4		60.9		30.3		16000	33.0	38.9	48.9	54.7	17.3	22.4
400	52.0		63.8		30.8		20000	27.1		44.0		19.0	
500	52.8	58.7	66.2	71.4	27.6	33.7							

Ln Start Level: 15 dB
 L1.00 0.0 dBA L50.00 0.0 dBA L95.00 0.0 dBA
 L5.00 0.0 dBA L90.00 0.0 dBA L99.00 0.0 dBA

Detector: Slow
 Weighting: A
 SPL Exceedance Level 1: 85.0 dB Exceeded: 0 times
 SPL Exceedance level 2: 120 dB Exceeded: 0 times
 Peak-1 Exceedance Level: 105 dB Exceeded: 0 times
 Peak-2 Exceedance Level: 100 dB Exceeded: 0 times
 Hysteresis: 2
 Overloaded: 0 time(s)
 Paused: 0 times for 00:00:00.0

File Translated: Z:\Vista Env\2008\081101-Los Banos Wal-Mart\Noise Measurements\5.slmdl
 Model/Serial Number: 824 / A3176

Current Any Data

Start Time: 20-Jan-2009 14:40:19
 Elapsed Time: 00:10:00.6

	A Weight	C Weight	Flat
Leq:	63.3 dBA	68.8 dBC	69.5 dBF
SEL:	91.1 dBA	96.6 dBC	97.3 dBF
Peak:	90.1 dBA	93.2 dBC	93.2 dBF
20-Jan-2009 14:43:19	20-Jan-2009 14:41:22	20-Jan-2009 14:41:22	
Lmax (slow):	76.4 dBA	79.3 dBC	80.2 dBF
20-Jan-2009 14:43:19	20-Jan-2009 14:43:19	20-Jan-2009 14:43:19	
Lmin (slow):	41.0 dBA	58.0 dBC	59.7 dBF
20-Jan-2009 14:41:35	20-Jan-2009 14:42:11	20-Jan-2009 14:42:11	
Lmax (fast):	77.4 dBA	81.6 dBC	83.2 dBF
20-Jan-2009 14:43:19	20-Jan-2009 14:43:19	20-Jan-2009 14:43:19	
Lmin (fast):	39.8 dBA	56.9 dBC	58.8 dBF
20-Jan-2009 14:42:33	20-Jan-2009 14:42:11	20-Jan-2009 14:42:08	
Lmax (impulse):	78.8 dBA	84.7 dBC	85.3 dBF
20-Jan-2009 14:44:25	20-Jan-2009 14:41:22	20-Jan-2009 14:41:22	
Lmin (impulse):	41.1 dBA	58.5 dBC	61.0 dBF
20-Jan-2009 14:42:11	20-Jan-2009 14:42:11	20-Jan-2009 14:42:08	

Calibrated:	20-Jan-2009 08:31:09	Offset:	-49.2 dB
Checked:	20-Jan-2009 08:31:09	Level:	94.0 dB
Calibrator	not set	Level:	94.0 dB
Cal Records Count:	0		

Interval Records:	Disabled	Number Interval Records:	0
History Records:	Disabled	Number History Records:	0
Run/Stop Records:		Number Run/Stop Records:	2

Stationary Noise Calculations - Homes Northwest of Project Site

Stationary Noise Sources	Reference Distance	Reference Leq	Reference Home Adjacent to Project Site Distance	Reference Home Adjacent to Project Site Leq
Rooftop HVAC	6	65.1	660	24
Auto Parking Lot	5	63.1	680	20
Onsite Truck Operations	10	63.3	10	63

1 (Line Source: hard=0, soft=.5; Point Source: hard=1, soft=1.5)
(eq. N-2141.2 of TeNS)

Stationary Noise Sources	Distance from Receptor to Wall	Height of Wall*	Without Wall Noise Level at Residence	With Wall Noise Level at Residence	Exterior Observer Height (feet)	Source Height (feet)	Source Frequency (hz)	barrier to receiver - b (all)	source to barrier - a	source to receiver - c	path difference y = a+b-c (auto)	line of sight (slope)	fresnel	Barrier Atten
Rooftop HVAC	655	30	24	19	5	30	800	655.477	5.000	660.473	0.004	-1	-0.010	-4.8
Auto Parking Lot	5	8	20	8	5	3	800	5.831	675.019	680.003	0.847	1	2.408	-12.82
Onsite Truck Operate	5	8	63	58	5	12	800	5.831	6.403	12.207	0.028	1	0.078	-5.7

* Height of wall for Rooftop HVAC based on height of parapet wall, for ground level sources based on northwest wall height of 8 feet.

Stationary Noise Calculations - Homes North of Project Site

Noise Sources	Reference		Home Adjacent to Project Site	
	Distance	Leq	Distance	Leq
Rooftop HVAC	6	65.1	360	30
Auto Parking Lot	5	63.1	380	25
Onsite Truck Operations	10	63.3	150	40

1 (Line Source: hard=0, soft=-5; Point Source: hard=1, soft=1.5)
(eq. N-2141.2 of TeNS)

Stationary Noise Sources	Distance from Receptor to Wall	Height of Wall* (feet)	Without Wall		With Wall		Exterior Source Height (feet)	Source Frequency (hz)	barrier to receiver - b (all)	source to barrier - a		source to receiver - c		path difference (auto)	line of sight (slope)	Barrier Atten
			Level at Residence	at Residence	Noise Level at Residence	Noise Level at Residence				barrier - a	receiver - c	barrier - a	receiver - c			
Rooftop HVAC	120	30	30	30	29	30	5	800	122.577	5.000	127.475	0.101	-0.287	-0.995		
Auto Parking Lot	360	6	25	25	16	3	5	800	360.001	20.224	380.005	0.220	0.625	-9.06		
Onsite Truck Oper	142	6	40	40	40	13.5	5	800	142.004	10.966	150.241	2.729	-7.762	0		

* Height of wall for Rooftop HVAC based on height of parapet wall, for ground level sources based on existing north wall height of 6 feet.

Stationary Noise Calculations - Mobile Homes East of Project Site

Stationary Noise Sources	Reference Home Adjacent to Project Site		
	Distance	Leq	Leg
Rooftop HVAC	6	65.1	20
Auto Parking Lot	5	63.1	16
Onsite Truck Operations	10	63.3	22

1 (Line Source: hard=0, soft=-5; Point Source: hard=1, soft=1.5)
(eq. N-2141.2 of TeNS)

Stationary Noise Sources	Distance from Receptor to Wall	Height of Wall* (feet)	Without Wall		With Wall		Exterior Observer Height (feet)	Source Frequency y (hz)	Barrier to Receiver - b (all)	Path Difference			Line of Sight (slope)	Barrier Atten	
			Distance from source to Wall	Wall Noise Level at Residence	Noise Level at Residence	Height (feet)				Source Height (feet)	Barrier - a	source to receiver - c			y = a+b-c (auto)
Rooftop HVAC	1095	30	5	20	15	30	5	800	1095.285	5.000	1100.284	0.001	-1	fresnel -0.004	-4.9
Auto Parking Lot	950	6	200	16	10	3	5	800	950.001	200.022	1150.002	0.021	1	0.061	-5.6
Onsite Truck Operate	950	6	250	22	20	13.5	5	800	950.001	250.112	1200.030	0.083	-1	-0.236	-1.22

* Height of wall for Rooftop HVAC based on height of parapet wall, for ground level sources based on east wall height of 6 feet.