Quick Quack Car Wash (Store #44-236) – 3601 Van Buren Boulevard

Noise Impact Study

City of Riverside, CA

Prepared for:

Quick Quack Development II, LLC
Efrain Corona
1380 Lead Hill Blvd #260
Roseville, CA 95661

Prepared by:

MD Acoustics, LLC
Claire Pincock, INCE-USA
1197 Los Angeles Avenue, Ste 256
Simi Valley, CA 93065

Date: 12/5/2023

TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF EXHIBITS

LIST OF TABLES

1.0 Executive Summary

This report has been prepared to provide the calculated noise projections from the proposed Quick Quack Car Wash ("Project") located at 3601 Van Buren Boulevard in Riverside, CA. All calculations are compared to the City of Riverside's noise ordinance as well as the existing ambient condition. The project proposes to construct a 108-foot car wash tunnel with 18 vacuum stalls. There is residential to the northeast, commercial to the northwest, commercial to the southwest (across Van Buren Boulevard), and commercial and a fire station to the southeast (across Andrew Street).

1.1 Findings and Conclusions

One (1) long-term baseline ambient measurement was taken to be representative of the northwest corner of the project site to determine the ambient noise condition within the project vicinity. Ambient noise data taken indicates that daytime levels are 48 to 56 dBA Leq(h). The predominant source of noise impacting the existing uses is traffic noise propagating from Van Buren Boulevard.

One situation were modeled. A 120HP IDC Predator system was modeled in a standard tunnel with absorptive liner along the walls of the last 15' of the tunnel by the exit. Project plus ambient operational noise levels are anticipated to be 51 dBA Leq at the adjacent residential use and 49 dBA Leq at the adjacent commercial use. This complies with the 55 dBA Leq residential noise limit and 65 dBA Leq commercial noise limit. The 8' walls decrease the noise level 2-3 dB and the 8' tall doorway decreases the noise level 1-2 dB. The total decrease in noise level with both is a 3-4 dB drop. Together, all outlined project design features reduce the noise level by about 30 decibels.

The following outlines the project design features:

1. The project will use a 120 HP IDC Predator system or equivalent. The reference equipment sound level data is provided in Appendix B.

2. The tunnel exit dimensions will be 10 feet wide by 8 feet tall.

3. An acoustic liner (quiet fiber acoustic perforated metal panels or equivalent) will line 15' of the exit (see Appendix C) to be shown on the construction drawing.

4. The project will incorporate 6' CMU walls on the northwest and northeast property lines as well as 8' walls to the northwest of the tunnel and the northeast of the exit driveway. See Exhibit B.

2.0 Introduction

2.1 Purpose of Analysis and Study Objectives

The purpose of this noise impact study is to evaluate the potential noise impacts for the project study area and to recommend noise mitigation measures, if necessary, to minimize the potential noise impacts. The assessment was conducted and compared to the noise standards set forth by the Federal, State, and Local agencies. Consistent with the California Environmental Quality Act (CEQA) and CEQA Guidelines, a significant impact related to noise would occur if a proposed project is determined to result in:

- Exposure of persons to or generation of noise levels above standards established in the local General Plan or noise ordinance, or applicable agencies.
- Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels.
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

The following is provided in this report:

- A description of the study area and the proposed project
- Information regarding the fundamentals of noise
- A description of the local noise guidelines and standards
- An evaluation of the existing ambient noise environment
- An analysis of stationary noise impacts from the project site to adjacent land uses
- Construction noise and vibration evaluation

2.2 Site Location and Study Area

The project site is located at 3601 Van Buren Boulevard, in the City of Riverside, CA as shown in Exhibit A. The land uses directly surrounding the project include residential to the northeast, commercial to the northwest, commercial to the southwest (across Van Buren Boulevard), and commercial and a fire station to the southeast (across Andrew Street).

2.3 Proposed Project Description

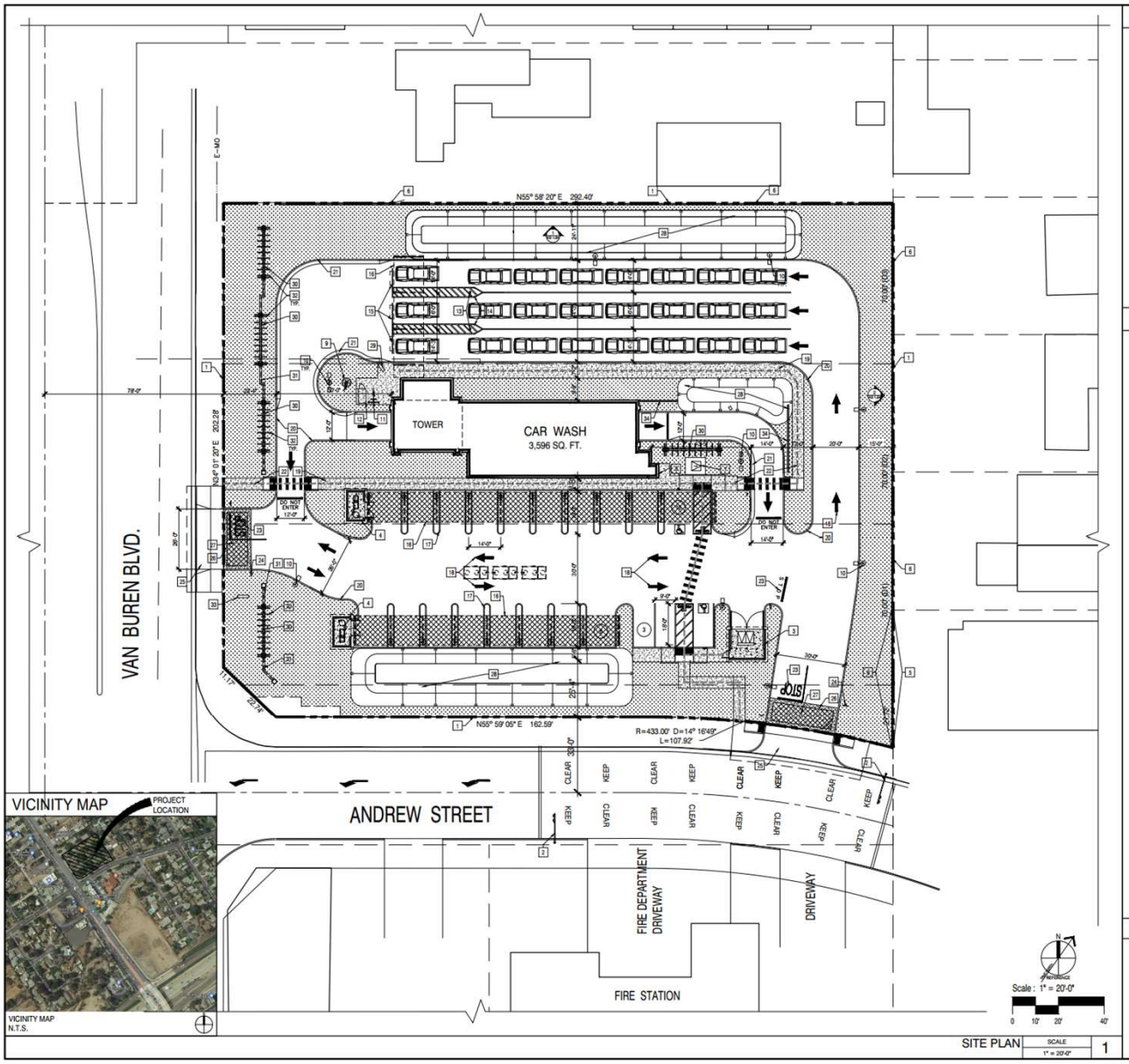
The project proposes to develop a 108-foot car wash tunnel and 18 covered vacuum stall systems. The site plan used for this is illustrated in Exhibit B. The project operational hours are assumed to operate between 7 AM to 9 PM, 7 days per week.

Exhibit A

Location Map

Exhibit B

Site Plan



PROJECT SUMMARY

OWNER/DEVELOPER:	QUICK QUACK CAR WASH 1380 LEAD HILL BOULEVARD, SUITE 260 ROSEVILLE, CA 95611
PROPERTY ADDRESS:	3605, 3619, & 3631 VAN BUREN BOULEVARD RIVERSIDE, CA
APN:	233-022-077
ZONING:	
NORTHERN PORTION:	CR-SP (SPECIFIC PLAN - MAGNOLIA AVENUE)
GENERAL PLAN:	GP DESIGNATION - MUV - MIXED USE VILLAGE
GROSS LAND AREA:	1.69 AC 73,818 SF GROSS
EXISTING LAND USE:	SINGLE FAMILY HOMES
PROPOSED LAND USE:	COMMERCIAL - CAR WASH FACILITY
PROPOSED CARWASH AREA:	
GROSS BUILDING AREA	3,615 SF
MAXIMUM BUILDING HEIGHT	29'-0"
CONSTRUCTION TYPE:	VB
OCCUPANCY:	B
SPRINKLERS:	NO
PARKING REQUIRED	2 STALLS
PARKING PROVIDED	3 STALLS
VACUUM STALLS	18 STALLS
BICYCLE SPACES REQUIRED	1
BICYCLE SPACES PROVIDED	2
SITE COVERAGE SUMMARY:	
BUILDING COVERAGE (FAR)	9.59%
LANDSCAPE AREA	18,682 SF
LANDSCAPE COVERAGE	25.31%

KEYNOTES:

1. PROPERTY LINE, REFERENCE CIVIL DRAWINGS
2. PROPOSED FIRE DEPARTMENT CONTROLLED STOP LIGHT
3. TRASH ENCLOSURE. REFERENCE DETAIL 1/AS 1.07
4. VACUUM EQUIPMENT ENCLOSURE. REFERENCE DETAIL 9/AS 1.07
5. EXISTING CMU BLOCK WALL
6. PROPOSED 6' HIGH SPLIT-FACE CMU DECORATIVE WALL WITH DECORATIVE CAP
7. TRANSFORMER AND PAD PROVIDED BY PG&E. REFERENCE CIVIL DRAWINGS.
8. ELECTRIC METER CABINET LOCATION
9. 30' FLAG POLE, STYLE: "MEMORIAL" UNCOMMON USA, INC.
10. LIGHT STANDARD BASE. REFERENCE ELECTRICAL DRAWINGS .
11. BIKE RACKS
12. BIKE LOCKER
13. LICENSE PLATE RECOGNITION
14. PIPE BOLLARD
15. GATE
16. LINE OF METAL CANOPY ABOVE
17. PARKING LOT STRIPING. 4" WIDE LINES PAINTED "WHITE" TYPICAL
18. PAINT PAVEMENT DIRECTIONAL ARROW
19. WALKWAY - 4" CONCRETE WITH NATURAL GRAY CONCRETE MEDIUM BROOM FINISH
20. CONCRETE CURB OR CURB AND GUTTER. REFERENCE CIVIL DRAWINGS
21. ROLLED CURB, REFERENCE CIVIL DRAWINGS
22. ACCESSIBLE PATH OF TRAVEL
23. PAINT STOP SIGN PER CITY STANDARDS
24. SITE ENTRANCE TOW AWAY SIGN
25. NATURAL GRAY CONCRETE PAVEMENT
26. SMOOTH FINISH BAND AT CROSSWALK, SCOFIELD PASDRE BROWN CS-2
27. SCORED COLORED PAVEMENT, SCOFIELD ANTIQUE AMBER CS-15
28. BIO RETENTION AREA. REFERENCE CIVIL DRAWINGS.
29. MENU BOARD
30. 3'-0" HIGH CMU BLOCK WITH STONE VENEER SCREEN, REFERENCE SHEET AS 1.05 FOR DETAILS.
31. 2'-0" HIGH CMU BLOCK WITH PLASTER FINISH SCREEN, REFERENCE SHEET AS 1.05 FOR DETAILS.
32. PROPOSED METAL TRELLIS, PAINT TO MATCH WOOD LOOK. REFERENCE SHEET AS 1.05 FOR DETAILS.
33. MONUMENT SIGN. REFERENCE SIGN DRAWINGS.
34. PROPOSED 8' HIGH CMU NOISE CANCELLATION BARRIER WITH PLASTER FINISH, PAINT TO MATCH THE BUILDING. REFERENCE SHEET AS 1.05 FOR ELEVATIONS.

LEGEND:

- WALKWAY - 4" CONCRETE WITH NATURAL GRAY CONCRETE MEDIUM BROOM FINISH
- LANDSCAPING AND IRRIGATION SYSTEM. REFERENCE LANDSCAPE DRAWINGS
- VACUUM CANOPY SYSTEM. (TYP)
- PROPERTY LINE
- ACCESSIBLE PATH OF TRAVEL
- INDICATES NUMBER OF PARKING SPACES

LA Design Group, Inc.
21671 GATEWAY CENTER DRIVE, STE. 213
DIAMOND BAR, CA 91765
(T) 909.860.1010

Seal: LICENSED ARCHITECT — ROBIN SHORAM SHAHAFIG — C 25558 — EXP. 08/31/25 — STATE OF CALIFORNIA

NOTE: This information is conceptual in nature and is subject to adjustments pending further verification and Client, Tenant, and Governmental Agency comments/approvals. No warranties or guarantees of any kind are given or implied by the Architect.

A Project for:

Quick Quack CAR WASH

(PROJECT NO. 44-236)
3601 VAN BUREN BLVD.
RIVERSIDE, CA 95661

Client:

QUICK QUACK CAR WASH
1380 LEAD HILLS BLVD., STE. 260
ROSEVILLE, CA 95661

Revisions:

UPDATED ENTITLEMENT PCKG.	10/17/2023
UPDATED ENTITLEMENT PCKG.	08/24/2023
UPDATED ENTITLEMENT PCKG.	06/19/2023
UPDATED ENTITLEMENT PCKG.	02/03/2023
ENTITLEMENT SUBMITTAL PCKG.	11/18/2022
No. Description	Date

Project No.:	210504.01
Drawn By:	-
Reviewed By:	-
Scale:	AS NOTED
Date:	
Filename:	-

Sheet Title: SITE PLAN

Sheet #: AS 1.01

3.0 Fundamentals of Noise

This section of the report provides basic information about noise and presents some of the terms used within the report.

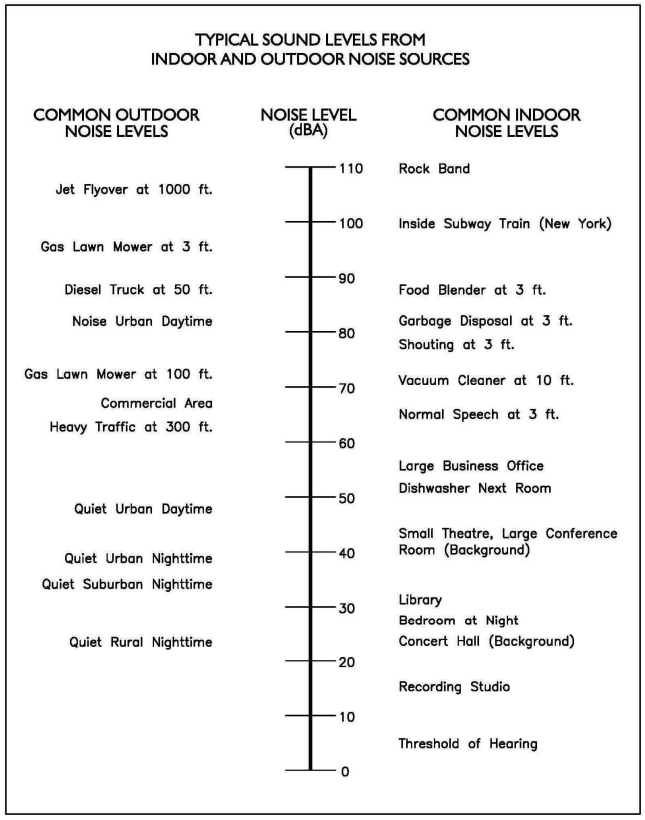
3.1 Sound, Noise, and Acoustics

Sound is a disturbance created by a moving or vibrating source and is capable of being detected by the hearing organs. Sound may be thought of as mechanical energy of a moving object transmitted by pressure waves through a medium to a human ear. For traffic or stationary noise, the medium of concern is air. *Noise* is defined as sound that is loud, unpleasant, unexpected, or unwanted.

3.2 Frequency and Hertz

A continuous sound is described by its *frequency* (pitch) and its *amplitude* (loudness). Frequency relates to the number of pressure oscillations per second. Low-frequency sounds are low in pitch (bass sounding) and high-frequency sounds are high in pitch (squeak). These oscillations per second (cycles) are commonly referred to as Hertz (Hz). The human ear can hear from the bass pitch starting at 20 Hz to the high pitch of 20,000 Hz.

Exhibit C: Typical A-Weighted Noise Levels



3.3 Sound Pressure Levels and Decibels

The *amplitude* of a sound determines its loudness. The loudness of sound increases or decreases as the amplitude increases or decreases. Sound pressure amplitude is measured in units of micro-Newton per square inch meter (µN/m2), also called micro-Pascal (µPa). One µPa is approximately one hundred billionths (0.00000000001) of normal atmospheric pressure. Sound pressure level (SPL or L_p) is used to describe in logarithmic units the ratio of actual sound pressures to a reference pressure squared. These units are called decibels abbreviated dB. Exhibit C illustrates reference sound levels for different noise sources.

3.4 Addition of Decibels

Because decibels are on a logarithmic scale, sound pressure levels cannot be added or subtracted by simple plus or minus addition. When two sounds or equal SPL are combined, they will produce an SPL 3 dB greater than the original single SPL. In other words, sound energy must be doubled to produce a 3 dB increase. If two sounds differ by approximately 10 dB, the higher sound level is the predominant sound.

3.5 Human Response to Changes in Noise Levels

In general, the healthy human ear is most sensitive to sounds between 1,000 Hz and 5,000 Hz, (A-weighted scale) and it perceives a sound within that range as being more intense than a sound with a higher or lower frequency with the same magnitude. For purposes of this report as well as with most environmental documents, the A-scale weighting is typically reported in terms of A-weighted decibel (dBA). Typically, the human ear can barely perceive a change in the noise level of 3 dB. A change in 5 dB is readily perceptible, and a change in 10 dB is perceived as being twice or half as loud. As previously discussed, a doubling of sound energy results in a 3 dB increase in sound, which means that a doubling of sound energy (e.g. doubling the volume of traffic on a highway) would result in a barely perceptible change in sound level.

3.6 Noise Descriptors

Noise in our daily environment fluctuates over time. Some noise levels occur in regular patterns, others are random. Some noise levels are constant while others are sporadic. Noise descriptors were created to describe the different time-varying noise levels.

A-Weighted Sound Level: The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighting filter de-emphasizes the very low and very high-frequency components of the sound in a manner similar to the response of the human ear. A numerical method of rating human judgment of loudness.

Ambient Noise Level: The composite of noise from all sources, near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

Community Noise Equivalent Level (CNEL): The average equivalent A-weighted sound level during a 24-hour day, obtained after the addition of five (5) decibels to sound levels in the evening from 7:00 to 10:00 PM and after the addition of ten (10) decibels to sound levels in the night before 7:00 AM and after 10:00 PM.

Decibel (dB): A unit for measuring the amplitude of a sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micro-pascals.

dB(A): A-weighted sound level (see definition above).

Equivalent Sound Level (LEQ): The sound level corresponding to a steady noise level over a given sample period with the same amount of acoustic energy as the actual time-varying noise level. The energy average noise level during the sample period.

Habitable Room: Any room meeting the requirements of the Uniform Building Code, or other applicable regulations, which is intended to be used for sleeping, living, cooking, or dining purposes, excluding such enclosed spaces as closets, pantries, bath or toilet rooms, service rooms, connecting corridors, laundries, unfinished attics, foyers, storage spaces, cellars, utility rooms, and similar spaces.

L(n): The A-weighted sound level exceeded during a certain percentage of the sample time. For example, L10 in the sound level exceeded 10 percent of the sample time. Similarly L50, L90, L99, etc.

Noise: *A*ny unwanted sound or sound which is undesirable because it interferes with speech and hearing, is intense enough to damage hearing, or is otherwise annoying. The State Noise Control Act defines noise as "...excessive undesirable sound...".

Outdoor Living Area: Outdoor spaces that are associated with residential land uses typically used for passive recreational activities or other noise-sensitive uses. Such spaces include patio areas, barbecue areas, jacuzzi areas, etc. associated with residential uses; outdoor patient recovery or resting areas associated with hospitals, convalescent hospitals, or rest homes; outdoor areas associated with places of worship which have a significant role in services or other noise-sensitive activities; and outdoor school facilities routinely used for educational purposes which may be adversely impacted by noise. Outdoor areas usually not included in this definition are: front yard areas, driveways, greenbelts, maintenance areas and storage areas associated with residential land uses; exterior areas at hospitals that are not used for patient activities; outdoor areas associated with places of worship and principally used for short-term social gatherings; and, outdoor areas associated with school facilities that are not typically associated with educational uses prone to adverse noise impacts (for example, school play yard areas).

Percent Noise Levels: See L(n).

Sound Level (Noise Level): The weighted sound pressure level obtained by use of a sound level meter having a standard frequency filter for attenuating part of the sound spectrum.

Sound Level Meter: An instrument, including a microphone, an amplifier, an output meter, and frequency weighting networks for the measurement and determination of noise and sound levels.

Single Event Noise Exposure Level (SENEL): The dB(A) level which, if it lasted for one second, would produce the same A-weighted sound energy as the actual event.

3.7 Traffic Noise Prediction

Noise levels associated with traffic depend on a variety of factors: (1) volume of traffic, (2) speed of traffic, (3) auto, medium truck (2 axle), and heavy truck percentage (3 axle and greater), and sound propagation. The greater the volume of traffic, the higher speeds and truck percentages equate to a louder volume of noise. A doubling of the Average Daily Traffic (ADT) along a roadway will increase noise levels by approximately 3 dB; the reasons for this are discussed in the sections above.

3.8 Sound Propagation

As sound propagates from a source it spreads geometrically. Sound from a small, localized source (i.e., a point source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates at a rate of 6 dB per doubling of distance. The movement of vehicles down a roadway makes the source of the sound appear to propagate from a line (i.e., line source) rather than a point source. This line source results in the noise propagating from a roadway in a cylindrical spreading

versus a spherical spreading that results from a point source. The sound level attenuates for a line source at a rate of 3 dB per doubling of distance.

As noise propagates from the source, it is affected by the ground and atmosphere. Noise models use hard site (reflective surfaces) and soft site (absorptive surfaces) to help calculate predicted noise levels. Hard site conditions assume no excessive ground absorption between the noise source and the receiver. Soft site conditions such as grass, soft dirt or landscaping attenuate noise at a rate of 1.5 dB per doubling of distance. When added to the geometric spreading, the excess ground attenuation results in an overall noise attenuation of 4.5 dB per doubling of distance for a line source and 7.5 dB per doubling of distance for a point source.

Research has demonstrated that atmospheric conditions can have a significant effect on noise levels when noise receivers are located 200 feet or more from a noise source. Wind, temperature, air humidity, and turbulence can further impact have far sound can travel.

4.0 Ground-Borne Vibration Fundamentals

4.1 Vibration Descriptors

Ground-borne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of ground-borne vibrations typically only cause a nuisance to people, but at extreme vibration levels, damage to buildings may occur. Although ground-borne vibration can be felt outdoors, it is typically only an annoyance to people indoors where the associated effects of the shaking of a building can be notable. Ground-borne noise is an effect of ground-borne vibration and only exists indoors since it is produced from noise radiated from the motion of the walls and floors of a room and may also consist of the rattling of windows or dishes on shelves.

Several different methods are used to quantify vibration amplitude.

PPV – Known as the peak particle velocity (PPV) which is the maximum instantaneous peak in vibration velocity, typically given in inches per second.

RMS – Known as root mean squared (RMS) can be used to denote vibration amplitude

VdB – A commonly used abbreviation to describe the vibration level (VdB) for a vibration source.

4.2 Vibration Perception

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans whose threshold of perception is around 65 VdB. Outdoor sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible ground-borne noise or vibration. To counter the effects of ground-borne vibration, the Federal Transit Administration (FTA) has published guidance relative to vibration impacts. According to the FTA, fragile buildings can be exposed to ground-borne vibration levels of 0.3 inches per second without experiencing structural damage.

4.3 Vibration Propagation

There are three main types of vibration propagation: surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wavefront, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wavefront. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wavefront. However, unlike P-waves, the particle motion is transverse, or side-to-side and perpendicular to the direction of propagation.

As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. As stated above, this drop-off rate can vary greatly depending on the soil but has been shown to be

effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests.

5.0 Regulatory Setting

The proposed project is located in Riverside, California, and noise regulations are addressed through the efforts of various federal, state, and local government agencies. The agencies responsible for regulating noise are discussed below.

5.1 Federal Regulations

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Publicize noise emission standards for interstate commerce
- Assist state and local abatement efforts
- Promote noise education and research

The Federal Office of Noise Abatement and Control (ONAC) originally was tasked with implementing the Noise Control Act. However, it was eventually eliminated leaving other federal agencies and committees to develop noise policies and programs. Some examples of these agencies are as follows: The Department of Transportation (DOT) assumed a significant role in noise control through its various agencies. The Federal Aviation Agency (FAA) is responsible for regulating noise from aircraft and airports. The Federal Highway Administration (FHWA) is responsible for regulating noise from the interstate highway system. The Occupational Safety and Health Administration (OSHA) is responsible for the prohibition of excessive noise exposure to workers. The Housing and Urban Development (HUD) is responsible for establishing noise regulations as it relates to exterior/interior noise levels for new HUD-assisted housing developments near high noise areas.

The federal government advocates that local jurisdictions use their land use regulatory authority to arrange new development in such a way that “noise sensitive” uses are either prohibited from being constructed adjacent to a highway or that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

Since the federal government has preempted the setting of standards for noise levels that can be emitted by the transportation source, the City is restricted to regulating the noise generated by the transportation system through nuisance abatement ordinances and land use planning.

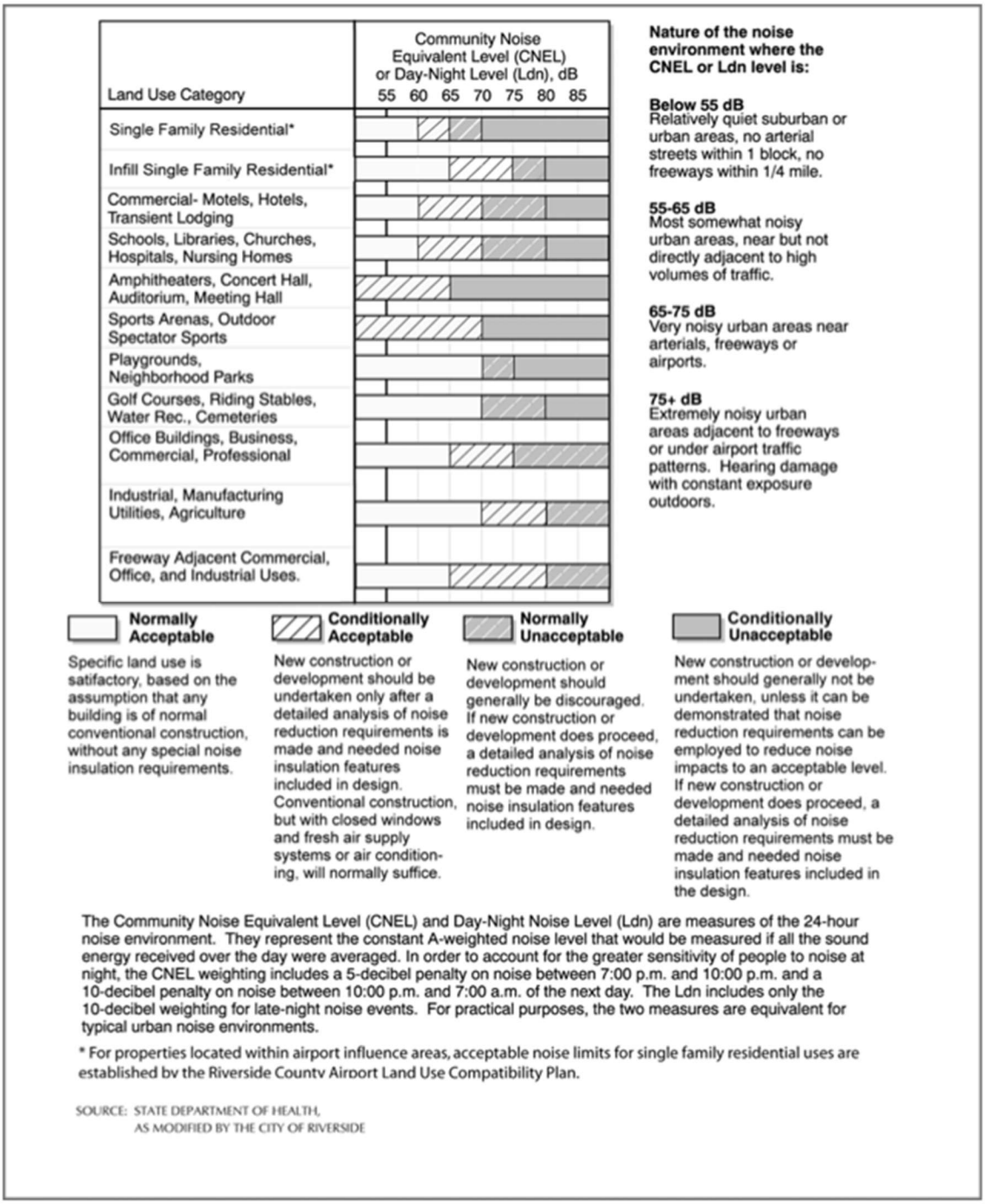
5.2 State Regulations

Established in 1973, the California Department of Health Services Office of Noise Control (ONC) was instrumental in developing regularity tools to control and abate noise for use by local agencies. One significant model is the “Land Use Compatibility for Community Noise Environments Matrix.” The matrix allows the local jurisdiction to clearly delineate the compatibility of sensitive uses with various incremental levels of noise.

The State of California has established noise insulation standards as outlined in Title 24 in the California Building Code (CBC) which in some cases requires acoustical analyses to outline exterior noise levels and

to ensure interior noise levels do not exceed the interior threshold. The State mandates that the legislative body of each county and city adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines published by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable as illustrated in Exhibit D, which presents the City of Riverside's adaptation of these guidelines.

Exhibit D: Land Use Compatibility Guidelines



5.3 City of Riverside Noise Regulations

The City of Riverside outlines their noise regulations and standards within the Noise Element from the General Plan and Title 7 of the Municipal Code. For purposes of this analysis, the City's General Plan and Noise Ordinance are used to evaluate the roadway noise and stationary noise impacts to and from the proposed project. The Noise Element outlines Goals and Polices and establishes Noise/Land Use Compatibility Criteria (Figure N-10). This assessment will compare the project noise levels to the residential noise limits since the proposed project is located directly adjacent to existing residential land uses. The project impacts were compared to the City's residential noise standards.

Stationary Noise Regulation

Section 7.25.010 from the Municipal Code discusses the noise standards for stationary noise sources and states the following:

A. Unless a variance has been granted as provided in this chapter, it shall be unlawful for any person to cause or allow the creation of any noise which exceeds the following:

1. The exterior noise standard of the applicable land use category, up to five decibels, for a cumulative period of more than thirty minutes in any hour; or

2. The exterior noise standard of the applicable land use category, plus five decibels, for a cumulative period of more than fifteen minutes in any hour; or

3. The exterior noise standard of the applicable land use category, plus ten decibels, for a cumulative period of more than five minutes in any hour; or

4. The exterior noise standard of the applicable land use category, plus fifteen decibels, for the cumulative period of more than one minute in any hour; or

5. The exterior noise standard for the applicable land use category, plus twenty decibels or the maximum measured ambient noise level, for any period of time.

Table 7.25.101A from the noise ordinance describes the exterior noise standards for emanations from a stationary noise source, as it affects adjacent properties:

Table 7.25.010A
Exterior Noise Standards

Land Use Category	Time Period	Noise Level
Residential	Night (10 p.m. to 7 a.m.) Day (7 a.m. to 10 p.m.)	45 dBA 55 dBA
Office/Commercial	Any time	65 dBA
Industrial	Any time	70 dBA
Community support	Any time	60 dBA
Public recreation facility	Any time	65 dBA
Nonurban	Any time	70 dBA

Section 7.25.010 (B) of the municipal code states if the measured ambient noise level exceeds that permissible within any of the first four noise limit categories, the allowable noise exposure standard shall be increased in five decibel increments in each category as appropriate to encompass the ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

Section 7.30.015 outlines the interior residential sound level limits. The daytime limits are 45 dBA Leq for noise that lasts for a cumulative period of more than five minutes in any hour.

Construction Noise Regulation

Section 7.35.010(B)(5) of the municipal code regulates the allowable hours of construction activity to 7:00 AM – 7:00 PM on weekdays and to 8:00 AM – 5:00 PM on Saturdays, with no construction activities allowed on Sunday or federal holidays.

Threshold Applied to the Project

This assessment assumes a worst-case scenario in that the car wash operates constantly (more than thirty minutes in an hour) between 7 AM – 9 PM. This assessment compares the operational noise projections to the ambient levels which cannot be exceeded. The project also complies with the commercial 65 dBA standard.

6.0 Study Method and Procedure

The following section describes the noise modeling procedures and assumptions used for this assessment.

6.1 Noise Measurement Procedure and Criteria

Noise measurements are taken to determine the existing noise levels. A noise receiver or receptor is any location in the noise analysis in which noise might produce an impact. The following criteria are used to select measurement locations and receptors:

- Locations expected to receive the highest noise impacts, such as the first row of houses
- Locations that are acoustically representative and equivalent to the area of concern
- Human land usage
- Sites clear of major obstruction and contamination

MD conducted the sound level measurements in accordance with Federal Highway Transportation (FHWA) and Caltrans (TeNS) technical noise specifications. All measurement equipment meets American National Standards Institute (ANSI) specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA). The following gives a brief description of the Caltrans Technical Noise Supplement procedures for sound level measurements:

- Microphones for sound level meters were placed 5-feet above the ground for all measurements
- Sound level meters were calibrated (Larson Davis CAL 200) before and after each measurement
- Following the calibration of equipment, a windscreen was placed over the microphone
- Frequency weighting was set on “A” and slow response
- Results of the long-term noise measurements were recorded on field data sheets
- During any short-term noise measurements, any noise contaminations such as barking dogs, local traffic, lawnmowers, or aircraft flyovers were noted
- Temperature and sky conditions were observed and documented

6.2 Long-Term Noise Measurement Location

The noise monitoring location was selected based on the distance of the project’s stationary noise sources to the nearest sensitive receptors. One (1) long-term 24-hour noise measurement was conducted near the project site and is illustrated in Exhibit E. Appendix A includes photos, a field sheet, and measured noise data.

6.3 Stationary Noise Modeling

SoundPLAN (SP) acoustical modeling software was utilized to model future worst-case stationary noise impacts to the adjacent land uses. SP is capable of evaluating multiple stationary noise source impacts at various receiver locations. SP’s software utilizes algorithms (based on the inverse square law and reference equipment noise level data) to calculate noise level projections. The software allows the user to input

specific noise sources, spectral content, sound barriers, building placement, topography, and sensitive receptor locations.

The future worst-case noise level projections were modeled using reference sound level data for the various stationary on-site sources (e.g., car wash equipment). The model assumes that the car wash tunnel is approximately 108 feet long. The model assumes that the entrance tunnel opening is approximately 14 feet wide by 12 feet tall and the exit tunnel opening is approximately 10 feet wide by 8 feet tall with 18 vacuum stalls. The model takes into account the existing brick wall along a part of the residential property line and the 6' proposed walls along the northwest and northeast property lines. The model also includes 8' supplemental walls near the tunnel exit as indicated in Exhibit B.

Two situations were modeled with two blower systems. A 120HP IDC Predator system was modeled at 7 to 10 feet high as point sources, and the exit was modeled with absorptive liner along the walls of the last 15' of the tunnel by the exit. It is anticipated that blowers will be located approximately 0 to 15 feet inside the exit of the tunnel. The reference equipment sound level data is provided in Appendix C.

In addition, MD performed reference noise level measurements on Vacutech systems operations and utilized said information as part of the noise model. The referenced sound level data and assumptions are provided in Appendix C.

Table 1: Reference Sound Level Measurements for SoundPLAN Model (dBA)

Source	Source Type	Reference Level (dBA)	Distance (ft)
120HP IDC Predator Blowers	Point Source	87	10
Vacutech	Point Source	70	1.5
Vacuum Turbine (Inside Enclosure)	Point Source	43	3

All other noise-producing equipment (e.g., compressors, pumps) will be housed within mechanical equipment rooms. Vacuum motors will be housed within CMU enclosures. There will be no external speakers on the project site

6.4 FTA Construction Vibration Model

The construction vibration analysis utilizes the Federal Transit Administration (FTA) Noise and Vibration During Construction model/methodology, together with several key construction parameters.

The project was analyzed based on the different construction phases. Construction noise is expected to be loudest during the grading, concrete, and building phases of construction. The construction vibration calculation output worksheet is located in Appendix D.

6.5 Interior Noise Modeling

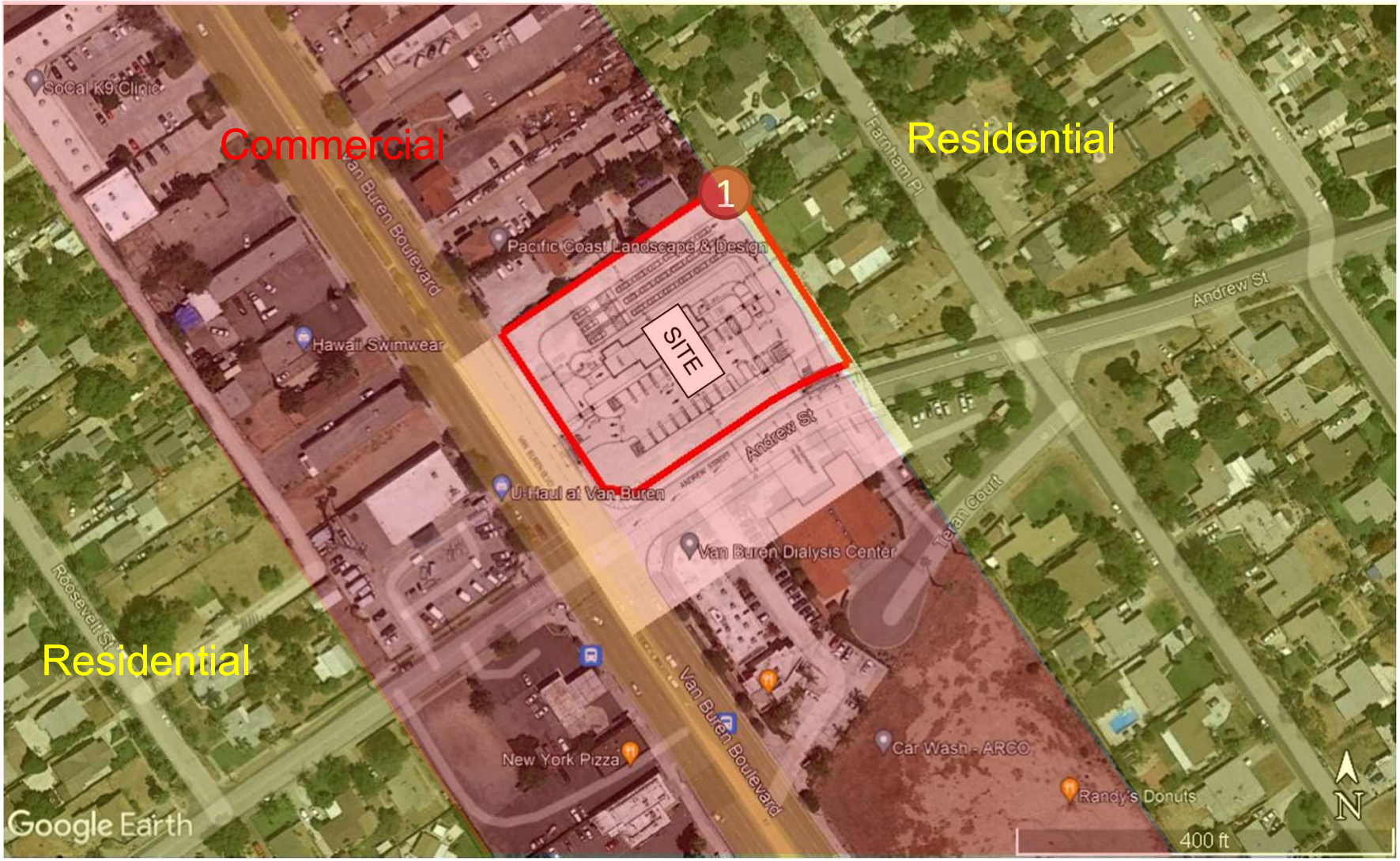
The interior noise level is the difference between the projected exterior noise level at the structure's facade and the noise reduction provided by the structure itself. Typical building construction will provide a

conservative 12 dBA noise level reduction with a "windows open" condition and a very conservative 20 dBA noise level reduction with "windows closed". MD estimated the interior noise level by assuming a "windows closed" condition and subtracting the 20 dBA from the predicted exterior noise level.

Exhibit E

Measurement Locations

= Long-term Monitoring Location



7.0 Existing Noise Environment

A noise measurement was taken to determine the existing ambient noise levels. One (1) 24-hour ambient noise measurement (LT1) was conducted at the project site on 5/10/2022 (See Exhibit E). LT1 was taken at the north corner of the project site furthest from the existing traffic and commercial noise. This measurement represents the quietest location on the adjacent property lines. As a conservative measure, this quietest location is used to represent the ambient level along the northwest and northeast property lines. Noise data indicates that traffic along Van Buren Boulevard is the primary source of noise impacting the site and the surrounding area. The ambient data confirms that for some hours, the existing noise levels exceed the noise limit as indicated in Section 7.25.010 of the City's noise ordinance. These hours are highlighted in red in Table 2.

7.1 Long-Term Noise Measurement Results

The results of the long-term noise data are presented in Table 2.

Table 2: Long-Term Noise Measurement Data (dBA)[1]

Date	Time	dB(A)								
		L_{EQ}	L_{MAX}	L_{MIN}	L_2	L_8	L_{25}	L_{50}	L_{90}	L_{99}
5/10/2022	10AM-11AM	48.4	71.3	34.0	52.4	51.3	50.5	47.2	44.0	43.8
5/10/2022	11AM-12AM	48.0	68.8	33.1	52.6	51.1	50.4	46.9	43.4	42.6
5/10/2022	12AM-1PM	49.1	74.2	34.3	54.4	51.9	50.8	47.7	43.6	43.1
5/10/2022	1PM-2PM	51.8	66.0	48.8	58.0	53.7	51.7	47.7	45.0	44.3
5/10/2022	2PM-3PM	49.4	71.3	37.6	53.4	52.3	51.7	48.8	44.2	43.8
5/10/2022	3PM-4PM	55.6	84.2	38.0	66.4	59.0	53.9	49.1	46.8	45.2
5/10/2022	4PM-5PM	54.4	79.0	39.6	62.6	61.1	59.2	49.3	45.4	44.3
5/10/2022	5PM-6PM	50.8	76.3	39.0	57.7	53.6	52.9	49.1	46.2	45.3
5/10/2022	6PM-7PM	51.7	78.6	39.0	54.2	52.9	52.6	48.9	45.7	45.3
5/10/2022	7PM-8PM	50.9	75.7	41.0	58.6	53.5	51.5	49.5	46.8	46.1
5/10/2022	8PM-9PM	51.7	84.9	36.4	55.7	52.2	51.8	47.9	45.7	44.7
5/10/2022	9PM-10PM	48.7	72.1	38.4	55.1	51.5	49.8	47.7	45.8	45.6
5/10/2022	10PM-11PM	48.6	74.4	33.1	54.4	53.1	50.7	46.5	43.4	43.2
5/10/2022	11PM-12AM	49.2	79.5	29.2	52.3	51.2	48.3	43.9	41.2	40.4
5/11/2022	12AM-1AM	45.5	72.0	31.2	54.6	46.6	46.2	42.3	39.5	38.3
5/11/2022	1AM-2AM	43.5	64.6	29.2	49.9	47.7	45.2	42.1	39.3	38.2
5/11/2022	2AM-3AM	43.7	61.3	31.1	48.0	47.7	46.7	42.6	39.7	38.9
5/11/2022	3AM-4AM	46.2	66.1	30.6	53.0	50.4	49.4	44.3	40.9	40.8
5/11/2022	4AM-5AM	49.6	72.7	38.5	55.4	54.2	51.3	48.7	45.6	45.4
5/11/2022	5AM-6AM	55.7	86.8	40.7	60.1	53.6	52.4	50.2	48.4	48.0
5/11/2022	6AM-7AM	52.7	78.5	35.1	59.5	58.0	54.6	50.7	48.0	47.4
5/11/2022	7AM-8AM	50.0	69.7	34.7	53.2	52.7	52.6	49.4	46.5	44.3
5/11/2022	8AM-9AM	50.0	73.8	34.3	54.8	52.6	51.9	48.5	45.8	45.1
5/11/2022	9AM-10AM	56.2	88.3	31.9	55.6	53.3	52.5	48.3	46.1	45.4
CNEL:		57.1								

Notes:
[1.] Long-term noise monitoring location (LT1) is illustrated in Exhibit E. The quietest hourly noise interval during operational hours is highlighted in orange. Hours where the ambient exceeds the limit are highlighted in red.

Noise data indicates that the ambient noise level ranges between 48 dBA to 56 dBA Leq during operational hours. From 9 AM to 10 AM and 3 PM to 4 PM, the ambient noise level was above the residential noise limit. Additional field notes and photographs are provided in Appendix A.

As a conservative comparison, MD has utilized the quietest hourly level and has compared the project's projected noise levels to the quietest hourly ambient. The quietest (lowest) level during operational hours occurred between 11 AM and 12 AM (48 dBA, Leq(h)). Comparing the ambient noise level in the quietest location and time to the maximum operational noise level will show the maximum potential impact from the site to the adjacent receptors.

8.0 Future Noise Environment Impacts

This assessment analyzes future noise impacts as a result of the project. The analysis details the estimated exterior/interior noise levels. Stationary noise impacts are analyzed from the on-site noise sources such as dryers/blowers and vacuums (associated with car wash equipment).

8.1 Future Exterior Noise

The following outlines the exterior noise levels associated with the proposed project.

8.1.1 Noise Impacts to Off-Site Receptors Due to Stationary Sources

Sensitive receptors that may be affected by project operational noise include existing residences to the north and west. The worst-case stationary noise was modeled using SoundPLAN acoustical modeling software. Worst-case assumes the blowers are always operational when in reality the noise will be intermittent and cycle on/off depending on customer usage. Project operations are assumed to occur within the hours of 7 AM to 9 PM. Operating outside the allowable hours has the potential to exceed the City's noise ordinance (Section 7.25.010).

A total of two (2) receptors were modeled to evaluate the proposed project's operational impact. A receptor is denoted by a yellow dot. All yellow dots represent either a property line or a sensitive receptor such as a building facade. Receptor 1 represents the nearest residential property line. Receptor 2 represents the nearest commercial property line.

This study compares the Project's operational plus ambient noise levels to the ambient only condition.

Project-Only Levels

Exhibit G shows the "Project-Only" noise levels and contours at the nearest sensitive receptors. The project-only hourly noise level is 48 dBA Leq at the residential receptor to the northeast and 47 dBA Leq at the commercial receptor to the northwest. These levels fall below the 55 dBA Leq external daytime residential limit and 65 dBA Leq commercial limit from Table 7.25.010A of the Municipal Code.

Project Plus Ambient Operational Noise Levels

Table 3 demonstrates the project plus the ambient noise levels. Project plus ambient noise level projections during the quietest hourly level during operation are anticipated to be 51 dBA Leq at the residential receptor and 51 dBA Leq at the commercial receptor and does not exceed the 55 dBA Leq residential limit and 65 dBA Leq commercial limit.

Table 3: Worst-Case Predicted Operational Leq Noise Levels (dBA)

Situation	Receptor[1]	Existing Ambient Noise Level (dBA, Leq)[2]	Project Noise Level (dBA, Leq)	Total Combined Noise Level (dBA, Leq)	Exterior Noise Limit (dBA, Leq)	Change in Noise Level as Result of Project	Exceeds Limit?
120 HP IDC Predator Lined	1	48	48	51	**55**	3	No
	2	48	47	51	**65**	3	No

Notes:
[1.] Receptor 1 represents residential use and receptor 2 represents commercial use.
[2.] See Table 2 for ambient levels.
[3.] See Exhibit F for the operational noise level projections.

It should be noted that as traffic volumes continue to increase along Van Buren Boulevard, traffic noise levels will increase within the project vicinity. Project-generated noise levels will further be masked by traffic noise along the subject roadways.

8.2 Project Design Features

The following summarizes the project design features for the project.

1. The project will use a 120 HP IDC Predator system or equivalent. The reference equipment sound level data is provided in Appendix B.

2. The tunnel exit dimensions will be 10 feet wide by 8 feet tall.

3. An acoustic liner (quiet fiber acoustic perforated metal panels or equivalent) will line 15’ of the exit (see Appendix C) to be shown on the construction drawing.

4. The project will incorporate 6’ CMU walls on the northwest and northeast property lines as well as 8’ walls to the northwest of the tunnel and the northeast of the exit driveway. See Exhibit B.

8.3 Future Interior Noise

Typical “windows closed” condition assumes a 20 dBA noise reduction from building construction techniques. The anticipated interior noise level from project operation plus existing ambient noise at the residential property will be 31 dBA Leq with the “windows closed” condition and 39 dBA Leq with the “windows opened” condition as shown in Table 4. This meets the interior daytime residential limit of 45 dBA Leq.

Exhibit F

IDC Operational Noise Levels dBA, Leq

9.0 Construction Noise Impact

The degree of construction noise may vary for different areas of the project site and also vary depending on the construction activities. Noise levels associated with the construction will vary with the different phases of construction.

9.1 Construction Noise

The Environmental Protection Agency (EPA) has compiled data regarding the noise-generated characteristics of typical construction activities. The data is presented in Table 4.

Table 4: Typical Construction Noise Levels

EQUIPMENT POWERED BY INTERNAL COMBUSTION ENGINES

Type	Noise Levels (dBA) at 50 Feet
Earth Moving	
Compactors (Rollers)	73 - 76
Front Loaders	73 - 84
Backhoes	73 - 92
Tractors	75 - 95
Scrapers, Graders	78 - 92
Pavers	85 - 87
Trucks	81 - 94
Materials Handling	
Concrete Mixers	72 - 87
Concrete Pumps	81 - 83
Cranes (Movable)	72 - 86
Cranes (Derrick)	85 - 87
Stationary	
Pumps	68 - 71
Generators	71 - 83
Compressors	75 - 86

IMPACT EQUIPMENT

Type	Noise Levels (dBA) at 50 Feet
Saws	71 - 82
Vibrators	68 - 82

Notes:
[1] Referenced Noise Levels from the Environmental Protection Agency (EPA)

Construction noise is considered a short-term impact and would be considered significant if construction activities are taken outside the allowable times as described in the City's Municipal Code (Section 7.35.010(B)(5)).

Construction is anticipated to occur during the permissible hours according to the City's Municipal Code. Construction noise will have a temporary or periodic increase in the ambient noise level above the existing within the project vicinity however the City has an exemption for construction that occurs within the allowable hours (see Section 7.35.020(G)). Furthermore, noise reduction measures are provided to further reduce construction noise (Section 9.3). The impact is considered less than significant.

9.2 Construction Vibration

Construction activities can produce vibration that may be felt by adjacent land uses. The construction of the proposed project would not require the use of equipment such as pile drivers, which are known to generate substantial construction vibration levels. The two pieces of equipment with the most potential to cause vibratory impact are the truck and the roller. According to the FTA Noise and Vibration Impact Assessment manual, a loaded truck has a PPV of 0.076 in/sec (86 VdB) at 25 feet, and a vibratory roller has a PPV of 0.210 in/sec (94 VdB) at 25 ft. The nearest vibration-sensitive building is located 25 feet from the property line of the construction site. Therefore, the maximum PPV at the noise-sensitive locations is 0.089 in/sec. These levels have no likely damage or annoyance impact according to the FTA manual. Therefore, no additional vibration mitigation measures are required.

9.3 Construction Noise Reduction Policies

Construction operations must follow the City's General Plan and the Noise Ordinance, which states that construction, repair, or excavation work performed must occur within the permissible hours. To further ensure that construction activities do not disrupt the adjacent land uses, the following measures shall be taken and should be included as conditions of approval:

1. Construction shall occur during the permissible hours as defined in Section 7.35.010(B)(5) and 7.35.020(G).

2. During construction, the contractor shall ensure all construction equipment is equipped with appropriate noise attenuating devices.

3. The contractor shall locate equipment staging areas that will create the greatest distance between construction-related noise/vibration sources and sensitive receptors nearest the project site during all project construction.

4. Idling equipment shall be turned off when not in use.

5. Equipment shall be maintained so that vehicles and their loads are secured from rattling and banging.

10.0 References

State of California General Plan Guidelines: 1998. Governor's Office of Planning and Research

City of Riverside: City of Riverside General Plan 2025 Noise Element. Nov 2007.

City of Riverside: City of Riverside Municipal Code. Jun. 2017.

Appendix A:

Photographs and Field Measurement Data

MD ACOUSTICS
Sound Solutions for Planning and Design
www.mdacoustics.com

AZ Office
4960 S. Gilbert Rd, Ste 1-461
Chandler, AZ 85249

CA Office
1197 E Los Angeles Ave, C-256
Simi Valley, CA 93065

24-Hour Continuous Noise Measurement Datasheet

Project: Quick Quack #44-236
Site Address/Location: 3601 Van Buren Boulevard
Date: 5/10/2022-5/11/2022
Field Tech/Engineer: Jason Schuyler

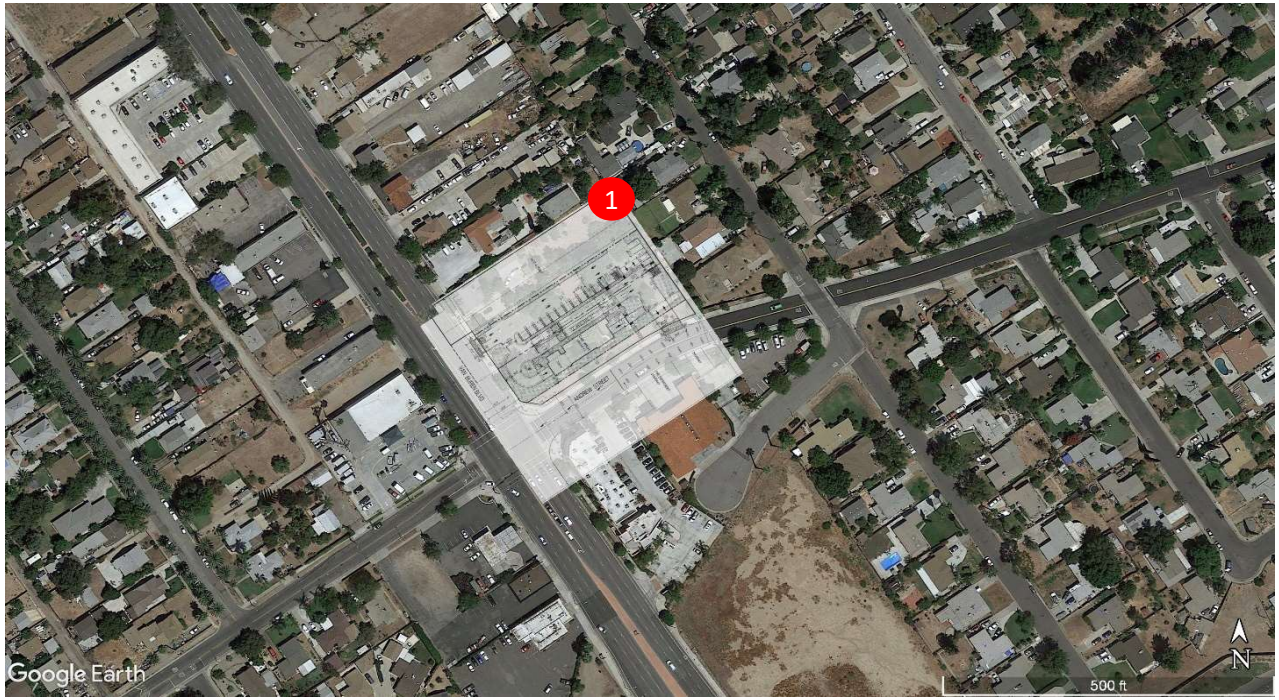
Site Observations: Clear weather

General Location:
Sound Meter: Piccolo 2 **SN:** 80206
Settings: A-weighted, slow, 1-min, 24-hour duration
Meteorological Con.: 2 to 5 mph wind, eastern direction
Site ID: LT1

Site Topo: Flat
Ground Type: Soft site, Open raw ground with a road

Noise Source(s) w/ Distance:
C/L of Van Buren is 350 ft from meter

Figure 1: LT-1 Monitoring Location



MD ACOUSTICS
Sound Solutions for Planning and Design
www.mdacoustics.com

AZ Office
4960 S. Gilbert Rd, Ste 1-461
Chandler, AZ 85249

CA Office
1197 E Los Angeles Ave, C-256
Simi Valley, CA 93065

24-Hour Noise Measurement Datasheet - Cont.

Project: Quick Quack #44-236 **Day:** 1 of 1
Site Address/Location: 3601 Van Buren Boulevard
Site ID: LT1

Date	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
5/10/2022	10:00 AM	11:00 AM	**48.4**	71.3	34.0	52.4	51.3	50.5	47.2	44.0
5/10/2022	11:00 AM	12:00 PM	**48.0**	68.8	33.1	52.6	51.1	50.4	46.9	43.4
5/10/2022	12:00 PM	1:00 PM	**49.1**	74.2	34.3	54.4	51.9	50.8	47.7	43.6
5/10/2022	1:00 PM	2:00 PM	**51.8**	66.0	48.8	58.0	53.7	51.7	47.7	45.0
5/10/2022	2:00 PM	3:00 PM	**49.4**	71.3	37.6	53.4	52.3	51.7	48.8	44.2
5/10/2022	3:00 PM	4:00 PM	**55.6**	84.2	38.0	66.4	59.0	53.9	49.1	46.8
5/10/2022	4:00 PM	5:00 PM	**54.4**	79.0	39.6	62.6	61.1	59.2	49.3	45.4
5/10/2022	5:00 PM	6:00 PM	**50.8**	76.3	39.0	57.7	53.6	52.9	49.1	46.2
5/10/2022	6:00 PM	7:00 PM	**51.7**	78.6	39.0	54.2	52.9	52.6	48.9	45.7
5/10/2022	7:00 PM	8:00 PM	**50.9**	75.7	41.0	58.6	53.5	51.5	49.5	46.8
5/10/2022	8:00 PM	9:00 PM	51.7	84.9	36.4	55.7	52.2	51.8	47.9	45.7
5/10/2022	9:00 PM	10:00 PM	48.7	72.1	38.4	55.1	51.5	49.8	47.7	45.8
5/10/2022	10:00 PM	11:00 PM	48.6	74.4	33.1	54.4	53.1	50.7	46.5	43.4
5/10/2022	11:00 PM	12:00 AM	49.2	79.5	29.2	52.3	51.2	48.3	43.9	41.2
5/11/2022	12:00 AM	1:00 AM	45.5	72.0	31.2	54.6	46.6	46.2	42.3	39.5
5/11/2022	1:00 AM	2:00 AM	43.5	64.6	29.2	49.9	47.7	45.2	42.1	39.3
5/11/2022	2:00 AM	3:00 AM	43.7	61.3	31.1	48.0	47.7	46.7	42.6	39.7
5/11/2022	3:00 AM	4:00 AM	46.2	66.1	30.6	53.0	50.4	49.4	44.3	40.9
5/11/2022	4:00 AM	5:00 AM	49.6	72.7	38.5	55.4	54.2	51.3	48.7	45.6
5/11/2022	5:00 AM	6:00 AM	55.7	86.8	40.7	60.1	53.6	52.4	50.2	48.4
5/11/2022	6:00 AM	7:00 AM	52.7	78.5	35.1	59.5	58.0	54.6	50.7	48.0
5/11/2022	7:00 AM	8:00 AM	**50.0**	69.7	34.7	53.2	52.7	52.6	49.4	46.5
5/11/2022	8:00 AM	9:00 AM	**50.0**	73.8	34.3	54.8	52.6	51.9	48.5	45.8
5/11/2022	9:00 AM	10:00 AM	**56.2**	88.3	31.9	55.6	53.3	52.5	48.3	46.1

CNEL: 57.1

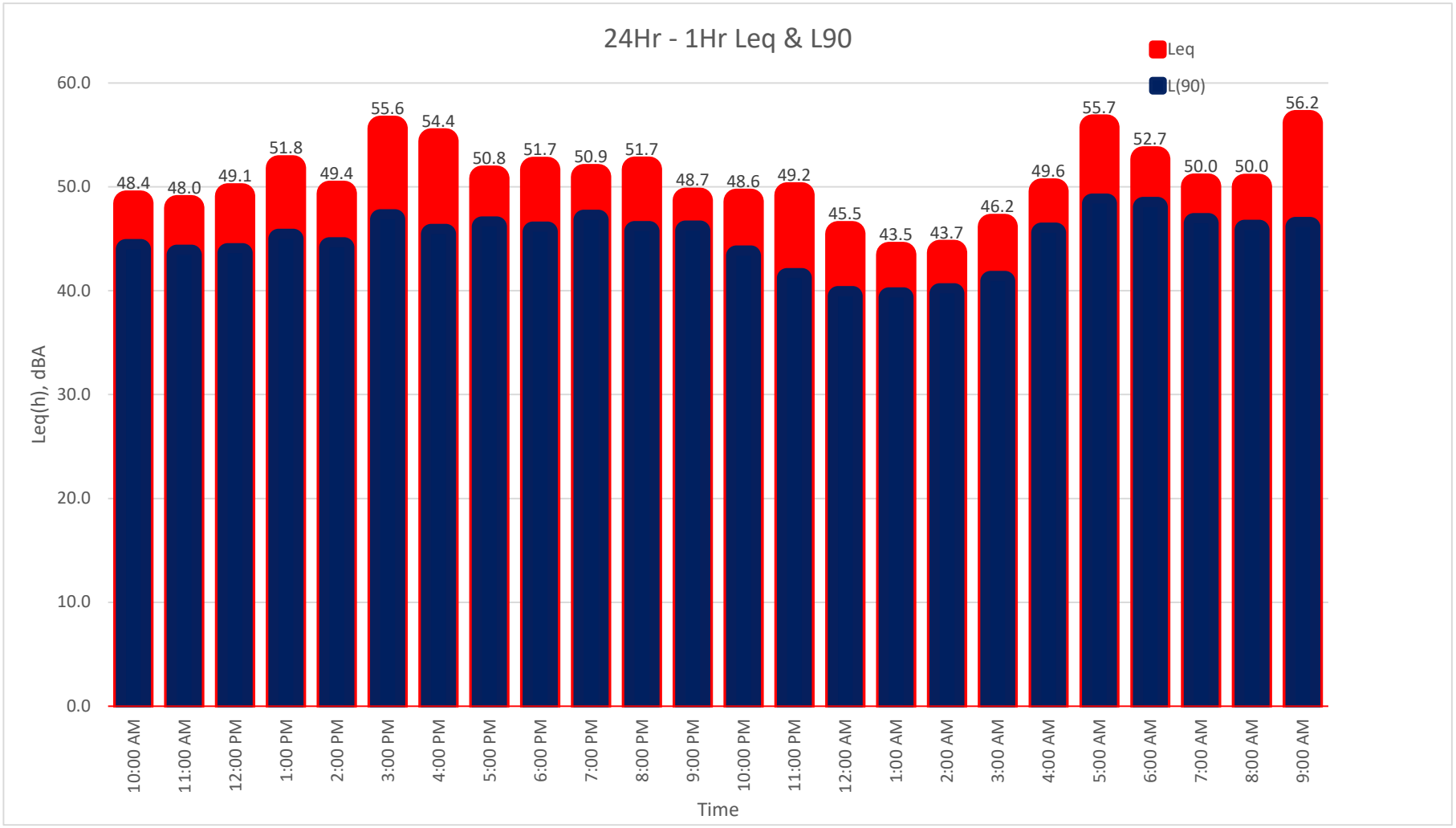
MD ACOUSTICS
Sound Solutions for Planning and Design
www.mdacoustics.com

AZ Office
4960 S. Gilbert Rd, Ste 1-461
Chandler, AZ 85249

CA Office
1197 E Los Angeles Ave, C-256
Simi Valley, CA 93065

24-Hour Continuous Noise Measurement Datasheet - Cont.

Project: Quick Quack #44-236 **Day:** 1 of 1
Site Address/Location: 3601 Van Buren Boulevard
Site ID: LT1



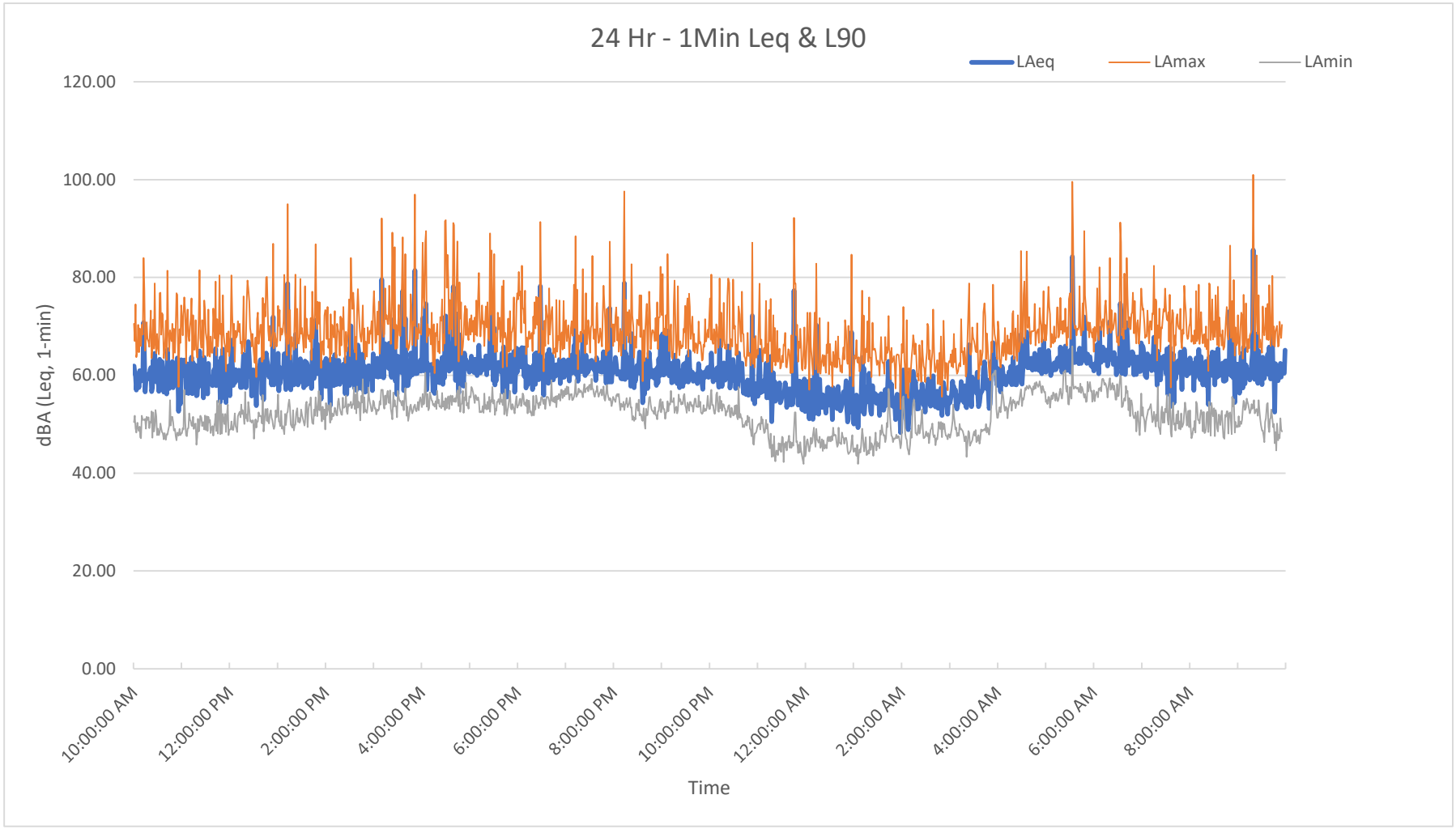
MD ACOUSTICS
Sound Solutions for Planning and Design
www.mdacoustics.com

AZ Office
4960 S. Gilbert Rd, Ste 1-461
Chandler, AZ 85249

CA Office
1197 E Los Angeles Ave, C-256
Simi Valley, CA 93065

24-Hour Continuous Noise Measurement Datasheet - Cont.

Project: Quick Quack #44-236 **Day:** 1 of 1
Site Address/Location: 3601 Van Buren Boulevard
Site ID: LT1



Appendix B:

SoundPLAN Input/Outputs

QQ 44-236 Riverside
Octave spectra of the sources in dB(A) - 007 - 120 HP Predator - Lined: Outdoor SP

Name	Source type	I or A m,m^2	Li dB(A)	R'w dB	L'w dB(A)	Lw dB(A)	KI dB	KT dB	DO-Wall dB	Emission spectrum	63Hz dB(A)	125Hz dB(A)	250Hz dB(A)	500Hz dB(A)	1kHz dB(A)	2kHz dB(A)	4kHz dB(A)	8kHz dB(A)	16kHz dB(A)
001 - 120 HP Predator - Lined Tunnel-Entrance	Area	15.61	77.9	0.0	77.9	89.8	0.0	0.0	3	2109_Entrance_		71.0	87.1	85.9	76.9	65.9	52.2		
001 - 120 HP Predator - Lined Tunnel-Exit	Area	7.44	83.5	0.0	83.5	92.2	0.0	0.0	3	2110_Exit_		76.7	87.4	87.4	84.3	82.9	76.8		
001 - 120 HP Predator - Lined Tunnel-Facade 01	Area	194.86	79.2	57.0	29.8	52.7	0.0	0.0	3	2073_Facade 01_		41.5	51.3	45.2	33.4	28.1	18.9		
001 - 120 HP Predator - Lined Tunnel-Facade 02	Area	25.51	78.1	57.0	30.2	44.2	0.0	0.0	3	2074_Facade 02_		29.2	43.3	36.2	18.4	3.1	-14.3		
001 - 120 HP Predator - Lined Tunnel-Facade 03	Area	194.86	79.2	57.0	29.8	52.7	0.0	0.0	3	2075_Facade 03_		41.5	51.4	45.1	33.2	27.9	18.9		
001 - 120 HP Predator - Lined Tunnel-Facade 04	Area	33.68	83.2	57.0	33.8	49.1	0.0	0.0	3	2076_Facade 04_		39.1	47.5	42.0	29.6	23.5	14.3		
001 - 120 HP Predator - Lined Tunnel-Roof	Area	222.58	76.8	57.0	28.4	51.9	0.0	0.0	0	2071_Roof 01_		42.3	50.6	43.5	29.8	23.5	13.8		
Car Lane	Line	91.86			62.8	82.4	0.0	0.0	0	Drive-Thru - Idiling Car @ 6ft	66.5	68.0	71.5	75.1	76.0	77.2	73.7	65.5	59.1
Car Lane	Line	70.10			62.8	81.3	0.0	0.0	0	Drive-Thru - Idiling Car @ 6ft	65.3	66.8	70.3	74.0	74.8	76.0	72.5	64.3	58.0
Car Lane	Line	70.17			62.8	81.3	0.0	0.0	0	Drive-Thru - Idiling Car @ 6ft	65.3	66.8	70.3	74.0	74.8	76.0	72.5	64.3	58.0
Turbine	Point				86.7	86.7	0.0	0.0	0	Vacutech Turbine	59.0	71.4	69.2	66.2	69.7	73.6	80.4	83.6	77.8
Turbine	Point				86.7	86.7	0.0	0.0	0	Vacutech Turbine	59.0	71.4	69.2	66.2	69.7	73.6	80.4	83.6	77.8
Vac	Point				81.0	81.0	0.0	0.0	0	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0	0	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0	0	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0	0	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0	0	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0	0	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0	0	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0	0	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0	0	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0	0	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0	0	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0	0	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0	0	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0	0	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0	0	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0	0	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0	0	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0	0	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1

QQ 44-236 Riverside
Octave spectra of the sources in dB(A) - 007 - 120 HP Predator - Lined: Indoor SP

Name	Source type	L'w dB(A)	Lw dB(A)	KI dB	KT dB	LwMax dB(A)	DO-Wall dB	Emission spectrum	63Hz dB(A)	125Hz dB(A)	250Hz dB(A)	500Hz dB(A)	1kHz dB(A)	2kHz dB(A)	4kHz dB(A)	8kHz dB(A)	
20 Side Colums	Point	89.9	89.9	0.0	0.0		0	IDC Predator Side Column	58.6	69.9	82.7	85.9	83.2	81.6	75.4	67.0	
20 Side Colums	Point	89.9	89.9	0.0	0.0		0	IDC Predator Side Column	58.6	69.9	82.7	85.9	83.2	81.6	75.4	67.0	
80 HP Hoggers	Point	102.6	102.6	0.0	0.0		0	IDC Predator Hogger Single	75.8	83.8	97.0	97.9	95.4	94.1	88.2	76.4	

Source	Source type	Leq,d dB(A)
Receiver R1 Fl G Lr,lim dB(A) Leq,d 47.9 dB(A)	Sigma(Leq,d) 0.0 dB(A)	
001 - 120 HP Predator - Lined Tunnel-Exit	Area	46.3
Vac	Point	33.7
Vac	Point	32.5
Vac	Point	31.5
Vac	Point	30.6
Vac	Point	30.4
Vac	Point	29.9
Vac	Point	29.8
Vac	Point	29.6
Vac	Point	29.3
Vac	Point	29.1
Vac	Point	28.9
Vac	Point	28.7
Vac	Point	28.7
Vac	Point	28.2
Vac	Point	27.6
Vac	Point	27.4
Vac	Point	27.1
Vac	Point	27.0
Car Lane	Line	26.9
Car Lane	Line	26.6
Car Lane	Line	26.1
Turbine	Point	22.8
001 - 120 HP Predator - Lined Tunnel-Entrance	Area	21.6
Turbine	Point	20.6
001 - 120 HP Predator - Lined Tunnel-Facade 04	Area	3.7
001 - 120 HP Predator - Lined Tunnel-Roof	Area	-0.5
001 - 120 HP Predator - Lined Tunnel-Facade 03	Area	-4.2
001 - 120 HP Predator - Lined Tunnel-Facade 01	Area	-7.5
001 - 120 HP Predator - Lined Tunnel-Facade 02	Area	-18.4
Receiver R2 Fl G Lr,lim dB(A) Leq,d 47.0 dB(A)	Sigma(Leq,d) 0.0 dB(A)	
001 - 120 HP Predator - Lined Tunnel-Exit	Area	45.1
Car Lane	Line	38.5
Car Lane	Line	36.9
Car Lane	Line	35.7
001 - 120 HP Predator - Lined Tunnel-Entrance	Area	28.3
Vac	Point	27.7
Vac	Point	17.9
Vac	Point	17.2
Vac	Point	16.9
Vac	Point	16.7
Vac	Point	16.7
Vac	Point	16.6

QQ 44-236 Riverside
Contribution level - 007 - 120 HP Predator - Lined: Outdoor SP

9

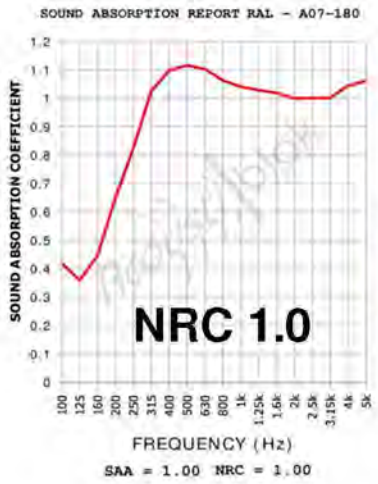
Source	Source type	Leq,d dB(A)	
Turbine	Point	16.5	
Vac	Point	16.4	
Vac	Point	16.2	
Vac	Point	16.2	
Vac	Point	16.1	
Vac	Point	15.9	
Vac	Point	15.8	
Vac	Point	15.4	
Vac	Point	15.4	
Vac	Point	15.2	
Vac	Point	15.1	
Vac	Point	15.0	
Turbine	Point	14.9	
001 - 120 HP Predator - Lined Tunnel-Facade 01	Area	8.3	
001 - 120 HP Predator - Lined Tunnel-Facade 04	Area	6.9	
001 - 120 HP Predator - Lined Tunnel-Roof	Area	2.8	
001 - 120 HP Predator - Lined Tunnel-Facade 03	Area	-6.0	
001 - 120 HP Predator - Lined Tunnel-Facade 02	Area	-11.7	

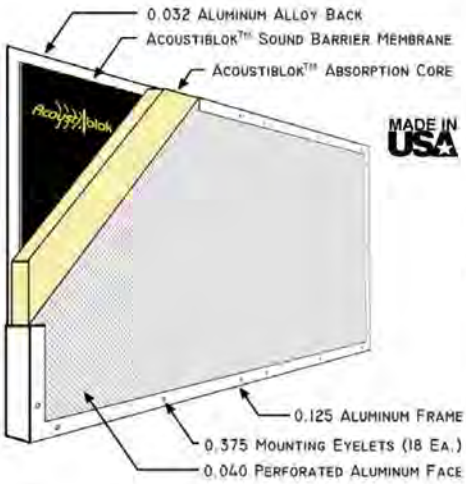
Appendix C:
Referenced Noise Data

Appendix I

North American Office
Acoustiblok, Inc.
6900 Interbay Boulevard
Tampa, FL 33616 USA
Phone: 813-980-1400
Fax: 813-549-2653
www.acoustiblok.com
sales@acoustiblok.com

Industrial Model All Weather Sound Panel™ (Pat. Pend)
Technical Data





Acoustiblok All Weather Sound Panels™ achieve high STC and NRC ratings. They have been specifically designed to withstand outdoor exposure in full sunlight, extreme weather conditions, and harsh industrial environments. (NRC of 1.0 is the highest sound absorption rating possible)

All Weather Sound Panels include an internal layer of U.L. classified Acoustiblok sound isolation material plus a specifically engineered 2" thick weather proof sound absorbing material.

Specifications:		
NRC (Noise Reduction Coefficient):	1.00 *	Gross dimensions: up to 48" x 120"x 2.423", ± 0.125" custom sizes available on special order.
STC (Sound Transmission Class):	29 *	Frame construction: 0.125" welded corrosion resistant 6063-T5 aluminum, mill finish, eyelets: 0.375" (18 ea.)
Weight: (8' panel)	104 lbs	Front face: 0.040 corrosion resistant 5052-H32 aluminum alloy, 3/32" round holes staggered on 5/32" centers.
UL Std 723 fire resistance: Flame spread 0, smoke developed 0.		Back face: 0.032 corrosion resistant 5052-H32 aluminum alloy, mill finish.
UV tolerant, animal resistant, washable, does not support mold growth.		

* Independent Testing by accredited NVLAP testing facility in compliance with ASTM E90, E 413, and other applicable industry standards.

Subject to change without notice, contact Acoustiblok for details.

Product Data Sheet

Product Name

QuietFiber® Hydrophobic Noise Absorption Material – QF2

For Manufacturer Info:

Contact:
Acoustiblok, Inc.
6900 Interbay Boulevard
Tampa, FL 33616
Call - (813) 980-1400
Fax - (813)849-6347
Email - sales@acoustiblok.com
www.acoustiblok.com

Product Description

Basic Use

QuietFiber hydrophobic noise absorption material is an easily installed solution to many noise problems. It is engineered specifically for maximum noise absorption and is used extensively for industrial and commercial applications and is now being successfully introduced into non-industrial environments where reverberant sound and echo is a problem.

QuietFiber® QF2

QuietFiber is rated at the highest noise reduction level – NRC 1.00. Areas of high noise levels including sound reverberation can be resolved easily and economically by introducing QuietFiber into as much of the area as possible. The amount of noise reduction in highly reflective rooms will be directly relative to how much of the QuietFiber material can be installed into the room.

Unlike other fibrous materials which do not have the same high NRC ratings, QuietFiber is hydrophobic, meaning it will not absorb nor combine with water. Marine noise reduction applications are endless.

QuietFiber® QF2

- Highest noise absorption rating of NRC 1.00
- Non Silica
- Virtually fireproof – Class A fire rating
  - 0 Smoke + 0 Flame Development
- Hydrophobic – will not combine with water
- Will not support mold or mildew growth
- Available in plain, black or white face
- Full outdoor weather and U.V. tolerant
- Significant sound benefit v. fiberglass
- Install on top of acoustical ceiling tiles
- High temperature capable
- Comprised of up to 90% recycled material
- 100% recyclable

Product Data Sheet

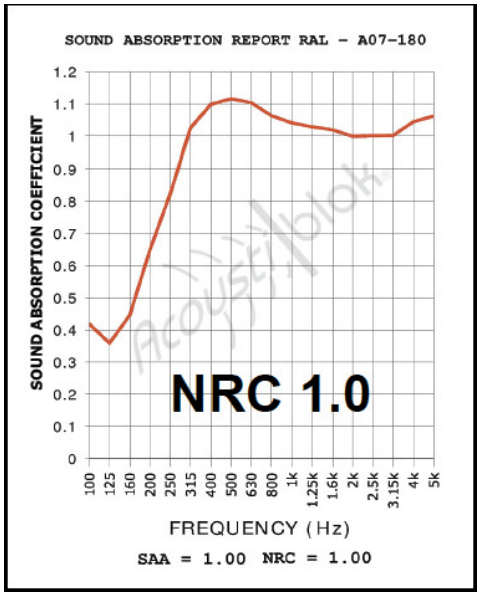
Product Name

QuietFiber® Hydrophobic Noise Absorption Material – QF2

NRC 1.0 Rated	125hz	250hz	500hz	1000hz	2000hz	4000hz
	0.36	0.79	1.15	1.04	1.01	1.04

Technical Data:

- ASTM C 423 – NRC 1.00
- ASTM E 84 – Class 1, 0 Flame 0 Smoke
- ASTM C 518 – R 4.2 per inch
- ASTM C 518 – 0.24 @ 75°F (24°C)



Standards Compliance:

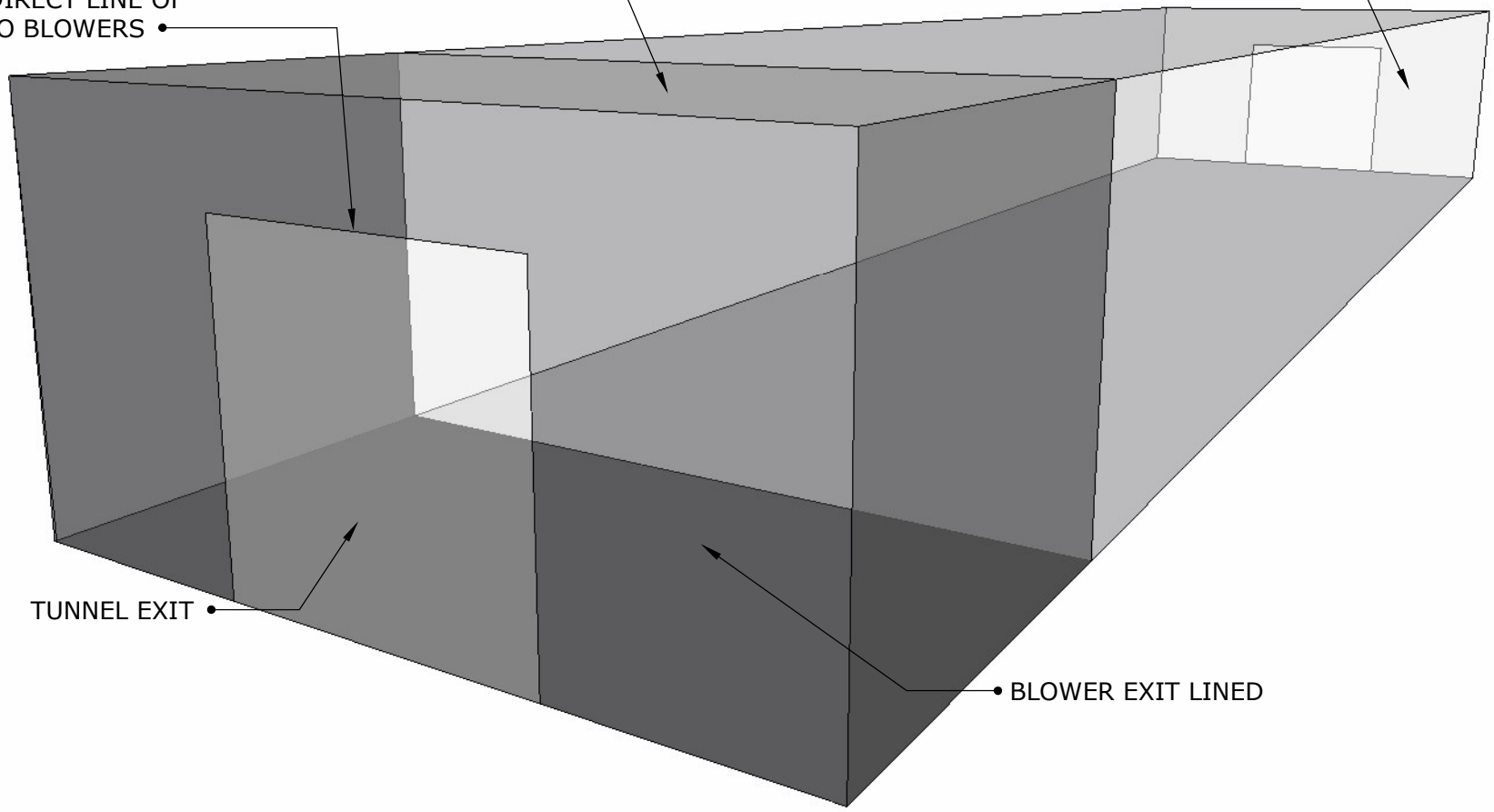
- ASTM C 665 Non-Corrosive Type I
- ASTM C 612 1A, 1B, II, III
- ASTM E 136 Rated Non-combustible per NFPA Standard 220
- ASTM C 1104 Absorption less than 1% by volume
- ASTM C 356 Linear shrinkage <2% @ 1200°F (650°C)

6900 Interbay Blvd
Tampa, Florida USA 33616
Telephone: (813)980-1440
www.Acoustiblok.com
sales@acoustiblok.com

LINE EXIT INTERIOR SECTION
OF BLOWER ROOM W/ 2" THICK ACOUSTIC
MATERIAL W/ NRC 1.0 OR EQUIVALENT.
LINER NEEDS TO BE ADDED
TO ALL SURFACES EXCEPT FLOOR

TUNNEL ENTRANCE

TUNNEL EXIT MUST
BLOCK DIRECT LINE OF
SIGHT TO BLOWERS



TUNNEL EXIT

BLOWER EXIT LINED

ACOUSTIC TREATMENTS TO TUNNEL INTERIOR

MD ACOUSTICS
Sound Solutions for Planning and Design

FOR ILLUSTRATIVE PURPOSES ONLY

MD ACOUSTICS
Sound Solutions for Planning and Design
www.mdacoustics.com

AZ Office
4960 S. Gilbert Rd, Ste 1-461
Chandler, AZ 85249
p. (602) 774-1950

CA Office
1197 Los Angeles Ave, Ste C-256
Simi Valley, CA 93065
p. (805) 426-4477

Project: SuperStar Car Wash Chula Vista
Site Location: 1555 W Warner Rd, Gilbert, AZ 85233
Date: 4/5/2018
Field Tech/Engineer: Robert Pearson
Source/System: Vacutec System

Location: Vac Bay 1
Sound Meter: NTi XL2 **SN:** A2A-05967-E0
Settings: Z-weighted, slow, 1-sec, 10-sec duration
Meteorological Cond.: 80 degrees F, 2 mph wind

Site Observations:
Clear sky, measurements were performed within 1.5ft of source. Measurements were performed while the vacuum was positiioned at threee (3) different positions. Holstered, unholstered and inside a car. This data is utilized for acoustic modeling purposes and represents an average sound level at a vacuum station.

Table 1: Summary Measurement Data

Source	System	Overall dB(A)	3rd Octave Band Data (dBA)																														
			20	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1K	1.25K	1.6K	2K	2.5K	3.15K	4K	5K	6.3K	8K	10K	12.5K	16K	20K
Vacutech (Holstered)	Vacuum	63.3	9	17	22	29	31	35	40	41	44	43	46	48	47	49	51	51	51	52	53	52	52	50	52	53	50	47	47	48	45	39	30
Vacutech (Un Holstered)	Vacuum	80.7	6	19	22	28	34	37	40	43	47	46	48	48	48	49	54	55	58	58	62	65	68	70	74	75	73	69	67	65	63	60	55
Vacutech (Inside Car)	Vacuum	69.6	16	28	31	38	42	45	49	51	52	55	60	61	57	55	59	53	55	56	54	57	57	57	57	57	55	54	51	48	46	42	36
Arth. Average Level*	Vacuum	71.2	11	21	25	32	36	39	43	45	47	48	52	53	51	51	55	53	55	55	56	58	59	59	61	62	59	56	55	53	51	47	40

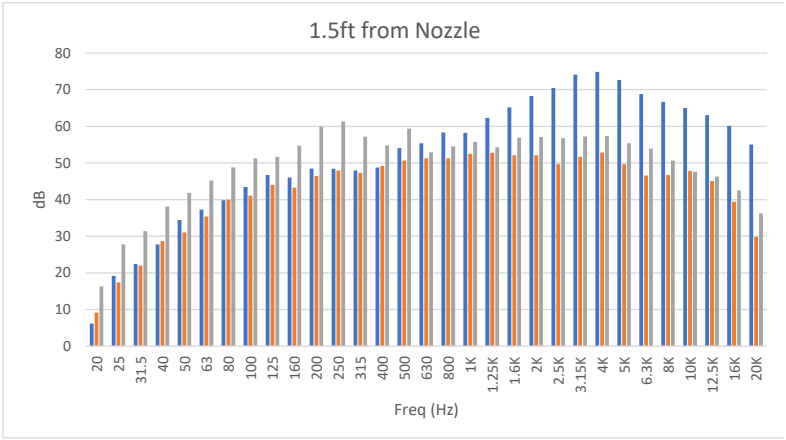
* Refers to the arthitmetic average of all measurements. This measurement represents an average of the multiple vacuum positions.

Figure 1: Example Measurement Position

Figure 1: Holstered

Figure 2: Un Holstered

Figure 3: Inside Car



80hp Predator Quiet Dryer System Specifications

Center Band Sound Frequency	63 Hz	125 Hz	250 Hz	500 Hz	1,000 Hz	2,000 Hz	4,000 Hz	8,000 Hz	**Total Sound** 60 Hz Results	
Final Sound Pressure Level	47.8	57.0	68.9	73.5	68.4	65.2	58.5	48.2	76.2	dBA at Q=1, 5 feet
Final Sound Pressure Level	46.2	55.3	67.2	71.9	66.7	63.4	56.6	46.1	74.5	dBA at Q=1, 10 feet
Final Sound Pressure Level	44.4	53.6	65.4	70.1	64.8	61.5	54.7	44.0	72.7	dBA at Q=1, 15 feet
Final Sound Pressure Level	42.8	51.9	63.7	68.4	63.1	59.8	52.9	42.2	71.0	dBA at Q=1, 20 feet
Final Sound Pressure Level	41.3	50.4	62.2	66.9	61.6	58.2	51.4	40.6	69.5	dBA at Q=1, 25 feet
Final Sound Pressure Level	40.0	49.1	60.9	65.6	60.3	56.9	50.0	39.2	68.2	dBA at Q=1, 30 feet
Final Sound Pressure Level	38.8	47.9	59.7	64.5	59.1	55.7	48.8	38.0	67.1	dBA at Q=1, 35 feet
Final Sound Pressure Level	37.8	46.9	58.7	63.4	58.1	54.7	47.8	37.0	66.0	dBA at Q=1, 40 feet
Final Sound Pressure Level	36.8	45.9	57.7	62.5	57.1	53.7	46.8	36.0	65.1	dBA at Q=1, 45 feet
Final Sound Pressure Level	36.0	45.1	56.9	61.6	56.3	52.8	46.0	35.1	64.2	dBA at Q=1, 50 feet
Final Sound Pressure Level	35.2	44.3	56.1	60.8	55.5	52.1	45.2	34.3	63.4	dBA at Q=1, 55 feet
Final Sound Pressure Level	34.5	43.6	55.4	60.1	54.8	51.3	44.5	33.6	62.7	dBA at Q=1, 60 feet
Final Sound Pressure Level	33.8	42.9	54.7	59.4	54.1	50.7	43.8	32.9	62.0	dBA at Q=1, 65 feet
Final Sound Pressure Level	33.2	42.3	54.1	58.8	53.5	50.0	43.2	32.3	61.4	dBA at Q=1, 70 feet
Final Sound Pressure Level	32.6	41.7	53.5	58.2	52.9	49.5	42.6	31.7	60.8	dBA at Q=1, 75 feet
Final Sound Pressure Level	32.1	41.1	52.9	57.7	52.3	48.9	42.0	31.2	60.3	dBA at Q=1, 80 feet

Sound pressure values are approximated from outdoor propagation equation for planes waves given the sound power values and distances taken from the center of the arch going along the tunnel axis.

* All information provided by MD Acoustics, LLC via tests performed in Cary, IL IDC facilities.

Sound Power Values

									Lw_eq
Predator Side Column	55.6	66.9	79.7	82.9	80.2	78.6	72.4	64.0	86.9
Predator Hogger Single	67.8	75.8	88.9	89.8	87.4	86.1	80.1	68.3	94.5
Predator Hogger Dual	65.9	74.8	86.4	91.4	85.6	81.7	74.7	62.1	93.8

SOUND LEVEL METER READINGS

MODEL: FT-DD-T340HP4 (40hp VACSTAR TURBINE VACUUM PRODUCER)

READING ONE: 43 DB-A, 3 FEET FROM TURBINE @ 45° ANGLE
AND NO BACKGROUND NOISE OR OUTSIDE INTERFERENCE.

READING TWO: 36 DB-A, 10 FEET FROM TURBINE @ 45° ANGLE
AND NO BACKGROUND NOISE OR OUTSIDE INTERFERENCE.

READING THREE: 24 DB-A, 20 FEET FROM TURBINE @ 45° ANGLE
AND NO BACKGROUND NOISE OR OUTSIDE INTERFERENCE.

READING FOUR: 12 DB-A, 30 FEET FROM TURBINE @ 45° ANGLE
AND NO BACKGROUND NOISE OR OUTSIDE INTERFERENCE.

NOTE: THESE READINGS WERE TAKEN OUTSIDE OF 8'x10'x8' CINDER BLOCK ENCLOSURE WITH CONCRETE SLAB AND WOOD JOIST ROOF.

SOUND LEVEL METER USED:

SIMPSON MODEL #40003 – MSHA APPROVED.
MEETS OSHA & WALSH-HEALY REQUIREMENTS FOR NOISE CONTROL.
CONFORMS TO ANSI S1.4-1983, IEC 651 SPECS FOR METER TYPE.

Vacutech
1350 Hi-Tech Drive, Sheridan WY, 82801
PHONE: (800) 917-9444 FAX: (303) 675-1988
EMAIL: info@vacutechllc
WEB SITE: vacutechllc.com

Appendix D:

Construction Modeling Output

VIBRATION LEVEL IMPACT

Project:	QQ Riverside	Date: 12/3/20
Source:	Large Bulldozer	
Scenario:	Unmitigated	
Location:	Project Site	
Address:		

PPV = PPVref(25/D)^n (in/sec)

DATA INPUT

Equipment = Type	2	Large Bulldozer	INPUT SECTION IN BLUE
PPVref =	0.089	Reference PPV (in/sec) at 25 ft.	
D =	25.00	Distance from Equipment to Receiver (ft)	
n =	1.10	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

DATA OUT RESULTS

PPV =	**0.089**	IN/SEC	OUTPUT IN RED

QUICK QUACK CARWASH NESTING BIRD ASSESSMENT REPORT

Project Site:
3605, 3619, and 3631 Van Buren Boulevard
Riverside, CA 95661

Prepared for:

Quick Quack Car Wash
1380 Lead Hills Blvd., STE 260
Roseville, CA 95661

Prepared by:

Ruth Villalobos & Associates, Inc.
3602 Inland Empire Blvd., Suite C310
Ontario, CA 91764
(909) 685-5942

February 2023

1. Introduction

1.1. Purpose of the Nesting Bird Survey

This letter report has been prepared to present the results of Ruth Villalobos & Associates, Inc. (RVA) Nesting Bird Assessment at the proposed Quick Quack Carwash site within the City of Riverside, California (# 44-236). The assessment was conducted to determine whether nests or potential nests exist on site and/or whether the site and surrounding area provide suitable nesting bird habitat to ensure that avoidance and minimization of potential impacts to nesting birds are implemented within the project area during proposed project activities.

1.2. Project Location

The project site is approximately 1.69 acres, located at 3605, 3619 and 3631 Van Buren Boulevard, Riverside, California at the northeast corner of Van Buren Boulevard and Andrew Street (see Figure 1). The proposed project site currently consists of three single-family homes and associated structures/improvements. On-site and surrounding vegetation include several large trees.

1.3. Project Activities

The proposed project includes the construction and operation of a carwash with 20 associated vacuum stalls, parking, landscaping, and bicycle spaces. Implementation of the proposed project would require that the existing buildings be demolished and that the existing flat area of the site be re-graded to provide new building pads and internal parking and drive aisles. Additionally, project activities are anticipated to consist of, but are not limited to, grubbing of vegetation/landscaping, tree removal, dirt removal, grading, and paving.

2. Regulations Protecting Nesting Birds

2.1. Federal Laws

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 U.S. Government Code [USC] 703 et. seq.) enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the Soviet Union, and authorizes the protection of nesting birds that are both residents and migrants, whether or not they are considered sensitive by resource agencies. Under the MBTA it is unlawful "for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to Federal regulations.

2.2. State Laws

California Fish and Game Code

California Department of Fish and Wildlife (CDFW) regulates all activities that alter streams and lakes and their associated habitat. The CDFW, through provisions of the California Fish and Game Code (Sections 1601-1603), is empowered to issue agreements for any alteration of a river, stream, or lake where fish or wildlife resources may be adversely affected.

As with the MBTA, similar provisions within the California Fish and Game Code (CFGC) protects all native birds of prey and their nests (FGC Section 3503.5), all Falconiformes or Strigiformes (birds-of-prey) and their nests (FGC Section 3503.5), and all migratory non-game birds except as provided by the rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA (Section 3513).

3. Methodology

RVA staff biologist Justinne Manahan conducted a pre-construction nesting bird habitat assessment of the project site on January 20, 2023.

The assessment area for active bird nests included the entirety of the project site plus a 300-foot buffer as the surrounding area contains several trees and shrubs (see Figure 2). Assessment methods included walking the project site while conducting a thorough examination of the trees and shrubs on site for the presence of bird nests or signs of nesting behavior. Trees were surveyed with the aid of binoculars to detect any potentially obscured nests or signs of nesting and binoculars were utilized to survey areas not accessible on foot. As observing the presence of actual nests in vegetation can be particularly difficult because most species choose areas that camouflage nests under dense vegetation growth, special attention was paid to the signs of nesting behaviors of birds. Trees and shrubs on site and within the buffer were also assessed for their potential to provide nesting bird habitat.

Indicators of active nests that were considered during the survey included sightings of birds carrying nesting material and/or food, repeated flying to and from potential nest sites (indicating mate and/or chick feeding), evidence of whitewash/excrement on lower portions of trunks, branches, and/or the ground, and auditory evidence of chicks. All avian species observed during the survey were recorded and photos marked with Global Positioning System (GPS) coordinates were taken of any nests and potential nest locations (as determined by the presence of nest activity indicators).

4. Survey Results

During the January 20, 2023 nesting bird habitat assessment, no avian nests, potential nesting sites, or indicators of nesting were observed on site. However, it should be noted that the nesting bird habitat assessment was conducted outside of the typical passerine nesting bird season of February 1st – August 31st.

The temperature was 50 degrees Fahrenheit at 9:00 am, with clear skies and winds at 7 miles per hour. Avian species observed and documented during the assessment included the following species:

- American crow (*Corvus brachyrhnchos*)
- House Finch (*Haemorhous mexicanus*)
- Lesser goldfinch (*Spinus psaltria*)
- Mourning dove (*Zenaida macroura*)

Vegetation observed on site and within the survey buffer primarily consisted of ornamental shrubs for residential and commercial landscaping as well as several trees, including:

- Peruvian pepper tree (*Schinus molle*)
- Unidentified pine (*Pinus* sp.)
- Lemon tree/Citrus tree (*Citrus limon*)
- Western sycamore (*Platanus racemosa*)
- Crepe myrtle (*Lagerstroemia indica*)
- California palm (*Washingtonia filifera*)
- Southern magnolia (*Magnolia grandiflora*)

No nests, potential nesting sites, or indicators of nesting were identified. Project site trees were thoroughly observed for signs of nests or potential signs of nesting. No whitewash, feathers, or potential nests were observed within the trees on the project site nor within the trees and shrubs within the survey area.

Overall bird activity within the survey buffer was relatively low. As noted, the nesting bird habitat assessment was conducted outside of the typical active nesting bird season, which likely attributed to the lack of active nests and/or nesting behavior observed. Moderate winds, such as those experienced during the assessment, additionally contribute to low bird activity.

5. Conclusion/Recommendations

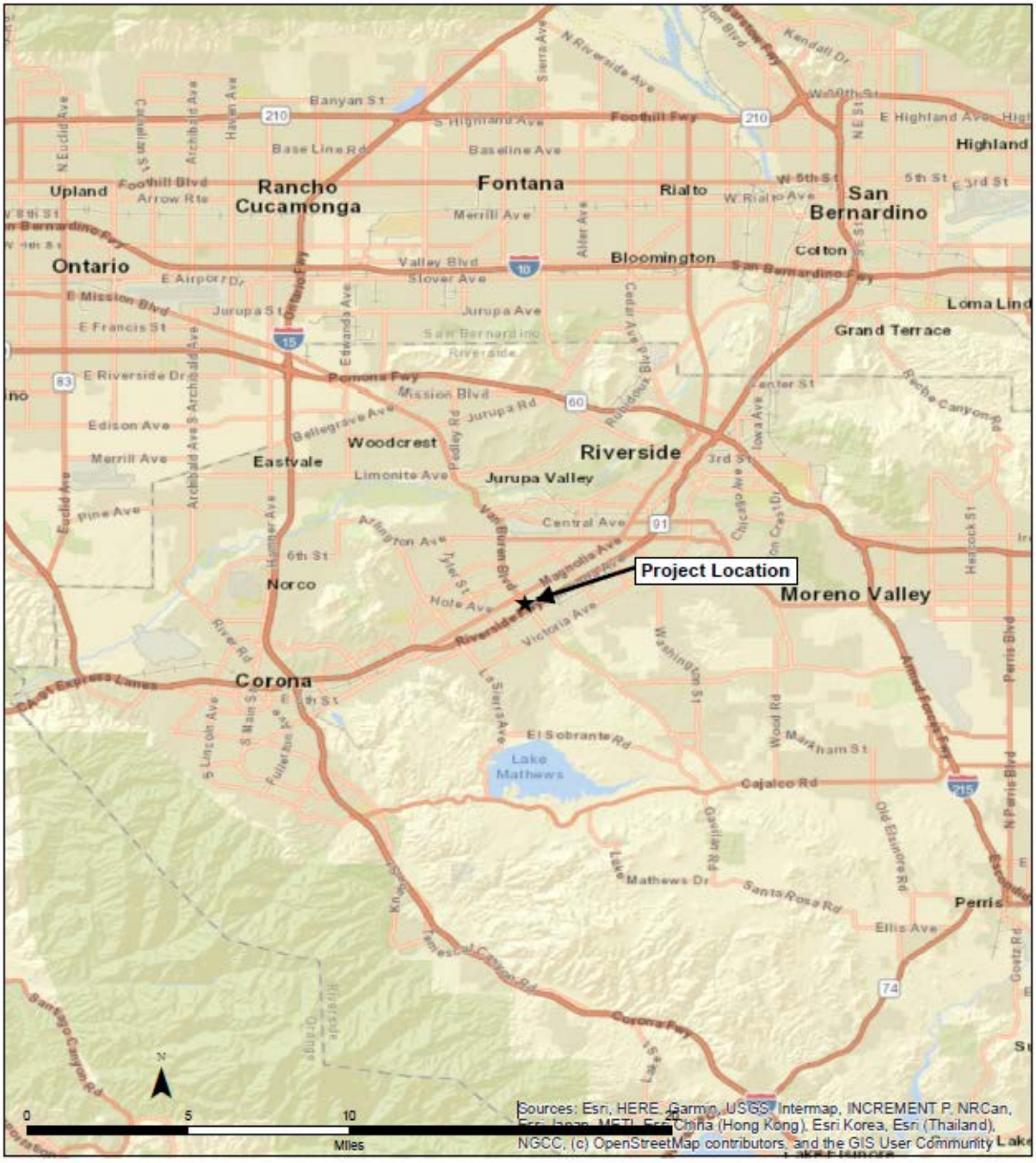
Based on the results of the January 20, 2023 nesting bird assessment, no active nests or potential nests were present within the project site or within the 300-foot buffer surrounding the site. However, the site's several trees provide potential suitable habitat for nesting birds and birds were heard and observed within the 300-foot buffer areas, which also contain several trees and shrubs that could provide suitable nesting habitat. It is therefore recommended that construction activities involving vegetation removal (i.e., clearing, grubbing, tree cutting/removal, etc.) be scheduled to occur outside of the CDFW-defined nesting season of February 1 through August 31 as is feasible. If scheduling construction activities involving vegetation removal outside of the nesting season is not feasible, it is recommended that a qualified biologist perform a nesting bird clearance survey within three days prior to and of the start of construction activities to ensure no active nests are present.

Attachments:

Figure 1: Project Vicinity/Location Map

Figure 2: Survey Area

Site Photographs

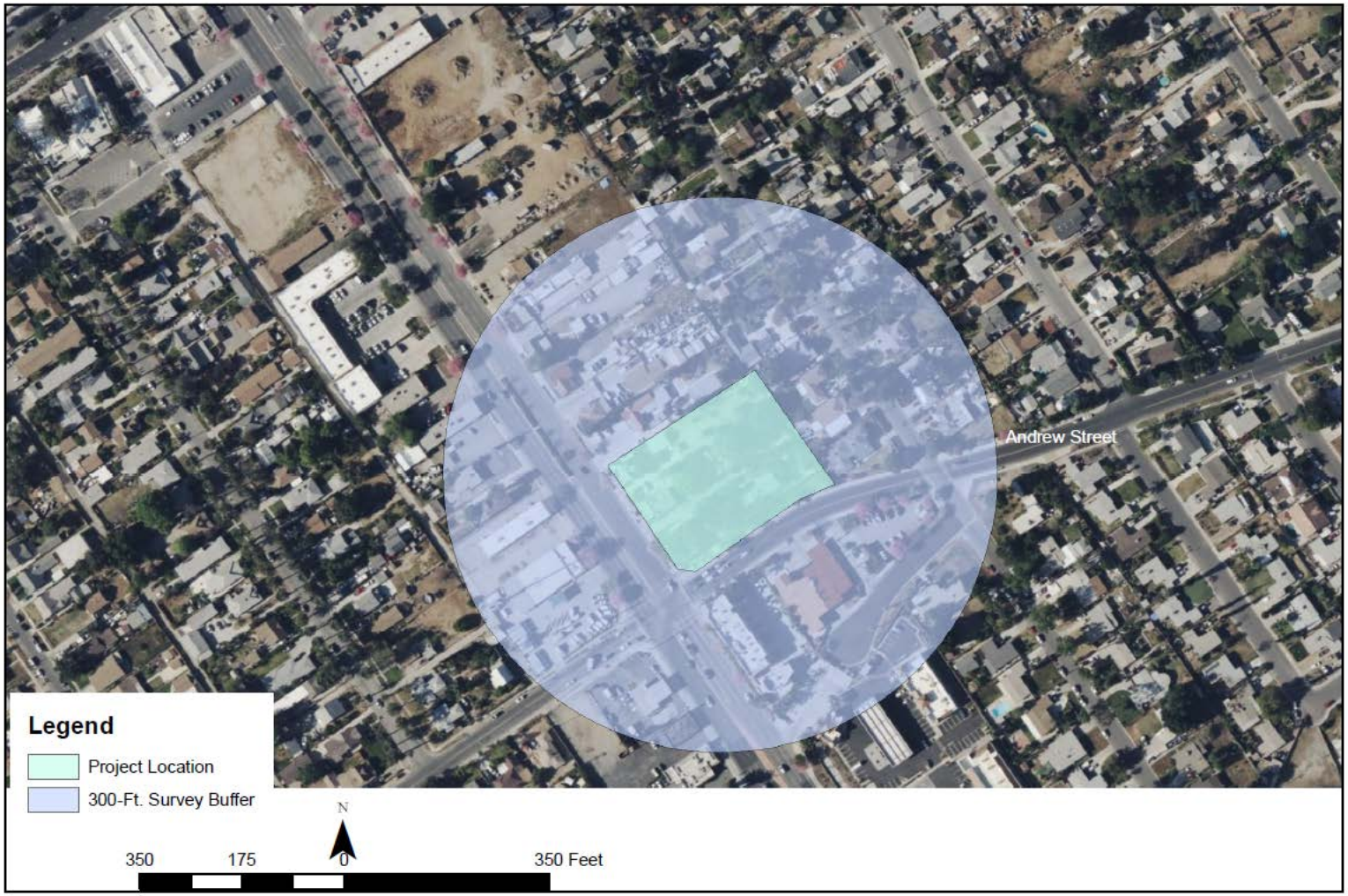


QUICK QUACK CAR WASH - VAN BUREN

RVA

Regional Map

Figure 1



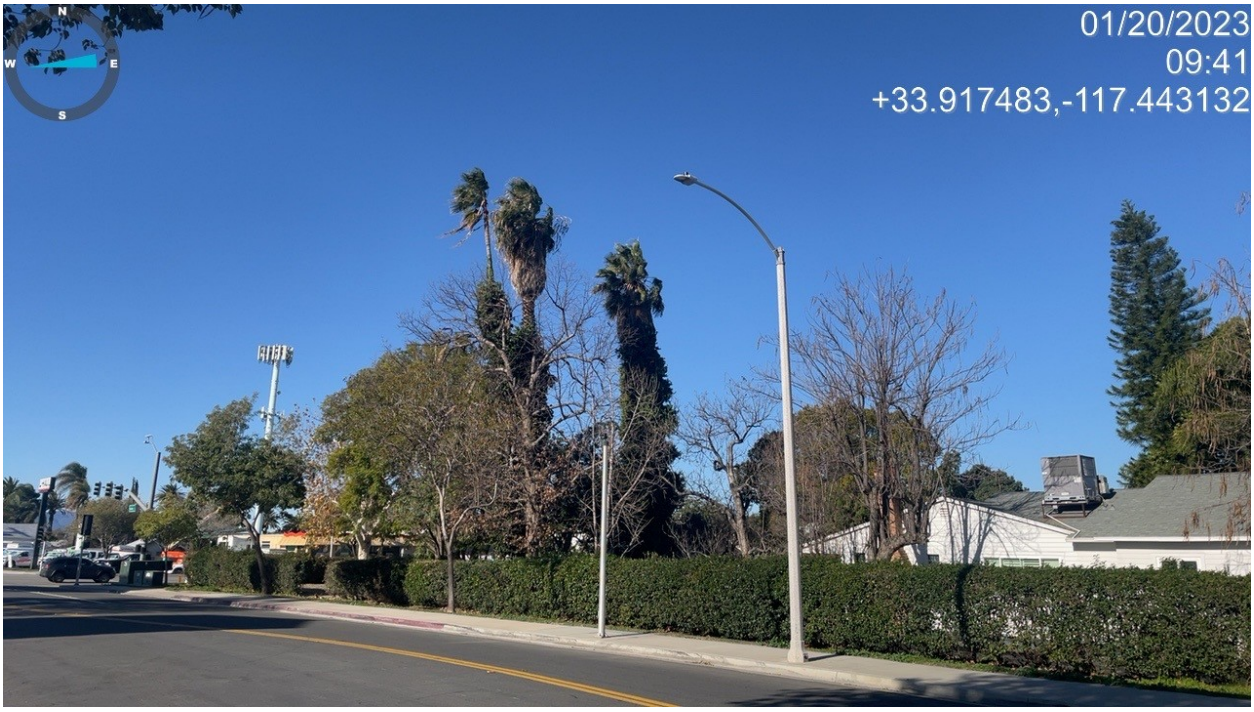
QUICK QUACK CAR WASH - VAN BUREN

Survey Area

Figure 2

Site Photos


01/20/2023
09:41
+33.917483,-117.443132


01/20/2023
09:41
+33.917483,-117.443132


01/20/2023
09:42
+33.917542,-117.443118
CITY OF RIVERSIDE
ARLINGTON
FIRE STATION
NO. 2


01/20/2023
09:43
+33.917238,-117.443640

MEMORANDUM

URBAN CROSSROADS

DATE: February 9, 2023
TO: Sonya Hooker, Ruth Villalobos & Associates, Inc.
FROM: Haseeb Qureshi, Urban Crossroads, Inc.
JOB NO: 14976-02 AQ & GHG DD

QUICK QUACK ANDREW AND VAN BUREN AIR QUALITY & GREENHOUSE GAS DUE DILIGENCE ASSESSMENT

Sonya Hooker,

Urban Crossroads, Inc. is pleased to provide the following Air Quality & Greenhouse Gas Due Diligence Assessment for the Quick Quack Andrew and Van Buren (**Project**), which is located at the northeast corner of Van Buren Boulevard and Andrew Street in the City of Riverside.

PROJECT OVERVIEW

The Project is proposed to consist of a 73,818-square-foot (sf) automatic car wash facility, consisting of a 3,596-sf car wash tunnel, 4 parking stalls, and 20 vacuum stalls. The Project is anticipated to be constructed in a single phase by the year 2024.

SUMMARY OF FINDINGS

Results of the assessment indicate that the Project is not anticipated to result in a significant impact during construction or operational activities associated with air quality and greenhouse gas emissions.

PROJECT AIR QUALITY EMISSIONS

CONSTRUCTION EMISSIONS

Construction activities associated with the Project will result in emissions of VOCs, NO_X, SO_X, CO, PM_{10}, and $PM_{2.5}$. Construction related emissions are expected from the following construction activities:

- Demolition
- Site Preparation
- Grading
- Building Construction
- Paving
- Architectural Coating

CONSTRUCTION EMISSIONS

The estimated maximum daily construction emissions are summarized on Table 1. Detailed construction model outputs are presented in Attachment A. As shown, emissions resulting from the Project construction will not exceed thresholds established by the SCAQMD for emissions of any criteria pollutant.

TABLE 1: OVERALL REGIONAL CONSTRUCTION EMISSIONS SUMMARY

Source	Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Summer						
2024	2.25	26.60	19.60	0.07	5.07	2.52
Winter						
2024	7.89	17.80	21.30	0.04	0.93	0.73
Maximum Daily Emissions	**7.89**	**26.60**	**21.30**	**0.07**	**5.07**	**2.52**
SCAQMD Regional Threshold	75	100	550	150	150	55
Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

[1]PM10 and PM2.5 source emissions reflect 3x daily watering per SCAQMD Rule 403 for fugitive dust.

OPERATIONAL EMISSIONS

Operational activities associated with the proposed Project would result in emissions of CO, VOCs, NO_X, SO_X, PM_{10}, and $PM_{2.5}$. Operational related emissions are expected from the following primary sources: area source emissions, energy source emissions, mobile source emissions, and on-site equipment emissions.

The estimated operation-source emissions from the proposed Project are summarized on Table 2. Detailed operation model outputs are presented in Attachment A. As shown on Table 2, operational-

source emissions would not exceed the applicable SCAQMD regional thresholds for emissions of any criteria pollutant.

TABLE 2: TOTAL PROPOSED PROJECT REGIONAL OPERATIONAL EMISSIONS

Source	Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Summer						
Mobile Source	0.39	0.37	3.37	0.01	0.26	0.05
Area Source	0.12	< 0.005	0.16	< 0.005	< 0.005	< 0.005
Energy Source	< 0.005	0.04	0.03	< 0.005	< 0.005	< 0.005
Total Maximum Daily Emissions	**0.51**	**0.41**	**3.56**	**0.01**	**0.26**	**0.05**
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	NO	NO	NO	NO	NO	NO
Winter						
Mobile Source	0.36	0.40	2.82	0.01	0.26	0.05
Area Source	0.10	0.00	0.00	0.00	0.00	0.00
Energy Source	< 0.005	0.04	0.03	< 0.005	< 0.005	< 0.005
Total Maximum Daily Emissions	**0.46**	**0.44**	**2.85**	**0.01**	**0.26**	**0.05**
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	NO	NO	NO	NO	NO	NO

PROJECT GREENHOUSE GAS EMISSIONS

The estimated annual GHG emissions are summarized on Table 3 for the proposed Project. The estimated GHG emission include emissions from Carbon Dioxide (CO_2), Methane (CH_4), Nitrous Oxide (N_2O), and Refrigerants (R). As shown on Table 3, the proposed Project would generate a total of approximately 119.30 $MTCO_2e$/yr. Detailed model outputs are presented in Attachment A.

TABLE 3: PROPOSED PROJECT GREENHOUSE GAS EMISSIONS

Source	Emission (lbs/day)				
	CO_2	CH_4	N_2O	R	Total CO_2e
Annual construction-related emissions amortized over 30 years	5.63	3.33E-04	0.00E+00	6.67E-04	5.67
Mobile	77.80	< 0.005	< 0.005	0.14	79.20
Area	0.07	< 0.005	< 0.005	0.00	0.07
Energy	23.40	< 0.005	< 0.005	0.00	23.50
Water	1.49	0.01	< 0.005	0.00	1.85
Waste	1.23	0.12	0.00	0.00	4.29
Refrigerants	0.00	0.00	0.00	4.72	4.72
Total CO2E (All Sources)	**119.30**				

As shown on Table 3, the Project will result in approximately 119.30 $MTCO_2e$/yr net new emissions; the proposed the Project emissions would not exceed the City of Riverside's 3,000 MT CO_2e screening threshold and GHG impacts would be less than significant.

CONCLUSION

Results of the assessment indicate that the Project is not anticipated to result in a significant impact during construction or operational activities associated with air quality and greenhouse gas emissions.

ATTACHMENT A
CALEEMOD OUTPUTS

14976 - Quick Quack Andrew and Van Buren Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	14976 - Quick Quack Andrew and Van Buren
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.20
Precipitation (days)	18.0
Location	33.91762502254899, -117.44378523995509
County	Riverside-South Coast
City	Riverside
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5421
EDFZ	11
Electric Utility	City of Riverside
Gas Utility	Southern California Gas

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Automobile Care Center	3.60	1000sqft	0.08	3,596	18,682	—	—	—
Parking Lot	24.0	Space	0.22	0.00	0.00	—	—	—

Other Asphalt Surfaces	1.39	Acre	1.39	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.82	2.25	26.6	19.6	0.07	1.20	3.87	5.07	1.11	1.41	2.52	—	9,044	9,044	0.23	1.03	13.8	9,372
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.55	7.89	17.8	21.3	0.04	0.74	0.19	0.93	0.68	0.04	0.73	—	3,642	3,642	0.15	0.04	0.02	3,657
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.68	0.68	4.99	5.27	0.01	0.20	0.09	0.29	0.19	0.03	0.21	—	1,023	1,023	0.04	0.02	0.10	1,030
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.12	0.12	0.91	0.96	< 0.005	0.04	0.02	0.05	0.03	< 0.005	0.04	—	169	169	0.01	< 0.005	0.02	170

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	2.82	2.25	26.6	19.6	0.07	1.20	3.87	5.07	1.11	1.41	2.52	—	9,044	9,044	0.23	1.03	13.8	9,372
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	2.55	7.89	17.8	21.3	0.04	0.74	0.19	0.93	0.68	0.04	0.73	—	3,642	3,642	0.15	0.04	0.02	3,657
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.68	0.68	4.99	5.27	0.01	0.20	0.09	0.29	0.19	0.03	0.21	—	1,023	1,023	0.04	0.02	0.10	1,030
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.12	0.12	0.91	0.96	< 0.005	0.04	0.02	0.05	0.03	< 0.005	0.04	—	169	169	0.01	< 0.005	0.02	170

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.46	0.51	0.42	3.56	0.01	0.01	0.26	0.27	0.01	0.05	0.05	8.05	951	959	0.85	0.04	31.7	1,023
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.40	0.46	0.44	2.86	0.01	0.01	0.26	0.26	0.01	0.05	0.05	8.05	901	909	0.85	0.04	28.6	971
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.35	0.42	0.32	2.13	< 0.005	0.01	0.16	0.16	0.01	0.03	0.03	8.05	620	628	0.84	0.03	29.4	686
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.06	0.08	0.06	0.39	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	1.33	103	104	0.14	< 0.005	4.86	114

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.42	0.39	0.37	3.37	0.01	0.01	0.26	0.26	0.01	0.05	0.05	—	800	800	0.03	0.04	3.23	815
Area	0.03	0.12	< 0.005	0.16	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.64	0.64	< 0.005	< 0.005	—	0.65
Energy	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	141	141	0.01	< 0.005	—	142
Water	—	—	—	—	—	—	—	—	—	—	—	0.65	8.35	9.00	0.07	< 0.005	—	11.2
Waste	—	—	—	—	—	—	—	—	—	—	—	7.40	0.00	7.40	0.74	0.00	—	25.9
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	28.5	28.5
Total	0.46	0.51	0.42	3.56	0.01	0.01	0.26	0.27	0.01	0.05	0.05	8.05	951	959	0.85	0.04	31.7	1,023
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.39	0.36	0.40	2.82	0.01	0.01	0.26	0.26	0.01	0.05	0.05	—	751	751	0.03	0.04	0.08	763
Area	—	0.10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	141	141	0.01	< 0.005	—	142
Water	—	—	—	—	—	—	—	—	—	—	—	0.65	8.35	9.00	0.07	< 0.005	—	11.2
Waste	—	—	—	—	—	—	—	—	—	—	—	7.40	0.00	7.40	0.74	0.00	—	25.9
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	28.5	28.5
Total	0.40	0.46	0.44	2.86	0.01	0.01	0.26	0.26	0.01	0.05	0.05	8.05	901	909	0.85	0.04	28.6	971
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.33	0.31	0.28	1.99	< 0.005	< 0.005	0.16	0.16	< 0.005	0.03	0.03	—	470	470	0.03	0.02	0.85	479
Area	0.02	0.11	< 0.005	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.44	0.44	< 0.005	< 0.005	—	0.44
Energy	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	141	141	0.01	< 0.005	—	142
Water	—	—	—	—	—	—	—	—	—	—	—	0.65	8.35	9.00	0.07	< 0.005	—	11.2

Waste	—	—	—	—	—	—	—	—	—	—	—	7.40	0.00	7.40	0.74	0.00	—	25.9
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	28.5	28.5
Total	0.35	0.42	0.32	2.13	< 0.005	0.01	0.16	0.16	0.01	0.03	0.03	8.05	620	628	0.84	0.03	29.4	686
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.06	0.06	0.05	0.36	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	77.8	77.8	< 0.005	< 0.005	0.14	79.2
Area	< 0.005	0.02	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.07	0.07	< 0.005	< 0.005	—	0.07
Energy	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	23.4	23.4	< 0.005	< 0.005	—	23.5
Water	—	—	—	—	—	—	—	—	—	—	—	0.11	1.38	1.49	0.01	< 0.005	—	1.85
Waste	—	—	—	—	—	—	—	—	—	—	—	1.23	0.00	1.23	0.12	0.00	—	4.29
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.72	4.72
Total	0.06	0.08	0.06	0.39	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	1.33	103	104	0.14	< 0.005	4.86	114

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.92	1.61	15.6	16.0	0.02	0.67	—	0.67	0.62	—	0.62	—	2,494	2,494	0.10	0.02	—	2,502
Demolition	—	—	—	—	—	—	0.66	0.66	—	0.10	0.10	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.55	0.57	< 0.005	0.02	—	0.02	0.02	—	0.02	—	88.8	88.8	< 0.005	< 0.005	—	89.1
Demolition	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.7	14.7	< 0.005	< 0.005	—	14.8
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.06	1.04	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	180	180	0.01	0.01	0.71	183
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.61	0.15	< 0.005	0.01	0.14	0.15	0.01	0.04	0.05	—	544	544	0.01	0.09	1.15	572
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.96	5.96	< 0.005	< 0.005	0.01	6.05
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	19.4	19.4	< 0.005	< 0.005	0.02	20.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.99	0.99	< 0.005	< 0.005	< 0.005	1.00

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.21	3.21	< 0.005	< 0.005	< 0.005	3.37

3.3. Site Preparation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.11	1.77	16.6	14.6	0.02	0.87	—	0.87	0.80	—	0.80	—	2,294	2,294	0.09	0.02	—	2,302
Dust From Material Movement	—	—	—	—	—	—	1.98	1.98	—	0.91	0.91	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.6	12.6	< 0.005	< 0.005	—	12.6
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.08	2.08	< 0.005	< 0.005	—	2.09
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.63	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	108	108	< 0.005	< 0.005	0.43	110
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.55	0.55	< 0.005	< 0.005	< 0.005	0.56
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.09
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.50	2.10	19.5	17.1	0.02	1.08	—	1.08	1.00	—	1.00	—	2,643	2,643	0.11	0.02	—	2,652
Dust From Material Movement	—	—	—	—	—	—	2.13	2.13	—	0.92	0.92	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.16	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	21.7	21.7	< 0.005	< 0.005	—	21.8
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.60	3.60	< 0.005	< 0.005	—	3.61
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.05	0.83	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	144	144	0.01	< 0.005	0.57	146
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.26	0.10	7.07	1.70	0.04	0.12	1.62	1.74	0.12	0.45	0.57	—	6,257	6,257	0.11	1.01	13.2	6,573
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.10	1.10	< 0.005	< 0.005	< 0.005	1.12
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	51.4	51.4	< 0.005	0.01	0.05	54.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.18	0.18	< 0.005	< 0.005	< 0.005	0.18
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.52	8.52	< 0.005	< 0.005	0.01	8.94

3.7. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.54	1.28	10.9	11.6	0.02	0.44	—	0.44	0.40	—	0.40	—	2,159	2,159	0.09	0.02	—	2,167
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.54	1.28	10.9	11.6	0.02	0.44	—	0.44	0.40	—	0.40	—	2,159	2,159	0.09	0.02	—	2,167
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	0.46	3.96	4.21	0.01	0.16	—	0.16	0.15	—	0.15	—	781	781	0.03	0.01	—	784
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.08	0.72	0.77	< 0.005	0.03	—	0.03	0.03	—	0.03	—	129	129	0.01	< 0.005	—	130
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	16.6	16.6	< 0.005	< 0.005	0.07	16.8
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.3	18.3	< 0.005	< 0.005	0.05	19.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	15.2	15.2	< 0.005	< 0.005	< 0.005	15.4
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.3	18.3	< 0.005	< 0.005	< 0.005	19.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.58	5.58	< 0.005	< 0.005	0.01	5.65
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.62	6.62	< 0.005	< 0.005	0.01	6.93
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.92	0.92	< 0.005	< 0.005	< 0.005	0.94
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.10	1.10	< 0.005	< 0.005	< 0.005	1.15
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Paving (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.71	0.60	5.52	7.25	0.01	0.26	—	0.26	0.24	—	0.24	—	1,103	1,103	0.04	0.01	—	1,106
Paving	—	0.60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.11	0.14	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	21.1	21.1	< 0.005	< 0.005	—	21.2
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.50	3.50	< 0.005	< 0.005	—	3.51
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.07	0.79	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	165	165	0.01	0.01	0.02	167
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.21	3.21	< 0.005	< 0.005	0.01	3.26
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.53	0.53	< 0.005	< 0.005	< 0.005	0.54
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Architectural Coating (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.18	1.21	1.53	< 0.005	0.04	—	0.04	0.04	—	0.04	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	5.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.41	3.41	< 0.005	< 0.005	—	3.43
Architectural Coatings	—	0.10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.57	0.57	< 0.005	< 0.005	—	0.57
Architectural Coatings	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.04	3.04	< 0.005	< 0.005	< 0.005	3.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Automobile Care Center	0.42	0.39	0.37	3.37	0.01	0.01	0.26	0.26	0.01	0.05	0.05	—	800	800	0.03	0.04	3.23	815

Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.42	0.39	0.37	3.37	0.01	0.01	0.26	0.26	0.01	0.05	0.05	—	800	800	0.03	0.04	3.23	815
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Automobile Care Center	0.39	0.36	0.40	2.82	0.01	0.01	0.26	0.26	0.01	0.05	0.05	—	751	751	0.03	0.04	0.08	763
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.39	0.36	0.40	2.82	0.01	0.01	0.26	0.26	0.01	0.05	0.05	—	751	751	0.03	0.04	0.08	763
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Automobile Care Center	0.06	0.06	0.05	0.36	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	77.8	77.8	< 0.005	< 0.005	0.14	79.2
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.06	0.06	0.05	0.36	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	77.8	77.8	< 0.005	< 0.005	0.14	79.2

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	—	74.2	74.2	< 0.005	< 0.005	—	74.4
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	17.8	17.8	< 0.005	< 0.005	—	17.8
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	91.9	91.9	< 0.005	< 0.005	—	92.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	—	74.2	74.2	< 0.005	< 0.005	—	74.4
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	17.8	17.8	< 0.005	< 0.005	—	17.8
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	91.9	91.9	< 0.005	< 0.005	—	92.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	—	12.3	12.3	< 0.005	< 0.005	—	12.3

Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	2.94	2.94	< 0.005	< 0.005	—	2.95
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	15.2	15.2	< 0.005	< 0.005	—	15.3

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Automobile Care Center	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	49.5	49.5	< 0.005	< 0.005	—	49.6
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	49.5	49.5	< 0.005	< 0.005	—	49.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Automobile Care Center	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	49.5	49.5	< 0.005	< 0.005	—	49.6
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	49.5	49.5	< 0.005	< 0.005	—	49.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Automobile Care Center	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.20	8.20	< 0.005	< 0.005	—	8.22
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.20	8.20	< 0.005	< 0.005	—	8.22

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	0.03	< 0.005	0.16	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.64	0.64	< 0.005	< 0.005	—	0.65

Total	0.03	0.12	< 0.005	0.16	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.64	0.64	< 0.005	< 0.005	—	0.65
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.07	0.07	< 0.005	< 0.005	—	0.07
Total	< 0.005	0.02	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.07	0.07	< 0.005	< 0.005	—	0.07

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Automob Care Center	—	—	—	—	—	—	—	—	—	—	—	0.65	8.35	9.00	0.07	< 0.005	—	11.2
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.65	8.35	9.00	0.07	< 0.005	—	11.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Automob ile Care Center	—	—	—	—	—	—	—	—	—	—	—	0.65	8.35	9.00	0.07	< 0.005	—	11.2
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.65	8.35	9.00	0.07	< 0.005	—	11.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Automob ile Care Center	—	—	—	—	—	—	—	—	—	—	—	0.11	1.38	1.49	0.01	< 0.005	—	1.85
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.11	1.38	1.49	0.01	< 0.005	—	1.85

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	7.40	0.00	7.40	0.74	0.00	—	25.9
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	7.40	0.00	7.40	0.74	0.00	—	25.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	7.40	0.00	7.40	0.74	0.00	—	25.9
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	7.40	0.00	7.40	0.74	0.00	—	25.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Automobile	—	—	—	—	—	—	—	—	—	—	—	1.23	0.00	1.23	0.12	0.00	—	4.29
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1.23	0.00	1.23	0.12	0.00	—	4.29

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	28.5	28.5
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	28.5	28.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	28.5	28.5
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	28.5	28.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Automobile	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.72	4.72
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.72	4.72

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetatio	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	5/1/2024	5/17/2024	5.00	13.0	20
Site Preparation	Site Preparation	5/20/2024	5/21/2024	5.00	2.00	2
Grading	Grading	5/22/2024	5/24/2024	5.00	3.00	4
Building Construction	Building Construction	5/28/2024	11/27/2024	5.00	132	200
Paving	Paving	11/19/2024	11/27/2024	5.00	7.00	10
Architectural Coating	Architectural Coating	11/19/2024	11/27/2024	5.00	7.00	10

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Site Preparation	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43

Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29
Building Construction	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Building Construction	Welders	Diesel	Average	3.00	8.00	46.0	0.45
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	8.00	10.0	0.56
Architectural Coating	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	12.5	18.5	LDA,LDT1,LDT2
Demolition	Vendor	—	10.2	HHDT,MHDT
Demolition	Hauling	7.77	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—

Site Preparation	Worker	7.50	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	10.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	89.3	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	1.15	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	0.59	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	12.5	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	0.23	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	5,394	1,798	4,197

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	8,703	—
Site Preparation	—	—	3.00	0.00	—
Grading	—	2,144	6.00	0.00	—
Paving	0.00	0.00	0.00	0.00	1.61

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	3	74%	74%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Automobile Care Center	0.00	0%
Parking Lot	0.22	100%
Other Asphalt Surfaces	1.39	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	787	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Automobile Care Center	85.3	85.3	42.7	28,913	512	920	461	205,590
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	5,394	1,798	4,197

5.10.3. Landscape Equipment

Season	Unit	Value

Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Automobile Care Center	34,410	787	0.0330	0.0040	154,449
Parking Lot	8,242	787	0.0330	0.0040	0.00
Other Asphalt Surfaces	0.00	787	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Automobile Care Center	338,316	296,216
Parking Lot	0.00	0.00
Other Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Automobile Care Center	13.7	0.00
Parking Lot	0.00	0.00
Other Asphalt Surfaces	0.00	0.00

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Automobile Care Center	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Automobile Care Center	Supermarket refrigeration and condensing units	User Defined	150	26.5	16.5	16.5	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	25.1	annual days of extreme heat
Extreme Precipitation	2.00	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	3.16	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A

Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	93.6
AQ-PM	92.6
AQ-DPM	96.2
Drinking Water	77.4
Lead Risk Housing	86.5
Pesticides	27.1
Toxic Releases	72.0
Traffic	93.7
Effect Indicators	—

CleanUp Sites	0.00
Groundwater	26.2
Haz Waste Facilities/Generators	61.8
Impaired Water Bodies	0.00
Solid Waste	0.00
Sensitive Population	—
Asthma	67.0
Cardio-vascular	82.7
Low Birth Weights	81.0
Socioeconomic Factor Indicators	—
Education	75.2
Housing	57.9
Linguistic	68.9
Poverty	83.2
Unemployment	70.9

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	32.34954446
Employed	44.86077249
Median HI	30.96368536
Education	—
Bachelor's or higher	17.50288721
High school enrollment	2.489413576
Preschool enrollment	34.72346978

Transportation	—
Auto Access	65.16104196
Active commuting	66.2517644
Social	—
2-parent households	61.26010522
Voting	8.161170281
Neighborhood	—
Alcohol availability	23.7520852
Park access	27.15257282
Retail density	94.21275504
Supermarket access	59.69459772
Tree canopy	22.43038624
Housing	—
Homeownership	40.75452329
Housing habitability	34.9544463
Low-inc homeowner severe housing cost burden	26.43397921
Low-inc renter severe housing cost burden	65.8026434
Uncrowded housing	23.3029642
Health Outcomes	—
Insured adults	33.3504427
Arthritis	39.1
Asthma ER Admissions	31.6
High Blood Pressure	43.5
Cancer (excluding skin)	60.5
Asthma	21.6
Coronary Heart Disease	40.3
Chronic Obstructive Pulmonary Disease	25.1

Diagnosed Diabetes	36.9
Life Expectancy at Birth	22.9
Cognitively Disabled	58.3
Physically Disabled	80.2
Heart Attack ER Admissions	9.2
Mental Health Not Good	22.6
Chronic Kidney Disease	27.1
Obesity	17.5
Pedestrian Injuries	51.3
Physical Health Not Good	25.2
Stroke	34.3
Health Risk Behaviors	—
Binge Drinking	43.3
Current Smoker	19.7
No Leisure Time for Physical Activity	22.4
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	32.5
Elderly	79.3
English Speaking	70.1
Foreign-born	53.2
Outdoor Workers	45.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	67.4
Traffic Density	87.9
Traffic Access	51.6

Other Indices	—
Hardship	83.8
Other Decision Support	—
2016 Voting	20.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	93.0
Healthy Places Index Score for Project Location (b)	20.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Building Construction, Paving, Architectural Coating overlap to present a conservative analysis. Construction schedule compressed to account for 2024 Opening Year.

Construction: Off-Road Equipment	T/L/B replaced with Crawler Tractor to accurately calculate disturbance for Site Preparation and Grading phases. Standard 8 hours work days.
Operations: Architectural Coatings	SCAQMD Rule 1113
Construction: Architectural Coatings	SCAQMD Rule 1113
Operations: Refrigerants	As of 1 January 2022, new commercial refrigeration equipment may not use refrigerants with a GWP of 150 or greater. Further, R-404A (the CalEEMod default) is unacceptable for new supermarket and cold storage systems as of 1 January 2019 and 2023, respectively.