CITY OF INDIO

APPENDIX N

IN-FILL CHECKLIST

Project Title: Expansion of L&G Market

Case Numbers:

City of Indio Contact Person, Phone Number, and Email: Mr. Kevin Snyder, Community Development Dir.

100 Civic Center Drive, Indio, CA 92201, 760-541-4255, ksnyder@indio.org

Project Location: 49900 Jackson Street, APN's: 612-280-06,07,08, & 09

92201

Project Sponsor's Name and Contact Information: Mr. Mike Thomas 49826 Jackson Street, Indio, CA

760-347-1511, mikejthomas1969@gmail.com

Project Site General Plan Land Use Designation: Neighborhood Commercial (NC)

Project Site Zoning Designation: Neighborhood Commercial (NC)

Prior Environmental Document(s) Analyzing the Effects of the In-fill Project (including State Clearinghouse number if assigned): None

Location of Prior Environmental Document(s) Analyzing the Effects of the In-fill Project:

None

Description of Project: **(Describe the whole action involved, including but not limited to later phases of the project and any secondary, support, or off-site features necessary for its implementation. Attach additional pages if necessary.)**

The proposal will consist of a remodel of a convenience store to include the following on a 2.4 Acre Site:

- 8 Gasoline Pumps
- 6,000 SF Convenience Store
- 2,000 SF Flower Shop
- 2,500 SF Coffee Shop with outdoor seating

- 2,000 SF Retail Shop

In addition, the Site will contain 69 Parking Spaces including 3 Charging Stations one of which is ADA accessible, 13 EV parking space, 4 handicapped spaces on site. Lastly, the site will have on-site retention, a dog park, and access points from Avenue 50 and Jackson Street.

The property will include on-site landscaping, parking, and retention.

Surrounding Land Uses and Setting. Briefly describe the project site surroundings, including any prior uses of the project site, or, if vacant, describe the urban uses that exist on at least 75% of the project site perimeter: The Site has been a convenience store for about 50 years where the family lived on site at one time. The area is a mix of residential and commercial uses. The site is surrounded by residential to the west, Veterinarian's Office to north, vacant land and a church to the east, and another church to the south.

Other Public Agencies Whose Approval is Required: City of Indio Building Department, County Health Department, and the Department of Toxic Substances

Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

AB 52 will be complied when the project is submitted.

Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code Section 21080.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code Section 21082.3(c) contains provisions specific to confidentiality.

SATISFACTION OF STATE CEQA GUIDELINES APPENDIX M PERFORMANCE STANDARDS

Provide the information demonstrating that the in-fill project satisfies the performance standards in State CEQA Guidelines Appendix M below. For mixed-use projects, the predominant use will determine which performance standards apply to the entire project.

1. Does the non-residential in-fill project include a renewable energy feature? If so, describe below. If not, explain below why it is not feasible to do so.

The Site will have electric charging stations.

2. If the project site is included on any list compiled pursuant to Section 65962.5 of the Government Code for hazardous waste, either provide documentation of remediation or describe the recommendations provided in a preliminary endangerment assessment or comparable document that will be implemented as part of this project.

The Site is not on a list of Hazardous Materials Site for the State of California

3. For residential projects, the project satisfies which of the following?

Project not Residential

☐ Located within a low vehicle travel area, as defined in State CEQA Guidelines Appendix M. (Attach VMT map.)

☐ Located within ½ mile of an existing major transit stop or an existing stop along a high-quality transit corridor. (Attach map illustrating proximity to transit.)

☐ Consist of 300 or fewer units that are each affordable to low-income households. (Attach evidence of legal commitment to ensure the continued availability and use of the housing units for lower income households, as defined in Section 50079.5 of the Health and Safety Code, for a period of at least 30 years, at monthly housing costs, as determined pursuant to Section 50053 of the Health and Safety Code.)

5. For commercial projects with a single building floorplate below 50,000 square feet, the project satisfies which of the following?

Project is less than 50,000 Square Feet

☐ Located within a low vehicle travel area, as defined in State CEQA Guidelines Appendix M. (Attach VMT map.)

☐ The project is within ½ mile of at least 1,800 dwelling units. (Attach map illustrating proximity to households.)

6. For office building projects, the project satisfies which of the following?

☐ Located within a low vehicle travel area, as defined in State CEQA Guidelines Appendix M. (Attach VMT map.)

☐ Located within ½ mile of an existing major transit stop or within ¼ mile of an existing stop along a high-quality transit corridor. (Attach map illustrating proximity to transit.)

7. For school projects, the project does all of the following:

Not a School

☐ The project complies with the requirements in Sections 17213, 17213.1, and 17213.2 of the California Education Code.

☐ The project is an elementary school and is within one mile of 50% of the student population or is a middle school or high school and is within two miles of 50% of the student population. Alternatively, the school is within ½ mile of an existing major transit stop or an existing stop along a high-quality transit corridor. (Attach map and methodology.)

☐ The project provides parking for bicycles and scooters.

8. For small walkable community projects, the project must be a residential project that has a density of at least eight units to the acre or a commercial project with a floor area ratio of at least 0.5, or both.

ENVIRONMENTAL FACTORS AFFECTED

The in-fill project could potentially result in one or more of the following environmental effects.

☐ Aesthetics and Scenic Resources	☐ Agriculture Resources	☒ Air Quality
☐ Biological Resources	☒ Cultural Resources and Tribal Cultural Resources	☐ Energy
☐ Geology and Soils	☒ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials
☐ Hydrology and Water Quality	☐ Land Use and Planning	☐ Mineral Resources
☒ Noise and Vibration	☐ Population and Housing	☐ Public Services and Recreation
☒ Transportation	☐ Utilities and Service Systems	☐ Wildfire
☐ Mandatory Findings of Significance		

Determination

On the basis of this initial evaluation:

☒ I find that the proposed in-fill project WOULD NOT have any significant effects on the environment that either have not already been analyzed in a prior EIR or that are more significant than previously analyzed, or that uniformly applicable development policies would not substantially mitigate. Pursuant to Public Resources Code Section 21094.5, CEQA does not apply to such effects. A Notice of Determination (State CEQA Guidelines Section 15094) will be filed.

☐ I find that the proposed in-fill project will have effects that either have not been analyzed in a prior EIR or are more significant than described in the prior EIR, and that no uniformly applicable development policies would substantially mitigate such effects. With respect to those effects that are subject to CEQA, I find that such effects WOULD NOT be significant and a NEGATIVE DECLARATION, or if the project is a Transit Priority Project a SUSTANABLE COMMUNITIES ENVIRONMENTAL ASSESSMENT, will be prepared.

☐ I find that the proposed in-fill project will have effects that either have not been analyzed in a prior EIR or are more significant than described in the prior EIR, and that no uniformly applicable development policies would substantially mitigate such effects. I find that although those effects could be significant, there will not be a significant effect in this case because revisions to the in-fill project have been made by or agreed to by the project proponent. A NEGATIVE DECLARARTION,

or if the project is a Transit Priority Project a SUSTANABLE COMMUNITIES ENVIRONMENTAL ASSESSMENT, will be prepared.

☐ I find that the proposed in-fill project will have effects that either have not been analyzed in a prior EIR or are more significant than described in the prior EIR, and that no uniformly applicable development policies would substantially mitigate such effects. I find that those effects WOULD be significant, and an ENVIRONMENTAL IMPACT REPORT is required to analyze those effects that are subject to CEQA.

_____ _____

Signature of City Representative Date

EVALUATION OF ENVIRONMENTAL IMPACTS OF IN-FILL PROJECTS

The following instructions are for the evaluation of project impacts in the In-fill Environmental Checklist:

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources the City cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. For the purpose of this checklist, “prior EIR” means the environmental impacts report certified for a planning level decision, as supplemented by any subsequent or supplemental environmental impact reports, negative declarations, or addenda to those documents. “Planning level decision” means the enactment or amendment of a general plan, community plan, specific plan, or zoning code. (State CEQA Guidelines Section 15183.3(e).)

4. Once the City staff has determined that a particular physical impact may occur as a result of an in-fill project, then the checklist answers must indicate whether the impact has already been analyzed in a prior EIR. If the effect of the in-fill project is not more significant than what has already been analyzed that effect of the in-fill project is not subject to CEQA. The brief explanation accompanying this determination should include page and section references to the portions of the prior EIR containing the analysis of that effect. The brief explanation shall also indicate whether the prior EIR included any mitigation measures to substantially lessen that effect and whether those measures have been incorporated into the in-fill project.

5. If the in-fill project would cause a significant adverse effect that either is specific to the project or project site and was not analyzed in a prior EIR, or is more significant than was analyzed in a prior EIR, the City must determine whether uniformly applicable development policies or standards that have been adopted by the City would substantially mitigate that effect. If so, the checklist shall explain how the in-fill project’s implementation

of the uniformly applicable development policies will substantially mitigate the effect. That effect of the in-fill project is not subject to CEQA if the City makes a finding, based upon substantial evidence, that the development policies or standards will substantially mitigate that effect.

6. If all effects of an in-fill project were either analyzed in a prior EIR or are substantially mitigated by uniformly applicable development policies or standards, CEQA does not apply to the project, and the City shall file a Notice of Determination.

7. Effects of an in-fill project that either have not been analyzed in a prior EIR, or that uniformly applicable development policies or standards do not substantially mitigate, are subject to CEQA. With respect to those effects of the in-fill project that are subject to CEQA, the checklist shall indicate whether those effects are significant, less than significant with mitigation, or less than significant. If there are one or more “Significant Impact” entries when the determine is made, an in-fill EIR is required. The in-fill EIR should be limited to analysis of those effects determined to be significant. (State CEQA Guidelines Sections 15128, 15183.3(d).)

8. “Less Than Significant with Mitigation Incorporated” applies where the incorporation of mitigation measures will reduce an effect of an in-fill project that is subject to CEQA from “Significant Impact” to a “Less Than Significant Impact.” The City must describe the mitigation measures, and briefly explain how those measures reduce the effect to a less than significant level. If the effects of an in-fill project that are subject to CEQA are less than significant with mitigation incorporated, the City may prepare a Mitigated Negative Declaration. If all of the effects of the in-fill project that are subject to CEQA are less than significant, the City may prepare a Negative Declaration.

1. The explanation of each issue should identify:

   a. the significance criteria or threshold, if any, used to evaluate each question; and

   b. the mitigation measure identified, if any, to reduce the impact to less than significance.

PROJECT EVALUATION

AESTHETICS AND SCENIC RESOURCES	Significant Impact	Less Than Significant or Less Than Significant With Mitigation	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the in-fill project:					
a. Have a substantial adverse effect on a scenic vista that is visible from a City scenic corridor?	☐	☐	☒	☐	☐
b. Substantially alter or damage a scenic resource that is visible from a City scenic corridor?	☐	☐	☒	☐	☐
c. Conflict with applicable General Plan policies or zoning regulations governing scenic quality?	☐	☐	☒	☐	☐
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐	☐

AGRICULTURE RESOURCES	Significant Impact	Less Than Significant or Less Than Significant With Mitigation	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the in-fill project:					
a. Convert Prime Farmland, Farmland of Statewide Importance, or Unique Farmland (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐	☐
b. Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☒	☐	☐
c. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	☐	☐	☒	☐	☐

AIR QUALITY	Significant Impact	Less Than Significant or Less Than Significant With Mitigation	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the in-fill project:					
a. Conflict with or obstruct implementation of the current Riverside County Air Quality Management Plan?	☐	☐	☐	☐	☒
b. Result in a cumulatively considerable net increase of ROC and/or NOx emissions?	☐	☐	☐	☐	☒
c. Expose sensitive receptors to substantial pollutant concentrations of fugitive dust, carbon monoxide, toxic air contaminants, and/or spores?	☐	☐	☐	☐	☒
d. Result in other emissions that create objectionable odors adversely affecting a substantial number of people?	☐	☐	☐	☐	☒

a. Per the Air Quality Report in Appendix C, the proposed project will not conflict with the Climate Action Plan for Riverside County or that of the South Coast Air Quality Management District and no further action is needed.

b. Per the Air Quality Report which addresses Regional Construction, Localized Construction, Regional Operation, and Local Operation there is no significant increase in any pollutant including ROC and/or No_x and no further action is warranted.

c. Per the Air Quality Report, the nearest sensitive receptors are the single family uses that are 173 feet from the site which exceeds the 50-foot separation required by California Air Resource Board and that no concentration of pollutants such as Carbon Monoxide, Nitrogen Oxides, or any particulates would have significant impacts and no further action is needed.

d. The Gas Station will not create any objectionable odors from its operation or from any pollutant and no further action is needed.

BIOLOGICAL RESOURCES	Significant Impact	Less Than Significant or Less Than Significant With Mitigation	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the in-fill project:					
a. Have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special status species by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☒	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☒	☐	☐
c. Have a substantial adverse effect on state or federally regulated and/or protected wetlands through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐	☐
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐	☐

The Site has been used as a Convenience Store for more than 50 years and do not have any species living on site.

CULTURAL RESOURCES AND TRIBAL CULTURAL RESOURCES	Significant Impact	Less Than Significant or Less Than Significant With Mitigation	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the in-fill project:					
a. Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5 of the State CEQA Guidelines?	☐	☒	☐	☐	☐
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the State CEQA Guidelines?	☐	☒	☐	☐	☐

c. Cause a substantial adverse change in the significance of a tribal cultural resources, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:					
1. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☒	☐	☐	☐
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the City shall consider the significance of the resource to a local California Native American tribe?					
d. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐	☐

Although the Cultural Resources Report from Paleo West which is Exhibit A. The report found no significant impacts:

a. There are no significant historic buildings on site, nor do they qualify for designation in any local, state, or federal register.

b. The project could have potential for subterranean resources and therefore Mitigation Measures One and Two will protect any subterranean resources that could be found.

c. The City will conduct an AB54 Review with local tribes to ensure that they have adequate review time to have consultation with the City. This is a requirement of State Law so there is no need for any Mitigation Measures.

d. In the event human remains are found Mitigation Measure 2 will ensure that the Indio Police and the Riverside County Coroner are contacted and that there was no foul-play committed and identify the body for ancestral or tribal claim.

The following are recommended Mitigation Measures used regularly in the Coachella Valley. It is recommended that the following mitigation measures be used that are standard in the Coachella Valley:

1. If buried cultural resources are discovered during the earth-moving operations, all work in that area should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds and, if necessary, develop a treatment plan in consultation with the City of Indio.

2. If unexpected human remains are uncovered during construction activities, all construction work taking place within the vicinity of the discovered remains must cease and the necessary steps to ensure the integrity of the immediate area must be taken. The County Coroner and Indio Police Department must be notified within 24 hours of the discovery of human remains. Concurrently, the Applicant shall hire a qualified consultant to conduct Middens Testing to see if there are additional human remains. If the remains discovered are determined by the coroner to be of Native American descent, the coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC would in turn contact the Most Likely Descendant (MLD) would determine further action to be taken. The MLD would have 48 hours to access the site and make a recommendation regarding disposition of the remains. All results from the Middens Testing and the MLD shall be provided to the Archeological Information Center at the University of California Riverside and the City of Indio.

3. During periods of Excavation a qualified paleontologist is defined as an individual who meets the standards set forth by the Society of Vertebrate Paleontology (2010). The qualified paleontologist would be onsite during ground-disturbance to mitigate any discoveries of paleontological resources that are encountered during Project construction.

4. Prior to the start of the proposed Project activities, all field personnel should receive a worker's environmental awareness training on paleontological resources. The training will provide a description of the laws and ordinances protecting fossil resources, the types of fossil resources that may be encountered in the Project area, the role of the paleontological monitor, outline steps to follow if a fossil discovery is made and provide contact information for the Project Paleontologist.

ENERGY	Significant Impact	Less Than Significant or Less Than Significant With Mitigation	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the in-fill project:					
a. Consume energy resources in a wasteful, inefficient, or unnecessary amount during project construction and/or operation?	☐	☐	☒	☐	☐
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐	☐

GEOLOGY AND SOILS	Significant Impact	Less Than Significant or Less Than Significant With Mitigation	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the in-fill project:					

a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	☐	☐	☒	☐	☐
b. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?	☐	☐	☒	☐	☐
c. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?	☐	☐	☒	☐	☐
d. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?	☐	☐	☒	☐	☐
e. Result in substantial soil erosion or the loss of topsoil during project construction and/or operation?	☐	☐	☒	☐	☐
f. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐	☐
g. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐	☐
h. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☒	☐	☐
i. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐	☐

GREENHOUSE GAS EMISSIONS	Significant Impact	Less Than Significant or Less Than Significant With Mitigation	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the in-fill project:					

a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☒	☐	☐	☐
b. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☒	☐	☐	☐

a. The proposed project does not exceed the CAP's screening thresholds and will have a less than significant impact on the environment and therefore no further action is needed.

b. The proposed project will not conflict with an applicable plan or policy regulations. Given the reasonably anticipated decline in project emissions once fully constructed and operational, the project is consistent with the Executive Order's horizon-year goal. Therefore, the project is consistent with Executive Orders S-3-05 and B-30-15, AB 32, and SCAG's 2020-2045 RTP/SCS and therefore no further action is needed.

HAZARDS AND HAZARDOUS MATERIALS	Significant Impact	Less Than Significant or Less Than Significant With Mitigation	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the project:					
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐	☐
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐	☐
e. Not comply with the Adopted Land Use Compatibility Standards in the Safety Zones of the Airport Comprehensive Land Use Plan for Riverside County and/or the Height Restriction Zones for Camarillo Airport?	☐	☐	☒	☐	☐
f. Substantially physically interfere with the City's designated evacuation routes?	☐	☐	☒	☐	☐

g. Expose people or structures, either directly or indirectly, to significant risk of loss, injury, or death involving wildland fires?	☐	☐	☒	☐	☐

The Gas Station will be monitored by the Riverside County Heath Department and the State Department of Toxic Substances to ensure all protocols are being implemented.

HYDROLOGY AND WATER QUALITY	Significant Impact	Less Than Significant or Less Than Significant With Mitigation	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the in-fill project:					
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation onsite or offsite?	☐	☐	☒	☐	☐
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite?	☐	☐	☒	☐	☐
e. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of pollutant runoff?	☐	☐	☒	☐	☐
f. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows?	☐	☐	☒	☐	☐
g. Be located in a flood hazard zone and risk the release of pollutants due to project inundation?	☐	☐	☒	☐	☐

h. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐	☐

LAND USE AND PLANNING	Significant Impact	Less Than Significant or Less Than Significant With Mitigation	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the in-fill project:					
a. Physically divide an established neighborhood or community?	☐	☐	☒	☐	☐
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation or applicable goal or policy from the City of Camarillo General Plan that was adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐	☐

MINERAL RESOURCES	Significant Impact	Less Than Significant or Less Than Significant With Mitigation	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the in-fill project:					
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☒	☐	☐
b. Result in the loss of availability of a locally important mineral resource recovery site delineated in the City of Camarillo General Plan, specific plan, or other applicable land use plan?	☐	☐	☒	☐	☐

NOISE AND VIBRATION	Significant Impact	Less Than Significant or Less Than Significant With Mitigation	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the in-fill project:					
a. Generate construction noise levels that exceed the Noise Ordinance exterior or interior noise standards at residential properties during the hours that are specified by the City of Indio.	☐	☒	☐	☐	☐

b. Generate a substantial temporary (non-construction) or permanent increase in noise levels at existing sensitive receptors in the vicinity of the project site?	☐	☒	☐	☐	☐
c. Generate excessive ground borne vibration?	☐	☒	☐	☐	☐
d. Expose people residing or working in the project area to excessive noise levels from aircraft operations from any airport?	☐	☐	☒	☐	☐

a. As documented in Appendix D Noise Study, the Construction Noise Generated by activities such as demolition, site preparation, grading building, paving, construction, architectural coating will range between 59 to 71 dBA which is within the Federal Transit Administration (FTA) Guidelines of 80dBA.

   In addition to complying with Section 95C.08(3) of the Indio Municipal Code, the following policies are recommended to reduce construction noise:

   1. During construction, the contractor shall ensure that all construction equipment is equipped with appropriate noise attenuating devices.
   2. 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.
   3. Idling equipment shall be turned off when not in use.
   4. Equipment shall be maintained so that vehicles and their loads are secured from rattling and banging.

The Construction noise will not be significant and with compliance of Indio Municipal Code 95C.08(3) there shall be minimal impact and no further action is warranted.

b. Based on all the data in the Noise Study there will be no substantial increase in noise levels from non-construction activities and it is recommended that a 6-foot block wall be incorporated on the eastern property line to mitigate noise levels.

c. The nearest existing building is 25 feet east of the project site. At this distance, a large bulldozer would yield a worst-case 0.210 PPV (in/sec) which is below the risk of architectural damage to older residential buildings. And the ground borne vibrations will not be significant and no further action is needed.

d. The nearest airport is Jaqueline Cochran Airport which is 11 miles away so the aircraft noise will not impact any worker or resident and no further action is warranted.

POPULATION AND HOUSING	Significant Impact	Less Than Significant or Less Than Significant With Mitigation	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the in-fill project:					
a. Induce substantial unplanned population growth in an area, either directly or indirectly?	☐	☐	☒	☐	☐
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐	☐

PUBLIC SERVICES AND RECREATION	Significant Impact	Less Than Significant or Less Than Significant With Mitigation	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the in-fill project:					
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services? • Fire Protection • Police Protection • Schools • Parks • Other Public Services	☐	☐	☒	☐	☐
b. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐	☐
c. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐	☐

TRANSPORTATION	Significant Impact	Less Than Significant or Less Than Significant With Mitigation	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the in-fill project:					
a. Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☒	☐	☐	☐
b. Conflict or be inconsistent with CEQA Guidelines Section 15064.3(b) for the reduction of vehicle miles travelled (VMT)?	☐	☒	☐	☐	☐
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves) or incompatible uses (e.g., farm equipment)?	☐	☒	☐	☐	☐
d. Result in inadequate emergency access?	☐	☒	☐	☐	☐

A Focused Traffic Study was conducted by Trames Solutions and found that there would be a total of 2,268 new trips with 239 occurring in the Peak Hour and that trucks would be able to successfully be able to navigate the Site.

A. The proposed project will not violate any transportation policies implemented by the City or CVAG and therefore will have no impact.

B. In regard to VMT the land uses on site will be eligible to be “screened” out and therefore have no significant impact according to the VMT Analysis conducted by Trames Solutions which is attached to this Study as Exhibit B.

C. According to the Focused Traffic Study attached as Exhibit C there will be no increase in hazards or truck turning movements.

D. The project has been reviewed by Indio Fire and the proposal will have no impact on emergency access to or from the Site.

UTILITIES AND SERVICE SYSTEMS	Significant Impact	Less Than Significant or Less Than Significant With Mitigation	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the in-fill project:					

a. Require the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, or natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐	☐
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐	☐
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐	☐
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐	☐
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐	☐

WILDFIRE	Significant Impact	Less Than Significant or Less Than Significant With Mitigation	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
If located in or near areas or lands classified in the City of Camarillo's General Plan Safety Element as very high or high fire hazard severity zones, would the in-fill project:					
a. Substantially impair an adopted emergency evacuation plan?	☐	☐	☒	☐	☐
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐	☐
c. Require the installation and maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☒	☐	☐

d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐	☐

MANDATORY FINDINGS OF SIGNIFICANCE	Significant Impact	Less Than Significant or Less Than Significant With Mitigation	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
a. Does the in-fill project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐	☐
b. Does the in-fill project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☒	☐	☐
c. Does the in-fill project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐	☐

Exhibits

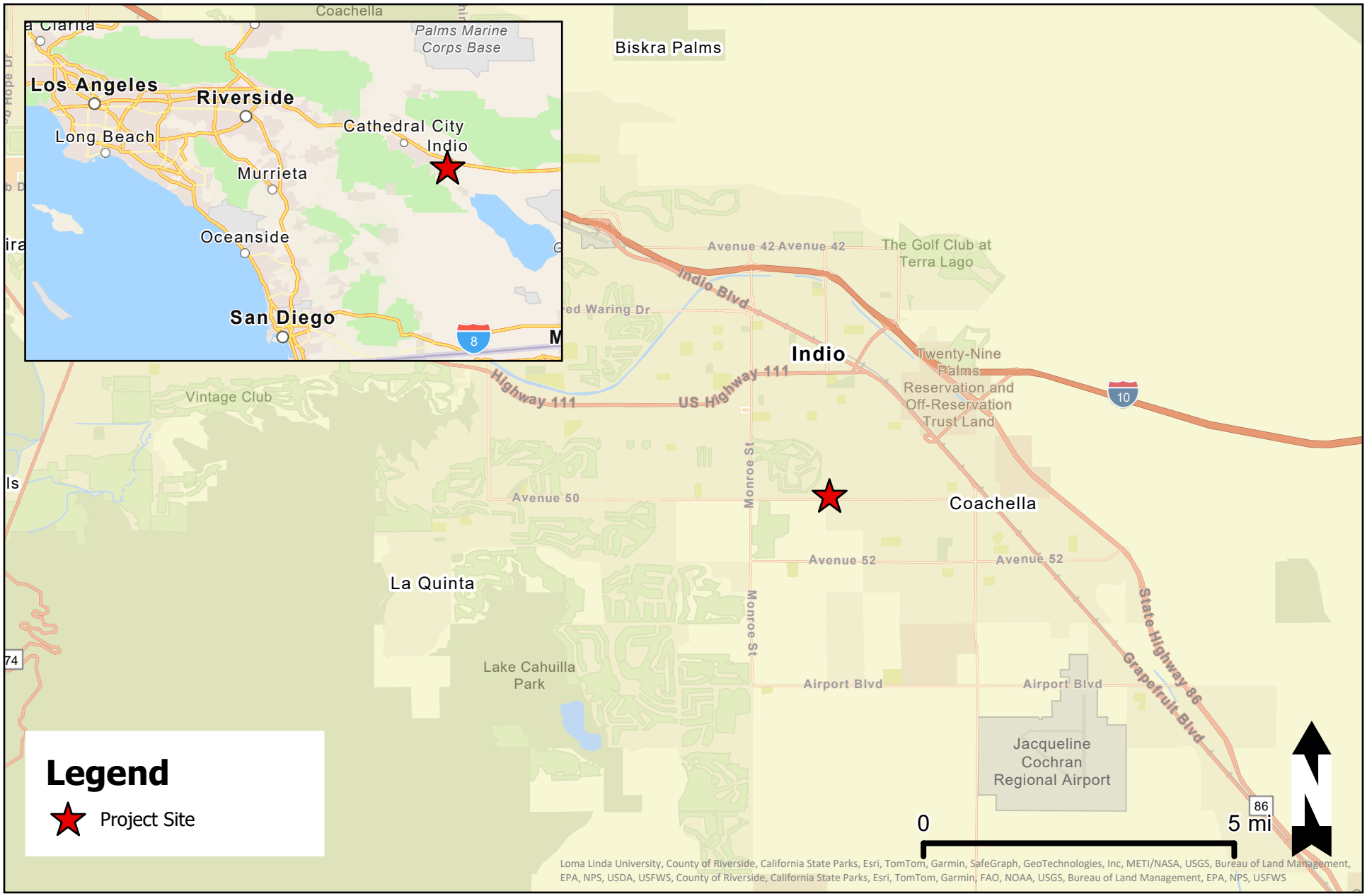
Exhibit 1 - Regional Location

Exhibit 2 – Location Map

Exhibit 3 – Proposed Project Site

Exhibit 4 – Photo Array

Exhibit 5 - Site Plan



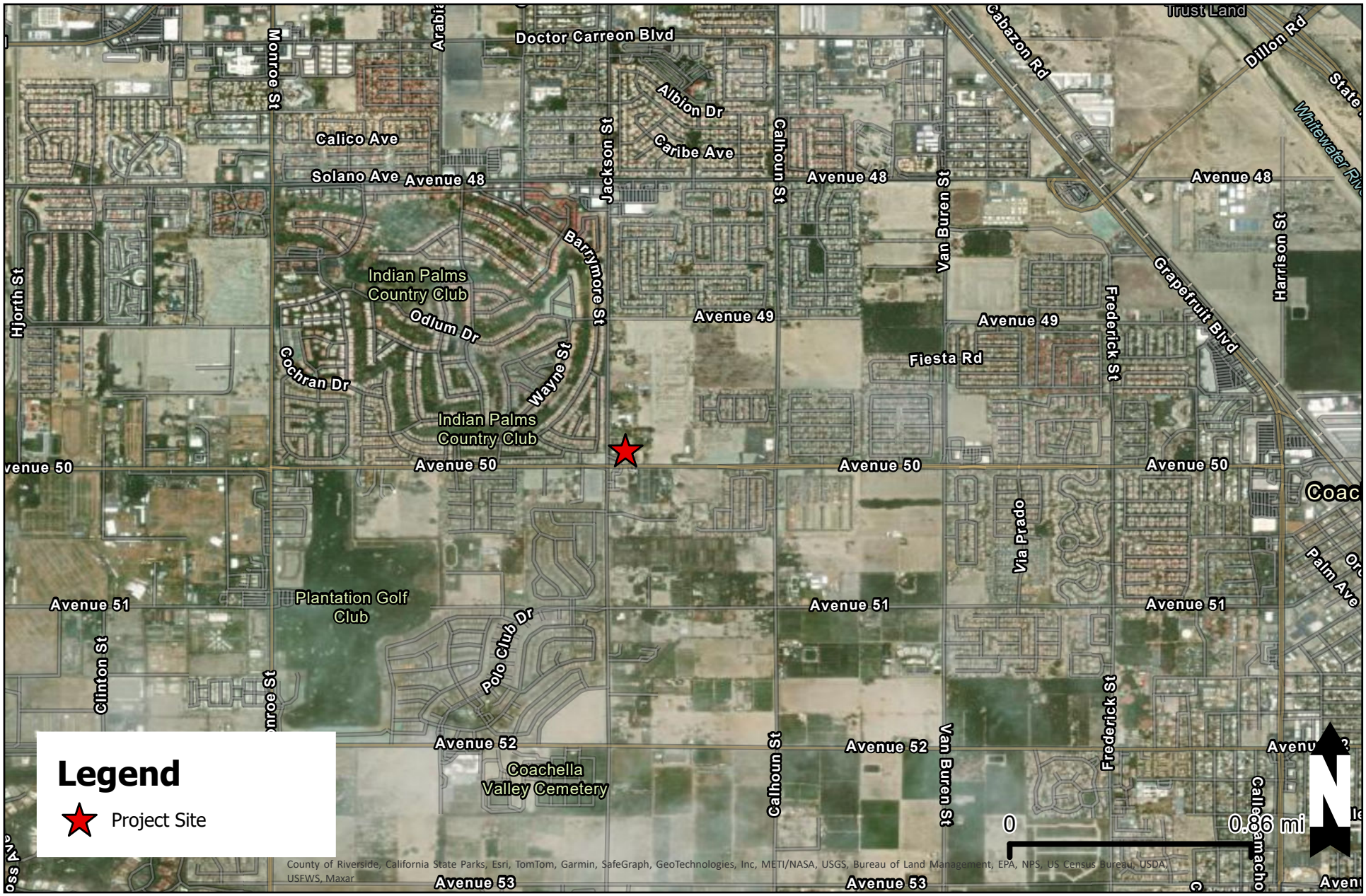
The Altum Group

Project Regional Location

L&G Market

Exhibit

1



The Altum Group

Vicinity Map

L&G Market

Exhibit

2



The Altum Group

Project Site

L&G Market

Exhibit

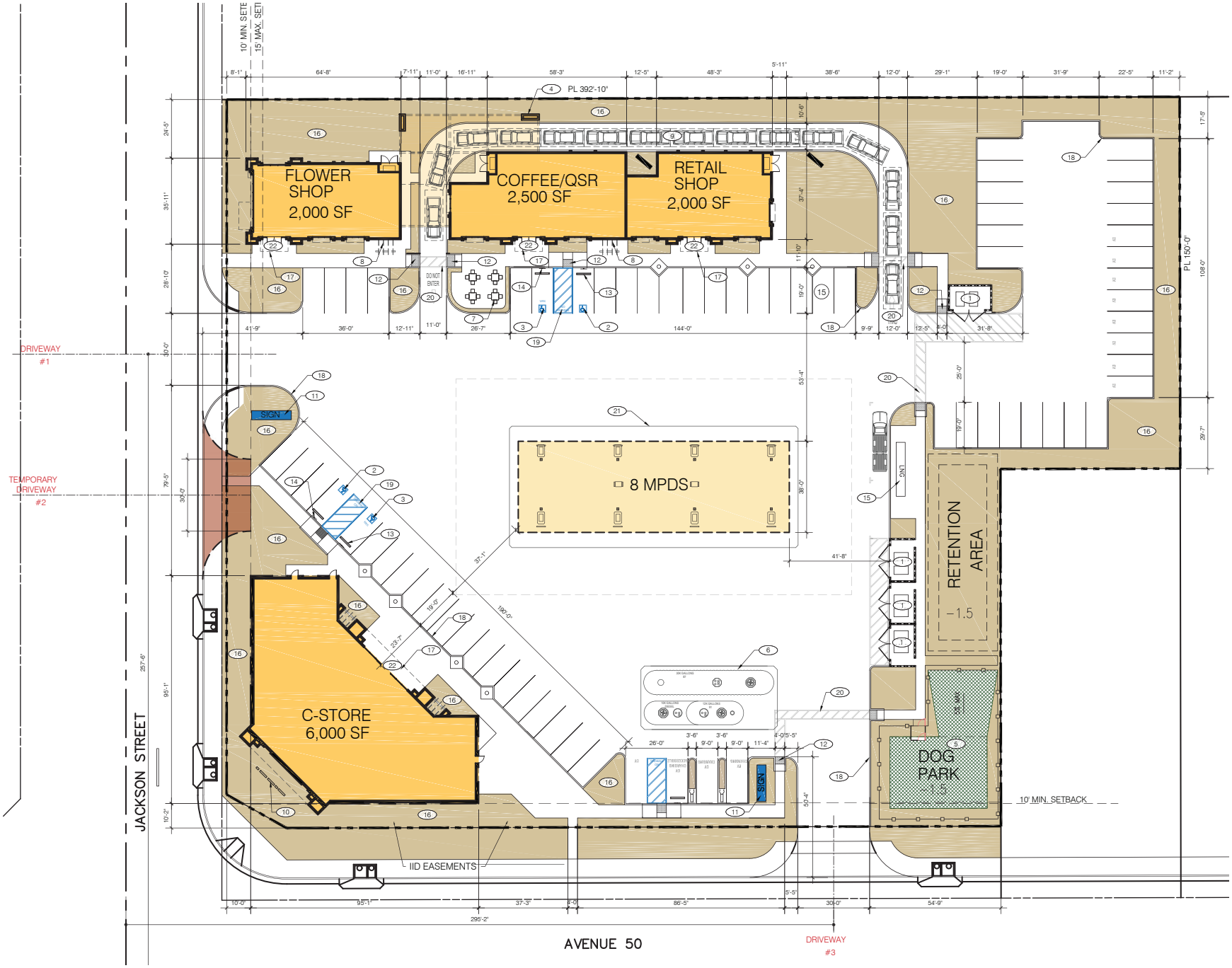
3


1: Ancillary Structure


2: Store
L&G


3: Residence


1: Ancillary Structure
3: Residence
2: Store



The Altum Group

Site Plan

L&G Market

Exhibit

5

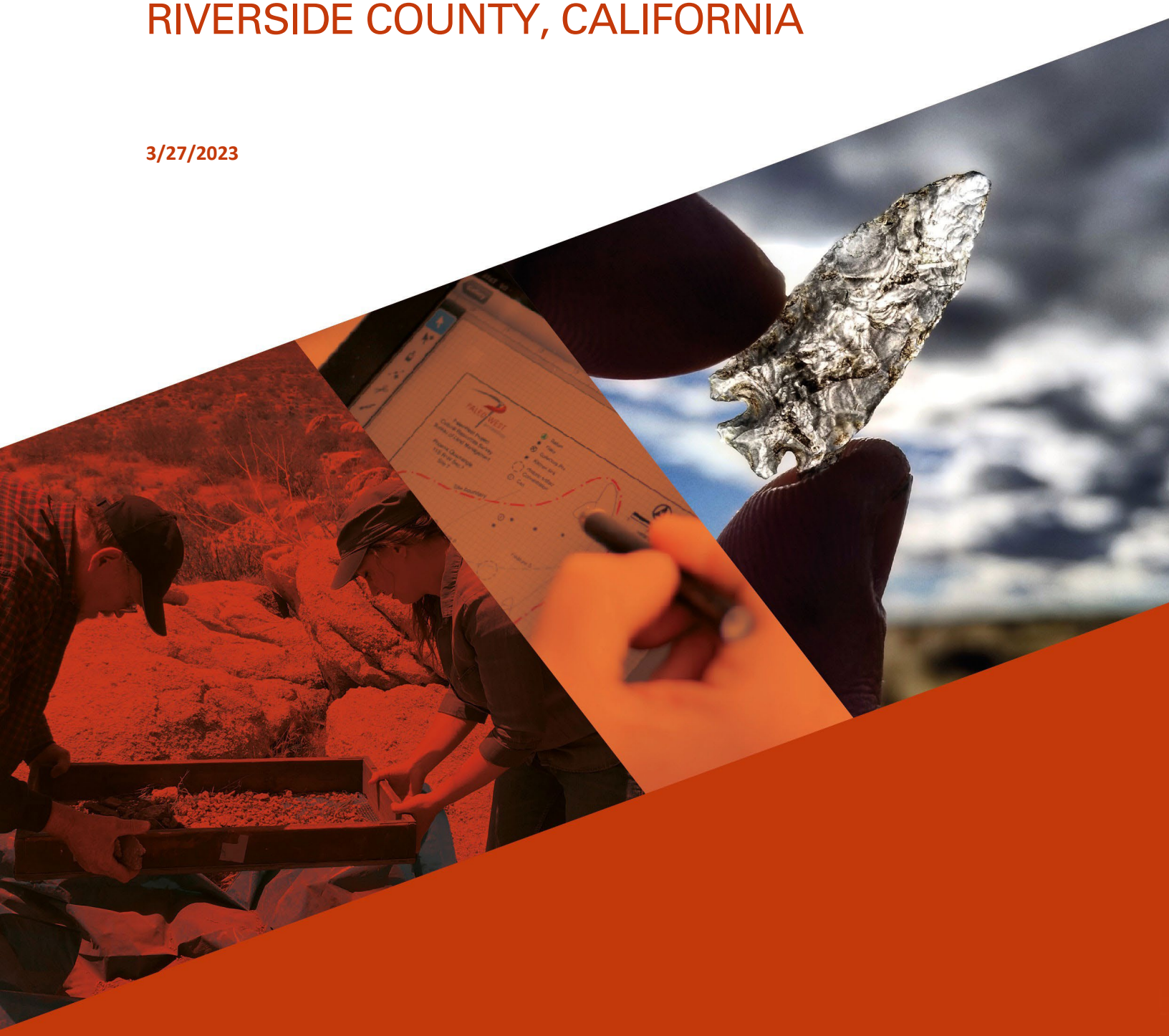
Appendicies

Appendix A
Cultural and Paleontology Studies

PALEOWEST

ADDENDUM TO CULTURAL RESOURCE INVESTIGATION IN SUPPORT OF THE L&G MARKET EXPANSION PROJECT, CITY OF INDIO, RIVERSIDE COUNTY, CALIFORNIA

3/27/2023



ADDENDUM TO CULTURAL RESOURCE INVESTIGATION IN SUPPORT OF THE L&G MARKET EXPANSION PROJECT, CITY OF INDIO, RIVERSIDE COUNTY, CALIFORNIA

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March 27, 2023

Keywords: CEQA; City of Indio; Coachella Valley; Phase I Survey; 2.72 Acres; Riverside County; L&G Desert Store Property (Built Resource)

MANAGEMENT SUMMARY

PaleoWest, LLC (PaleoWest) was contracted by The Altum Group to conduct a Phase I cultural resource assessment for the proposed L&G Market Expansion Project (Project). The proposed Project involves the development of approximately 2.72 acres on three parcels, Assessor's Parcel Numbers 612-280-006, -007, -008, -009, on the northeast corner of Jackson Street and Avenue 50 in Indio, California. The Project requires compliance with the California Environmental Quality Act (CEQA); the City of Indio (City) is the Lead Agency for the purposes of CEQA.

This report summarizes the methods and results of the cultural resource investigation of the Project area. The investigation included background research, communication with the Native American Heritage Commission (NAHC) and interested Native American tribal groups, pedestrian survey of the Project area, and significance evaluation of a historic period built-environment resource. The purpose of the investigation was to determine the potential for the Project to impact archaeological and historical resources under CEQA.

As part of the background research, PaleoWest requested a literature review and records search from the Eastern Information Center, housed at the University of California, Riverside. The records search indicated that 50 previous studies have been conducted within one mile of the Project area. In addition, 32 resources have been recorded within one mile of the Project area. These resources include 11 prehistoric archaeological sites, nine prehistoric isolated artifacts, five historic period archaeological sites, one historic period isolated artifact, one multi-component archaeological site, and five historic period built-environment resources. None of these previously recorded resources were identified within the Project area.

As part of the cultural resource assessment of the Project area, PaleoWest also requested a search of the Sacred Lands File (SLF) from the NAHC. Results of the SLF search indicate that there are no known Native American cultural resources within the immediate Project area. The NAHC suggested contacting 18 individuals representing 12 Native American tribal groups to find out if they have additional information about the Project area. The 12 recommended tribal groups were contacted. To date, six responses have been received from Native American tribal groups.

PaleoWest conducted a pedestrian survey of the proposed Project area on January 10, 2023. No prehistoric archaeological resources were identified as a result of the survey. One historic period built-environment resource, the L&G Desert Store and associated buildings and structures, was identified as a result of the survey. An evaluation for historical significance indicates that the property is not eligible for the California Register of Historical Resources. Therefore, the L&G Desert Store Property is not considered a historical resource for the purposes of CEQA and no further cultural resource management is recommended for this resource.

Despite the developed nature of the Project area and general surroundings, the Project area is moderately to highly sensitive for buried archaeological resources. Based on these findings, archaeological monitoring would be recommended for ground-disturbing activities associated with development of the Project area at depths extending into undisturbed sediments.

In the event that potentially significant cultural resources are encountered during construction activities associated with the Project, a qualified archaeologist shall be obtained to assess the

significance of the find in accordance with the criteria set forth in the California Register of Historical Resources. In addition, Health and Safety Code 7050.5, CEQA 15064.5(e), and Public Resources Code 5097.98 mandate the process to be followed in the unlikely event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

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1 INTRODUCTION

PaleoWest, LLC (PaleoWest) was contracted by The Altum Group to conduct a Phase I cultural resource assessment for the proposed L&G Market Expansion Project (Project). The proposed Project involves development of approximately 2.72 acres on Assessor's Parcel Numbers (APNs) 612-280-006, -007, -008, -009 in Indio, California. The Project requires compliance with the California Environmental Quality Act (CEQA); the City of Indio (City) is the Lead Agency for the purposes of the CEQA.

1.1 PROJECT LOCATION

The Project area is within the city of Indio the northeast corner of Jackson Street and Avenue 50 (Figure 1-1, Figure 1-2, Figure 1-3). The Project area occupies APNs 612-280-006-, 007, -008, -009 and totals approximately 2.72 acres. As shown in Figure 1-2, the Project area is within Section 36, Township 5 South, Range 7 East, San Bernardino Baseline and Meridian (SBBM), as depicted on the Indio, CA 7.5' U.S. Geological Survey (USGS) topographic quadrangle. The elevation of the Project area is approximately 25 feet (ft) below mean sea level (bmsl).

1.2 REPORT ORGANIZATION

This report documents the results of a cultural resource investigation conducted for the proposed Project. Section 1 has introduced the Project location and description. Section 2 states the regulatory context that should be considered for the Project. Section 3 synthesizes the natural and cultural setting of the Project area and surrounding region. The results of the existing cultural resource data literature and resource record review and the Sacred Lands File (SLF) search, and a summary of the Native American communications is presented in Section 4. The field methods employed during this investigation, findings, and resource evaluation are outlined in Section 5 with management recommendation provided in Section 6. This is followed by bibliographic references and appendices.



Figure 1-1. Project vicinity map.

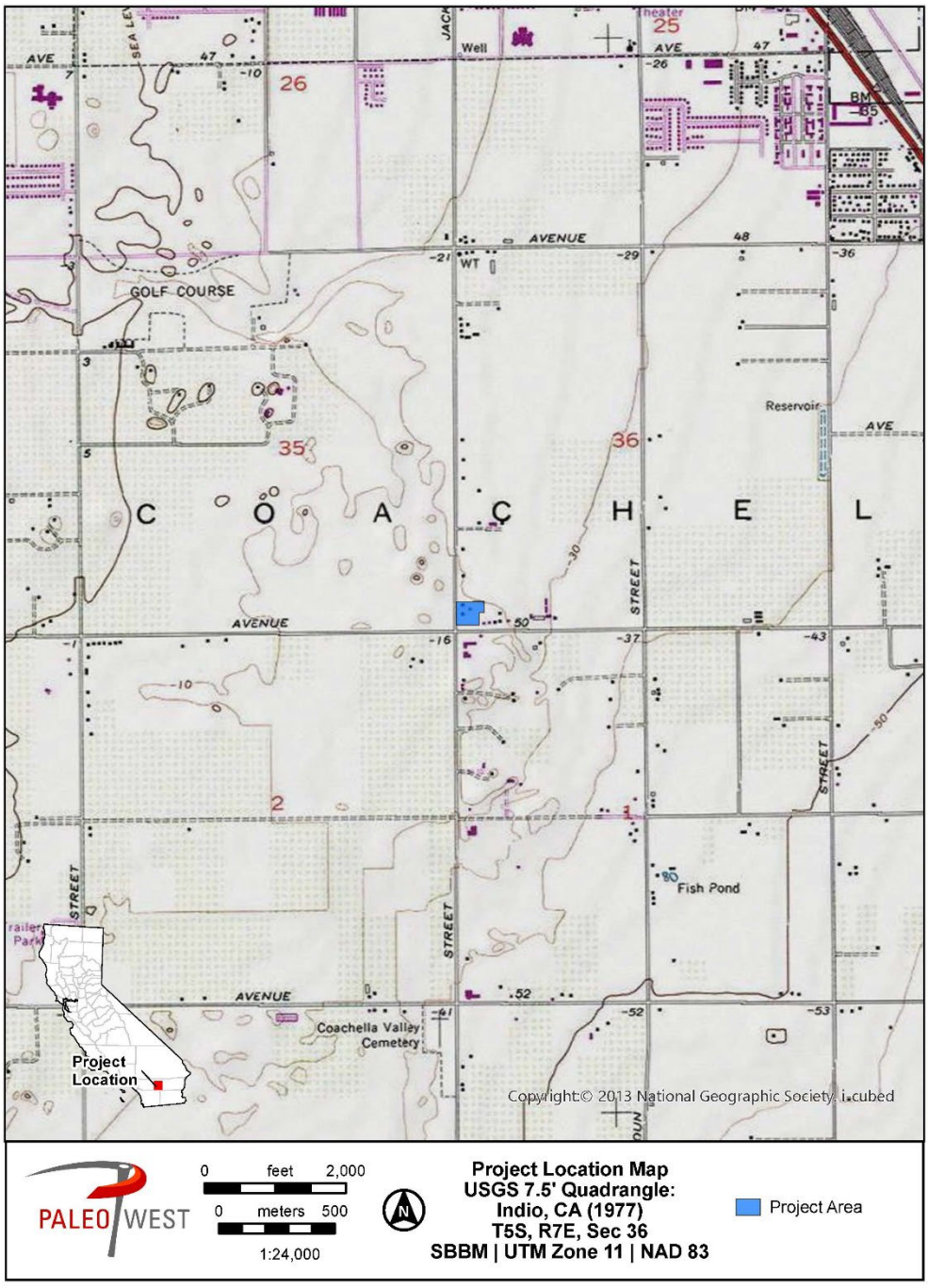


Figure 1-2. Project Location Map

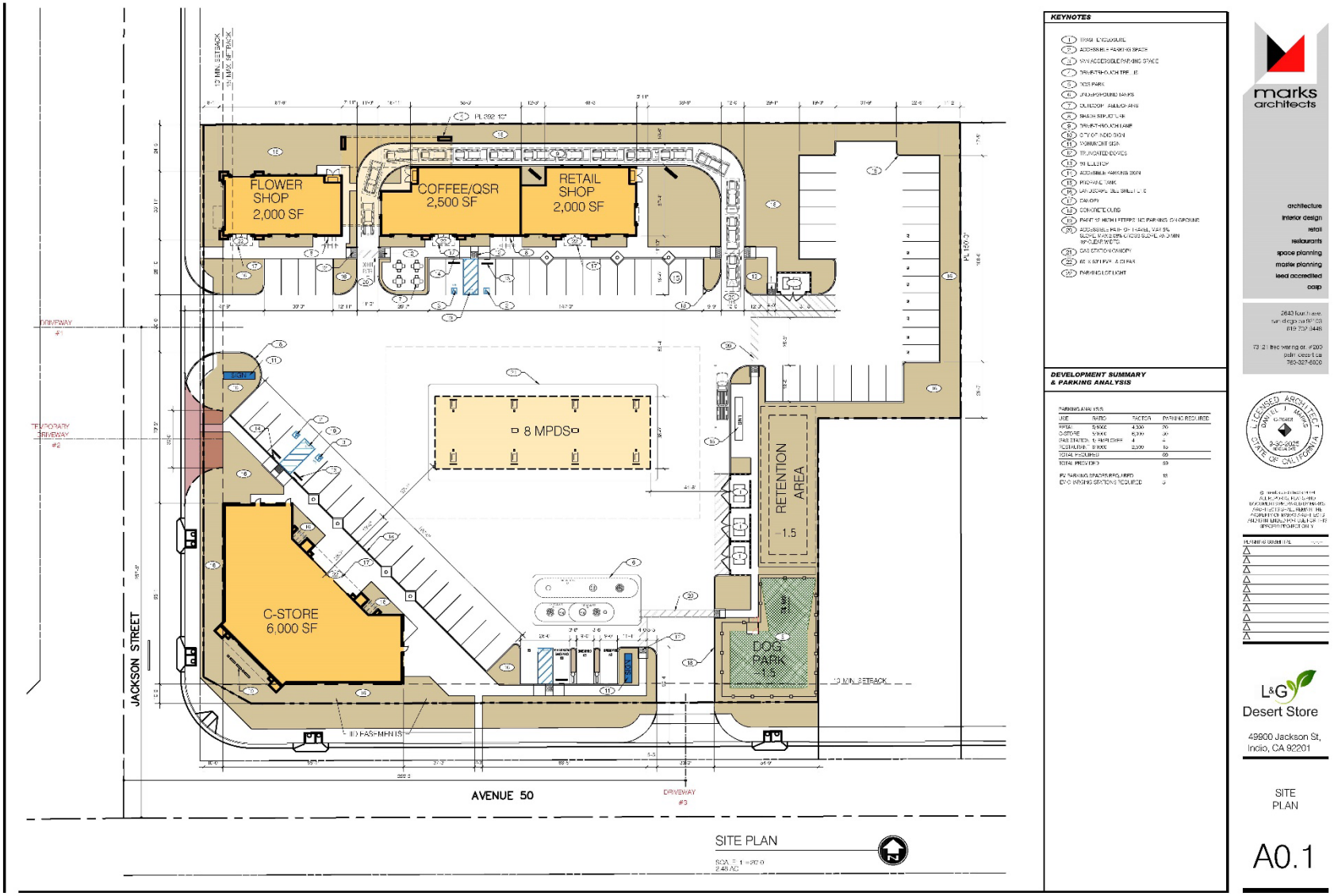


Figure 1-3. Site Plan

2 REGULATORY CONTEXT

2.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT

The proposed Project is subject to compliance with CEQA, as amended. Compliance with CEQA statutes and guidelines requires both public and private projects with financing or approval from a public agency to assess the project's impact on cultural resources (Public Resources Code Section 21082, 21083.2, and 21084 and California Code of Regulations 10564.5). The first step in the process is to identify cultural resources that may be impacted by the project and then determine whether the resources are "historically significant" resources.

CEQA defines historically significant resources as "resources listed or eligible for listing in the California Register of Historical Resources (CRHR)" (Public Resources Code Section 5024.1). A cultural resource may be considered historically significant if the resource is 45 years old or older, possesses integrity of location, design, setting, materials, workmanship, feeling, and association, and meets any of the following criteria for listing on the CRHR:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or,
4. Has yielded, or may be likely to yield, information important in prehistory or history (Public Resources Code Section 5024.1).

Cultural resources are buildings, sites, humanly modified landscapes, traditional cultural properties, structures, or objects that may have historical, architectural, cultural, or scientific importance. CEQA states that if a project will have a significant impact on important cultural resources, deemed "historically significant," then project alternatives and mitigation measures must be considered.

2.2 CALIFORNIA ASSEMBLY BILL 52

Signed into law in September 2014, California Assembly Bill 52 (AB 52) created a new class of resources—tribal cultural resources (TCRs)—for consideration under CEQA. TCRs may include sites, features, places, cultural landscapes, sacred places, or objects with cultural value to a California Native American tribe that are listed or determined to be eligible for listing in the CRHR, included in a local register of historical resources, or a resource determined by the lead CEQA agency, in its discretion and supported by substantial evidence, to be significant and eligible for listing on the CRHR. AB 52 requires that the lead CEQA agency consult with California Native American tribes that have requested consultation for projects that may affect TCRs. The lead CEQA agency shall begin consultation with participating Native American tribes prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report. Under AB 52, a project that has potential to cause a substantial adverse change to a TCR constitutes a significant effect on the environment unless mitigation reduces such effects to a less than significant level.

2.3 CITY OF INDIO GENERAL PLAN GOALS AND POLICIES

"The preservation of significant cultural and historic resources serves to strengthen community identity and provides educational opportunities" (City of Indio 2020). The Conservation Element (CE) included in the City's General Plan 2040 promotes the preservation and maintenance of significant cultural and paleontological resources. Goal CE-8 was specifically included for the preservation of historic, archaeological, and paleontological resources because of their scientific, educational, aesthetic, and cultural values. The following policies are outlined in the General Plan to help achieve that goal.

2.3.1 CE-8 Policies

CE-8.1 Site plan review. Ensure adequate site plan review and mitigation measures are implemented for the development of sites with the potential to contain historic, archaeological, and paleontological resources.

CE-8.2 Avoidance of impacts to historic resources. For projects that could affect historic resources, ensure adequate study to identify eligible resources and project-level review to avoid or lessen negative impacts through conformance with the Secretary of the Interior's Standards for the Treatment of Historic Properties.

CE-8.3 Incentivize retention of historic landmarks. Explore opportunities to provide economic and regulatory incentives for the retention and sensitive upgrades and changes to historic landmarks and contributors to designated historic districts.

CE-8.4 Monitoring. Require monitoring on sites where grading has the potential to impact subsurface cultural and paleontological resources during excavation and construction activities.

CE-8.5 Public Education. Support opportunities to promote public awareness of the history and prehistory of the area as the oldest Valley City and the cultural center of the Coachella Valley.

CE-8.6 Coordination with local tribes. Periodically meet with representatives from local tribes to: Obtain input prior to making decisions, taking actions, or implementing programs/projects that may impact cultural resources; discuss methods to preserve and protect highly sensitive cultural resources; and ensure that there is agreement regarding the protocol to be followed when cultural resources are discovered.

3 SETTING

This section of the report summarizes information regarding the physical and cultural setting of the Project area, including the prehistoric, ethnographic, and historic contexts of the general area. Several factors, including topography, available water sources, and biological resources, affect the nature and distribution of prehistoric, ethnographic, and historic-period human activities in an area. This background provides a context for understanding the nature of the cultural resources that may be identified within the region.

3.1 ENVIRONMENTAL SETTING

The Project area is east of the Peninsular Ranges in the southern extent of the Coachella Valley at the western edge of the Colorado Desert. The Coachella Valley is bordered by the San Jacinto and Santa Rosa mountains (part of the Peninsular Ranges) to the southwest and by the low, rolling Indio and Mecca hills to the northeast. From the steep slopes of the San Jacinto Mountains, the desert floor descends suddenly at less than 3 kilometers (km) (2 mi) eastward to sea level and below in the city of Indio, where the Project area is located.

South of the Project area, elevations gradually drop to 90 meters (m) (300 ft) bmsl at the Salton Sea Basin. This basin has filled periodically throughout the Pleistocene and Holocene when the Colorado River shifted its course near its mouth at the Gulf of California and flowed north into the basin, forming a large freshwater lake commonly known as Lake Cahuilla. A major water source flowing through the central valley is the Whitewater River. Prior to the development of the Coachella Valley, the river drained the southern slope of the San Bernardino Mountains for thousands of years (Laflin 2001), flowing in a generally south-southeast direction 80.5 km (50 mi) toward the Salton Sea. The Whitewater River was likely the largest perennial stream that entered the Salton Basin during prehistoric times, replenishing the underground aquifer during nonlacustrine intervals. The Whitewater River Storm Channel runs along the western boundary of the Project area.

Prior to the mid-1900s, the climate of the Project region was characterized by low relative humidity, very low rainfall, high summer temperatures of up to 52°Celsius (125°Fahrenheit), and mild winters. Since the 1950s, the relative humidity in the area has risen gradually as more and more golf courses have been built and maintained in the Coachella Valley. High winds are common and are accompanied by blowing sand and dust during the spring and late fall. Within the desert areas surrounding the Project area, the average annual rainfall is as sparse as 6.0 centimeters (cm) (2.5 inches [in]) per year and occurs primarily during the winter months. The Project area is within an area identified by Bean and Saubel (1972) as a Lower Sonoran life zone. The Lower Sonoran life zone is characterized by low rainfall, fine-textured alluvial to sandy soils, and xerophytic plant communities.

3.1.1 Lake Cahuilla

Arguably the most important environmental change in the Colorado Desert in the past 2000 years was the formation of Lake Cahuilla. In response to the western diversion of the Colorado River in the Salton Trough, Lake Cahuilla filled and shrank numerous times throughout the Pleistocene and Holocene. The lake would fill until the water reached an elevation of 12 m (40 ft), the minimum crest of the delta at Cerro Prieto, where overflow would spill into the Gulf of

California (Waters 1983:374). Wilke (1976) calculated that it would take roughly 12–20 years of receiving the entire flow of the Colorado River to fill Lake Cahuilla to an altitude of 12 m (40 ft). Alternatively, Wilke (1976) also determined that approximately 60 years would be required to completely dry out the lake without input from the Colorado River.

Using radiocarbon assays, historical accounts and evidence, and cross dating of artifacts found along the former Lake Cahuilla shoreline, researchers have posited five lacustrine intervals in the Salton Basin representing an unknown number of stands of Lake Cahuilla during the past 2000 years (Cleland 1998; Laylander 1994; Schaefer 1986; Waters 1983; Wilke 1976). The first and earliest of these events has been dated to A.D. 700–890, followed by a gradual, but complete, drought of the lake at about A.D. 950. The second interval began shortly after A.D. 950, peaking at approximately A.D. 965–1150; followed by another gradual, but complete, desiccation of the lake at A.D. 1210. The third interval began shortly after A.D. 1210, peaking between A.D. 1225 and 1360. The third interval was followed by a gradual, but not complete desiccation of the lake by A.D. 1450; the lake remained approximately 50 m (165 ft) deep at this time. The fourth interval lasted between A.D. 1450–1520, desiccating again by A.D. 1580. The fifth, more recent lacustrine interval of Lake Cahuilla occurred during the Spanish explorations of the region between 1540 and 1775 (Cleland 1998:13).

Recent paleoclimatic research indicates that a Medieval Warm climatic anomaly was registered throughout Far West North America between circa 1060 and 575 cal B.P. (Graumlich 1993; Spaulding 2001; Stine 1994). Researchers believe the Medieval Warm would have restricted prehistoric occupation in the Southern California deserts to a few suitable water sources such as the Colorado River and Lake Cahuilla. High stands of Lake Cahuilla, whose source is not directly affected by climatic conditions, are in fact registered during the Medieval Warm, suggesting that the area was likely highly favorable for prehistoric occupation.

3.2 PREHISTORIC SETTING

Native American occupation of the Colorado Desert is typically divided into five cultural periods: San Dieguito (ca. 12,000–7000 years B.P.); Pinto (ca. 7000–4000 B.P.); Amargosa (ca. 4,000–1200 B.P.); and the Late Prehistoric Period (ca. 1200–200 B.P.). These cultural periods exclude the controversial "Early Man" pre-projectile point materials from Calico. The prehistoric cultural setting discussed below begins at the Late Prehistoric period based on the archival research conducted for the study area.

3.2.1 Late Prehistoric Period

The Late Prehistoric period in the Colorado Desert is marked by the introduction of new artifact types and technological innovations of the previous Amargosa Period of the Late Archaic and defined as the Patayan Pattern (Cleland 1998; CSRI 1986; Schaefer 1994, 1995). This period is characterized by the introduction of ceramics, including Tizon Brown Ware from the Peninsular Ranges, Colorado Buff Wares from the Colorado River region, and the Salton Buff Ware from the Lake Cahuilla shoreline (Schaefer 1995; Waters 1982). New projectile point types, including Desert Side-notched and Cottonwood Triangular points, signify the introduction of the bow and arrow hunting technology, marking a pre-ceramic phase of the expansion of the earlier Amargosa assemblages perhaps as early as 1500 B.P. Techniques of floodplain horticulture were also introduced to the inhabitants along the Colorado River at the same time as ceramics. Additionally, burial practices changed from extended inhumations to cremated remains,

sometimes buried in ceramic vessels. Typical of the Hohokam culture from southern Arizona, these traits were introduced to the Colorado River inhabitants and gradually spread west to the Peninsular Ranges and Coastal Plains of Southern California.

The Patayan Pattern is typified by several differing settlement and subsistence systems (Schaefer 1995). Dispersed seasonal settlements, known as rancherias, were found along the Colorado River. These settlements were composed of *jacal* (i.e., adobe style) structures, semi-subterranean pit houses, *ramadas*, or brush huts depending on the season and types of settlement. Larger rancherias would disperse to upper terraces of the Colorado River and to special collection areas during the summer months, coinciding with the flood phase of the river, returning to the lower terraces for plant harvesting. At the eastern base of the Peninsular Ranges, the settlement pattern was typified by dispersed rancherias or villages at the mouths of canyons supporting perennial streams, at the base of alluvial fans near springs, or down on the valley floor where a shallow water table allowed wells to be dug (e.g., at Indian Wells). In addition to these sites, specialized sites were in all of the micro-environmental zones that were exploited seasonally. Archaeologically, these specialized sites can range in characteristics from bedrock milling features and pot-drops along trails; to chipping stations and quarries; to temporary camps containing bone, shell, ceramics, flaked and ground stone tools; and ornamental items such as beads and pendants, as well as other occupational debris.

3.3 ETHNOHISTORIC SETTING

The Cahuilla have been studied extensively by Dr. Lowell Bean and much of the following discussion is derived from Bean's description of the Cahuilla in Volume 8 of the *Handbook of North American Indians* (Bean 1978:575–587).

The Cahuilla belong to nonpolitical, nonterritorial patrimoieties that governed marriage patterns as well as patrilineal clans and lineages. Each clan, "political-ritual-corporate units" composed of 3–10 lineages, owned a large territory in which each lineage owned a village site with specific resource areas. Clan lineages cooperated in defense, in large communal subsistence activities, and in performing rituals. Clans were apt to own land in the valley, foothill, and mountain areas, providing them with the resources of many different ecological niches.

Prehistorically, Cahuilla shelters are believed to have been dome shaped; after contact, they tended to be rectangular in shape. Cahuilla shelters were often made of brush, palm fronds, or arrowweed. Most of the Cahuilla domestic activities were performed outside the shelters within the shade of large, expansive *ramadas*.

The Cahuilla were, for the most part, hunting, collecting, harvesting, and protoagricultural peoples. As in most of California, acorns were a major staple, but the roots, leaves, seeds, and fruit of many other plants also were used. Fish, birds, insects, and large and small mammals were also available.

To gather and prepare these food resources, the Cahuilla had an extensive inventory of equipment including bows and arrows, traps, nets, disguises, blinds, spears, hooks and lines, poles for shaking down pine nuts and acorns, cactus pickers, seed beaters, digging sticks and weights, and pry bars. In addition, the Cahuilla also had an extensive inventory of food processing equipment including hammers and anvils, mortars and pestles, manos and metates, winnowing shells and baskets, strainers, leaching baskets and bowls, knives (made of stone, bone, wood, and carrizo cane), bone saws, and drying racks made of wooden poles to dry fish.

Mountain tops, unusual rock formations, springs, and streams are held sacred to the Cahuilla as are rock art sites and burial and cremation sites. In addition, various birds are revered as sacred beings of great power and were sometimes ritually killed and mourned in mortuary ceremonies similar to those for important individuals. As such, bird cremation sites are considered sacred by the Cahuilla.

3.4 HISTORICAL SETTING

The history of the California desert region has been reviewed in detail by von Till Warren et al. (1981:85–105). A very brief summary of historical events in the Project area is provided below.

Prior to 1820, very little is known about historical developments in the Coachella Valley. In the early 1850s, the Maricopa-Bradshaw route was established to serve the mining camps developing near La Paz, Arizona (von Till Warren et al. 1981:85). The Maricopa-Bradshaw route paralleled the old Cocomaricopa Trail, an Indian trail that began east of Blythe and roughly followed the present route of Interstate 10 across the Chuckwalla Valley, traversing the Mecca-Indio area and Coachella Valley to the San Gorgonio Pass. During this time, the U.S. Government was strongly promoting the establishment of a railroad route to connect the east and west coasts; however, it was not until 1877 that the Southern Pacific Railroad transected the western Colorado Desert. This railroad route connected the San Gorgonio Pass to the town of Yuma, Arizona via the eastern shore of the Salton Sea. In 1876, Southern Pacific established a railroad station at a remote desert location and named it after the nearby Indian wells. Within three years, the name was changed to *Indio*, the Spanish word for Indian (Gudde 1998:177).

Management of the desert lands was largely the responsibility of the General Land Office (GLO), and later the Department of Agriculture Grazing Administration. Until the passage of the Taylor Grazing Act of 1934, no control was exercised over the California desert lands. Because of the extremely arid nature of the California deserts, this act had virtually no impact on the region; not until the responsibility for managing the desert came under control of the Bureau of Land Management (BLM) in 1946 were the first attempts made at range management. Since that time, the BLM also has been engaged in evaluating lands for their "uses," and classifying them for different types of management (von Till Warren et al. 1981:95).

The paucity of water in many areas of the Colorado Desert discouraged farming, and agricultural development only flourished when water could be imported in significant quantities. Because of the relatively high water table in the Coachella Valley, the agricultural industry began to develop prior to the importation of water by means of drilling artesian wells. Beginning in the first decade of the twentieth century, Coachella Valley farmers planted extensive date, fig, and grape acreage. Towns that developed with the agricultural growth include Thermal, Mecca, Indio, and Coachella. Because of the extensive farming efforts, the water table in the Coachella Valley was seriously depleted, stimulating the formation of the Coachella Valley Water District (CVWD) to promote conservation and replenish the groundwater basin.

3.4.1 Indio

The community of Indio was established as an important hub for the Southern Pacific. Passenger trains stopped 12 times a day and freight trains stopped 24 times a day to change crews. The Southern Pacific also established extensive repair shops, a hotel, and other amenities for its 215 workers such as a restaurant and clubhouse (McGroarty 1914:155).

Another important early industry in Indio was date farming. The U.S. Government established an experiment station in Indio for the purposes of creating new varieties of dates and testing the viability of those new strains in a desert environment (Brown and Body 1922:588). Early in its history, Indio was touted as a health resort for those suffering from breathing disorders such as tuberculosis or asthma. Today, Indio—the self-styled Date capital of America—"is the ranking commercial, governmental, farming, travel, and shipping center in the Coachella Valley" (Peters et al. 1999:92).

As with much of Southern California, Indio experienced rapid population growth and a housing and construction boom during the post-World War II period. Agricultural lands and open spaces were redeveloped as residential tracts, expanded commercial corridors, and new highways and roads. Between 1940 and 1950, Indio's population expanded by 77 percent, from 2985 to 5281. Much of this growth was driven by a variety of infrastructure improvements, which supported increased residential and tourism related development. State- and nation-wide highway building campaigns propelled new settlement, as improved transportation corridors made communities like Indio more attractive (and feasible) for new settlers and tourists. This, in turn, inspired businesses to capitalize on the new automobile-related travel and tourism, as hotels flourished along the new interstate lines, often with an eye toward promoting the exoticism and Middle Eastern flavor of Indio and the Coachella Valley (Carmack et al. 2019).

In the late 1950s, Interstate 10 was completed, which directly placed Indio on the most expedient route between Los Angeles to the west and Phoenix, Arizona to the east. Residential development during the decades after World War II was consistent with that experienced in other parts of the Coachella Valley and Southern California. It included construction of residential tracts with homes designed in a variety of the popular Mid-Century Modern architectural styles of the day. Many of these spread into the land just west of the historic city center (Carmack et al. 2019).

The completion of the Interstate 10 opened Indio and neighboring desert towns for increased tourism and settlement; its construction also meant extensive demolition throughout the historic core of downtown. The City correspondingly grew outward rapidly in the Post-War Period. By 1972, the agricultural land between Indio Boulevard and Interstate 10 gave way to new subdivisions, and the city also expanded south of Highway 111 and west of Monroe Street. Following residential development in Indio were commercial enterprises and facilities catering to the growing tourism industry in the Coachella Valley. Commercial development during the post-World War II era followed many of the same patterns of residential construction; it was primarily based in those areas near or west of the city center and consisted of buildings designed in popular Mid-Century Modern architectural styles. Other tourism-related development included the construction of new golf courses and hotels, which were further supported by ongoing efforts to provide the Coachella Valley with additional water supplies (Carmack et al. 2019).

4 CULTURAL RESOURCE INVENTORY

PaleoWest completed a literature review and records search at the Eastern Information Center at University of California, Riverside, on October 31, 2022. This inventory effort included the Project area and a one-mile radius around the Project area, collectively termed the study area. The objective of this records search was to identify prehistoric or historic period cultural resources that have been previously recorded within the study area during prior cultural resource investigations.

As part of the cultural resources inventory, PaleoWest staff also examined historical maps and aerial images to characterize the developmental history of the Project area and surrounding area. A summary of the results of the record search and background research are provided below.

4.1 PREVIOUS CULTURAL RESOURCE INVESTIGATIONS

The records search results indicate that 50 previous investigations have been conducted and documented within one mile of Project area between 1980 and 2017 (Table 4-1). As a result of the records search, it appears that none of the Project area has been inventoried for cultural resources.

Table 4-1. Previous Cultural Investigations within One Mile of the Project Area

Report No.	Year	Author(s)	Title
RI-01100	1980	Stanley Berryman	Results of Archaeological Tests of Four Sites on the Indian Palms Country Club, Indio, California
RI-01101	1980	Stanley Berryman	Results of an Archaeological Survey of the Indian Palms Country Club, Indio, California
RI-01102	1998	Bruce Love	Cultural Resources Report: Indian Palms Country Club, City of Indio, Riverside County, California
RI-01975	1985	Breece, William H. and Laurel A. Harrison	The Results of a Cultural Resources Survey in Coachella, California
RI-03366	1991	Love, Bruce and Karl Lorenzen	Cultural Resources Assessment: Tentative Parcel 26826, City of Indio, Riverside County, Ca
RI-03865	1995	Love, Bruce	Identification And Evaluation of Historic Properties: Avenue 50 Street Widening and Interchange Project, City of Coachella, Riverside County, California
RI-04432	2001	Love, Bruce and Bai "Tom" Tang	Historical / Archaeological Resources Survey Report: Astor Ranch Property, City of Indio, Riverside County, California
RI-04552	2002	Brock, James	Phase I Cultural Resources Assessment for a 116-Acre Property in the City of Coachella, Riverside County, California (APN 612-220-002, 612-220-004, 612-240--1, 612-240-002, 612-240-003, And 612-240-004)
RI-04556	2002	Brock, James	Phase I Cultural Resources Assessment for Tentative Tract Map No. 30582, City of Coachella, Riverside County, California (APN 612-220-003)

Report No.	Year	Author(s)	Title
RI-04557	2002	Brock, James	Phase II Archaeological Investigations of Sites CA-RIV-6797 and CA-RIV-6798, Tentative Tract No. 30684, City of Coachella, Riverside County, California
RI-04558	2002	Brock, James	Phase I Cultural Resources Assessment for Tentative Tract No. 30728, City of Coachella, Riverside County, California
RI-04559	2002	Brock, James	Phase I Cultural Resources Assessment for Tentative Tract Map No. 30729, City of Coachella, Riverside County, California
RI-04560	2002	Brock, James	Phase I Cultural Resources Assessment for Tentative Tract Map No. 30830, City of Coachella, Riverside County, California
RI-04562	2002	Brock, James	Phase I Cultural Resources Assessment for Tentative Tract Map No. 30910, City of Coachella, Riverside County, California
RI-04669	2003	Brock, James	Phase I Cultural Resources Assessment for a 60-Acre Property in the Cities of Coachella and Indio, Riverside County, California (Tentative Tract 31433 Indio)
RI-04684	2002	O'Neil, Stephen	Cultural Resources Reconnaissance of the Indio Ranchos Polo Estates, City of Indio, Riverside County, California
RI-04740	2004	Tetra Tech, Inc.	An Archaeological Resources Survey of Approximately 80 Acres for the Coachella 293 Project, City of Coachella, County of Riverside, California
RI-04817	2004	Demcak, Carol R.	Report of Archaeological and Paleontological Monitoring at Tract 30684, Coachella, Riverside County, California
RI-04821	2004	Demcak, Carol R.	Report of Phase I Archaeological Assessment for 38-Acre Parcel (APNs 765-020-007), Avenue 50 at Calhoun Street, Coachella, California
RI-04823	2004	Demcak, Carol R.	Report of Phase I Archaeological Assessment for Two Parcels (APNs 612-270-002, -003, and -004), Avenue 49 at Calhoun Street, Coachella, California
RI-04825	2003	Demcak, Carol R.	Report of Phase II (Test Level) Archaeological Investigations at TTM 30910, City of Coachella, Riverside County, California
RI-04826	2003	Demcak, Carol. R.	Report of Extended Phase II (Test Level) Archaeological Investigations at TTM 30910, City of Coachella, Riverside County, California
RI-04827	2003	Demcak, Carol R.	Final Report of Extended Phase II (Test Level) Archaeological Investigations at TTM 30910, City of Coachella, Riverside County, California
RI-04832	2004	Demcak, Carol R.	Report of Archaeological and Paleontological Monitoring at TTM 30871 "La Colonia", Coachella, Riverside County, California
RI-05606	2003	White, Robert S. and Laura S. White	A Cultural Resources Assessment of a +/-17 Acre Parcel, Located Southeast of the Intersection of Jackson Street and Avenue 48, City of Coachella, Riverside County
RI-05609	2003	White, Robert S. and Laura S. White	A Cultural Resources Assessment of a 28.4-Acre Parcel as Shown on TTM 31698, Southeast of Van Buren Street and Avenue 50, City of Coachella, Riverside County

Report No.	Year	Author(s)	Title
RI-05741	2003	Tang, Bai, Michael Hogan, Josh Smallwood, and Daniel Ballester	Historical/Archaeological Resources Survey Report, Tentative Tract Map No. 31389, in the City of Indio, Riverside County, California
RI-05861	2002	Love, Bruce, Bai Tang, Mariam Dahdul, and Daniel Ballester	Historical/Archaeological Resources Survey Report, Jordon Outreach Ministries, APN 767-150-004; PP17669, Avenue 51 and Calhoun Street, Indio/Coachella Area, Riverside County, California
RI-05886	2002	Hogan, Michael, Harry M. Quinn, and Mariam Dahdul	Archaeological Mitigation and Data Recovery Report, Indian Palms Country Club, City of Indio, Riverside County, California
RI-05908	2002	Love, Bruce, Bai Tang, and Michael Hogan	Historical/Archaeological Resources Survey Report, Tentative Tract Map No. 30452, in the City of Indio, Riverside County, California
RI-05988	2003	Hogan, Michael, Bai Tang, And Mariam Dahdul	Historical/Archaeological Resources Survey Report, County Estates, City of Indio, Riverside County, California
RI-05991	2003	Tang, Bai and Michael Hogan	Letter Report: Historical/Archaeological Resources Survey, Parcel Map No. 18469, Within Section 35 of T5S R7E, SBBM, City of Indio, Riverside County, California
RI-06014	2003	Hogan, Michael	Letter Report: Archaeological Monitoring of Earth-Moving Activities, Tentative Tract Map No. 30728, City of Coachella, Riverside County, California
RI-06201	2004	Hogan, Michael, Bai Tang, Josh Smallwood, and Harry M. Quinn	Archaeological Monitoring Report, Indian Palms Tracts 3075-3, 501-1, -2, -3, and 30019-2, City of Indio, Riverside County, California
RI-06265	2006	Gust, Sherri, Amy Diaz, and Steven McCormick	Archaeological Resources Assessment Report for APN# 767-180-005, The Vineyards at Coachella, City of Coachella, California
RI-06303	2004	Tang, Bai "Tom" and Casey Tibbet	The "Patton House", Northwest Corner of Avenue 48 and Jackson Street, City of Indio, Riverside County, California
RI-06532	2006	Tang, Bai, Michael Hogan, Deirdre Encarnacion, and Daniel Ballester	Historical/Archaeological Resources Survey Report: Assessor's Parcel Nos. 767-140-006 And 767-150-003, Near the City of Coachella, Riverside County, California
RI-06678	2007	Ahmet, Koral	Cultural Resources Survey of an 11.58 Acre Parcel Located South of 50th Avenue in the City of Coachella, Riverside County, California
RI-06680	2006	Tang, Bai "Tom"	Letter Report: Cultural Resources Documentation Review and Update, Celebrity House, Indian Palms Country Club and Resort, 48-630 Monroe Street; APN 614-220-007, City of Indio, County of Riverside, California
RI-06756	2005	Demcak, Carol R. and Stephen R. Van Wormer	Historical Assessment of "Celebrity House" (Primary No. 33-14798), Indian Palms Country Club, 48-630 Monroe, Indio, California
RI-07381	2007	Tang, Bai "Tom" and Michael Hogan	Archaeological Monitoring Report: Barcelona Project Tentative Tract Map No. 32411 City of Indio, Riverside County, California
RI-07522	2006	Sanka, Jennifer	Phase I Cultural Resources Assessment Van Buren Street Project Coachella, Riverside County, California
RI-08107	2004	Scott, Kim, Steve McCormick, and Sherri Gust	Archaeological & Paleontological Evaluation and Mitigation Plan Indio-40 Parcel, Indio, Riverside County, California

Report No.	Year	Author(s)	Title
RI-08540	2010	Tang, Bai "Tom" and Michael Hogan	Identification And Evaluation of Historic Properties Indio Water Authority Wastewater Treatment Project Cities of Indio and La Quinta Riverside County, California
RI-09563	2015	Clark, Tiffany	Cultural Resource Monitoring Report for the Las Plumas West Project, City of Indio, Riverside County, California
RI-09622	2012	Horne, Melinda, Molly Valasik, and Sherri Gust	82266 Avenue 50 Cultural Resources Assessment City of Coachella, Riverside County, California
RI-09720	2016	Etherigde, Johni, Don C. Perez, and Aniela Travers	Archaeological Survey Report: 49044 Calhoun Street, Coachella, Riverside County, California 92236
RI-09768	2000	Love, Bruce and Bai "Tom" Tang	Cultural Resource Element City of La Quinta General Plan
RI-09879	2017	Olson, John	Re: Archaeological and Paleontological Resources Monitoring Program Towermarket/Revella Project
RI-10229	2002	Lewis, Don	Cultural Resource Assessment Cingular Wireless SB-200-01

4.2 CULTURAL RESOURCES REPORTED WITHIN ONE MILE OF THE PROJECT AREA

The records search indicated that 32 cultural resources have been previously documented within one mile of the Project area (Table 4-2). Of the 32 resources, 11 are prehistoric archaeological sites, nine prehistoric isolated artifacts, five historic period archaeological sites, one historic period isolated artifact, one multi-component archaeological site, and five historic period built environment resources. None of these previously recorded resources were identified within the Project area.

Table 4-2. Previously Recorded Cultural Resources within One Mile of the Project Area

Primary No.	Trinomial	Age	Type	Description
P-33-002082	CA-RIV-002082	Multicomponent	Site	Prehistoric ceramic sherds and historic refuse scatter
P-33-002083	CA-RIV-002083	Prehistoric	Site	Ceramic sherds, lithic scatter, and groundstone
P-33-002084	CA-RIV-002084	Prehistoric	Site	Ceramic sherds and four eroding cremations
P-33-002085	CA-RIV-002085	Prehistoric	Site	Ceramic sherds, ash, and burnt red clay
P-33-008270	CA-RIV-006087	Prehistoric	Site	Ceramic sherds, lithic scatter, and groundstone; appears to be no longer extant
P-33-008272	CA-RIV-006089	Prehistoric	Site	Ceramic sherds and groundstone
P-33-008291	CA-RIV-006090	Prehistoric	Site	Ceramic sherds
P-33-008302		Historic	Building	Whittier Ranch/Astor Ranch; Mission Revival residence
P-33-011269		Prehistoric	Isolate	Single ceramic sherd
P-33-011393		Prehistoric	Isolate	Single handstone/discoidal
P-33-011410	CA-RIV-006797	Prehistoric	Site	Ceramic sherds, lithic scatter, and thermally affected clay

Primary No.	Trinomial	Age	Type	Description
P-33-011411	CA-RIV-006798	Prehistoric	Site	Ceramic sherds, lithic scatter, and thermally affected clay
P-33-011412	CA-RIV-006799H	Historic	Site	Refuse scatter
P-33-011583		Historic	Building	Clayton House and barn; 50-281 Calhoun Street
P-33-011584		Historic	Isolate	Single shard of manganese-added purple glass
P-33-011585		Prehistoric	Isolate	Single bifacial handstone
P-33-011900	CA-RIV-006919H	Historic	Site	Foundation, refuse scatter, and well/cistern
P-33-012294	CA-RIV-007017	Prehistoric	Site	Ceramic sherds, lithic scatter, and thermally affected clay
P-33-012510		Prehistoric	Isolate	Single ceramic sherd
P-33-012808		Prehistoric	Isolate	Single primary flake
P-33-013094		Prehistoric	Isolate	One handstone fragment and pieces of charcoal
P-33-013095		Prehistoric	Isolate	One handstone fragment, fire-affected rock, and pieces of charcoal
P-33-013131	CA-RIV-007310	Historic	Site	Refuse scatter
P-33-013204		Historic	Building, Structure	Date farm structures, foundations, wells/cisterns, and machinery
P-33-013250		Prehistoric	Site	Cremation (collected and turned over to Cabazon Band of Mission Indians)
P-33-014798		Historic	Building, Structure	Celebrity House; single-story Spanish Eclectic-style building
P-33-014901	CA-RIV-007932	Historic	Site	Refuse scatter and well/cistern
P-33-014902		Prehistoric	Isolate	Single handstone
P-33-015674	CA-RIV-008167	Historic	Site	Refuse scatter and water control system
P-33-015733	CA-RIV-008194	Historic	Building, Site	Date palm and citrus orchard, two historic-period buildings, a garage/pumphouse and a powerline
P-33-015993	CA-RIV-008291	Prehistoric	Site	Ceramic sherds, one chipped stone flake, one freshwater shell fragment, and two animal bone fragments
P-33-022299		Prehistoric	Isolate	Single ceramic sherd

4.3 ADDITIONAL SOURCES

Additional sources consulted during the cultural resource literature and data review include the National Register of Historic Places (NRHP), the Office of Historic Preservation Archaeological Determinations of Eligibility, and the Office of Historic Preservation Built Environment Resources Directory. Of the 32 resources within one mile of the Project area, one resource (P-33-008302) had been determined eligible for listing on the NRHP.

Historical maps and aerial images were also consulted as part of the background research. Maps that were examined as part of this effort include Indio, California 30-minute (1904), Coachella, California 15-minute (1941), Coachella, California 15-minute (1943), Santa Ana, California 1 by 2-degree (1949), Indio, California (1956) 7.5-minute, Santa Ana, California 1 by 2-degree (1965) USGS series maps (TopoView 2022). Historical aerial images were available on NETROnline dating to 1953, 1972, 1984, 2002, 2009, and 2020. Results of the archival review indicate that the Project area remained primarily undeveloped until sometime between 1953 and 1972. A 1972 aerial image depicts the three extant structures on the property (NETROnline

2022; TopoView 2022). It also appears that a single structure existed just north of the property by 1953 but was no longer extant by 1972.

A review of Bureau of Land Management (BLM) General Land Office (GLO) records indicated that the entire Project area is a part of a California Enabling Act (10 Stat. 244) Patent issued to State of California in 1856 (BLM 2022). The patent provided the sale of lands in the 16th and 36th sections of land in each township, save lands reserved for other public purposes, lands previously conveyed, e.g., rancho lands, sovereign lands, and swamp or overflowed lands, and lands known to be mineral in character for the purpose of supporting public schools by creating school lands. It does not appear that the three historic period structures present within the Project area were related to the patent.

Background research for the Project also included a review of nearby archaeological sensitivity assessment for the Highway 111 Widening Project (Thomas and Clark 2016) and the Archaeological Sensitivity Model for the Whitewater River Stormwater Channel (Mirro 2012) that were prepared by Applied EarthWorks. These assessments indicate that this general area is Holocene valley fill, consisting of sands and clays, fluvial and lacustrine sediments (Mirro 2012). The studies identified at least three different soil types – Gilman, Indio, and Coachella – within the vicinity of the Project area.

Based on the available geological and soil data, the sediments that underlie the Project area likely represent mixed Holocene deposits that derive from Lake Cahuilla and the Whitewater River. Although floodplain deposits associated with the Whitewater River may have buried archaeological remains in the Project area, higher magnitude fluvial processes (e.g., floodplain scours) that occurred prior to channelization could have also destroyed archaeological sites through erosion. Based on these findings, the sensitivity of the Project area is moderate to high for buried archaeological resources in undisturbed sediments.

4.4 NATIVE AMERICAN COORDINATION

PaleoWest contacted the Native American Heritage Commission (NAHC) on September 29, 2022, for a review of the SLF. The objective of the SLF search was to determine if the NAHC had any knowledge of Native American cultural resources (e.g., traditional use or gathering area, place of religious or sacred activity, etc.) within the immediate vicinity of the Project area. The NAHC responded on November 7, 2022, stating that the SLF was completed with negative results; however, the NAHC requested that 18 individuals representing 12 Native American tribal groups be contacted to elicit information regarding cultural resource issues related to the proposed Project (Appendix A). PaleoWest sent outreach letters to the 12 recommended tribal groups on January 11, 2023. These letters were followed up by phone calls on January 25, 2023. To date, six responses have been received.

Ms. Jill McCormick, Historic Preservation Officer Quechan Tribe of the Fort Yuma Reservation, responded via email on January 12, 2023 and stated that the Tribe does not wish to comment on the Project and defers to more local Tribes and supports their decisions.

Staff from the Los Coyotes Band of Cahuilla and Cupeño Indians, stated during a follow-up phone call on January 25, 2023 that if Mr. Chapparosa had not responded to the initial request that the Tribe does not have any comments on the Project or that they defer to other Tribal groups.

Staff from the Santa Rosa Band of Cahuilla Indians, stated during a follow-up phone call on January 25, 2023 that if Ms. Redner had not responded to our initial request that the Tribe does not have any comments regarding the Project.

Mr. Joseph Ontiveros, from the Soboba Band of Luiseno Indians Cultural Resources Department, stated during a follow-up phone call on January 25, 2023 that the Tribe defers to more local Tribes and supports their determinations.

A response was received via email on January 26, 2023 from Mr. Geramy Martin, the Tribal Secretary for the Augustine Band of Cahuilla Indians. Mr. Martin stated in the letter that the Tribe is not currently aware of specific resources that may be affected by the Project, however, in the event that any cultural resources are discovered during the development of this project, the Tribe would like to be contacted immediately for further evaluation.

A response from Xitlaly Madrigal, the Cultural Resources Analyst for the Agua Caliente Band of Cahuilla Indians, was received via email on January 30, 2023, stating that the Project does lie within the Traditional Use Area. The Tribe also requests copies of any cultural resource documentation (report and site records) generated in connection with the Project, and the presence of an approved Agua Caliente Native American Cultural Resource Monitor(s) during any ground disturbing activities (including archaeological testing and surveys). Additionally, the response states that should buried cultural deposits be encountered, the Monitor may request that destructive construction halt and the Monitor will notify a Qualified Archaeologist (Secretary of the Interior's Standards and Guidelines) to investigate and, if necessary, prepare a mitigation plan for submission to the State Historic Preservation Officer and the Agua Caliente Tribal Historic Preservation Office.

5 FIELD INVESTIGATION

5.1 FIELD METHODS

A combination pedestrian and reconnaissance survey of the Project area was conducted by PaleoWest Archaeologist Heather Landazuri on January 10, 2023. The fieldwork effort included an intensive pedestrian survey of the open ground surface areas within the Project area and a reconnaissance survey of the hardscaped areas within the Project area. The survey included approximately 76% of the Project area; there was a portion of the Project area that was not accessible to the surveyor during the field visit (approximately 0.65 acres). The intensive pedestrian survey was conducted by walking a series of parallel transects running east/west spaced at 10-m (33-ft) intervals. The archaeologist carefully inspected areas within the Project area likely to contain or exhibit sensitive cultural resources to ensure discovery and documentation of any visible, potentially significant cultural resources.

Prehistoric site indicators may include areas of darker soil with concentrations of ash, charcoal, bits of animal bone (burned or unburned), shell, flaked stone, ground stone, or even human bone. Historic Period site indicators may include fence lines, ditches, standing buildings, objects or structures such as sheds, or concentrations of materials at least 45 years in age, such as domestic refuse (e.g., glass bottles, ceramics, toys, buttons, leather shoes), refuse from other pursuits such as agriculture (e.g., metal tanks, farm machinery parts, horse shoes), or structural materials (e.g., nails, glass window panes, corrugated metal, wood posts or planks, metal pipes and fittings, railroad spurs, etc.).

During the field survey, the exteriors of the building(s) within the Project area were photographed and recorded. Any building or structure located on the property that was determined to have been built prior to 1975 or to be potentially eligible for the CRHR was formally evaluated on California Department of Parks and Recreation (DPR) 523 series forms. DPR forms of recorded resources are included in Appendix B.

5.2 FIELD RESULTS

The Project is located at the corner of Jackson Street and Avenue 50 and is bounded by private residences and a date farm to the north and a private residence to the east. Ground visibility was limited as a large portion of the Project area is hardscaped and includes a convenient store, residential structures, other ancillary buildings/structures, and a large, paved parking lot. The Project area contains APNs 612-280-006, -007, -008, and -009.

The vacant, fenced area along Avenue 50 (APN 612-280-009) was intensively surveyed. The ground surface was 90-95% visible, with some areas not visible due to the presence of vegetation and fallen leaves. Modern refuse was noted throughout this area including glass bottles, plastic wrappers, construction debris (bricks, depleted sandbags, piled cobbles, piled basalt, piled granitic rocks, etc.).

Access to the second, fenced area within the eastern half of APN 612-280-007, was not provided to the PaleoWest surveyor. Based on a visual assessment from the fenceline, this area appears to be used as a storage/lay down area for the neighboring resident and includes various construction tools and materials. No prehistoric or historic period cultural resources were observed in either of these portions of the Project area.

Within APNs 612-280-008, -006, and the eastern half of 612-280-007, the parking area, convenient store, and residential structures were inspected and photographed (as permitted) during the field visit. The parking lot is very disturbed by frequent vehicle traffic and modern refuse. In the northeastern corner of the parking area a pile of milled lumber, some of which was burned, was observed. Modern refuse was scattered in this area as well.

No prehistoric or historic period archaeological resources were observed during the field survey. However, an historic period built-environment resource was recorded during the field survey (Figure 5-1). The convenience store parcel (APN 612-280-007) was documented as the L&G Desert Store Property considering at least three buildings/structures on the property were constructed prior to 1972. The entire property is fenced off with wooden fencing. PaleoWest was provided access to the rear of the convenient store and the front and partial sides of the residence; however, as mentioned above access to the area behind the residence (in the eastern half of APN 612-280-007) was not permitted. A detailed description and assessment of the historical significance of the property is provided in the following section in order to evaluate the resource's eligibility for listing on the CRHR. DPR forms can be found in Appendix B.

5.2.1 L&G Desert Store Property

The L&G Desert Store Property is a 1.36-acre lot (APN 612-280-007) with a single-family residence, produce store (L&G Desert Store), and ancillary structure. These structures were all built before 1972. The commercial structures have multiple additions, resulting in complex roof shapes. Additionally, several utilitarian structures are present on the property, including a galvanized steel water tank and storage shed, west of the residence. Two large refrigerated freight containers are directly adjacent to the store and ancillary structure. Vegetation is dense toward the rear of the property, with large trees and grass surrounding the residence. Several large palm trees are scattered toward the front of the property. The whole property is fenced off by wood fencing.

Residence

This vernacular style, single-family residence is set back from Jackson Street, at a roughly 45-degree angle (Figure 5-2). The single-story residence has a rectangular footprint with a wood carport extending out from the building covering the concrete driveway. The primary façade has a recessed entryway centered between a garage and a front room. The primary façade is clad in brick and stucco and all fenestration appears to have been replaced with vinyl. The recessed middle section has wrought iron fencing in-between brick pillars, which appears to be a later alteration. The building has a flat roof with weathered wood fascia boards along the roofline. The remaining sides of the building could not be accessed during the field visit.

L&G Desert Store and Ancillary Structure

The main structure on the subject property is the L&G Desert Store, a single-story commercial structure on the southwest corner of the parcel (Figure 5-3). The structure is of a modest vernacular-style design, clad in vertical wood siding. Its original square footprint has been added onto over the years to serve the needs of its proprietors. As a result, the store has a complex roof shape. A gable roof covers what appears to be the original section of the store and



Figure 5-1. Resource Location Map



Figure 5-2. Southern façade of private residence and front yard



Figure 5-3. L&G Desert Store



Figure 5-4. Western façade of small storage building northeast of L & G store

supports a shed roof that covers the produce stand on the west façade. A rectangular section of the store extends north and is also covered with a gable roof. Fenestration consists of vinyl windows with faux mullions. The openings are covered by operable siding segments functioning as shutters. Various signage is affixed to the roof and sides of the store. Wood bollards have been installed along the west and south façades.

A single-story ancillary structure is due north of the store (Figure 5-4). The structure is perpendicular to the store and consists of two rectangular sections, slightly offset from each other, covered by two connected gable roofs. Only the primary façade was accessible at the time of recordation. Fenestration on this shingle-clad façade is limited to two small windows east of the centrally located front door. A previous window opening to the west of the front door has been filled in. The configuration of these openings suggests this structure may have had a residential use before, however, at present it appears to be used for storage.

CRHR Eligibility Evaluation

The following presents an assessment of the historical significance of the L&G Desert Store Property by applying the evaluation procedure and criteria for the CRHR. The purpose of this assessment is to evaluate the eligibility of the resource for listing in the CRHR.

CRHR Criterion 1: The L&G Desert Store Property does not meet CRHR Criterion 1 for association with events that have made a significant contribution to the broad patterns of California's history and cultural heritage. The property, with the produce store as its main structure, is a common rural commercial/residential property constructed throughout California and Indio during the second part of the 20th century. Research has yielded no indication that

significant historical events related to the City of Indio, California, or the United States are specifically associated with the property. While the L&G Desert Store continues to be a popular destination for local produce, the store's effect on the history of Indio appears to have been limited. Research has yielded no information to suggest that the L&G Desert Store played an important role in the continued development of the City to be considered historically significant under Criterion 1.

CRHR Criterion 2: The L&G Desert Store Property does not meet Criterion 2 for any direct associations with the productive lives of persons important in local, state, or national history. Research has yielded no information regarding the owners of the property prior to its purchase by Linda and George Thomas in 1979. While the Thomas family continues to successfully operate the store, their involvement does not meet the significance threshold, and research has yielded no information to suggest that any persons of historical significance were specifically associated with this property. Therefore, the L&G Desert Store Property is not historically significant under Criterion 2.

CRHR Criterion 3: The L&G Desert Store Property does not meet Criterion 3 for embodying the distinctive characteristics of a type, period, and method of construction, or as the work of an important creative individual, or as having high artistic value. The residence, store, and ancillary structure on the L&G Desert Store Property are common and unremarkable examples of vernacular architecture. They are nearly indistinguishable from other buildings of that style constructed during the latter half of the 20th century. While the architects and builders of the buildings were not identified, it is unlikely that the building represents the work of a master. Additionally, the residence and structures have undergone many alterations over the years. Therefore, the L&G Desert Store Property is not historically significant under Criterion 3.

CRHR Criterion 4: The L&G Desert Store Property does not meet Criterion 4 since it is unlikely to yield information important to prehistory or history. It is unlikely that this property has the potential to broaden our understanding of 20th century building construction or commercial development, or to the history of Indio, California, or the United States. Therefore, the L&G Desert Store Property is not historically significant under Criterion 4.

Since the L&G Desert Store Property is not considered historically significant under any of the evaluation criteria, a formal assessment of historical integrity is not required. Due to a lack of historical significance under all criteria, PaleoWest recommends that the L&G Desert Store Property is not eligible for listing in the CRHR.

6 MANAGEMENT RECOMMENDATIONS

As a result of the cultural resource records search and site visit, one historic period built-environment resource (L&G Desert Store Property) was documented in the Project area. The L&G Desert Store Property consists of a residence, a store, and an ancillary structure. A significance evaluation conducted by PaleoWest indicates that the property does not meet the criteria for listing on the CRHR. As such, the property is not considered a historical resource for the purposes of CEQA and no further cultural resource management is recommended for the resource.

Despite the developed nature of the Project area and general surroundings, the Project area is moderately to highly sensitive for buried archaeological resources. Based on these findings, archaeological monitoring would be recommended for ground-disturbing activities associated with development of the Project area at depths extending into undisturbed sediments.

In the event that potentially significant cultural materials are encountered during Project-related ground-disturbing activities, all work should be halted in the vicinity of the discovery until a qualified archaeologist can visit the site of discovery and assess the significance of the archaeological resource. In addition, Health and Safety Code 7050.5, CEQA 15064.5(e), and Public Resources Code 5097.98 mandate the process to be followed in the unlikely event of an accidental discovery of any human remains in a location other than a dedicated cemetery. Finally, should additional actions be proposed outside the currently defined Project area that have the potential for additional subsurface disturbance, further cultural resource management may be required.

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Appendix A.
Native American Coordination

Appendix B.
DPR Forms

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March 18, 2024

Rich Malacoff
Principal Planner
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44-600 Village Court, Suite 100
Palm Desert, California 92260
Transmitted via email to rich.malacoff@thealtumgroup.com

RE: Paleontological Resource Assessment for the L&G Expansion Project, City of Indio, Riverside County, California

Dear Rich Malacoff,

At the request of The Altum Group, PaleoWest, LLC (PaleoWest) conducted a paleontological resource assessment for the L&G Expansion Project (Project) in the city of Indio, Riverside County, California. The goal of the assessment was to identify the geologic units that may be impacted by the development of the Project, determine the paleontological sensitivity of geologic units within the Project area, assess the potential for impacts to paleontological resources from the development of the Project, and recommend mitigation measures to avoid or mitigate impacts to scientifically significant paleontological resources, as necessary.

This paleontological resource assessment included a fossil locality records search conducted by the Western Science Center (WSC) in Hemet, California. The records search was supplemented by a review of existing geologic maps and primary literature regarding fossiliferous geologic units within the proposed Project vicinity and region. This technical memorandum, which was written in accordance with the guidelines set forth by the Society of Vertebrate Paleontology (SVP) (2010), has been prepared to support environmental review under the California Environmental Quality Act (CEQA); the City of Indio is the Lead Agency for CEQA compliance.

PROJECT LOCATION AND DESCRIPTION

The Project area consists of approximately 2.66 acres of undeveloped land on Assessor's Parcel Numbers (APNs) 612-280-006, -007, -008, and -009, on the northeast corner of Jackson Street and Avenue 50 (Figure 1). The Project area is within Section 36 of Township 5 South, Range 7 East, Zone 11, as depicted on the 1977 Indio, California 7.5-minute Quadrangle from the U.S. Geological Survey (USGS) topographic quadrangle maps (Figure 1).

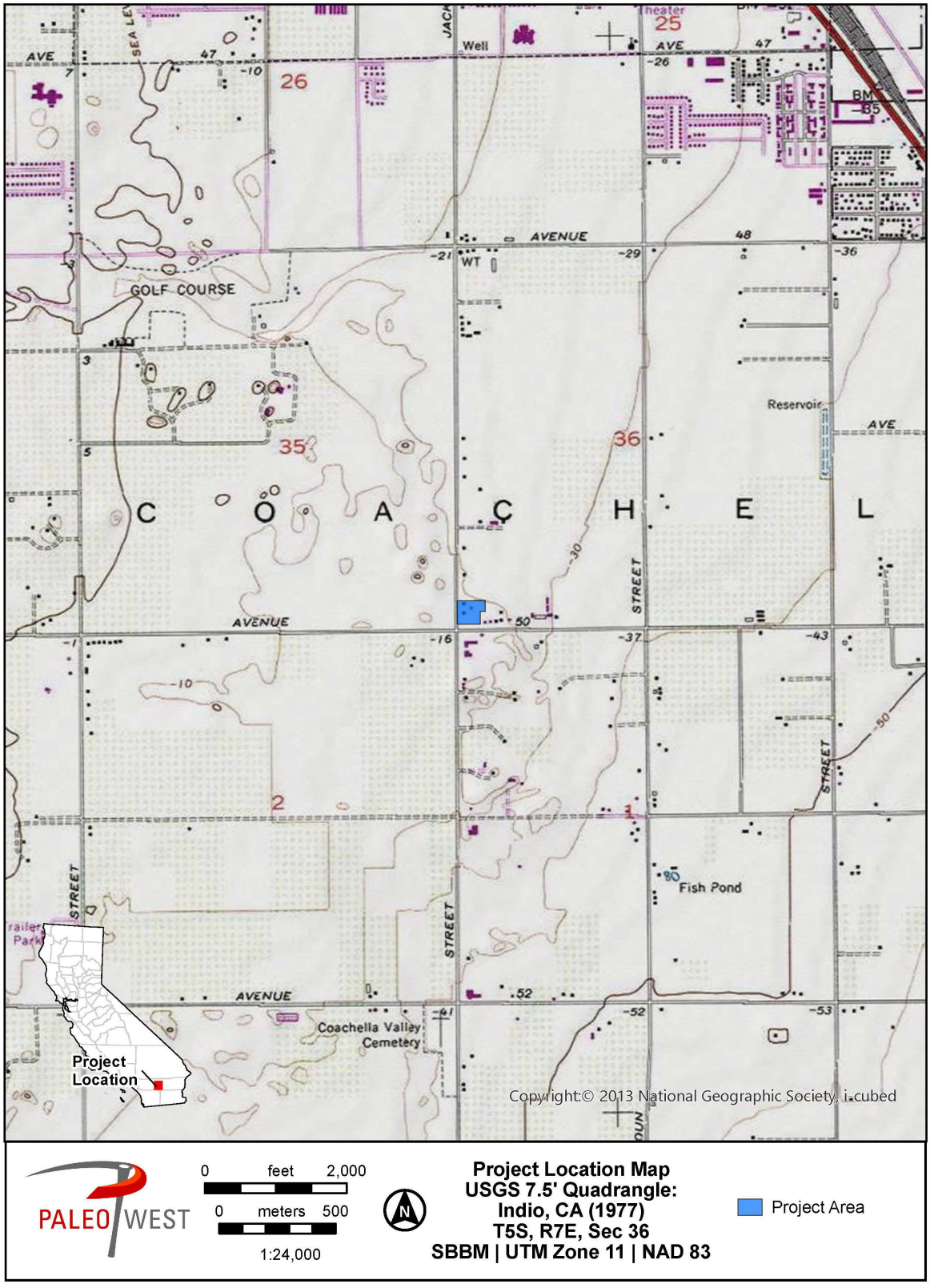


Figure 1. Project area.

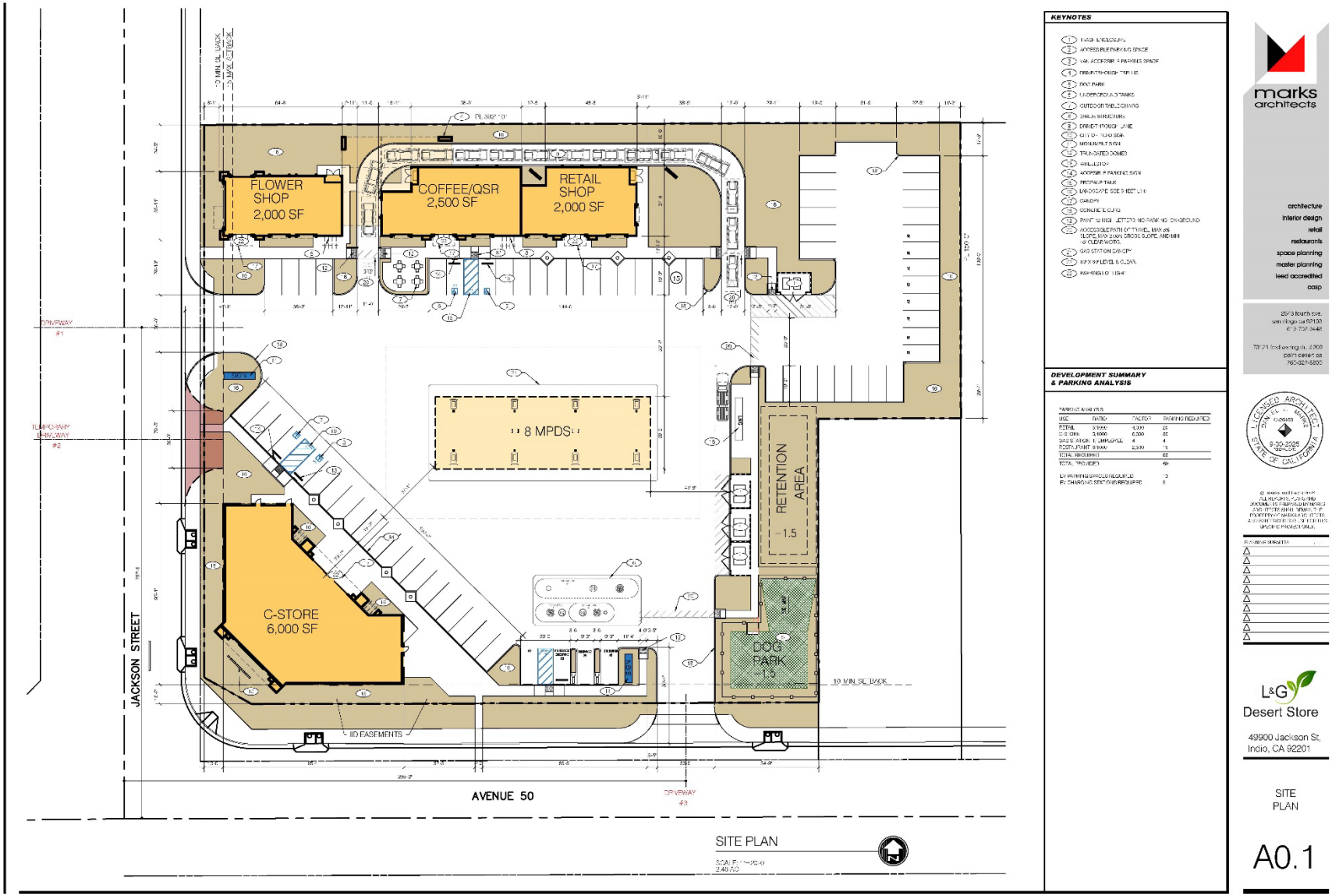


Figure 2. Site Plan

REGULATORY CONTEXT

Paleontological resources (i.e., fossils) are considered nonrenewable scientific resources because once destroyed, they cannot be replaced. As such, paleontological resources are afforded protection under various federal, state, and local laws and regulations. Laws pertinent to this Project are discussed below.

STATE LAWS AND REGULATIONS

California Environmental Quality Act

CEQA requires that public agencies and private interests identify the potential environmental consequences of their projects on any object or site of significance to the scientific annals of California (Division I, California Public Resources Code [PRC] Section 5020.1 [b]). Appendix G in Section 15023 provides an Environmental Checklist of questions (PRC 15023, Appendix G, Section VII, Part f) that includes the following: "Would the project directly or indirectly destroy a unique paleontological resource or site or unique geological feature?"

CEQA does not define "a unique paleontological resource or site." However, the SVP has provided guidance specifically designed to support state and federal environmental review. The SVP broadly defines significant paleontological resources as follows (SVP, 2010):

> "Fossils and fossiliferous deposits consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years)."

Significant paleontological resources are determined to be fossils or assemblages of fossils that are unique, unusual, rare, diagnostically important, or are common but have the potential to provide valuable scientific information for evaluating evolutionary patterns and processes, or which could improve our understanding of paleochronology, paleoecology, paleophylogeography, or depositional histories. New or unique specimens can provide new insights into evolutionary history; however, additional specimens of even well represented lineages can be equally important for studying evolutionary pattern and process, evolutionary rates, and paleophylogeography. Even unidentifiable material can provide useful data for dating geologic units if radiometric dating is possible. As such, common fossils (especially vertebrates) may be scientifically important, and therefore considered significant.

California Public Resources Code

Section 5097.5 of the Public Resources Code (PRC) states:

> "No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the

public agency having jurisdiction over such lands. Violation of this section is a misdemeanor."

As used in this PRC section, "public lands" means lands owned by, or under the jurisdiction of, the state or any city, county, district, authority, or public corporation, or any agency thereof. Consequently, public agencies are required to comply with PRC 5097.5 for their own activities, including construction and maintenance, as well as for permit actions (e.g., encroachment permits) undertaken by others.

LOCAL

The County of Riverside (2015) provides specific protections for paleontological resources identified within its boundaries. These protections include the SABER (Safeguard Artifacts Being Excavated in Riverside County) policy. The SABER Policy, enacted in October 2011 by the Riverside County Board of Supervisors, requires that any paleontological resources found or unearthed in the county of Riverside be curated at the Western Science Center.

Protections of paleontological resources fall under the City of Indio Final Environmental Impact Report (2019a). Chapter 4 states:

> "The purpose of the Conservation Element is to address the conservation, development, and use of natural resources, including air, water, soils, forests, biological habitat, and mineral deposits. It is also intended to enhance and protect archaeological, historic, and paleontological resources. These assets work in concert to sustain the health and prosperity of the community, not only environmentally but also economically. Assessing the current conditions of these resources provides a benchmark for reducing the impact of human activities on these systems. The goal is to maintain and improve the quality of these assets for the benefit of current and future generations."

City of Indio Final Environmental Impact Report 4.7.3:

> "Indio is located in the Coachella Valley, a large northwest to southeast trending basin that is the result of the well-known San Andreas Fault system in California. Sedimentary deposition has been slowly filling this basin since the Miocene Epoch (23.03–5.332 million years ago). Being an area of sedimentary deposition, there exists the potential for paleontological resources."

With these specifications in mind from the City of Indio Final Environmental Impact Report, The City of Indio General Plan of 2040 (2019b) highlights specific policies to protect paleontological resources during earth moving activities.

> "Goal CE-8: Historic, Archaeological, and Paleontological Resources. Historic, archaeological, and paleontological resources preserved for their scientific, educational, aesthetic, and cultural values.
>
> - CE-8 Policies
>
> - CE-8.1 Site plan review. Ensure adequate site plan review and mitigation measures are implemented for the development of sites with the potential to contain historic, archaeological, and paleontological resources
> - CE-8.2 Avoidance of impacts to historic resources. For projects that could affect historic resources, ensure adequate study to identify eligible resources and project-level review to avoid or lessen negative impacts

through conformance with the Secretary of the Interior's Standards for the Treatment of Historic Properties.

- CE-8.3 Incentivize retention of historic landmarks. Explore opportunities to provide economic and regulatory incentives for the retention and sensitive upgrades and changes to historic landmarks and contributors to designated historic districts.
- CE-8.4 Monitoring. Require monitoring on sites where grading has the potential to impact subsurface cultural and paleontological resources during excavation and construction activities.
- CE-8.5 Public Education. Support opportunities to promote public awareness of the history and prehistory of the area as the oldest Valley City and the cultural center of the Coachella Valley.

PALEONTOLOGICAL RESOURCE POTENTIAL

Absent specific agency guidelines, most professional paleontologists in California adhere to the guidelines set forth by SVP (2010) to determine the course of paleontological mitigation for a given project. These guidelines establish protocols for the assessment of the paleontological resource potential of underlying geologic units and outline measures to mitigate adverse impacts that could result from project development. Using baseline information gathered during a paleontological resource assessment, the paleontological resource potential of the geologic unit(s) (or members thereof) underlying a project area can be assigned to one of four categories defined by SVP (2010). Although these standards were written specifically to protect vertebrate paleontological resources, all fields of paleontology have adopted the following guidelines.

HIGH POTENTIAL (SENSITIVITY)

Rock units from which significant vertebrate or significant invertebrate fossils or significant suites of plant fossils have been recovered have a high potential for containing significant non-renewable fossiliferous resources. These units include sedimentary formations and some volcanic formations which contain significant nonrenewable.

LOW POTENTIAL (SENSITIVITY)

Sedimentary rock units that are potentially fossiliferous but have not yielded fossils in the past or contain common and/or widespread invertebrate fossils of well documented and understood taphonomic, phylogenetic species and habitat ecology. Reports in the paleontological literature or field surveys by a qualified vertebrate paleontologist may allow determination that some areas or units have low potentials for yielding significant fossils prior to the start of construction. Generally, these units will be poorly represented by specimens in institutional collections and will not require protection or salvage operations. However, as excavation for construction gets underway it is possible that significant and unanticipated paleontological resources might be encountered and require a change of classification from Low to High Potential and, thus, require monitoring and mitigation if the resources are found to be significant.

UNDETERMINED POTENTIAL (SENSITIVITY)

Specific areas underlain by sedimentary rock units for which little information is available have undetermined fossiliferous potentials. Field surveys by a qualified vertebrate paleontologist to specifically determine the potentials of the rock units are required before programs of impact mitigation for such areas may be developed.

NO POTENTIAL

Rock units of metamorphic or igneous origin are commonly classified as having no potential for containing significant paleontological resources.

METHODS

To assess whether a particular area has the potential to contain significant fossil resources at the subsurface, it is necessary to review published geologic mapping to determine the geology and stratigraphy of the area. Geologic units are considered "sensitive" for paleontological resources if they are known to contain significant fossils anywhere in their extent. Therefore, a search of pertinent local and regional museum repositories for paleontological localities within and nearby the Project area is necessary to determine whether fossil localities have been previously discovered within a particular rock unit. For this Project, a formal museum records search was conducted at the WSC (Stoneburg, 2022), and an informal records search was conducted of the online University of California Museum of Paleontology Collections (UCMP) (2022).

RESOURCE CONTEXT

GEOLOGIC SETTING

The Project area is in the Coachella Valley within the Colorado Desert geomorphic province in southern California. The Colorado Desert geomorphic province extends from the Transverse Ranges to the north and northeast, the Peninsular Range on the west, and the Gulf of California to the south. Dominant features within the Colorado Desert include the Salton Trough, the Colorado River, and the Orocopia, Chocolate, Palo Verde, and Chuckwalla Mountains. The Coachella Valley is within the Salton Trough—a large structural depression that extends from the San Gorgonio Pass in the north to the Gulf of Mexico in the south (Norris and Webb, 1976).

During the late Pleistocene to Holocene the Salton Trough held Lake Cahuilla; a large lake that once occupied the Coachella Valley (Alles, 2011; Deméré, 2002; Norris, 1979; Waters, 1983; Whistler et al., 1995). Pleistocene to Holocene Lake Cahuilla sand and silt lacustrine deposits are overlain by younger Holocene alluvial fan sand in the Coachella Valley. The depth of the contact between the Holocene fan and older Lake Cahuilla deposits in the Project area is unknown; however, radiocarbon dating of Lake Cahuilla deposits indicates lacustrine silt sediments have an age of approximately 4,000 years before present at a depth of 20 feet below ground surface (Waters, 1983). The Lake Cahuilla deposits are composed of weakly consolidated, shallow to moderately deep lacustrine sands, silts, and clays, with tufa and travertine rock coatings, coarse alluvial deposits, beach sand, and bivalve and gastropod shell

fragments (Norris, 1979; Waters, 1983). The Lake Cahuilla sediments range from several feet deep at the margin of the Coachella Valley to as much as 300 feet thick in the center of the Salton Trough (Arnal, 1961; Norris and Webb, 1976).

SITE SPECIFIC GEOLOGY AND PALEONTOLOGY

According to the Geologic Map of the Palm Desert and Coachella 15-minute quadrangle (Dibblee and Minch, 2008), the Project area is immediately underlain by Holocene alluvial fan facies (Qa) of the Coachella Valley (Figure 2). Alluvial fans typically have low fossil preservation potential due to the energy and clast distribution of the rheology of their formative depositional events (Woodburne, 1987). But late Pleistocene to Holocene sedimentary deposits derived from ancient Lake Cahuilla and likely present at depth in the Project area have proven to yield scientifically significant mollusk shells within the Coachella Valley (Whistler et al., 1995). Fossil specimens of diatoms, spores, pollen, land plants, sponges, ostracods, freshwater gastropods, fresher bivalves, fish, and small terrestrial vertebrate have been recovered from the Lake Cahuilla Beds, from unspecified depth (Scott 2014). In addition, Holocene non-mineralized (non-fossil) mollusk shells are also found the Lake Cahuilla silt deposits and their recovery and subsequent dating have helped researchers with studies in archaeology, geology, and seismology (Norris and Webb, 1976).

According to the WSC museum records search there are no records of significant vertebrate fossil specimens within the Project area or immediate vicinity (Stoneburg, 2022). The WSC does have a record for several freshwater invertebrate fossils recovered from Holocene alluvium at the nearby Imagine Coachella Project. The invertebrate locality yielded a number of identifiable freshwater invertebrate fossils, including bivalves (such as *Anodonta californiensis*, *Pisidium* sp.) and gastropods (Stoneburg, 2022). A review of online UCMP (2022) locality record databases did not produce any additional fossil records within or near the Project area.

FINDINGS

Based on the literature review and museum records search results, the paleontological sensitivity of the Project area was determined in accordance with the SVP's (2010) sensitivity scale and in consultation with the County of Riverside Paleontological Sensitivity Map (2015). Surficial Quaternary alluvium sediments in the Project area may be underlain at an unknown depth by older Holocene and Pleistocene deposits which have proven to yield significant fossils in the Coachella Valley (Stoneburg, 2022). Therefore, the Quaternary alluvium mapped at the surface of the Project area is assigned a low to high paleontological sensitivity, with a high potential to contain intact scientifically significant paleontological resources at depth. The Project plans to primarily disturb shallow Holocene sediments which have not yielded significant vertebrate fossils nearby, but deeper and older Holocene and Pleistocene sediments could produce significant vertebrate fossils. As a result, the potential for encountering significant fossil resources during Project-related ground disturbance is high and impacts to paleontological resources could occur.



Figure 3. Geologic map of the Project area.

RECOMMENDATIONS

In general, the potential for a given project to result in negative impacts to paleontological resources is directly proportional to the amount of ground disturbance associated with the project; thus, the higher the amount of ground disturbances within geological deposits with a known paleontological sensitivity, the greater the potential for negative impacts to paleontological resources. Since this Project entails the excavation of a building, new ground disturbances are anticipated. The underlying sediment is likely to be Holocene near the surface and Project-related ground disturbances are not anticipated to impact paleontological resources at shallow depth. However, the presence of significant fossil localities nearby suggests older fossil-bearing Pleistocene sediments may be present at depth in the Project area and could potentially yield significant paleontological material if disturbed. As such, paleontological mitigation is recommended for the Project.

It is recommended that a qualified paleontologist (Project Paleontologist) be retained to provide paleontological resource services during ground-disturbing activities for the Project. A qualified paleontologist is defined as an individual who meets the standards set forth by the Society of Vertebrate Paleontology (2010). The qualified paleontologist would be onsite during ground-disturbance to mitigate any discoveries of paleontological resources that are encountered during Project construction. In addition, prior to the start of the proposed Project activities, all field personnel should receive a worker's environmental awareness training on paleontological resources. The training will provide a description of the laws and ordinances protecting fossil resources, the types of fossil resources that may be encountered in the Project area, the role of the paleontological monitor, outline steps to follow if a fossil discovery is made and provide contact information for the Project Paleontologist. The training will be developed by the Project Paleontologist and can be delivered concurrent with other training including cultural, biological, safety, et cetera.

Thank you for contacting PaleoWest for this Project. If you have any questions, please do not hesitate to contact us.

Sincerely,
PALEOWEST





Michaela Adler | Associate Paleontologist

Heather Clifford | Senior Paleontologist

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Appendix B
Traffic and VMT Study

TRAMES SOLUTIONS INC.
4225 Oceanside Blvd., 354H
Oceanside, CA 92056
(760) 291 - 1400

February 26, 2024

Ms. Gabriela Marks
Marks Architects
2643 4th Ave.
San Diego, CA 92103

Subject: L&G Desert Store Focused Traffic Analysis (JN 0037-0051)

Dear Ms. Marks:

Trames Solutions Inc. is pleased to submit this focused traffic analysis for the proposed L&G Desert Store project. The site is located at 49900 Jackson St. in the City of Indio.

INTRODUCTION

The proposed project consists of developing a 2,500 sf coffee shop with a drive-thru, 4,000 sf of retail uses, and a convenience store with 16 vehicle fueling positions. Attachment A contains the site plan for the proposed project. The intent of this analysis is to determine the anticipated number of trips that would be generated during the morning and evening peak hours and throughout the day. This analysis also includes an assessment of the proposed truck paths throughout the site.

TRIP GENERATION ANALYSIS

Typically, traffic generated by developments can be determined based on the Institute of Transportation Engineers (ITE), Trip Generation handbook (11th edition). This publication contains trip rates based on studies conducted for a variety of uses. Land Use Code 937 (Coffee/Donut Shop w/Drive-Thru), 822 (Shopping Center with less than 40,000 square feet), and 945 (Convenience Store with fuel pumps) has been selected as the appropriate uses to represent the proposed project.

Table 1 provides a summary of the daily, AM peak hour, and PM peak hour trip rates for the proposed project based on the ITE Manual. Table 2 provides a summary of the trips. Based on the proposed uses, it is estimated that a total of 2,268 new trips will occur per day, with 239 new trip ends occurring during the AM Peak Hour, and 178 new trip ends occurring during the PM Peak Hour based on the ITE trip rates.

Some of the trips are anticipated to be comprised of pass-by traffic. These trips are already on the roadway system but will stop in on their way to a primary destination. The ITE Trip Generation Handbook has reduction percentages based on a particular land use type. The pass by reduction for a fast food restaurant (AM-50%; PM-55) has been applied to the coffee shop use based on the ITE has a pass-by rate for a coffee shop with a drive-thru and no indoor seating. ITE suggests the pass-by rate for a coffee shop would be as high as 90% during the morning and 98% during the evening peak hour. By adopting the lower reduction rate of a fast food use, we present a conservative amount of new trips in comparison to those for the coffee shop with no indoor seating. Similarly, a pass-by rate has also been applied to the convenience store (AM-76%; PM-75) use. These pass-by rates during the peak hours seem reasonable since the project site is located adjacent to major thoroughfares. The remaining half of the trips are anticipated to be new trips to/from the project site.

TRIP DISTRIBUTION

Trip distribution represents the directional orientation of traffic to and from the project site. The project's trip distribution patterns are based on the proximity to the major thoroughfares, regional freeway interchanges, and residential neighborhoods. Therefore, it is anticipated that approximately 50 percent of the traffic would come from the south of the project site, 10 percent from the north, 20% from the west, and 20 percent from the east. Figure A illustrates the percent distribution of the project traffic. Figure B illustrates the number of trips at the project driveways.

INTERNAL CIRCULATION

The largest vehicles anticipated to access the proposed project are fueling trucks. Figure C illustrates the swept paths of the trucks. As illustrated on the figure, it appears that the trucks can circulate throughout the site adequately.

CONCLUSIONS

The proposed project is estimated to generate a total of 2,268 new trips per day, with 239 new trip ends occurring during the AM Peak Hour, and 178 new trip ends occurring during the PM Peak Hour.

Fuel delivery trucks should be able to adequately serve the site.

If you have any questions, please contact me directly at (949) 244-2436.

Respectfully submitted,
Trames Solutions Inc.



Scott Sato, P.E.
Vice President

Attachment A – Site Plan

TABLE 1

PROJECT TRIP GENERATION RATES[1]

Land Use	ITE Code	Quantity[2]	Peak Hour Trip Rates						Daily
			AM			PM			
			IN	OUT	Total	IN	OUT	Total	
Coffee/Donut Shop with Drive-Through Window	937	2.5 TSF	43.80	42.08	85.88	19.50	19.49	38.99	533.57
Shopping Center (<40k)	822	4 TSF	1.42	0.94	2.36	3.30	3.29	6.59	54.45
Convenience Store/Gas Station - GFA (5.5-10k)	945	16 VFP	15.80	15.80	31.60	13.45	13.45	26.90	345.75

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 11th Edition (2021).

[2] TSF = Thousand Square Feet; VFP = Vehicle Fueling Positions

TABLE 2

PROJECT TRIP GENERATION SUMMARY

Land Use	ITE Code	Quantity[1]	Peak Hour						Daily
			AM			PM			
			In	Out	Total	In	Out	Total	
Coffee/Donut Shop with Drive-Through Window	937	2.5 TSF	110	105	215	49	49	98	1,334
Pass-By Reduction (50% AM, 55% PM)[2]			*-55*	*-53*	*-108*	*-27*	*-27*	*-54*	*-667*
Shopping Center (<40k)	822	4 TSF	6	4	10	13	13	26	218
Convenience Store/Gas Station - GFA (5.5-10k)	945	16 VFP	253	253	506	215	215	430	5,532
Pass-By Reduction (76% AM, 75% PM)[3]			*-192*	*-192*	*-384*	*-161*	*-161*	*-322*	*-4,149*
Total Net New Trips			122	117	239	89	89	178	2,268

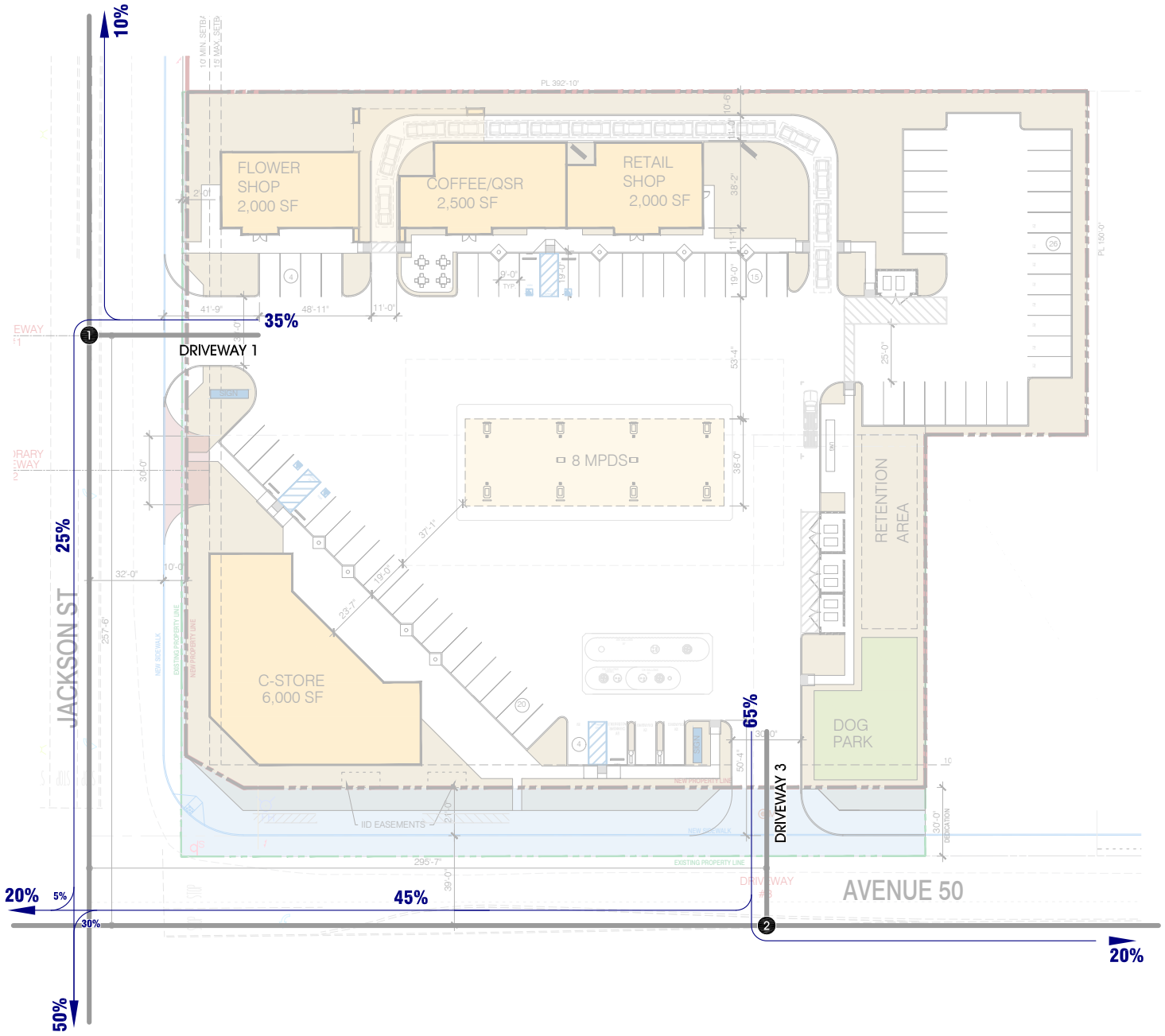
[1] TSF = Thousand Square Feet

[2] Pass by percentages based on Fast Food w/Drive-Thru

[2] Pass by percentages based on Convenience Store with 16 VFP

FIGURE A

PROJECT TRIP DISTRIBUTION

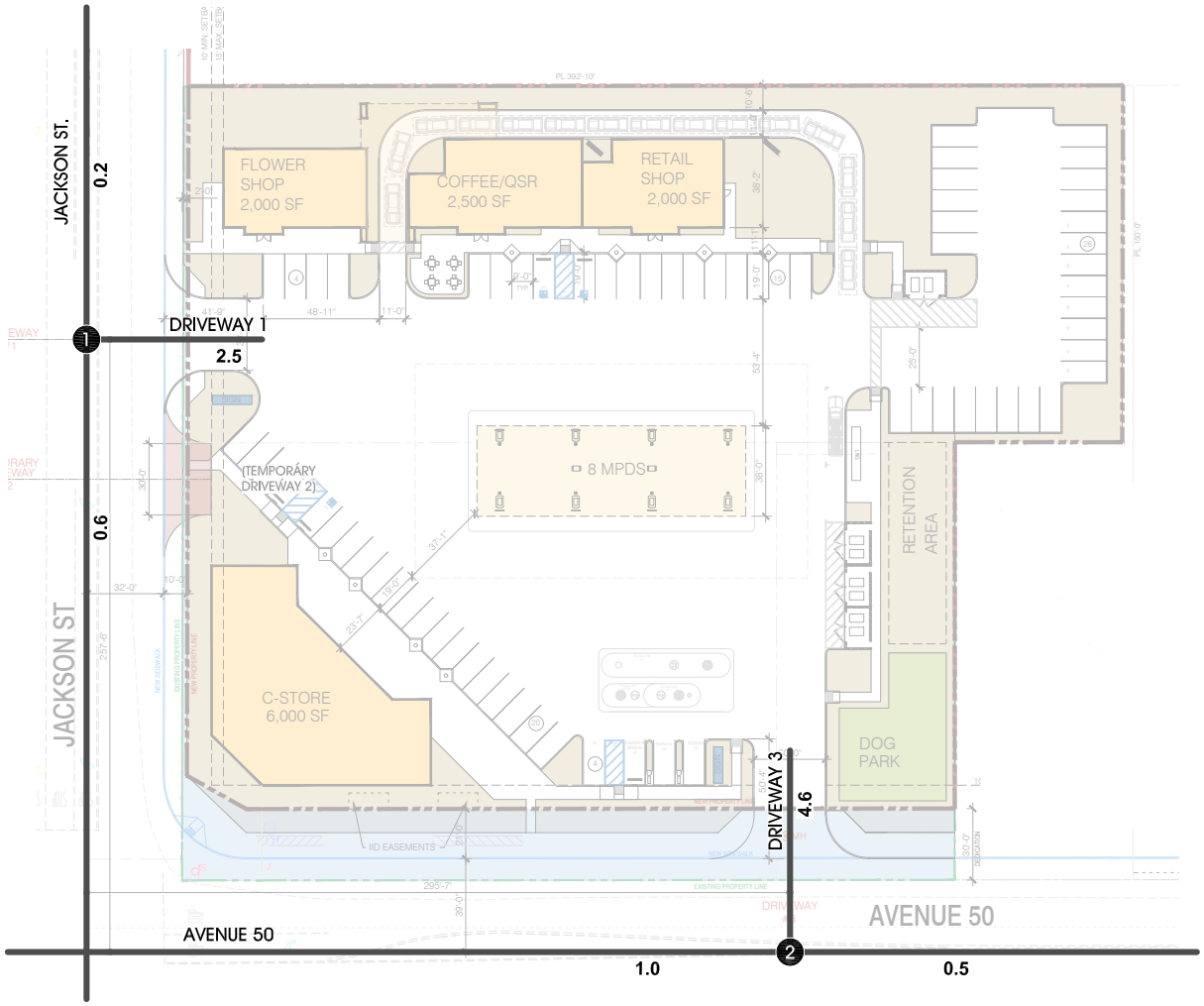


LEGEND:

- (#) = INTERSECTION ID
- = DIRT ROAD / FUTURE ROADWAY
- 10% = PERCENT TO/FROM PROJECT

N

FIGURE B
PROJECT ONLY TRAFFIC VOLUMES



AM PEAK HOUR INTERSECTION VOLUMES:

1. Jackson St. / Dwy. 1		2. Dwy. 3 / Avenue 50	
0(-25) 12(+25)	12(+62) 29(+25)	53(+49) 24(+111)	24(+49) 0(-49)
	0(-62) 31(+62)	55(+111) 0(-111)	

PM PEAK HOUR INTERSECTION VOLUMES:

1. Jackson St. / Dwy. 1		2. Dwy. 3 / Avenue 50	
0(-19) 9(+19)	9(+47) 22(+19)	40(+37) 17(+84)	17(+37) 0(-37)
	0(-47) 22(+47)	40(+84) 0(-84)	

LEGEND:

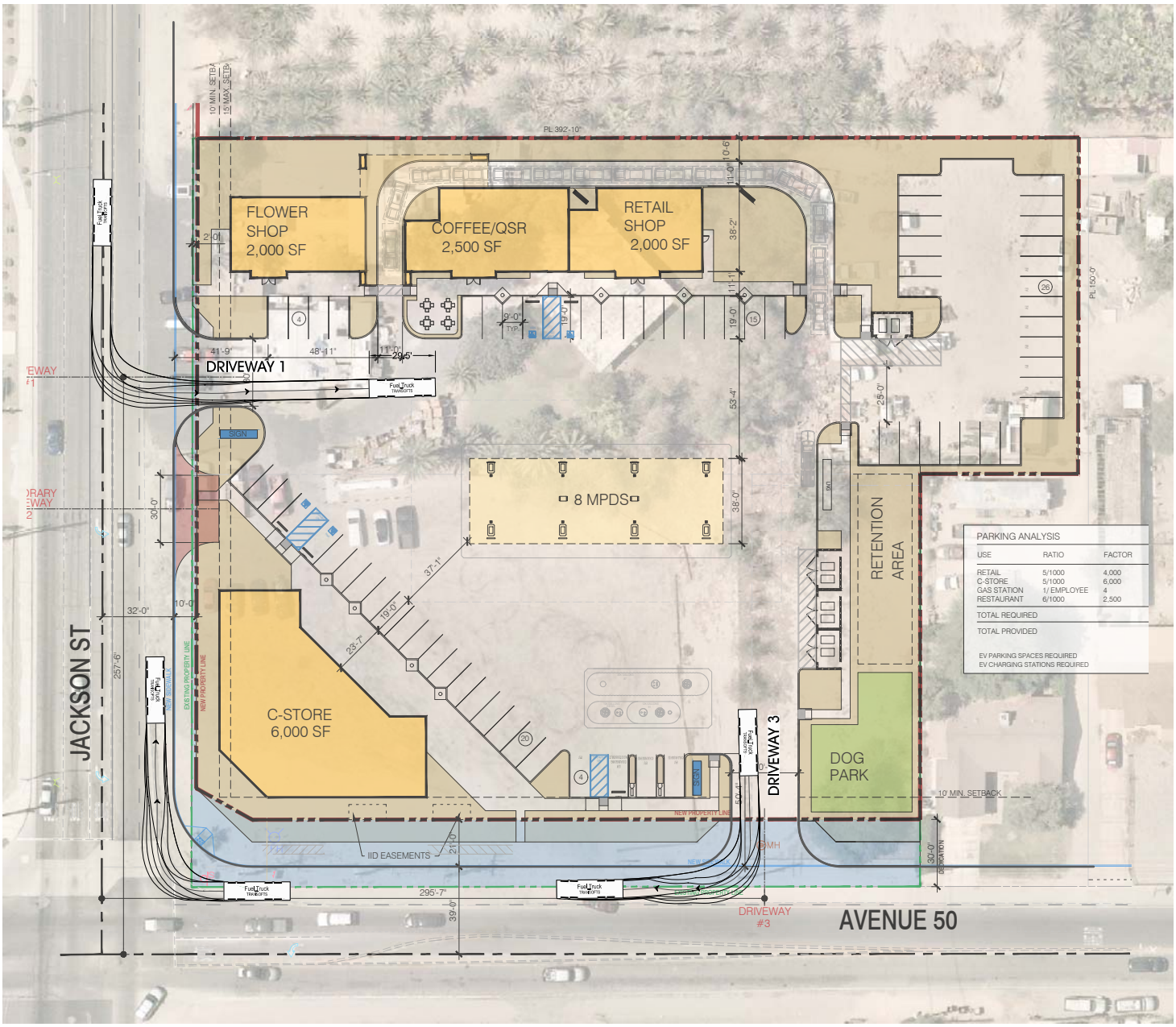
(#) = INTERSECTION ID

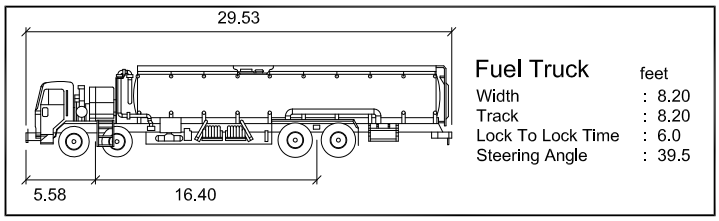
10(±10) = PROJECT ONLY NET NEW TRIPS (PROJECT ONLY PASS-BY TRIPS)

10.0 = VEHICLES PER DAY (1000'S)

N

FIGURE C
FUELING TANK TRUCK TURN PATHS





Fuel Truck	feet
Width	: 8.20
Track	: 8.20
Lock To Lock Time	: 6.0
Steering Angle	: 39.5

70' 0 70'

SCALE: 1" = 70'

N

ATTACHMENT A

SITE PLAN



PARKING ANALYSIS

USE	RATIO	FACTOR	PARKING REQUIRED
RETAIL	5/1000	4,000	20
C-STORE	5/1000	6,000	30
GAS STATION	1/ EMPLOYEE	4	4
RESTAURANT	6/1000	2,500	15
TOTAL REQUIRED			69
TOTAL PROVIDED			69
EV PARKING SPACES REQUIRED			13
EV CHARGING STATIONS REQUIRED			3

SITE PLAN V5 02/12/24

SCALE: 1"=20'-0"
2.48 AC

marks architects

architecture
interior design
retail
restaurants
space planning
master planning
leed accredited
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LICENSED ARCHITECT
DANIEL J. MARKS
C-26463
9-30-2025
RENEWAL DATE
STATE OF CALIFORNIA

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SCHEMATIC DESIGN	01/23/24

L&G

49900 Jackson St,
Indio, CA 92201

V5

TRAMES SOLUTIONS INC.
4225 Oceanside Blvd., 354H
Oceanside, CA 92056
(760) 291 - 1400

March 27, 2024

Ms. Gabriela Marks
Marks Architects
2643 4th Ave.
San Diego, CA 92103

Subject: L&G Desert Store Focused Traffic Analysis (JN 0037-0051)

Dear Ms. Marks:

Trames Solutions Inc. is pleased to submit this VMT Assessment for the proposed L&G Desert Store project. The site is located at 49900 Jackson St. in the City of Indio.

INTRODUCTION

The proposed project consists of developing a 2,500 sf coffee shop with a drive-thru, 4,000 sf of retail uses, and a convenience store with 16 vehicle fueling positions. Attachment A contains the site plan for the proposed project. This analysis provides an assessment of the project from a Vehicle Miles Traveled (VMT) perspective.

VEHICLE MILES TRAVELED (VMT) CRITERIA

The VMT evaluation is based on the passage of SB 743 which replaces automobile delay and LOS as the basis of determining CEQA impacts. Land use projects that have the potential to increase the average VMT per service population (compared to the City's baseline threshold) will be evaluated for potential impacts.

The City of Indio has adopted the County of Riverside's **Transportation Analysis Guidelines for Level of Service Vehicle Miles Traveled** (December 2020) in determining if a project would have a significant vehicle miles traveled impact. Based on the Guidelines, if a retail project is less than 60,000 sf and is local serving, a less-than-significant impact can be presumed. Local serving retail generally improves the convenience of obtaining goods/services close to home and has the effect of reducing vehicle travel.

CONCLUSIONS

The project will consist of a 2,500 sf coffee shop with a drive-thru, 4,000 sf of retail uses, and a 6,000 sf convenience store with 16 vehicle fueling positions that is less than 60,000 sf. This retail site will primarily serve the local neighborhood. Based on the City's VMT screening criteria, this project may be "screened out" from further VMT analysis.

If you have any questions, please contact me directly at (949) 244-2436.

Respectfully submitted,

Trames Solutions Inc.



Scott Sato, P.E.

Vice President

Attachment A – Site Plan

ATTACHMENT

SITE PLAN



PARKING ANALYSIS

USE	RATIO	FACTOR	PARKING REQUIRED
RETAIL	5/1000	4,000	20
C-STORE	5/1000	6,000	30
GAS STATION	1/ EMPLOYEE	4	4
RESTAURANT	6/1000	2,500	15
TOTAL REQUIRED			69
TOTAL PROVIDED			69
EV PARKING SPACES REQUIRED			13
EV CHARGING STATIONS REQUIRED			3

SITE PLAN V5 02/12/24

SCALE: 1"=20'-0"
2.48 AC

marks architects

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LICENSED ARCHITECT
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SCHEMATIC DESIGN	01/23/24

L&G

49900 Jackson St,
Indio, CA 92201

V5

Appendix C
Air Quality Study

MD ACOUSTICS
Sound Solutions for Planning and Design

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

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

www.mdacoustics.com

March 28, 2024

Mr. Rich Malacoff
The Altum Group
44-600 Village Court Suite 100
Palm Desert, CA 92260

Subject:
L & G Market – Focused Air Quality, Greenhouse Gas, Energy, and Health Risk Impact Study, City of Indio, CA

Dear Mr. Malacoff:

MD Acoustics, LLC (MD) has completed a focused Air Quality, Greenhouse Gas, Energy, and Health Risk Impact Evaluation for the L & G Market project located at the corner of Jackson Street and 50th Avenue in the city of Indio, CA. The purpose of this focused study is to evaluate the air quality, greenhouse gas, and energy construction and operational emissions generated by the proposed project and to compare the project emissions to South Coast Air Quality Management District's (SCAQMD) thresholds of significance as it relates to residential and commercial uses and consistency to the City's General Plan. A list of definitions and terminology is located in Appendix A.

1.0 Project Description

The Project includes the demolition of the existing market and single-family residence onsite and construction of a new 6,000 square-foot convenience market with 16 fueling positions, 4,000 square feet of retail space, a 2,500 square-foot coffee shop with drive thru, and 69 parking spaces. The proposed project site plan is in Appendix B. The site is zoned Neighborhood Center. The project is surrounded by residential uses to the east, commercial uses to the north, Avenue 50 to the south, and Jackson Street to the east. The nearest sensitive receptor is the single-family residence located adjacent to the east.

2.0 AQ/GHG Thresholds of Significance

2.1 AQ Significance Thresholds

Project emissions were compared to both regional and localized SCAQMD's thresholds of significance for construction and operational emissions[1,2].

2.2 GHG Significance Thresholds

The project emissions were compared to the County of Riverside Climate Action Plan's (CAP) and SCAQMD's 3,000 $MTCO_2e$ draft threshold for all land uses[3].

3.0 Evaluation Procedure/Methodology

MD utilized the latest version of CalEEMod (2022.1.1.22) to calculate both the construction and operational emissions from the project site[4]. Project construction is modeled to commence no earlier than July 2024 and be completed by July 2025. Construction assumes demolition, site preparation, grading,

[1] https://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf
[2] https://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds
[3] https://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/ghg-significance-thresholds/page/2
[4] https://www.caleemod.com/

building construction, paving, and architectural coating. CalEEmod defaults were utilized. Assumptions and output calculations are provided in Appendix C.

4.0 Local Ambient Conditions

The project site is located in Salton Sea Air Basin (SSAB) in the Coachella Valley Source Receptor Area (SRA 30)[5]. The nearest air monitoring station to the project site is the Palm Springs Fire Station #3. Historical air quality data for the vicinity can be found both at CARB and SCAQMD's websites[6,7]. Temperature and historical precipitation data can be found at the WRCC[8].

5.0 Findings

The following outlines the emissions for the project:

5.1 Regional Construction Emissions

The construction emissions for the project would not exceed the SCAQMD's daily emission thresholds at the regional level as indicated in Table 1, and therefore the impact would be considered less than significant.

<Table 1, next page>

[5] https://www.aqmd.gov/docs/default-source/default-document-library/map-of-monitoring-areas.pdf?sfvrsn=6
[6] https://www.aqmd.gov/home/library/air-quality-data-studies/historical-data-by-year
[7] https://www.arb.ca.gov/adam/
[8] https://www.wrcc.dri.edu/summary/Climsmsca.html

Table 1: Regional Significance – Construction Emissions (lbs/day)

Activity	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO_2	PM10	PM2.5
Demolition						
On-Site[2]	1.61	15.60	16.00	0.02	1.54	0.75
Off-Site[3]	0.08	0.85	1.46	0.00	0.35	0.10
Total	**1.69**	**16.45**	**17.46**	**0.02**	**1.89**	**0.85**
Site Preparation						
On-Site[2]	1.31	12.70	11.40	0.03	1.17	0.58
Off-Site[3]	0.04	0.04	0.77	0.00	0.10	0.02
Total	**1.35**	**12.74**	**12.17**	**0.03**	**1.27**	**0.60**
Grading						
On-Site[2]	1.65	15.90	15.40	0.02	3.51	2.02
Off-Site[3]	0.09	1.69	1.40	0.01	0.53	0.15
Total	**1.74**	**17.59**	**16.80**	**0.03**	**4.04**	**2.17**
Building Construction						
On-Site[2]	1.32	11.20	11.90	0.02	0.46	0.42
Off-Site[3]	0.02	0.11	0.47	0.00	0.08	0.02
Total	**1.34**	**11.31**	**12.37**	**0.02**	**0.54**	**0.44**
Paving						
On-Site[2]	1.38	6.13	8.21	0.01	0.27	0.25
Off-Site[3]	0.09	0.25	1.50	0.00	0.25	0.06
Total	**1.47**	**6.38**	**9.71**	**0.01**	**0.52**	**0.31**
Architectural Coating						
On-Site[2]	14.93	0.88	1.14	0.00	0.03	0.03
Off-Site[3]	0.00	0.00	0.08	0.00	0.01	0.00
Total	**14.93**	**0.88**	**1.22**	**0.00**	**0.04**	**0.03**
Total of overlapping phases[4]	**17.74**	**18.57**	**23.30**	**0.03**	**1.10**	**0.78**
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Thresholds	No	No	No	No	No	No

Notes:
[1] Source: CalEEMod Version 2022.1.1.22
[2] On-site emissions from equipment operated on-site that is not operated on public roads.
[3] Off-site emissions from equipment operated on public roads.
[4] Architectural coatings and paving phases may overlap.

5.2 Localized Construction Emissions

Utilizing the construction equipment list and associated acreages per 8-hour day provided in the SCAQMD "Fact Sheet for Applying CalEEMod to Localized Significance Thresholds" (South Coast Air Quality Management District 2011b), the maximum number of acres disturbed in a day would be 1.5 acres during site preparation (as shown in Table 2 below); therefore, the project emissions have been compared to the 1-acre per day localized significance threshold.

Table 2: Maximum Number of Acres Disturbed Per Day[1]

Activity	Equipment	Number	Acres/8hr-day	Total Acres
Site Preparation	Graders	1	0.5	0.5
	Scrapers	1	1.0	1.0
Total Per Phase				**1.5**
Grading	Graders	1	0.5	0.5
	Rubber Tired Dozers	1	0.5	0.5
Total Per Phase				**1.0**

Notes:

[1.] Source: CalEEMod output and South Coast AQMD, Fact Sheet for Applying CalEEMod to Localized Significance Thresholds. http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf?sfvrsn=2

None of the analyzed criteria pollutants would exceed the LST emission thresholds at the nearest sensitive receptors as shown in Table 3. Therefore, the impact would be less than significant from construction.

Table 3: Localized Significance – Construction Emissions (lbs/day)

Phase	On-Site Pollutant Emissions (pounds/day)[1]			
	NOx	**CO**	**PM10**	**PM2.5**
Demolition	15.60	16.00	1.54	0.75
Site Preparation	12.70	11.40	1.17	0.58
Grading	15.90	15.40	3.51	2.02
Building Construction	11.20	11.90	0.46	0.42
Paving	6.13	8.21	0.27	0.25
Architectural Coating	0.88	1.14	0.03	0.03
Total for overlapping construction phases	18.21	21.25	0.76	0.70
SCAQMD Threshold[2]	**132**	**878**	**4**	**3**
Exceeds Threshold?	No	No	No	No

Notes:
[1] Source: Calculated from CalEEMod and SCAQMD's Mass Rate Look-up Tables for one acre (see Table 2), to be conservative, in the Coachella Valley Source Receptor Area (SRA 30).
[2] The nearest sensitive receptors are the single-family residential uses located adjacent to the east of the project site; therefore, the 25-meter threshold was utilized.

5.3 Regional Operational Emissions

The operating emissions were based on year 2025, which is the anticipated opening year for the project. The CalEEMod default project trips and vehicle miles traveled (VMTs) were used.

The summer and winter emissions created by the proposed project's long-term operations were calculated and the highest emissions from either summer or winter are summarized in Table 4. The data in Table 4 shows that the operational emissions for the project would not exceed the SCAQMD's regional significance thresholds.

Table 4: Regional Significance – Operational Emissions (lbs/day)

Activity	Pollutant Emissions (pounds/day)[1]					
	VOC	NOx	CO	SO2	PM10	PM2.5
Area Sources[2]	0.41	0.00	0.54	0.00	0.00	0.00
Energy Usage[3]	0.01	0.11	0.10	0.00	0.01	0.01
Mobile Sources[4]	8.70	6.31	59.10	0.12	9.75	2.53
Total Emissions	**9.12**	**6.42**	**59.74**	**0.12**	**9.76**	**2.54**
SCAQMD Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	No	No	No	No	No

Notes:
[1] Source: CalEEMod Version 2022.1.1.22
[2] Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.
[3] Energy usage consists of emissions from on-site natural gas usage.
[4] Mobile sources consist of emissions from vehicles and road dust.

5.4 Localized Operational Emissions

Table 5 shows the calculated emissions for the proposed operational activities compared with appropriate LSTs. The LST analysis only includes on-site sources; however, the CalEEMod software outputs do not separate on-site and off-site emissions for mobile sources. For a worst-case scenario assessment, the emissions shown in Table 5 include all on-site project-related stationary sources and 10% of the project-related new mobile sources.[9] This percentage is an estimate of the amount of project-related new vehicle traffic that will occur on-site.

Table 5: Localized Significance – Unmitigated Operational Emissions

On-Site Emission Source	On-Site Pollutant Emissions (pounds/day)[1]			
	NOx	CO	PM10	PM2.5
Area Sources[2]	0.00	0.54	0.00	0.00
Energy Usage[3]	0.11	0.10	0.01	0.01
On-Site Vehicle Emissions[4]	0.63	5.91	0.98	0.25
Total Emissions	**0.74**	**6.55**	**0.99**	**0.26**
SCAQMD Threshold for 25 meters (82 feet)[5]	**132**	**878**	**1**	**1**
Exceeds Threshold?	No	No	No	No

Notes:
[1] Source: Calculated from CalEEMod and SCAQMD's Mass Rate Look-up Tables for 1 acre in Coachella Valley Source Receptor Area (SRA 30).
[2] Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.
[3] Energy usage consists of emissions from generation of electricity and on-site natural gas usage.
[4] On-site vehicular emissions based on 1/10 of the gross vehicular emissions and road dust.
[5] The nearest sensitive receptor is located adjacent to the east; therefore, the 25-meter threshold has been used.

Table 5 indicates that the local operational emissions from both scenarios would not exceed the LST thresholds at the nearest sensitive receptors, located adjacent to the project. Therefore, the project will result in less than significant Localized Operational emissions. Scenario 2 would have higher emissions of CO and PM.

[9] The project site is approximately 0.1 miles in length at its longest point; therefore the on-site mobile source emissions represent approximately 1/69th of the shortest CalEEMod default distance of 6.9 miles. Therefore, to be conservative, 1/10th the distance (dividing the mobile source emissions by 10) was used to represent the portion of the overall mobile source emissions that would occur on-site.

5.5 GHG Emissions

Table 6 outlines the construction and operational GHG emissions for the project. The project's emissions are below (2,338 $MTCO_2e$) the SCAQMD's draft screening threshold of 3,000 $MTCO_2e$ for all land uses and; therefore, the impact is less than significant.

Table 6: Opening Year Project-Related Greenhouse Gas Emissions

Category	Greenhouse Gas Emissions (Metric Tons/Year)[1]					
	Bio-CO2	**NonBio-CO_2**	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
Area Sources[2]	0.00	0.18	0.18	0.00	0.00	0.18
Energy Usage[3]	0.00	137.00	137.00	0.01	0.00	137.01
Mobile Sources[4]	0.00	1,929.00	1,929.00	0.10	0.10	1,965.00
Solid Waste[6]	4.55	0.00	4.55	0.46	0.00	15.90
Water[7]	0.48	1.50	1.97	0.05	0.00	3.54
Refrigerants	0.00	0.00	0.00	0.00	0.00	207.00
Construction[8]	0.00	2.47	2.47	0.00	0.00	9.59
Total Emissions	5.03	2,070.15	2,075.18	0.62	0.10	**2,338.22**
County of Riverside CAP and SCAQMD Draft Screening Threshold						**3,000**
Exceeds Threshold?						**No**

Notes:
[1] Source: CalEEMod Version 2022.1.1.22
[2] Area sources consist of GHG emissions from consumer products, architectural coatings, and landscape equipment.
[3] Energy usage consist of GHG emissions from electricity and natural gas usage.
[4] Mobile sources consist of GHG emissions from vehicles.
[5] Solid waste includes the CO_2 and CH_4 emissions created from the solid waste placed in landfills.
[6] Water includes GHG emissions from electricity used for transport of water and processing of wastewater.
[7] Construction GHG emissions based on a 30-year amortization rate.

5.6 Consistency with Applicable Plans

Consistency with the County of Riverside CAP Update

Per the County's CAP Update, the County adopted its first CAP in 2015 which set a target to reduce emissions back to 1990 levels by the year 2020 as recommended in the AB 32 Scoping Plan. Furthermore, the goals and supporting measures within the County's CAP Update are proposed to reflect and ensure compliance with changes in the local and State policies and regulations such as SB 32 and California's 2017 Climate Change Scoping Plan. Therefore, compliance with the County's CAP in turn reflects consistency with the goals of the CARB Scoping Plan, Assembly Bill (AB) 32 and Senate Bill (SB) 32.

Appendix D of the Riverside County CAP Update also states that project's that do not exceed the CAP's screening threshold of 3,000 MTCO2e per year are considered to have less than significant GHG emissions and are in compliance with the County's CAP Update. According to the County's CAP Update, projects that do not exceed emissions of 3,000 MTCO2e per year are also required to include the following efficiency measures:

- Energy efficiency matching or exceeding the Title 24 requirements in effect as of January 2023, and
- Water conservation measures that match the California Green Building Code in effect as of January 2017.

As stated above, the GHG emissions generated by the proposed project would not exceed the County of Riverside CAP Update screening threshold of 3,000 metric tons per year of CO2e.

Consistency with Executive Orders S-03-05 and B-30-15

Executive Orders S-3-05 and B-30-15 are orders from the State's Executive Branch for the purpose of reducing GHG emissions. These strategies call for developing more efficient land-use patterns to match population increases, workforce, and socioeconomic needs for the full spectrum of the population. The project includes elements of smart land use as it is well-served by transportation infrastructure and near public transit.

Although the project's emissions level in 2050 cannot be reliably quantified, statewide efforts are underway to facilitate the State's achievement of that goal and it is reasonable to expect the project's emissions profile to decline as the regulatory initiatives identified by ARB in the First Update are implemented, and other technological innovations occur. As such, given the reasonably anticipated decline in project emissions once fully constructed and operational, the project is consistent with the Executive Order's horizon-year goal. Therefore, the project is consistent with Executive Orders S-3-05 and B-30-15.

Consistency with AB32 Scoping Plan

The ARB Board approved a Climate Change Scoping Plan in December 2008. The Scoping Plan outlines the State's strategy to achieve the 2020 greenhouse gas emissions limit. The Scoping Plan "proposes a comprehensive set of actions designed to reduce overall greenhouse gas emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health" (California Air Resources Board 2008). The measures in the Scoping Plan have been in place since 2012.

This Scoping Plan calls for an "ambitious but achievable" reduction in California's greenhouse gas emissions, cutting approximately 30 percent from business-as-usual emission levels projected for 2020, or about 10 percent from today's levels. In May 2014, the CARB released its *First Update to the Climate Change Scoping Plan* (CARB 2014). This *Update* identifies the next steps for California's leadership on climate change. In November 2017, the CARB released the 2017 Scoping Plan. This Scoping Plan incorporates, coordinates, and leverages many existing and ongoing efforts and identifies new policies and actions to accomplish the State's climate goals, and includes a description of a suite of specific actions to meet the State's 2030 GHG limit. The 2017 Scoping Plan builds upon the successful framework established by the Initial Scoping Plan and First Update, while identifying new, technologically feasible, and cost-effective strategies to ensure that California meets its GHG reduction targets.

As the latest, 2017 Scoping Plan builds upon previous versions, project consistency with applicable strategies of both the 2008 and 2017 Plan are assessed in Table 7. As shown in Table 7, the project is consistent with the applicable strategies within the Scoping Plan.

Table 7: Project Consistency with CARB Scoping Plan Policies and Measures[1]

2008 Scoping Plan Measures to Reduce Greenhouse Gas Emissions	Project Compliance with Measure
California Light-Duty Vehicle Greenhouse Gas Standards – Implement adopted standards and planned second phase of the program. Align zero-emission vehicle, alternative and renewable fuel and vehicle technology programs with long-term climate change goals.	Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
Energy Efficiency – Maximize energy efficiency building and appliance standards; pursue additional efficiency including new technologies, policy, and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California.	Consistent. The project will be compliant with the current Title 24 standards.
Low Carbon Fuel Standard – Develop and adopt the Low Carbon Fuel Standard.	Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
Vehicle Efficiency Measures – Implement light-duty vehicle efficiency measures.	Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
Medium/Heavy-Duty Vehicles – Adopt medium and heavy-duty vehicle efficiency measures.	Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
Green Building Strategy – Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings.	Consistent. The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part of the California Building Standards Code in the CCR. Part 11 establishes voluntary standards, that are mandatory in the 2022 edition of the Code, on planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The project will be subject to these mandatory standards.
High Global Warming Potential Gases – Adopt measures to reduce high global warming potential gases.	Consistent. CARB identified five measures that reduce HFC emissions from vehicular and commercial refrigeration systems; vehicles that access the project that are required to comply with the measures will comply with the strategy.
Recycling and Waste – Reduce methane emissions at landfills. Increase waste diversion, composting, and commercial recycling. Move toward zero-waste.	Consistent. The state is currently developing a regulation to reduce methane emissions from municipal solid waste landfills. The project will be required to comply with City programs, such as City's recycling and waste reduction program, which comply, with the 75 percent reduction required by 2020 per AB 341.
Water – Continue efficiency programs and use cleaner energy sources to move and treat water.	Consistent. The project will comply with all applicable City ordinances and CAL Green requirements.
2017 Scoping Plan Recommended Actions to Reduce Greenhouse Gas Emissions	**Project Compliance with Recommended Action**
Implement Mobile Source Strategy: Further increase GHG stringency on all light-duty vehicles beyond existing Advanced	Consistent. These are CARB enforced standards; vehicles that access the project that are required to

Clean Car regulations.	comply with the standards will comply with the strategy.
Implement Mobile Source Strategy: At least 1.5 million zero emission and plug-in hybrid light-duty electric vehicles by 2025 and at least 4.2 million zero emission and plug-in hybrid light-duty electric vehicles by 2030.	Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
Implement Mobile Source Strategy: Innovative Clean Transit: Transition to a suite of to-be-determined innovative clean transit options. Assumed 20 percent of new urban buses purchased beginning in 2018 will be zero emission buses with the penetration of zero-emission technology ramped up to 100 percent of new sales in 2030. Also, new natural gas buses, starting in 2018, and diesel buses, starting in 2020, meet the optional heavy-duty low-NOX standard.	Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
Implement Mobile Source Strategy: Last Mile Delivery: New regulation that would result in the use of low NOX or cleaner engines and the deployment of increasing numbers of zero-emission trucks primarily for class 3-7 last mile delivery trucks in California. This measure assumes ZEVs comprise 2.5 percent of new Class 3–7 truck sales in local fleets starting in 2020, increasing to 10 percent in 2025 and remaining flat through 2030.	Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
Implement SB 350 by 2030: Establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas end uses by 2030.	Consistent. The project will be compliant with the current Title 24 standards.
By 2019, develop regulations and programs to support organic waste landfill reduction goals in the SLCP and SB 1383.	Consistent. The project will be required to comply with City programs, such as City's recycling and waste reduction program, which comply, with the 75 percent reduction required by 2020 per AB 341.
Notes: [1] Source: CARB Scoping Plan (2008 and 2017)	

Consistency with SCAG's 2020-2045 RTP/SCS

At the regional level, the 2020-2045 RTP and Sustainable Communities Strategy represent the region's Climate Action Plan that defines strategies for reducing GHGs. In order to assess the project's potential to conflict with the RTP/SCS, this section analyzes the project's land use profile for consistency with those in the Sustainable Communities Strategy. Generally, projects are considered consistent with the provisions and general policies of applicable City and regional land use plans and regulations, such as SCAG's Sustainable Communities Strategy, if they are compatible with the general intent of the plans and would not preclude the attainment of their primary goals.

Table 8 demonstrates the project's consistency with the Actions and Strategies set forth in the 2020-2045 RTP/SCS. As shown in Table 8, the project would be consistent with the GHG reduction related actions and strategies contained in the 2020-2045 RTP/SCS.

Table 8: Project Consistency with SCAG 2020-2045 RTP/SCS[1]

Actions and Strategies	Responsible Party(ies)	Consistency Analysis
Land Use Strategies		
Reflect the changing population and demands, including combating gentrification and displacement, by increasing housing supply at a variety of affordability levels.	Local Jurisdictions	Consistent. The proposed project is a commercial development primarily taking over an existing commercial lot.
Focus new growth around transit.	Local Jurisdictions	Consistent. The proposed project is a commercial development that would be consistent with the 2020 RTP/SCS focus on growing near transit facilities.
Plan for growth around livable corridors, including growth on the Livable Corridors network.	SCAG, Local Jurisdictions	Consistent. The proposed project is a commercial development that would be consistent with the 2020 RTP/SCS focus on growing along the 2,980 miles of Livable Corridors in the region.
Provide more options for short trips through Neighborhood Mobility Areas and Complete Communities.	SCAG, Local Jurisdictions	Consistent. The proposed project would help further jobs/housing balance objectives. The proposed project is also consistent with the Complete Communities initiative that focuses on creation of mixed-use districts in growth areas.
Support local sustainability planning, including developing sustainable planning and design policies, sustainable zoning codes, and Climate Action Plans.	Local Jurisdictions	Not Applicable. This strategy calls on local governments to adopt General Plan updates, zoning codes, and Climate Action Plans to further sustainable communities. The proposed project would not interfere with such policymaking and would be consistent with those policy objectives.
Protect natural and farmlands, including developing conservation strategies.	SCAG, Local Jurisdictions	Consistent. The proposed project is a commercial development in an existing community that would help reduce demand for growth in urbanizing areas that threaten green fields and open spaces.
Transportation Strategies		
Preserve our existing transportation system.	SCAG, County Transportation Commissions, Local Jurisdictions	Not Applicable. This strategy calls on investing in the maintenance of our existing transportation system. The proposed project would not interfere with such policymaking.
Manage congestion through programs like the Congestion Management Program, Transportation Demand Management, and Transportation Systems Management strategies.	County Transportation Commissions, Local Jurisdictions	Consistent. The proposed project is a commercial development that will minimize congestion impacts on the region because of its proximity to public transit and general density of population and jobs.
Promote safety and security in the transportation system.	SCAG, County Transportation Commissions, Local Jurisdictions	Not Applicable. This strategy aims to improve the safety of the transportation system and protect users from security threats. The proposed project would not interfere with such policymaking.
Complete our transit, passenger rail, active transportation, highways and arterials, regional express lanes goods movement, and airport ground	SCAG, County Transportation Commissions,	Not Applicable. This strategy calls for transportation planning partners to implement major capital and operational projects that are

transportation systems.	Local Jurisdictions	designed to address regional growth. The proposed project would not interfere with this larger goal of investing in the transportation system.
Technological Innovation and 21st Century Transportation		
Promote zero-emissions vehicles.	SCAG, Local Jurisdictions	Consistent. While this action/strategy is not necessarily applicable on a project-specific basis, the City's Building Code requires the proposed building to provide conduit for on-site electric vehicle charging stalls, which the project is to provide in the proposed parking garage.
Promote neighborhood electric vehicles.	SCAG, Local Jurisdictions	Consistent. While this action/strategy is not necessarily applicable on a project-specific basis, the City's Building Code requires the proposed building to provide conduit for on-site electric vehicle charging stalls, which the project is to provide in the proposed parking garage.
Implement shared mobility programs.	SCAG, Local Jurisdictions	Not Applicable. This strategy is designed to integrate new technologies for last-mile and alternative transportation programs. The proposed project would not interfere with these emerging programs.

Notes:
[1] Source: Southern California Association of Governments; 2020–2045 RTP/SCS, May 2020.

5.7 Energy Analysis

Information from the CalEEMod 2022.1.1.22 Daily and Annual Outputs contained in the air quality and greenhouse gas analyses above was utilized for this analysis. The CalEEMod outputs detail project related construction equipment, transportation energy demands, and facility energy demands.

Construction Energy Demand

Construction Equipment Electricity Usage Estimates

Electrical service will be provided by the Imperial Irrigation District. Based on the 2017 National Construction Estimator, Richard Pray (2017)[10], the typical power cost per 1,000 square feet of building construction per month is estimated to be $2.32. The project plans to develop the site with 12,500 square feet of commercial space over the course of approximately 12 months. Based on Table 9, the total power cost of the on-site electricity usage during the construction of the proposed project is estimated to be approximately $348. As shown in Table 9, the total electricity usage from Project construction related activities is estimated to be approximately 6,327 kWh.[11]

[10] Pray, Richard. 2017 National Construction Estimator. Carlsbad : Craftsman Book Company, 2017.
[11] LADWP's Small Commercial & Multi-Family Service (A-1) is approximately $0.06 per kWh of electricity Southern California Edison (SCE). Rates & Pricing Choices: General Service/Industrial Rates. https://library.sce.com/content/dam/sce-doclib/public/regulatory/historical/electric/2020/schedules/general-service-&-industrial-rates/ELECTRIC_SCHEDULES_GS-1_2020.pdf

Table 9: Project Construction Power Cost and Electricity Usage

Power Cost (per 1,000 square foot of building per month of construction)	Total Building Size (1,000 Square Foot)[1]	Construction Duration (months)	Total Project Construction Power Cost
$2.32	12.5	12	$348.00

Cost per kWh	Total Project Construction Electricity Usage (kWh)
$0.06	6,327

*Assumes the project will be under the A-1 Small Commercial & Multi-Family Service rate under LADWP. https://www.ladwp.com/ladwp/faces/ladwp/aboutus/a-financesandreports/a-fr-electricrates/a-fr-er-stcommindrates?_adf.ctrl-state=4uqberzct_4&_afrLoop=958662023680086

Construction Equipment Fuel Estimates

Using the CalEEMod data input, the project's construction phase would consume electricity and fossil fuels as a single energy demand, that is, once construction is completed their use would cease. CARB's 2017 Emissions Factors Tables show that on average aggregate fuel consumption (gasoline and diesel fuel) would be approximately 18.5 hp-hr-gal.[12] As presented in Table 10 below, project construction activities would consume an estimated 25,928 gallons of diesel fuel.

<Table 10, next page>

[12] Aggregate fuel consumption rate for all equipment was estimated at 18.5 hp-hr/day (from CARB's 2017 Emissions Factors Tables and fuel consumption rate factors as shown in Table D-21 of the Moyer Guidelines: (https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf).

Table 10: Construction Equipment Fuel Consumption Estimates

Phase	Number of Days	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	HP hrs/day	Total Fuel Consumption (gal diesel fuel)[1]
Demolition	20	Concrete/Industrial Saws	1	8	33	0.73	193	208
	20	Rubber Tired Dozers	1	8	367	0.4	1,174	1,270
	20	Tractors/Loaders/Backhoes	3	8	84	0.37	746	806
Site Preparation	3	Graders	1	8	148	0.41	485	79
	3	Scrapers	1	8	423	0.48	1,624	263
	3	Tractors/Loaders/Backhoes	1	7	84	0.37	218	35
Grading	6	Graders	1	8	148	0.41	485	157
	6	Rubber Tired Dozers	1	8	367	0.4	1,174	381
	6	Tractors/Loaders/Backhoes	2	7	84	0.37	435	141
Building Construction	220	Cranes	1	8	367	0.29	851	10,125
	220	Forklifts	2	7	82	0.2	230	2,730
	220	Generator Sets	1	8	14	0.74	83	986
	220	Tractors/Loaders/Backhoes	1	6	84	0.37	186	2,218
	220	Welders	3	8	46	0.45	497	5,908
Paving	10	Cement and Mortar Mixers	1	8	10	0.56	45	24
	10	Pavers	1	8	81	0.42	272	147
	10	Paving Equipment	1	8	89	0.36	256	139
	10	Rollers	2	8	36	0.38	219	118
	10	Tractors/Loaders/Backhoes	1	8	84	0.37	249	134
Architectural Coating	10	Air Compressors	1	6	37	0.48	107	58
CONSTRUCTION FUEL DEMAND (gallons of diesel fuel)								**25,928**

Notes:
[1]Using Carl Moyer Guidelines Table D-21 Fuel consumption rate factors (bhp-hr/gal) for engines less than 750 hp.
(Source: https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf)

Construction Worker Fuel Estimates

It is assumed that all construction worker trips are from light duty autos (LDA) along area roadways. With respect to estimated VMT, the construction worker trips would generate an estimated 26,381 VMT. Vehicle fuel efficiencies for construction workers were estimated in the air quality and greenhouse gas analysis using information generated using CARB's EMFAC model (see Appendix C for details). Table 11 shows that an estimated 853 gallons of fuel would be consumed for construction worker trips.

Table 11: Construction Worker Fuel Consumption Estimates

Phase	Number of Days	Worker Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Demolition	20	12.5	18.5	4,625	30.95	149
Site Preparation	3	7.5	18.5	416	29.95	14
Grading	6	10	18.5	1,110	30.95	36
Building Construction	220	4.25	18.5	17,298	30.95	559
Paving	10	15	18.5	2,775	30.95	90
Architectural Coating	10	0.85	18.5	157	30.95	5
Total Construction Worker Fuel Consumption						**853**

Notes:
[1]Assumptions for the worker trip length and vehicle miles traveled are consistent with CalEEMod 2022.1.1.22 defaults.

Construction Vendor/Hauling Fuel Estimates

Tables 12 and 13 show the estimated fuel consumption for vendor and hauling during building construction and architectural coating. With respect to estimated VMT, the vendor and hauling trips would generate an estimated 8,560 VMT. For the architectural coatings it is assumed that the contractors would be responsible for bringing coatings and equipment with them in their light duty vehicles.[13] Tables 12 and 13 show that an estimated 1,512 gallons of fuel would be consumed for vendor and hauling trips.

Table 12: Construction Vendor Fuel Consumption Estimates (MHD Trucks)[1]

Phase	Number of Days	Vendor Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Demolition	20	0	10.2	0	9.22	0
Site Preparation	3	0	10.2	0	8.22	0
Grading	6	0	10.2	0	9.22	0
Building Construction	220	2.05	10.2	4,600	9.22	499
Paving	10	5	10.2	510	9.22	55
Architectural Coating	10	0	10.2	0	9.22	0
Total Vendor Fuel Consumption						**554**

Notes:
[1] Assumptions for the vendor trip length and vehicle miles traveled are consistent with CalEEMod 2022.1.1.22 defaults.

Table 13: Construction Hauling Fuel Consumption Estimates (HHD Trucks)[1]

Phase	Number of Days	Hauling Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Demolition	20	9.9	20	3,960	6.74	588
Site Preparation	3	0	20	0	5.74	0
Grading	6	20.8	20	2,496	6.74	370
Building Construction	220	0	20	0	6.74	0
Paving	10	0	20	0	6.74	0
Architectural Coating	10	0	20	0	6.74	0
Total Construction Hauling Fuel Consumption						**958**

Notes:
[1]Assumptions for the hauling trip length and vehicle miles traveled are consistent with CalEEMod 2022.1.1.22 defaults.

[13] Vendors delivering construction material or hauling debris from the site during grading would use medium to heavy duty vehicles with an average fuel consumption of 9.22 mpg for medium heavy-duty trucks and 6.74 mpg for heavy heavy-duty trucks (see Appendix C for details).

Construction Energy Efficiency/Conservation Measures

Construction equipment used over the approximately 12-month construction phase would conform to CARB regulations and California emissions standards and is evidence of related fuel efficiencies. In addition, the CARB Airborne Toxic Control Measure limits idling times of construction vehicles to no more than five minutes, thereby minimizing unnecessary and wasteful consumption of fuel due to unproductive idling of construction equipment. Furthermore, the project has been designed in compliance with California's Energy Efficiency Standards and 2022 CALGreen Standards.

Construction of the proposed commercial development would require the typical use of energy resources. There are no unusual project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities; or equipment that would not conform to current emissions standards (and related fuel efficiencies). Equipment employed in construction of the project would therefore not result in inefficient wasteful, or unnecessary consumption of fuel.

Operational Energy Demand

Energy consumption in support of or related to project operations would include transportation energy demands (energy consumed by employee and patron vehicles accessing the project site) and facilities energy demands (energy consumed by building operations and site maintenance activities).

Transportation Fuel Consumption

The largest source of operational energy use would be vehicle operation of customers. The site is located in an urbanized area within the City of Indio.

Using the defaults VMT estimates from CalEEMod, it is assumed that the average vehicle miles traveled was 7.495 miles for all vehicle categories. As the proposed project is a commercial project, it was assumed that vehicles would operate 365 days per year. Table 14 shows the worst-case estimated annual fuel consumption for all classes of vehicles from autos to heavy-heavy trucks.[14] Table 14 shows that an estimated 198,986 gallons of fuel would be consumed per year for the operation of the proposed project.

<Table 14, next page>

[14] Average fuel economy based on aggregate mileage calculated in EMFAC 2017 for opening year (2027). See Appendix A for EMFAC output.

Table 14: Estimated Vehicle Operations Fuel Consumption

Vehicle Type	Vehicle Mix	Number of Vehicles	Average Trip (miles)[1]	Daily VMT	Average Fuel Economy (mpg)	Total Gallons per Day	Total Annual Fuel Consumption (gallons)
Light Auto	Automobile	1,252.6	6.03	7,548	31.82	237.20	86,576
Light Truck	Automobile	131.2	6.03	791	27.16	29.11	10,624
Light Truck	Automobile	404.3	6.03	2,436	25.6	95.16	34,735
Medium Truck	Automobile	330.2	6.03	1,990	20.81	95.62	34,901
Light Heavy Truck	2-Axle Truck	62.3	6.03	375	13.81	27.18	9,920
Light Heavy Truck 10,000 lbs +	2-Axle Truck	17.1	6.03	103	14.18	7.27	2,655
Medium Heavy Truck	3-Axle Truck	26.5	6.03	160	9.58	16.68	6,090
Heavy Heavy Truck	4-Axle Truck	43.8	6.03	264	7.14	36.94	13,485
Total		2,268	--	13,666	--	545.17	--
Total Annual Fuel Consumption							**198,986**

Notes:
[1]Based on the size of the site and relative location, trips were assumed to be local rather than regional.

Trip generation and VMT generated by the proposed project are consistent with other similar commercial uses of similar scale and configuration. That is, the proposed project does not propose uses or operations that would inherently result in excessive and wasteful vehicle trips and VMT, nor associated excess and wasteful vehicle energy consumption. Therefore, project transportation energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

Facility Energy Demands (Electricity and Natural Gas)

The annual natural gas and electricity demands were provided per the CalEEMod output and are provided in Table 15.

Table 15: Project Mitigated Annual Operational Energy Demand Summary[1]

Natural Gas Demand	kBTU/year
Convenience Market with Gas Pumps	130,483
Strip Mall	26,851
Fast Food Restaurant with Drive Thru	265,291
Total	422,625

Electricity Demand	kWh/year
Unrefrigerated Warehouse - No Rail	224,708
Strip Mall	59,136
Fast Food Restaurant with Drive Thru	168,955
Parking Lot	99,746
Total	552,545

Notes:
[1]Taken from the CalEEMod 2022.1.1.22 annual output.

As shown in Table 15, the estimated electricity demand for the proposed project is approximately 552,545 kWh per year. In 2022, the non-residential sector of the County of Riverside consumed approximately 8,720 million kWh of electricity.[15] In addition, the estimated natural gas consumption for the proposed

[15] California Energy Commission, Electricity Consumption by County. https://ecdms.energy.ca.gov/elecbycounty.aspx

project is approximately 422,625 kBTU per year. In 2022, the non-residential sector of the County of Riverside consumed approximately 146.9 million therms of gas.[16] Therefore, the increase in both electricity and natural gas demand from the proposed project is insignificant compared to the County's 2022 demand.

Renewable Energy and Energy Efficiency Plan Consistency

Regarding federal transportation regulations, the project site is located in an already developed area. Access to/from the project site is from existing roads. These roads are already in place so the project would not interfere with, nor otherwise obstruct intermodal transportation plans or projects that may be proposed pursuant to the ISTEA because SCAG is not planning for intermodal facilities in the project area.

Regarding the State's Energy Plan and compliance with Title 24 CCR energy efficiency standards, the applicant is required to comply with the California Green Building Standard Code requirements for energy efficient buildings and appliances as well as utility energy efficiency programs implemented by the SCE and Southern California Gas Company.

Regarding the State's Renewable Energy Portfolio Standards, the project would be required to meet or exceed the energy standards established in the California Green Building Standards Code, Title 24, Part 11 (CALGreen). CalGreen Standards require that new buildings reduce water consumption, employ building commissioning to increase building system efficiencies, divert construction waste from landfills, and install low pollutant-emitting finish materials.

6.0 Health Risk Assessment

CARB (and CAPCOA) recommend a 50-foot separation between gas stations and sensitive receptors; therefore, the approximately 173-foot separation from the property line of the residence to the east of the fueling canopy and approximately 180-foot separation to the underground storage tanks should be more than adequate. Furthermore, the attached (Appendix D) SCAQMD gasoline station HRA screening tables show that the MICR at residential receptors 50 meters (the fueling canopy is located approximately 52 meters [173 feet] away) from the fuel source would not exceed 1.352 in a million (per 1,000,000 gallons of throughput). At a throughput of 5MM gallons per year, the project would have a risk of 6.76. The risk is below SCAQMD's 10 in a million threshold and therefore no additional mitigation is required. A maximum throughput of 7.39MM gallons per year would be allowed for the project while remaining below the 10 in a million threshold.

Furthermore, the project includes the construction and operation of a convenience market with 8 fuel pumps. The fuel pump-portion of the project will be permitted by SCAQMD and fuel-related emissions will be regulated by the SCAQMD Rule 461 and be required to obtain a Permit To Operate. Gasoline dispensing facilities are required to use Phase I/II EVR (enhanced vapor recovery) systems. Phase II EVR have an average efficiency of 95.1 percent and Phase I EVR have an average efficiency of 98 percent. Therefore, the potential for fugitive VOC or TAC emissions from the gasoline pumps is negligible. As such, the project will not be a source of toxic air contaminants or fugitive VOC emissions and sensitive receptors (located as close as approximately 130 feet from the proposed gasoline fueling pumps) would not be

[16] California Energy Commission, Gas Consumption by County. http://ecdms.energy.ca.gov/gasbycounty.aspx

exposed to toxic sources of air pollution. The separating distance between the gas station and closest sensitive receptors is greater than the SCAQMD's minimum 50-foot separation.

According to the ARB's: *Revised Emission Factors for Gasoline Marketing Operations at California Gasoline Dispensing Facilities (12/23/2013)*[17], both Phase I and Phase II EVR systems have a minimum 95.1% efficiency at capturing emissions. Emission inventory is based upon two (2) factors: 8.4 lbs of TOG per thousand gallons dispensed (lbs/kgal) and 0.74 lbs/kgal for Gasoline Dispensing Facilities with Phase II pre-EVR vapor recovery.

These factors are based upon pre-EVR vapor recovery systems. Assuming a 95% vapor recovery rate, the majority of the emissions would be captured and the additional VOCs that would potentially escape these mandatory recovery systems is anticipated to be relatively small. Per Table 4, the project's operational VOC emissions are 9.1 lbs/day. At 4,110 gallons per day the calculated uncontrolled ORVR VOC would be 34.5 lbs/day. Even if an additional 34.5 lbs/day (the **uncontrolled** [no ORVR or phase II] vehicle fueling emission factor for each 1,000 gallons pumped) were added to the project's operational VOC emissions), the total emissions of 43.6 lbs/day would not even exceed the SCAQMD's operational threshold of significance of 55 lbs per day for VOC. However, the vehicle fueling emissions factor with ORVR and Phase II EVR in place is 0.021 lbs per thousand gallons which equates to 0.086 lbs/day. The emissions amount is below the VOC threshold of significance and the impact is less than significant. Furthermore, both ORVR and Phase II EVRs are required per regulation in California.

To exceed the VOC daily emissions threshold the gas pumps at the project site would have to pump over a half a million gallons of fuel per day to exceed the daily VOC threshold.

6.0 Conclusions

Construction and operational project emissions were evaluated and compared to both regional and localized SCAQMD's thresholds of significance. In addition, project GHG emissions were evaluated and compared to SCAQMD's draft threshold of 3,000 MTCO2e per year for all land uses. Project emissions are anticipated to be below SCAQMD's thresholds of significance with no mitigation. The project would also not exceed the health risk thresholds set by the SCAQMD. Therefore, the impact is less than significant.

Furthermore, neither construction nor operation of the project would result in wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources. The proposed project does not include any unusual project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities and is a commercial project that is not proposing any additional features that would require a larger energy demand than other commercial projects of similar scale and configuration. The energy demands of the project are anticipated to be accommodated within the context of available resources and energy delivery systems. The project would therefore not cause or result in the need for additional energy producing or transmission facilities. The project would not engage in wasteful or inefficient uses of energy and aims to achieve energy conservations goals within the State of California. The Project has been designed in compliance with California's Energy Efficiency Standards and 2022 CALGreen

[17] https://www.arb.ca.gov/vapor/gdf-emisfactor/gdf%20umbrella%20document%20-%2020%20nov%202013.pdf

Standards. The Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency; therefore, impacts would be less than significant.

MD is pleased to provide this focused Air Quality, Greenhouse Gas, Energy, and Health Risk Impact Evaluation. If you have any questions regarding this analysis, please don't hesitate to call us at (805) 426-4477.

Sincerely,
MD Acoustics, LLC



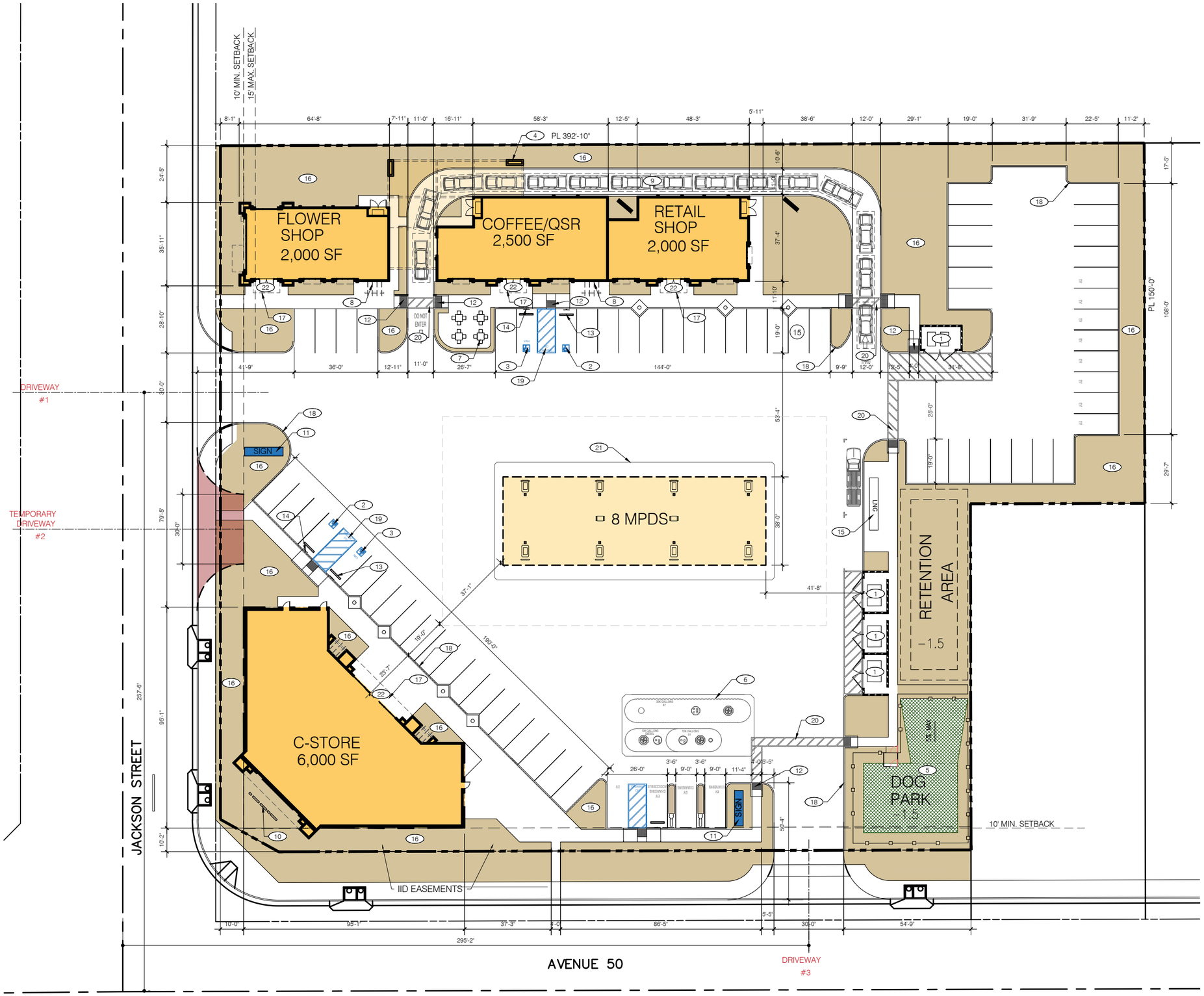
Tyler Klassen, EIT
Air Quality Specialist

Appendix A

Glossary of Terms

AQMP	Air Quality Management Plan
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CFCs	Chlorofluorocarbons
CH_4	Methane
CNG	Compressed natural gas
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DPM	Diesel particulate matter
GHG	Greenhouse gas
HFCs	Hydrofluorocarbons
LST	Localized Significant Thresholds
$MTCO_2e$	Metric tons of carbon dioxide equivalent
$MMTCO_2e$	Million metric tons of carbon dioxide equivalent
NAAQS	National Ambient Air Quality Standards
NOx	Nitrogen Oxides
NO_2	Nitrogen dioxide
N_2O	Nitrous oxide
O_3	Ozone
PFCs	Perfluorocarbons
PM	Particle matter
PM10	Particles that are less than 10 micrometers in diameter
PM2.5	Particles that are less than 2.5 micrometers in diameter
PMI	Point of maximum impact
PPM	Parts per million
PPB	Parts per billion
RTIP	Regional Transportation Improvement Plan
RTP	Regional Transportation Plan
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SF_6	Sulfur hexafluoride
SIP	State Implementation Plan
SOx	Sulfur Oxides
SRA	Source/Receptor Area
TAC	Toxic air contaminants
VOC	Volatile organic compounds
WRCC	Western Regional Climate Center

Appendix B
Site Plan



SITE PLAN

SCALE: 1"=20'-0"
2.48 AC

KEYNOTES

1. TRASH ENCLOSURE
2. ACCESSIBLE PARKING SPACE
3. VAN ACCESSIBLE PARKING SPACE
4. DRIVE-TRHOUGH TRELLIS
5. DOG PARK.
6. UNDERGROUND TANKS
7. OUTDOOR TABLE/CHAIRS
8. SHADE STRUCTURE
9. DRIVE-THROUGH LANE
10. CITY OF INDIO SIGN
11. MONUMENT SIGN
12. TRUNCATED DOMES
13. WHEELSTOP
14. ACCESIBLE PARKING SIGN
15. PROPANE TANK
16. LANDSCAPE SEE SHEET L1.0
17. CANOPY
18. CONCRETE CURB
19. PAINT 12' HIGH LETTERS 'NO PARKING' ON GROUND
20. ACCESSIBLE PATH OF TRAVEL, MAX 5% SLOPE, MAX 2.08% CROSS SLOPE, AND MIN 48" CLEAR WIDTG.
21. GAS STATION CANOPY
22. 60" X 60" LEVEL & CLEAR.
22. PARKING LOT LIGHT

DEVELOPMENT SUMMARY & PARKING ANALYSIS

PARKING ANALYSIS

USE	RATIO	FACTOR	PARKING REQUIRED
RETAIL	5/1000	4,000	20
C-STORE	5/1000	6,000	30
GAS STATION	1/ EMPLOYEE	4	4
RESTAURANT	6/1000	2,500	15
TOTAL REQUIRED			69
TOTAL PROVIDED			69
EV PARKING SPACES REQUIRED			13
EV CHARGING STATIONS REQUIRED			3

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LICENSED ARCHITECT
DANIEL J. MARKS
C-26463
9-30-2025
RENEWAL DATE
STATE OF CALIFORNIA

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PLANNING SUBMITTAL	--.--.--
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L&G
Desert Store

49900 Jackson St,
Indio, CA 92201

SITE PLAN

A0.1

Appendix C

CalEEMod Output & EMFAC2017 Data

L & G Market Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	L & G Market
Construction Start Date	7/1/2024
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.00
Precipitation (days)	7.60
Location	33.68572285113238, -116.21625629340936
County	Riverside-Salton Sea
City	Indio
Air District	South Coast AQMD
Air Basin	Salton Sea
TAZ	5695
EDFZ	19
Electric Utility	Imperial Irrigation District
Gas Utility	Southern California Gas
App Version	2022.1.1.22

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

Convenience Market with Gas Pumps	6.00	1000sqft	0.14	6,000	0.00	—	—	—
Strip Mall	4.00	1000sqft	0.09	4,000	0.00	—	—	—
Fast Food Restaurant with Drive Thru	2.50	1000sqft	0.06	2,500	0.00	—	—	—
Parking Lot	69.0	Space	2.61	0.00	2,000	—	—	—

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.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	14.9	17.6	17.5	0.03	0.77	3.27	4.05	0.71	1.46	2.17	—	4,052	4,052	0.12	0.25	3.65	4,134
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.34	11.3	12.2	0.02	0.46	0.07	0.53	0.42	0.02	0.44	—	2,322	2,322	0.09	0.03	0.01	2,333
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.86	4.42	4.70	0.01	0.18	0.15	0.33	0.17	0.04	0.21	—	915	915	0.03	0.02	0.13	922
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.16	0.81	0.86	< 0.005	0.03	0.03	0.06	0.03	0.01	0.04	—	152	152	0.01	< 0.005	0.02	153

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.74	17.6	17.5	0.03	0.77	3.27	4.05	0.71	1.46	2.17	—	4,052	4,052	0.12	0.25	3.65	4,134
2025	14.9	10.7	12.3	0.02	0.41	0.24	0.51	0.37	0.06	0.39	—	2,329	2,329	0.09	0.04	1.21	2,340
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.34	11.3	12.2	0.02	0.46	0.07	0.53	0.42	0.02	0.44	—	2,322	2,322	0.09	0.03	0.01	2,333
2025	1.26	10.7	12.1	0.02	0.41	0.07	0.48	0.37	0.02	0.39	—	2,320	2,320	0.09	0.03	0.01	2,331
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.50	4.42	4.70	0.01	0.18	0.15	0.33	0.17	0.04	0.21	—	915	915	0.03	0.02	0.13	922
2025	0.86	3.71	4.29	0.01	0.14	0.03	0.17	0.13	0.01	0.14	—	812	812	0.03	0.01	0.07	816
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.09	0.81	0.86	< 0.005	0.03	0.03	0.06	0.03	0.01	0.04	—	152	152	0.01	< 0.005	0.02	153
2025	0.16	0.68	0.78	< 0.005	0.03	0.01	0.03	0.02	< 0.005	0.03	—	134	134	0.01	< 0.005	0.01	135

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.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	9.11	6.43	59.8	0.12	0.10	9.66	9.76	0.09	2.45	2.54	30.4	13,321	13,352	3.69	0.64	1,289	14,923

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.12	6.92	43.1	0.11	0.10	9.66	9.76	0.09	2.45	2.54	30.4	11,949	11,979	3.74	0.65	1,249	13,516
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.68	6.63	47.4	0.11	0.10	9.61	9.71	0.09	2.44	2.53	30.4	12,488	12,518	3.70	0.64	1,266	14,066
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.40	1.21	8.65	0.02	0.02	1.75	1.77	0.02	0.44	0.46	5.03	2,068	2,073	0.61	0.11	210	2,329

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	8.70	6.31	59.1	0.12	0.09	9.66	9.75	0.08	2.45	2.53	—	12,484	12,484	0.58	0.62	41.2	12,725
Area	0.41	< 0.005	0.54	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.24	2.24	< 0.005	< 0.005	—	2.24
Energy	0.01	0.11	0.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	827	827	0.06	0.01	—	830
Water	—	—	—	—	—	—	—	—	—	—	2.87	9.04	11.9	0.30	0.01	—	21.4
Waste	—	—	—	—	—	—	—	—	—	—	27.5	0.00	27.5	2.75	0.00	—	96.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,248	1,248
Total	9.11	6.43	59.8	0.12	0.10	9.66	9.76	0.09	2.45	2.54	30.4	13,321	13,352	3.69	0.64	1,289	14,923
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	6.80	6.81	43.0	0.11	0.09	9.66	9.75	0.08	2.45	2.53	—	11,113	11,113	0.63	0.64	1.07	11,320
Area	0.32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Energy	0.01	0.11	0.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	827	827	0.06	0.01	—	830
Water	—	—	—	—	—	—	—	—	—	—	2.87	9.04	11.9	0.30	0.01	—	21.4
Waste	—	—	—	—	—	—	—	—	—	—	27.5	0.00	27.5	2.75	0.00	—	96.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,248	1,248
Total	7.12	6.92	43.1	0.11	0.10	9.66	9.76	0.09	2.45	2.54	30.4	11,949	11,979	3.74	0.65	1,249	13,516
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	7.31	6.51	47.0	0.11	0.09	9.61	9.70	0.08	2.44	2.52	—	11,651	11,651	0.60	0.62	17.8	11,870
Area	0.36	< 0.005	0.27	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.10	1.10	< 0.005	< 0.005	—	1.11
Energy	0.01	0.11	0.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	827	827	0.06	0.01	—	830
Water	—	—	—	—	—	—	—	—	—	—	2.87	9.04	11.9	0.30	0.01	—	21.4
Waste	—	—	—	—	—	—	—	—	—	—	27.5	0.00	27.5	2.75	0.00	—	96.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,248	1,248
Total	7.68	6.63	47.4	0.11	0.10	9.61	9.71	0.09	2.44	2.53	30.4	12,488	12,518	3.70	0.64	1,266	14,066
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.33	1.19	8.58	0.02	0.02	1.75	1.77	0.02	0.44	0.46	—	1,929	1,929	0.10	0.10	2.94	1,965
Area	0.07	< 0.005	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.18	0.18	< 0.005	< 0.005	—	0.18
Energy	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	137	137	0.01	< 0.005	—	137
Water	—	—	—	—	—	—	—	—	—	—	0.48	1.50	1.97	0.05	< 0.005	—	3.54
Waste	—	—	—	—	—	—	—	—	—	—	4.55	0.00	4.55	0.46	0.00	—	15.9
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	207	207
Total	1.40	1.21	8.65	0.02	0.02	1.75	1.77	0.02	0.44	0.46	5.03	2,068	2,073	0.61	0.11	210	2,329

3. Construction Emissions Details

3.1. 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	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	1.31	12.7	11.4	0.03	0.55	—	0.55	0.51	—	0.51	—	2,716	2,716	0.11	0.02	—	2,725
Dust From Material Movement	—	—	—	—	—	0.62	0.62	—	0.07	0.07	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.10	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	22.3	22.3	< 0.005	< 0.005	—	22.4
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.70	3.70	< 0.005	< 0.005	—	3.71
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

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.77	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	114	114	< 0.005	< 0.005	0.42	115
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
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.85	0.85	< 0.005	< 0.005	< 0.005	0.86
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.14
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
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

3.3. Grading (2024) - Unmitigated

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

Location	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	1.65	15.9	15.4	0.02	0.74	—	0.74	0.68	—	0.68	—	2,454	2,454	0.10	0.02	—	2,462

Dust From Material Movement	—	—	—	—	—	2.77	2.77	—	1.34	1.34	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.26	0.25	< 0.005	0.01	—	0.01	0.01	—	0.01	—	40.3	40.3	< 0.005	< 0.005	—	40.5
Dust From Material Movement	—	—	—	—	—	0.05	0.05	—	0.02	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.05	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.68	6.68	< 0.005	< 0.005	—	6.70
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	1.03	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	152	152	0.01	< 0.005	0.57	154
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
Hauling	0.03	1.63	0.37	0.01	0.03	0.38	0.40	0.03	0.10	0.12	—	1,447	1,447	0.01	0.23	3.09	1,518

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.27	2.27	< 0.005	< 0.005	< 0.005	2.30
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
Hauling	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.8	23.8	< 0.005	< 0.005	0.02	24.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.38	0.38	< 0.005	< 0.005	< 0.005	0.38
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
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.94	3.94	< 0.005	< 0.005	< 0.005	4.13

3.5. 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	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	1.32	11.2	11.9	0.02	0.46	—	0.46	0.42	—	0.42	—	2,201	2,201	0.09	0.02	—	2,209
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.32	11.2	11.9	0.02	0.46	—	0.46	0.42	—	0.42	—	2,201	2,201	0.09	0.02	—	2,209
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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.36	3.10	3.29	0.01	0.13	—	0.13	0.12	—	0.12	—	607	607	0.02	< 0.005	—	609
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.57	0.60	< 0.005	0.02	—	0.02	0.02	—	0.02	—	101	101	< 0.005	< 0.005	—	101
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.44	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	64.5	64.5	< 0.005	< 0.005	0.24	65.4
Vendor	< 0.005	0.07	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	65.9	65.9	< 0.005	0.01	0.18	68.9
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.03	0.25	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	54.9	54.9	< 0.005	< 0.005	0.01	55.6
Vendor	< 0.005	0.08	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	66.0	66.0	< 0.005	0.01	< 0.005	68.8
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	16.2	16.2	< 0.005	< 0.005	0.03	16.4
Vendor	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	18.2	18.2	< 0.005	< 0.005	0.02	19.0
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.68	2.68	< 0.005	< 0.005	< 0.005	2.72

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.01	3.01	< 0.005	< 0.005	< 0.005	3.14
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

3.7. Building Construction (2025) - Unmitigated

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

Location	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	1.24	10.6	11.9	0.02	0.40	—	0.40	0.37	—	0.37	—	2,201	2,201	0.09	0.02	—	2,209
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.24	10.6	11.9	0.02	0.40	—	0.40	0.37	—	0.37	—	2,201	2,201	0.09	0.02	—	2,209
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	3.48	3.90	0.01	0.13	—	0.13	0.12	—	0.12	—	724	724	0.03	0.01	—	726
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.64	0.71	< 0.005	0.02	—	0.02	0.02	—	0.02	—	120	120	< 0.005	< 0.005	—	120
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

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.41	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	63.1	63.1	< 0.005	< 0.005	0.22	64.0
Vendor	< 0.005	0.07	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	64.8	64.8	< 0.005	0.01	0.18	67.6
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.23	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	53.7	53.7	< 0.005	< 0.005	0.01	54.4
Vendor	< 0.005	0.07	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	64.9	64.9	< 0.005	0.01	< 0.005	67.5
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	18.9	18.9	< 0.005	< 0.005	0.03	19.1
Vendor	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	21.3	21.3	< 0.005	< 0.005	0.03	22.2
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.12	3.12	< 0.005	< 0.005	0.01	3.17
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.53	3.53	< 0.005	< 0.005	< 0.005	3.68
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

3.9. Paving (2025) - Unmitigated

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

Location	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	0.70	6.13	8.21	0.01	0.27	—	0.27	0.25	—	0.25	—	1,244	1,244	0.05	0.01	—	1,248
Paving	0.68	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.17	0.23	< 0.005	0.01	—	0.01	0.01	—	0.01	—	34.1	34.1	< 0.005	< 0.005	—	34.2
Paving	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.64	5.64	< 0.005	< 0.005	—	5.66
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	1.43	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	223	223	0.01	0.01	0.77	226
Vendor	0.01	0.17	0.07	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	158	158	< 0.005	0.02	0.44	165
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.55	5.55	< 0.005	< 0.005	0.01	5.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.34	4.34	< 0.005	< 0.005	0.01	4.52
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 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	0.93
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.72	0.72	< 0.005	< 0.005	< 0.005	0.75
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

3.11. Architectural Coating (2025) - Unmitigated

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

Location	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	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	14.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.66	3.66	< 0.005	< 0.005	—	3.67
Architectural Coatings	0.40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Architectural Coatings	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.08	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.6	12.6	< 0.005	< 0.005	0.04	12.8
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
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.32
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05
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
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

3.13. Demolition (2024) - Unmitigated

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

Location	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	1.61	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	—	—	—	—	—	0.87	0.87	—	0.13	0.13	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.85	0.88	< 0.005	0.04	—	0.04	0.03	—	0.03	—	137	137	0.01	< 0.005	—	137
Demolition	—	—	—	—	—	0.05	0.05	—	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.16	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	22.6	22.6	< 0.005	< 0.005	—	22.7
Demolition	—	—	—	—	—	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.07	0.07	1.29	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	190	190	0.01	0.01	0.71	192
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
Hauling	0.01	0.78	0.17	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	688	688	0.01	0.11	1.47	721
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.45	9.45	< 0.005	< 0.005	0.02	9.58
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
Hauling	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	37.7	37.7	< 0.005	0.01	0.03	39.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.57	1.57	< 0.005	< 0.005	< 0.005	1.59
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
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.24	6.24	< 0.005	< 0.005	0.01	6.54

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	281	281	0.02	< 0.005	—	282
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	74.0	74.0	0.01	< 0.005	—	74.3
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	211	211	0.02	< 0.005	—	212
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	125	125	0.01	< 0.005	—	125
Total	—	—	—	—	—	—	—	—	—	—	—	691	691	0.05	0.01	—	694
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	281	281	0.02	< 0.005	—	282
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	74.0	74.0	0.01	< 0.005	—	74.3
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	211	211	0.02	< 0.005	—	212
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	125	125	0.01	< 0.005	—	125
Total	—	—	—	—	—	—	—	—	—	—	—	691	691	0.05	0.01	—	694
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	46.5	46.5	< 0.005	< 0.005	—	46.7
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	12.2	12.2	< 0.005	< 0.005	—	12.3
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	35.0	35.0	< 0.005	< 0.005	—	35.1
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	20.7	20.7	< 0.005	< 0.005	—	20.7
Total	—	—	—	—	—	—	—	—	—	—	—	114	114	0.01	< 0.005	—	115

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	41.8	41.8	< 0.005	< 0.005	—	41.9
Strip Mall	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.61	8.61	< 0.005	< 0.005	—	8.63
Fast Food Restaurant with Drive Thru	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	85.0	85.0	0.01	< 0.005	—	85.3
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
Total	0.01	0.11	0.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	135	135	0.01	< 0.005	—	136

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	41.8	41.8	< 0.005	< 0.005	—	41.9
Strip Mall	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.61	8.61	< 0.005	< 0.005	—	8.63
Fast Food Restaurant with Drive Thru	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	85.0	85.0	0.01	< 0.005	—	85.3
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
Total	0.01	0.11	0.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	135	135	0.01	< 0.005	—	136
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.92	6.92	< 0.005	< 0.005	—	6.94
Strip Mall	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.42	1.42	< 0.005	< 0.005	—	1.43
Fast Food Restaurant with Drive Thru	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.1	14.1	< 0.005	< 0.005	—	14.1
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
Total	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	22.4	22.4	< 0.005	< 0.005	—	22.5

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	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	0.28	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.09	< 0.005	0.54	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.24	2.24	< 0.005	< 0.005	—	2.24
Total	0.41	< 0.005	0.54	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.24	2.24	< 0.005	< 0.005	—	2.24
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.28	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape Equipme	0.01	< 0.005	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.18	0.18	< 0.005	< 0.005	—	0.18
Total	0.07	< 0.005	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.18	0.18	< 0.005	< 0.005	—	0.18

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	0.85	2.63	3.49	0.09	< 0.005	—	6.30
Strip Mall	—	—	—	—	—	—	—	—	—	—	0.57	1.76	2.32	0.06	< 0.005	—	4.20
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	1.45	4.50	5.95	0.15	< 0.005	—	10.8
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.15	0.15	< 0.005	< 0.005	—	0.15
Total	—	—	—	—	—	—	—	—	—	—	2.87	9.04	11.9	0.30	0.01	—	21.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	0.85	2.63	3.49	0.09	< 0.005	—	6.30

Strip Mall	—	—	—	—	—	—	—	—	—	—	0.57	1.76	2.32	0.06	< 0.005	—	4.20
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	1.45	4.50	5.95	0.15	< 0.005	—	10.8
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.15	0.15	< 0.005	< 0.005	—	0.15
Total	—	—	—	—	—	—	—	—	—	—	2.87	9.04	11.9	0.30	0.01	—	21.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	0.14	0.44	0.58	0.01	< 0.005	—	1.04
Strip Mall	—	—	—	—	—	—	—	—	—	—	0.09	0.29	0.38	0.01	< 0.005	—	0.70
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	0.24	0.74	0.99	0.02	< 0.005	—	1.78
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.03	0.03	< 0.005	< 0.005	—	0.03
Total	—	—	—	—	—	—	—	—	—	—	0.48	1.50	1.97	0.05	< 0.005	—	3.54

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

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

Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	9.72	0.00	9.72	0.97	0.00	—	34.0
Strip Mall	—	—	—	—	—	—	—	—	—	—	2.26	0.00	2.26	0.23	0.00	—	7.92
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	15.5	0.00	15.5	1.55	0.00	—	54.3
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	27.5	0.00	27.5	2.75	0.00	—	96.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	9.72	0.00	9.72	0.97	0.00	—	34.0
Strip Mall	—	—	—	—	—	—	—	—	—	—	2.26	0.00	2.26	0.23	0.00	—	7.92
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	15.5	0.00	15.5	1.55	0.00	—	54.3
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	27.5	0.00	27.5	2.75	0.00	—	96.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	1.61	0.00	1.61	0.16	0.00	—	5.63
Strip Mall	—	—	—	—	—	—	—	—	—	—	0.37	0.00	0.37	0.04	0.00	—	1.31

Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	2.57	0.00	2.57	0.26	0.00	—	8.99
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	4.55	0.00	4.55	0.46	0.00	—	15.9

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,244	1,244
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.91	3.91
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,248	1,248
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,244	1,244

Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.91	3.91
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,248	1,248
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	206	206
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.65	0.65
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	207	207

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	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	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	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)

Vegetation	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	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	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
Site Preparation	Site Preparation	7/30/2024	8/3/2024	5.00	3.00	—
Grading	Grading	8/4/2024	8/12/2024	5.00	6.00	—
Building Construction	Building Construction	8/13/2024	6/17/2025	5.00	220	—
Paving	Paving	6/18/2025	7/2/2025	5.00	10.0	—
Architectural Coating	Architectural Coating	7/3/2025	7/17/2025	5.00	10.0	—
Demolition	Demolition	7/1/2024	7/29/2024	5.00	20.0	—

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
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Site Preparation	Scrapers	Diesel	Average	1.00	8.00	423	0.48
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	7.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	6.00	84.0	0.37
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Welders	Diesel	Average	3.00	8.00	46.0	0.45
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	8.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40

Demolition	Tractors/Loaders/Backh	Diesel	Average	3.00	8.00	84.0	0.37

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
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	20.8	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	4.25	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	2.05	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	5.00	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—

Architectural Coating	Worker	0.85	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
Demolition	—	—	—	—
Demolition	Worker	12.5	18.5	LDA,LDT1,LDT2
Demolition	Vendor	—	10.2	HHDT,MHDT
Demolition	Hauling	9.90	20.0	HHDT
Demolition	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	18,750	6,250	6,832

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)
Site Preparation	—	—	4.50	0.00	—
Grading	—	1,000	6.00	0.00	—
Paving	0.00	0.00	0.00	0.00	2.61
Demolition	0.00	0.00	0.00	17,200	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Convenience Market with Gas Pumps	0.00	0%
Strip Mall	0.00	0%
Fast Food Restaurant with Drive Thru	0.00	0%
Parking Lot	2.61	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	457	0.03	< 0.005
2025	0.00	457	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
Total all Land Uses	2,268	2,268	2,268	827,820	13,666	13,666	13,666	4,988,179

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	18,750	6,250	6,832

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

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)
Convenience Market with Gas Pumps	224,708	457	0.0330	0.0040	130,483
Strip Mall	59,136	457	0.0330	0.0040	26,851
Fast Food Restaurant with Drive Thru	168,955	457	0.0330	0.0040	265,291
Parking Lot	99,746	457	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)

Convenience Market with Gas Pumps	444,435	0.00
Strip Mall	296,290	0.00
Fast Food Restaurant with Drive Thru	758,834	0.00
Parking Lot	0.00	37,531

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Convenience Market with Gas Pumps	18.0	—
Strip Mall	4.20	—
Fast Food Restaurant with Drive Thru	28.8	—
Parking Lot	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
Convenience Market with Gas Pumps	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Convenience Market with Gas Pumps	Supermarket refrigeration and condensing units	R-404A	3,922	26.5	16.5	16.5	18.0
Strip Mall	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Strip Mall	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Strip Mall	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

Fast Food Restaurant with Drive Thru	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
Fast Food Restaurant with Drive Thru	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0
Fast Food Restaurant with Drive Thru	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

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	23.5	annual days of extreme heat
Extreme Precipitation	0.05	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.14	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 (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

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	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	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	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A

Air Quality Degradation	N/A	N/A	N/A	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 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	88.7
AQ-PM	9.65
AQ-DPM	36.6
Drinking Water	50.4
Lead Risk Housing	18.7
Pesticides	0.00
Toxic Releases	3.34
Traffic	10.5
Effect Indicators	—
CleanUp Sites	11.8
Groundwater	0.00
Haz Waste Facilities/Generators	50.1
Impaired Water Bodies	0.00
Solid Waste	0.00

Sensitive Population	—
Asthma	36.0
Cardio-vascular	46.2
Low Birth Weights	57.4
Socioeconomic Factor Indicators	—
Education	80.7
Housing	79.3
Linguistic	98.8
Poverty	55.7
Unemployment	70.0

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	50.68651354
Employed	83.80597973
Median HI	47.77364301
Education	—
Bachelor's or higher	5.851405107
High school enrollment	100
Preschool enrollment	3.849608623
Transportation	—
Auto Access	98.98626973
Active commuting	15.30861029
Social	—
2-parent households	61.19594508

Voting	7.891697677
Neighborhood	—
Alcohol availability	97.0101373
Park access	2.194276915
Retail density	10.94572052
Supermarket access	29.03888105
Tree canopy	4.427049917
Housing	—
Homeownership	91.53086103
Housing habitability	90.19633004
Low-inc homeowner severe housing cost burden	20.18478121
Low-inc renter severe housing cost burden	97.81855511
Uncrowded housing	47.26036186
Health Outcomes	—
Insured adults	27.75567817
Arthritis	88.7
Asthma ER Admissions	63.7
High Blood Pressure	71.3
Cancer (excluding skin)	87.6
Asthma	83.3
Coronary Heart Disease	63.8
Chronic Obstructive Pulmonary Disease	81.8
Diagnosed Diabetes	51.3
Life Expectancy at Birth	33.9
Cognitively Disabled	94.6
Physically Disabled	49.3
Heart Attack ER Admissions	72.3

Mental Health Not Good	44.5
Chronic Kidney Disease	45.1
Obesity	19.9
Pedestrian Injuries	67.6
Physical Health Not Good	42.2
Stroke	80.6
Health Risk Behaviors	—
Binge Drinking	4.8
Current Smoker	40.7
No Leisure Time for Physical Activity	31.1
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	10.6
Elderly	98.7
English Speaking	4.3
Foreign-born	75.2
Outdoor Workers	9.7
Climate Change Adaptive Capacity	—
Impervious Surface Cover	65.7
Traffic Density	21.2
Traffic Access	23.0
Other Indices	—
Hardship	70.8
Other Decision Support	—
2016 Voting	17.8

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	31.0
Healthy Places Index Score for Project Location (b)	41.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
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	No demolition required
Land Use	Per site plan

Source: EMFAC2017 (v1.0.3) Emissions Inventory
Region Type: Air District
Region: South Coast AQMD
Calendar Year: 2023
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Y	Vehicle Cat	Model Year	Speed	Fuel	Population	VMT	Trips	Fuel Consumption	Fuel Consumption	Total Fuel Consumption	VMT	Total VMT	Miles Per Gallon	Vehicle Class
South Coas	2023	HHDT	Aggregate	Aggregate	Gasoline	75.10442936	8265.097	1502.689	1.936286145	1936.286145	1913466.474	8265.097	13656273.03	7.14	**HHD**
South Coas	2023	HHDT	Aggregate	Aggregate	Diesel	109818.6753	13648008	1133618	1911.530188	1911530.188		13648008			
South Coas	2023	LDA	Aggregate	Aggregate	Gasoline	6635002.295	2.53E+08	31352477	7971.24403	7971244.03	8020635.698	2.53E+08	255180358.3	31.82	**LDA**
South Coas	2023	LDA	Aggregate	Aggregate	Diesel	62492.97958	2469816	297086.6	49.3916685	49391.6685		2469816			
South Coas	2023	LDA	Aggregate	Aggregate	Electricity	150700.3971	6237106	751566	0	0		6237106			
South Coas	2023	LDT1	Aggregate	Aggregate	Gasoline	758467.6481	27812996	3504563	1023.913006	1023913.006	1024279.466	27812996	27821405.09	27.16	**LDT1**
South Coas	2023	LDT1	Aggregate	Aggregate	Diesel	360.7799144	8408.618	1256.88	0.366459477	366.4594769		8408.618			
South Coas	2023	LDT1	Aggregate	Aggregate	Electricity	7122.93373	303507.5	35798.19	0	0		303507.5			
South Coas	2023	LDT2	Aggregate	Aggregate	Gasoline	2285150.139	85272416	10723315	3338.798312	3338798.312	3356536.438	85272416	85922778.34	25.60	**LDT2**
South Coas	2023	LDT2	Aggregate	Aggregate	Diesel	15594.68309	650362.8	76635.83	17.73812611	17738.12611		650362.8			
South Coas	2023	LDT2	Aggregate	Aggregate	Electricity	28809.63735	917592.8	145405.4	0	0		917592.8			
South Coas	2023	LHDT1	Aggregate	Aggregate	Gasoline	174910.3847	6216643	2605904	583.3851736	583385.1736	811563.1022	6216643	11211395.79	13.81	**LHDT1**
South Coas	2023	LHDT1	Aggregate	Aggregate	Diesel	125545.0822	4994753	1579199	228.1779285	228177.9285		4994753			
South Coas	2023	LHDT2	Aggregate	Aggregate	Gasoline	30102.75324	1034569	448486.2	111.5753864	111575.3864	209423.5025	1034569	2969599.008	14.18	**LHDT2**
South Coas	2023	LHDT2	Aggregate	Aggregate	Diesel	50003.13116	1935030	628976.5	97.84811618	97848.11618		1935030			
South Coas	2023	MCY	Aggregate	Aggregate	Gasoline	305044.5141	2104624	610089	57.849018	57849.018	57849.018	2104624	2104623.657	36.38	**MCY**
South Coas	2023	MDV	Aggregate	Aggregate	Gasoline	1589862.703	55684188	7354860	2693.883526	2693883.526	2744536.341	55684188	57109879.73	20.81	**MDV**
South Coas	2023	MDV	Aggregate	Aggregate	Diesel	36128.1019	1425691	176566.9	50.65281491	50652.81491		1425691			
South Coas	2023	MDV	Aggregate	Aggregate	Electricity	16376.67653	537591.7	83475.95	0	0		537591.7			
South Coas	2023	MH	Aggregate	Aggregate	Gasoline	34679.50542	330042.9	3469.338	63.26295123	63262.95123	74893.26955	330042.9	454344.9436	6.07	**MH**
South Coas	2023	MH	Aggregate	Aggregate	Diesel	13122.69387	124302	1312.269	11.63031832	11630.31832		124302			
South Coas	2023	MHDT	Aggregate	Aggregate	Gasoline	25624.3151	1363694	512691.3	265.2060557	265206.0557	989975.6425	1363694	9484317.768	9.58	**MHDT**
South Coas	2023	MHDT	Aggregate	Aggregate	Diesel	122124.488	8120623	1221858	724.7695868	724769.5868		8120623			
South Coas	2023	OBUS	Aggregate	Aggregate	Gasoline	5955.291639	245774	119153.5	48.07750689	48077.50689	86265.88761	245774	579743.8353	6.72	**OBUS**
South Coas	2023	OBUS	Aggregate	Aggregate	Diesel	4286.940093	333969.8	41558.29	38.18838072	38188.38072		333969.8			
South Coas	2023	SBUS	Aggregate	Aggregate	Gasoline	2783.643068	112189.6	11134.57	12.19474692	12194.74692	39638.85935	112189.6	323043.5203	8.15	**SBUS**
South Coas	2023	SBUS	Aggregate	Aggregate	Diesel	6671.825716	210853.9	76991.94	27.44411242	27444.11242		210853.9			
South Coas	2023	UBUS	Aggregate	Aggregate	Gasoline	957.7686184	89782.63	3831.074	17.62416327	17624.16327	17863.66378	89782.63	91199.2533	5.11	**UBUS**
South Coas	2023	UBUS	Aggregate	Aggregate	Diesel	13.00046095	1416.622	52.00184	0.239500509	239.5005093		1416.622			
South Coas	2023	UBUS	Aggregate	Aggregate	Electricity	16.11693886	1320.163	64.46776	0			1320.163			

Appendix D

Screening Tables for Gasoline Dispensing Facilities & CARB 2005 Air Quality and Land Use Handbook Table 1-1

Table 12.1A – Screening Tables for Gasoline Dispensing Facilities

Underground Storage Tank (UST) **Residential**

MICR per One Million Gallons of Gasoline

		Downwind Distance (meters)							
Station Abbr.	**Location**	**25**	**50**	**75**	**100**	**200**	**300**	**500**	**1000**
AZUS	**Azusa**	2.884	1.040	0.550	0.340	0.093	0.045	0.018	0.006
BNAP	**Banning**	4.208	1.703	0.940	0.603	0.186	0.093	0.039	0.013
CELA	**Central L.A.**	2.484	0.876	0.455	0.287	0.085	0.041	0.017	0.005
ELSI	**Lake Elsinore**	2.978	1.075	0.558	0.347	0.103	0.051	0.021	0.007
FONT	**Fontana**	3.306	1.254	0.677	0.423	0.124	0.060	0.025	0.007
MSVJ	**Mission Viejo**	2.721	0.981	0.515	0.319	0.094	0.047	0.018	0.006
PERI	**Perris**	3.494	1.310	0.695	0.436	0.127	0.063	0.026	0.008
PICO	**Pico Rivera**	2.629	0.956	0.509	0.316	0.091	0.044	0.018	0.005
RDLD	**Redlands**	3.562	1.325	0.691	0.418	0.113	0.055	0.024	0.007
UPLA	**Upland**	3.108	1.133	0.609	0.384	0.111	0.054	0.022	0.007
KBUR	**Burbank Airport**	3.097	1.198	0.655	0.410	0.125	0.062	0.026	0.008
KCNO	**Chino Airport.**	4.084	1.609	0.870	0.549	0.166	0.082	0.033	0.010
KCQT	**USC/Downtown L.A.**	3.382	1.244	0.656	0.407	0.110	0.052	0.021	0.007
KFUL	**Fullerton Airport**	2.726	1.027	0.553	0.348	0.104	0.052	0.021	0.007
KHHR	**Hawthorne Airport**	3.225	1.197	0.640	0.405	0.123	0.061	0.025	0.007
KLAX	**Los Angeles Int'l Airport**	4.456	1.830	1.010	0.648	0.204	0.102	0.044	0.013
KLGB	**Long Beach Airport**	3.417	1.394	0.764	0.488	0.151	0.076	0.033	0.010
KONT	**Ontario Airport**	4.834	2.006	1.111	0.710	0.222	0.112	0.047	0.015
KPSP	**Palm Springs Airport**	3.363	1.352	0.736	0.467	0.144	0.073	0.031	0.010
KRAL	**Riverside Airport**	4.141	1.678	0.922	0.588	0.177	0.088	0.038	0.013
KSMO	**Santa Monica Airport**	3.444	1.336	0.731	0.462	0.139	0.068	0.028	0.008
KSNA	**John Wayne Int'l Airport**	4.041	1.605	0.870	0.549	0.164	0.079	0.032	0.010
KTRM	**Desert Hot Springs Airport**	3.820	1.553	0.848	0.540	0.163	0.082	0.035	0.010
KVNY	**Van Nuys Airport**	2.909	1.132	0.608	0.378	0.111	0.055	0.022	0.007

Table 12.2A – Screening Tables for Gasoline Dispensing Facilities

Aboveground Storage Tank (AST) **Residential**

MICR per One Million Gallons of Gasoline

		Downwind Distance (meters)							
Station Abbr.	**Location**	**25**	**50**	**75**	**100**	**200**	**300**	**500**	**1000**
AZUS	**Azusa**	4.447	1.603	0.827	0.496	0.114	0.050	0.020	0.006
BNAP	**Banning**	5.469	2.176	1.185	0.748	0.210	0.101	0.042	0.013
CELA	**Central L.A.**	3.610	1.258	0.641	0.392	0.100	0.046	0.019	0.006
ELSI	**Lake Elsinore**	4.056	1.458	0.748	0.452	0.119	0.057	0.024	0.008
FONT	**Fontana**	4.812	1.787	0.940	0.569	0.145	0.067	0.027	0.008
MSVJ	**Mission Viejo**	3.600	1.276	0.650	0.395	0.108	0.052	0.021	0.007
PERI	**Perris**	4.639	1.733	0.904	0.558	0.144	0.069	0.029	0.009
PICO	**Pico Rivera**	3.720	1.342	0.699	0.421	0.106	0.049	0.019	0.006
RDLD	**Redlands**	5.809	2.218	1.154	0.685	0.132	0.062	0.026	0.008
UPLA	**Upland**	4.693	1.677	0.871	0.532	0.130	0.060	0.025	0.008
KBUR	**Burbank Airport**	3.940	1.493	0.808	0.493	0.139	0.069	0.028	0.008
KCNO	**Chino Airport.**	4.971	1.950	1.047	0.658	0.188	0.091	0.037	0.011
KCQT	**USC/Downtown L.A.**	5.393	1.959	1.002	0.604	0.133	0.058	0.024	0.007
KFUL	**Fullerton Airport**	3.614	1.336	0.699	0.429	0.118	0.058	0.024	0.007
KHHR	**Hawthorne Airport**	4.415	1.593	0.837	0.511	0.140	0.067	0.027	0.008
KLAX	**Los Angeles Int'l Airport**	5.624	2.316	1.257	0.794	0.227	0.111	0.047	0.015
KLGB	**Long Beach Airport**	4.450	1.829	0.993	0.621	0.172	0.083	0.035	0.011
KONT	**Ontario Airport**	5.990	2.494	1.370	0.862	0.249	0.121	0.051	0.017
KPSP	**Palm Springs Airport**	4.148	1.691	0.915	0.573	0.163	0.080	0.034	0.010
KRAL	**Riverside Airport**	5.770	2.318	1.244	0.776	0.202	0.096	0.041	0.013
KSMO	**Santa Monica Airport**	4.771	1.829	0.977	0.596	0.159	0.074	0.031	0.009
KSNA	**John Wayne Int'l Airport**	5.072	2.017	1.085	0.674	0.186	0.088	0.036	0.010
KTRM	**Desert Hot Springs Airport**	4.681	1.917	1.040	0.660	0.183	0.091	0.039	0.012
KVNY	**Van Nuys Airport**	3.673	1.428	0.760	0.467	0.127	0.060	0.025	0.008

Table 1-1

Recommendations on Siting New Sensitive Land Uses Such As Residences, Schools, Daycare Centers, Playgrounds, or Medical Facilities*

Source Category	Advisory Recommendations
Freeways and High-Traffic Roads	• Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
Distribution Centers	• Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). • Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Rail Yards	• Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. • Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	• Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the ARB on the status of pending analyses of health risks.
Refineries	• Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	• Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloro-ethylene	• Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district. • Do not site new sensitive land uses in the same building with perc dry cleaning operations.
Gasoline Dispensing Facilities	• Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50 foot separation is recommended for typical gas dispensing facilities.

*Notes:

- These recommendations are advisory. Land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.

- Recommendations are based primarily on data showing that the air pollution exposures addressed here (i.e., localized) can be reduced as much as 80% with the recommended separation.
- The relative risk for these categories varies greatly (see Table 1-2). To determine the actual risk near a particular facility, a site-specific analysis would be required. Risk from diesel PM will decrease over time as cleaner technology phases in.
- These recommendations are designed to fill a gap where information about existing facilities may not be readily available and are not designed to substitute for more specific information if it exists. The recommended distances take into account other factors in addition to available health risk data (see individual category descriptions).
- Site-specific project design improvements may help reduce air pollution exposures and should also be considered when siting new sensitive land uses.
- This table does not imply that mixed residential and commercial development in general is incompatible. Rather it focuses on known problems like dry cleaners using perchloroethylene that can be addressed with reasonable preventative actions.
- A summary of the basis for the distance recommendations can be found in Table 1-2.

Appendix D
Noise Study

L & G Market and Fueling Station

Noise Impact Study

City of Indio, CA

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MD ACOUSTICS
Sound Solutions for Planning and Design

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1.0 Introduction

1.1 Purpose of Analysis and Study Objectives

This noise assessment was prepared 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 City's Noise Guidelines, the project must demonstrate compliance to the applicable noise criterion as outlined within the Indio Noise Element and Municipal Code.

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 analysis of traffic noise impacts to the sensitive receptors and the project site; and
- An analysis of construction noise impacts.

1.2 Site Location and Study Area

The proposed L & G Market and Fueling Station site is located at the corner of Jackson Street and 50th Avenue in the city of Indio, CA. The site is zoned Neighborhood Center. See Exhibit A for the location.

Existing land uses surrounding the Project site include:

- North: Commercial and residential land uses;
- East: Residential land uses;
- South: 50th Avenue, commercial land uses; and
- West: Jackson Street, residential land uses.

1.3 Proposed Project Description

The Project includes the demolition of the existing market and single-family residence onsite and construction of a new 6,000 square-foot convenience market with 16 fueling positions, 4,000 square feet of retail space, a 2,500 square-foot coffee shop with drive thru, and 69 parking spaces. The proposed project site plan is in Appendix B.

PDF-1: The project should incorporate a 6' tall solid wall at least 4.2 lbs/sqft along the eastern residential property line.

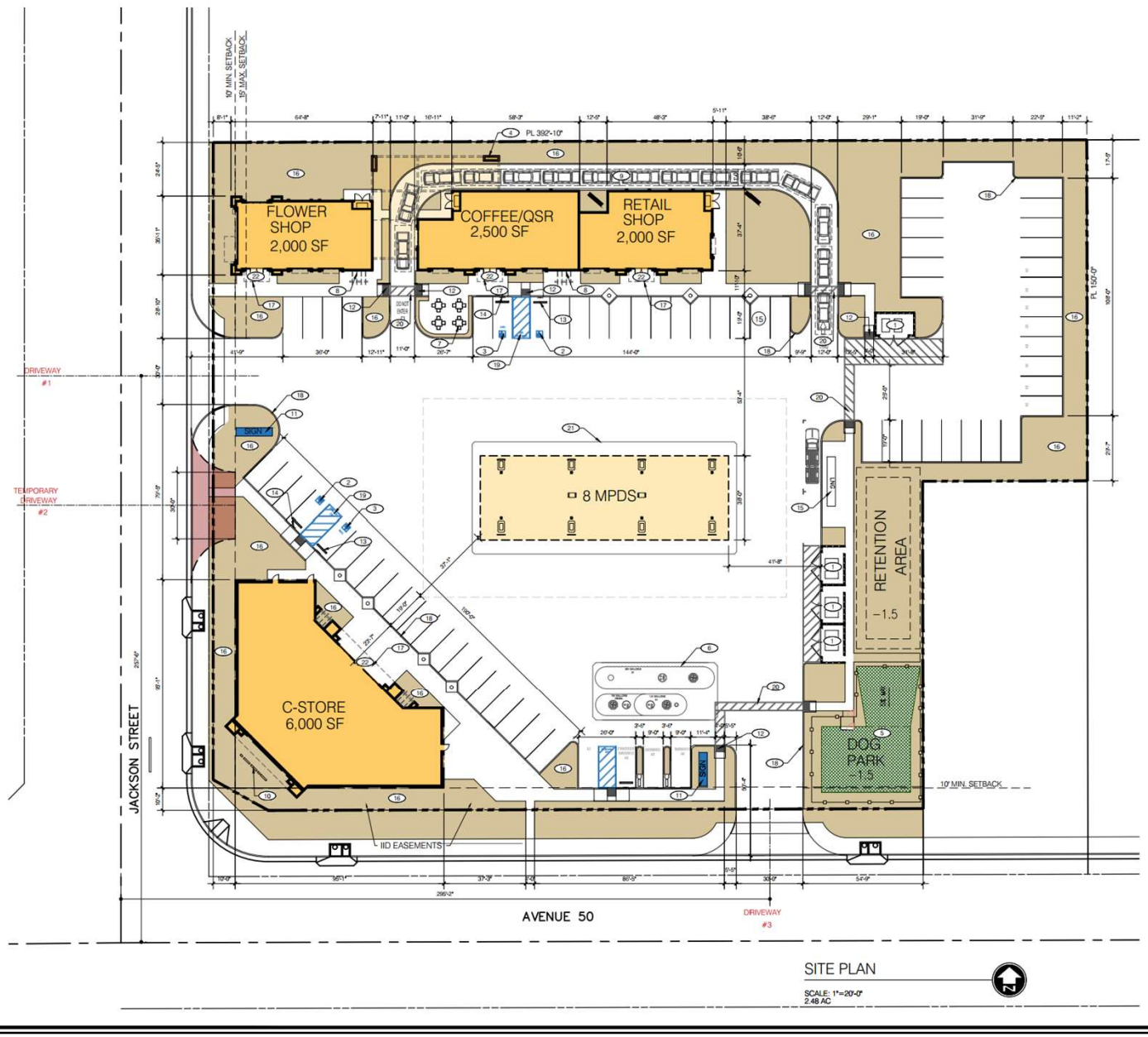
Exhibit A

Location Map



Exhibit B

Site Plan



KEYNOTES

1. TRASH ENCLOSURE
2. ACCESSIBLE PARKING SPACE
3. VAN ACCESSIBLE PARKING SPACE
4. DRIVE-THROUGH TRELLIS
5. DOG PARK.
6. UNDERGROUND TANKS
7. OUTDOOR TABLE/CHAIRS
8. SHADE STRUCTURE
9. DRIVE-THROUGH LANE
10. CITY OF INDIO SIGN
11. MONUMENT SIGN
12. TRUNCATED DOMES
13. WHEELSTOP
14. ACCESIBLE PARKING SIGN
15. PROPANE TANK
16. LANDSCAPE. SEE SHEET L1.0
17. CANOPY
18. CONCRETE CURB
19. PAINT 12' HIGH LETTERS "NO PARKING" ON GROUND
20. ACCESSIBLE PATH OF TRAVEL, MAX 5% SLOPE, MAX 2.00% CROSS SLOPE, AND MIN 48" CLEAR WIDTG.
21. GAS STATION CANOPY
22. 60" X 60" LEVEL & CLEAR.
23. PARKING LOT LIGHT

DEVELOPMENT SUMMARY & PARKING ANALYSIS

PARKING ANALYSIS

USE	RATIO	FACTOR	PARKING REQUIRED
RETAIL	5/1000	4,000	20
C-STORE	5/1000	6,000	30
GAS STATION	1/ EMPLOYEE	4	4
RESTAURANT	6/1000	2,500	15
TOTAL REQUIRED			69
TOTAL PROVIDED			69
EV PARKING SPACES REQUIRED			13
EV CHARGING STATIONS REQUIRED			3

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PLANNING SUBMITTAL

L&G Desert Store

49900 Jackson St,
Indio, CA 92201

SITE PLAN

A0.1

2.0 Fundamentals of Noise

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

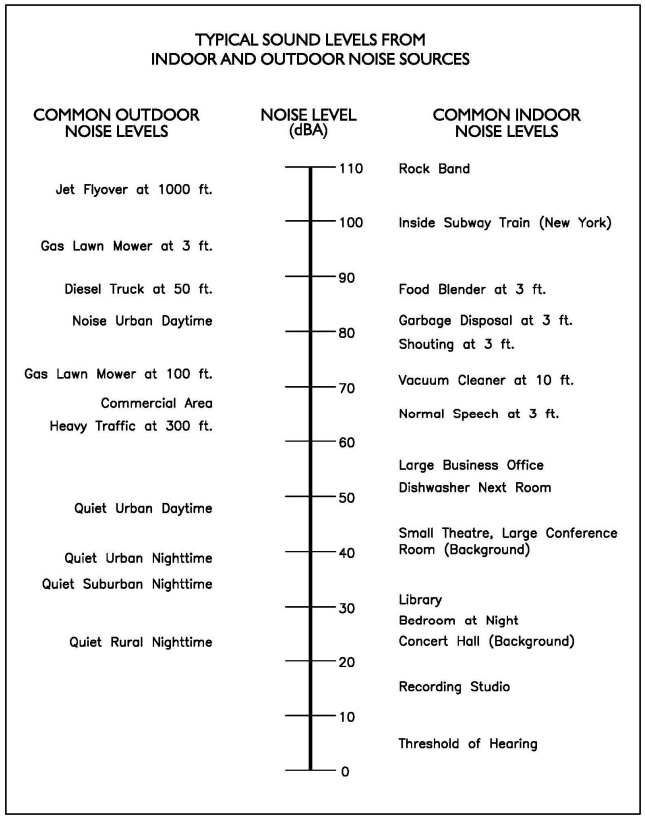
2.1 Sound, Noise, and Acoustics

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.

2.2 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



2.3 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 measure in units of micro-Newton per square inch meter (N/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 references sound levels for different noise sources.

2.4 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.

2.5 Sensitive Receptors

Noise-sensitive land uses include residential (single and multi-family dwellings, mobile home parks, dormitories, and similar uses); transient lodging (including hotels, motels, and similar uses); hospitals, nursing homes, convalescent hospitals, and other facilities for long-term medical care; public or private educational facilities, libraries, churches, and places of public assembly.

2.6 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 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.

Table 1: Decibel Changes and Loudness

Changes in Intensity Level, dBA	Changes in Apparent Loudness
1	Not perceptible
3	Just perceptible
5	Clearly noticeable
10	Twice (or half) as loud
Source: https://www.fhwa.dot.gov/environMent/noise/regulations_and_guidance/polguide/polguide02.cfm	

2.7 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 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, and L99, etc.

Noise: *A*ny unwanted sound or sound which is undesirable because it interferes with speech and hearing, or 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.

2.8 Traffic Noise Prediction

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

2.9 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.

3.0 Ground-Bourne Vibration Fundamentals

3.1 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.

3.2 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.

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 to identify potential vibration impacts that may need to be studied through actual field tests.

4.0 Regulatory Setting

The proposed project is located in the City of Indio, 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.

4.1 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 developments 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.

4.2 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 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 and the Uniform Building Code (UBC) 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.

Exhibit D: Land Use Compatibility Guidelines

Table 11-1: Noise Compatibility Guidelines

Land Use Category		Exterior Noise Level (CNEL)						
		50	55	60	65	70	75	80
A	Residential – single family residences, mobile homes, senior housing, convalescent homes							
B	Residential – multi-family residences, mixed-use (commercial/residential)							
C	Transient lodging – motels, hotels, resorts							
D*	Schools, churches, hospitals, nursing homes, child care facilities							
E*	Passive recreational parks, nature preserves, contemplative spaces, cemeteries							
F*	Active parks, golf courses, athletic fields, outdoor spectator sports, water recreation							
G*	Office/professional, government, medical/dental, commercial, retail, laboratories							
H*	Industrial, manufacturing, utilities, agriculture, mining, stables, ranching, warehouse, maintenance/repair							

ACCEPTABLE – Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal construction, without any special noise insulation requirements.

CONDITIONALLY ACCEPTABLE – New construction or development should be undertaken only after a detailed noise analysis is conducted to determine if noise reduction measures are necessary to achieve acceptable levels for land use. Criteria for determining exterior and interior noise levels are listed in Table N-2, Noise Standards. If a project cannot mitigate noise to a level deemed Acceptable, the appropriate county decision-maker must determine that mitigation has been provided to the greatest extent practicable or that extraordinary circumstances exist.

UNACCEPTABLE – New construction or development shall not be undertaken.

Source: City of Indio General Plan

4.3 City of Indio Noise Regulations

The City of Indio outlines their noise regulations and standards within Chapter 95C of the City of Indio Municipal Code and the Noise Element of the City of Indio General Plan.

City of Indio – Municipal Code

The City of Indio, CA Municipal Code (Section 95C.03 GENERAL PROHIBITIONS) states the following:

> "It shall be unlawful for any person to make, continue, or cause to be made or continued, within the city limits or within 200 feet thereof, any disturbing excessive or offensive noise or vibration which causes discomfort or annoyance to any reasonable person of normal sensitivity in the area or that is plainly audible at a distance greater than 50 feet from the source point for any purpose" (§ 95C.03A).

The City of Indio does not have a specific decibel noise control limit as long as the project is not disturbing, excessive, or offensive. Therefore, MD defers to the Noise Element as contained in the City of Indio General Plan.

Construction Noise and Vibration

Section 95C.08 (*DISTURBING, EXCESSIVE, OFFENSIVE NOISES OR VIBRATION CREATED BY VEHICLE(S), TOOLS, MACHINERY; DECLARATION OF CERTAIN ACTS CONSTITUTING*) of the Municipal Code state the following as it relates to construction:

> The following activities, among others, are declared to cause disturbing, excessive or offensive noises or vibration in violation of this section but such enumeration shall not be deemed to be exclusive, namely:
>
> (B)*Controlled hours of operation.* Notwithstanding the provisions of Chapter 151 of this code it shall be unlawful for any person to operate, permit, use or cause to operate, any of the following:
>
> (1) Powered model vehicles/planes;
>
> (2) Loading and unloading of vehicles, operating of fork lifts or cranes within 1,000 feet of a residence [exempted if distance from residential area exceeds 1,000 feet or as it may be reduced by the Planning Commission subject to design review or conditional use permit]; and
>
> (3) Construction tools and machinery.
> Other than between the hours of:
>
> (1) *Pacific Standard Time.*
> (a) Monday through Friday, 7:00 a.m. through 6:00 p.m.
> (b) Saturday, 8:00 a.m. through 6:00 p.m.
> (c) Sunday, 9:00 a.m. through 5:00 p.m.
> (d) Government Holidays, 9:00 a.m. through 5:00 p.m.

(2) *Pacific Daylight Time.*
(a) Monday through Friday, 6:00 a.m. through 6:00 p.m.
(b) Saturday, 7:00 a.m. through 6:00 p.m.
(c) Sunday, 9:00 a.m. through 5:00 p.m.
(d) Government Holidays, 9:00 a.m. through 5:00 p.m.

City of Indio General Plan

The City outlines their noise goals, policies and standards within the General Plan Noise Element. The following outlines the polices relevant to the proposed project:

NE-1.1 Sensitive receptors. Protect noise-sensitive uses, such as residences, schools, health care facilities, hotels, libraries, and churches, from excessive noise levels through land use capability/adjacency, build design, and noise ordinance enforcement.

NE-1.2 Noise compatibility. Apply the Noise Compatibility Matrix, shown in Table 11-1, as a guide for planning and development decisions. The City will require projects involving new development or modifications to existing development to implement mitigation measures, where necessary, to reduce noise levels to at least the normally compatible range shown in the City's Noise Compatibility Matrix shown in Table 11-1. Mitigation measures should focus on architectural features and building design and construction, rather than site design features, such as excessive setbacks, berms, and sound walls, to maintain compatibility with adjacent and surrounding uses.

NE-1.6 Limit on hours of operation. Limit delivery or service hours for stores and businesses with loading areas, docks, or trash bins that front, side, border, or gain access on driveways next to residential and other noise sensitive areas, such as residences, schools, hospitals, religious meeting spaces, and recreation areas.

NE-3.1 Noise ordinance. Minimize noise conflicts between neighboring properties through enforcement of applicable regulations, such as the City's Noise Control Ordinance.

NE-3.2 Noise complaints. Respond timely to noise complaints and conduct field monitoring compliance checks to regulate noise violators.

NE-3.3 Entertainment uses. Require noise generating uses, such as restaurants, bars, entertainment venues, and industrial manufacturing operations to minimize noise impacts on adjacent noise-sensitive receptors when there is a potential for adverse noise impacts to occur.

NE-3.4 Construction noise. Require development to minimize the exposure of neighboring properties to excessive noise levels from construction-related activity during all phases of construction.

Regulatory Summary

The proposed project is surrounded by residential uses in all directions, by commercial uses to the north, and by 50th Avenue to the south and Jackson Street to the west. There is no decibel limit in the Municipal Code or the General Plan; therefore, the land use compatibility matrix determines the acoustic design limit. The land use compatibility matrix is acceptable up to 60 dBA CNEL for residential uses and 70 dBA CNEL for commercial uses. Noise levels up to 75 dBA CNEL are conditionally acceptable only after a noise analysis determines whether or not noise reduction can lower noise levels into the acceptable range. Construction hours must comply with the municipal code as stated in Section 95C.08(3).

5.0 Study Method and Procedure

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

5.1 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 of the area of concern
- Human land usage
- Sites clear of major obstruction and contamination

All measurements equipment meets American National Standards Institute (ANSI) specifications for sound level meters (S1.4-1983). MD noise measurement procedures are presented below:

- The sound level meter was calibrated before and after the 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 noise measurements were recorded on field data sheets
- Temperature and sky conditions were observed and documented

5.2 Noise Measurement Location

The noise monitoring location was selected to obtain a baseline of the existing noise environment. Two (2) short-term noise measurements were conducted at the Project site, and long-term data was extrapolated based on traffic patterns. Appendix A includes photos, the field sheet, and measured noise data. Exhibit E illustrates the location of the measurement.

5.3 SoundPLAN Noise Model (Operational Noise)

SoundPLAN acoustical modeling software was utilized to model project operational noise at nearby sensitive receptors. The SoundPLAN software utilizes algorithms (based on the inverse square law) to calculate noise level projections. It allows the user to input specific noise sources, spectral content, sound barriers, building placement, topography, and sensitive receptor locations. It also calculates noise level increases due to the reflection of noise from hard surfaces.

Measured and referenced sound level data was utilized to model the various stationary on-site noise sources associated with project operation, (vehicle movements).

Noise associated with fueling areas and automobile parking areas was modeled using SoundPLAN methodology which takes into consideration the overall trip generation, number of parking spaces and

estimates the number of movements per hour per parking space. The fueling areas were modeled based on the Traffic Impact Analysis Trip Generation Rate (prepared by Trames Solutions, Inc. Feb 2024). The car parking lots were modeled as 1 movement per space per hour and is only active during the day except the convenience store which was also modeled at night. The HVAC was modeled using 1-3 5 ton rooftop units per building and the dog park was modeled with a single dog barking continuously during daytime hours. Modeling assumptions are summarized in Table 2. SoundPLAN noise modeling input and results are provided in Appendix B.

Table 2: SoundPLAN Modeling Assumptions

Noise Source	Source Type	Reference Lw
Gasoline Fueling Area	Area (SP Parking Tool)	--
Auto Parking	Area (SP Parking Tool)	--
HVAC	Point	75
Drive-Thru Speaker	Point	72
Dog Bark	Point	85

5.4 Traffic Noise Prediction Modeling

The FHWA Traffic Noise Prediction Model (FHWA-RD-77-108) was utilized to model future traffic noise levels on the project site and existing and existing plus project traffic noise volumes along roadways affected by project generated vehicle traffic. The FHWA model arrives at the predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL).

Project-generated vehicle traffic will result in an incremental increase in ambient noise levels. To determine the project's noise impact to the surrounding land uses, MD generated noise contours for existing ADT, and existing plus project conditions. Table 3 indicates the roadway parameters and vehicle distribution utilized for the modeling. Noise contours are used to provide a characterization of sound levels experienced at a set distance from the centerline of a subject roadway. They are intended to represent a worst-case scenario and do not take into account structures, sound walls, topography, and/or other sound attenuating features that may further reduce the actual noise level. Noise contours are developed for comparative purposes and are used to demonstrate potential increases/decreases along subject roadways as a result of a project. The referenced traffic data and traffic noise calculation worksheets outputs are located in Appendix C.

- Roadway classification – (e.g., freeway, major arterial, arterial, secondary, collector, etc.),
- Roadway Active Width – (distance between the center of the outermost travel lanes on each side of the roadway)
- Average Daily Traffic Volumes (ADT), Speeds, Percentages of autos, medium and heavy trucks
- Roadway grade and angle of view
- Site Conditions (e.g., soft vs. hard)
- Percentage of total ADT which flows each hour throughout a 24-hour period

Table 3: Roadway Parameters and Vehicle Distribution

Roadway/Type	Segment	Existing ADT[1]	Existing + Project ADT[2]	Speed (MPH)	Site Conditions
50th Avenue	East of Jackson	11,424	13,692	50	Hard
Jackson St	North of 50th	15,796	18,064	50	Hard
Motor-Vehicle Type[3]		**Daytime % (7AM to 7 PM)**	**Evening % (7 PM to 10 PM)**	**Night % (10 PM to 7 AM)**	**Total % of Traffic Flow**
Automobiles		75.5	14.0	10.4	92.0
Medium Trucks		48.0	2.0	50	3.0
Heavy Trucks		48.0	2.0	50	5.0

Notes:
[1] Existing ADT volumes provided in the traffic study prepared by Coachella Valley Traffic Counts (2017)
[2] Project trip generation provided in the traffic analysis prepared for the project (Trames Solutions, Inc., Feb 2024)
[3] Riverside County Arterial distribution

5.5 Construction Noise Modeling

Construction noise associated with the proposed project was calculated utilizing methodology presented in the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (2018) together with several key construction parameters including distance to each sensitive receiver, equipment usage, percent usage factor, and baseline parameters for the project site. Construction activities are anticipated to include four phases site preparation, grading, building construction, and paving.

Construction noise levels were calculated for each phase based on the CalEEMod Air Quality Model assumptions. All equipment was assumed to be situated at the center of the project site. Construction worksheets are provided in Appendix D.

6.0 Existing Noise Environment

Two (2) 15-minute noise measurements were conducted at the project site on September 21, 2022 to document the existing noise environment. The noise level was 55.6 to 59.8 dBA Leq. The measurement included the 1-hour Leq, Lmin, Lmax, and other statistical data (e.g. L2, L8). 24-hour data was extrapolated from the 1-hour measurement, and the results are presented in Table 4. Noise measurement field sheets are provided in Appendix A.

Table 4: Short-Term Noise Measurement Data (dBA)[1]

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90	Estimated CNEL[2]
NM1	5:48 PM	6:03 PM	59.8	73.9	52.0	67.1	63.0	59.0	57.0	54.3	60.5
NM2	6:05 PM	6:20 PM	55.6	65.0	48.1	61.0	58.6	56.3	54.5	51.7	58.1

Notes:

1. Short-term noise monitoring locations (NM1 and NM2) are illustrated in Exhibit E.
2. CNEL estimated based off typical traffic patterns. See Appendix A.

Ambient noise levels at the project site are projected to range between 55 and 60 dBA Leq. The overall CNEL is projected to be 58 to 61 dBA CNEL at and around the site. This is within normally acceptable for commercial and normally to conditionally acceptable for residential. The field data indicates that traffic along Jackson Street is the dominant noise source.

Exhibit E

X = Measurement locations

Measurement Locations



7.0 Future Noise Environment Impacts and Mitigation

This assessment analyzes future noise impacts to sensitive receptors and the project and compares the results to the City's Noise Standards. The analysis details the estimated exterior noise levels associated with traffic from adjacent roadway sources. The City has established different significance thresholds for different types of noise impacts.

7.1 Off-Site Traffic Noise Impact

The potential off-site noise impacts caused by the increase in vehicular traffic as a result of the project were calculated at a distance of 50 feet from affected road segments. The noise levels at 50 feet both with and without project-generated vehicle traffic were compared and the increase was calculated. The distance to the 55, 60, 65, and 70 dBA CNEL noise contours are also provided for reference (Appendix C). Noise contours were calculated for the following scenarios and conditions:

- Existing Condition: This scenario refers to the existing year traffic noise condition and is demonstrated in Table 5.

- Existing + Project Condition: This scenario refers to the existing year plus project traffic noise condition and is demonstrated in Table 5.

As shown in Table 5, the addition of project-generated vehicle traffic to Jackson Street and 50th Avenue would result in negligible increases in ambient noise levels and would not be significant.

Table 5: Change in Existing Noise Levels as a Result of Project Generated Traffic

Roadway	Segment	Modeled Noise Levels (dBA CNEL) at 50 feet from the Centerline			
		Existing Without Project	Existing With Project	Change in Noise Level	Increase of 3 dB or more[2]
50th Avenue	East of Jackson	74.4	75.2	0.8	No
Jackson St	North of 50th	75.8	76.4	0.6	No

Notes:
[1] FHWA roadway noise modeling worksheets are provided in Appendix C.
[2] Typically, the human ear can barely perceive the change in noise level of 3 dB

7.2 On-Site Traffic Noise Impact

Future noise levels associated with traffic were modeled using the FHWA Traffic Noise Model calculations in order to evaluate the project in light of the City's exterior standards presented in Exhibit D of this report as they apply to future traffic noise impacts to the proposed project. The Project is currently within the normally acceptable range. It will not change due to the increase in traffic levels due to the project. There are no outdoor uses for this Project, therefore, the impact is less than significant.

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

The existing residential land use located east of the project site is a sensitive receptor that may be affected by project operational noise. Worst-case operational noise was modeled using SoundPLAN acoustical modeling software. Two (2) receptors representative of nonresidential adjacent sites and two (2) receptors representative of the residential adjacent sites were modeled using the SoundPLAN noise model to evaluate the proposed project's operational impact. A receptor is denoted by a yellow dot. All yellow dots represent a property line. The results are in Table 6.

Project Operational Noise Levels

Worst-case "project only" exterior operational noise is presented in Exhibit F. Operational noise levels are expected to be 54 to 61 dBA CNEL at the residential receptors and 61 to 64 dBA CNEL at the adjacent nonresidential properties.

Project Plus Ambient Operational Noise Levels

Existing plus project noise level projections are anticipated to reach up to 63 CNEL at the nearest residential receptors and 65 dBA CNEL at the nonresidential receptors. The project-generated operational noise is expected to result in a maximum of 7 dB increase at the adjacent nonresidential sites and will increase a maximum of 5 dB at the adjacent residential sites. The project design includes a 6' wall on the eastern property line, which will reduce the noise impact of the site. The project demonstrates that it will keep surrounding uses in the conditionally acceptable land use compatibility range.

Table 6: Operational Noise Levels (dBA, CNEL)

Receptor[1]	Existing Ambient Noise Level (dBA, CNEL)	Project Noise Level (dBA, CNEL)[2]	Total Combined Noise Level (dBA, CNEL)	Conditionally Acceptable Land Use (dBA, CNEL)	Change in Noise Level as Result of Project
R1	61	61	64	75	3
R2	61	54	62	75	1
R3	58	61	63	75	5
R4	58	64	65	75	7

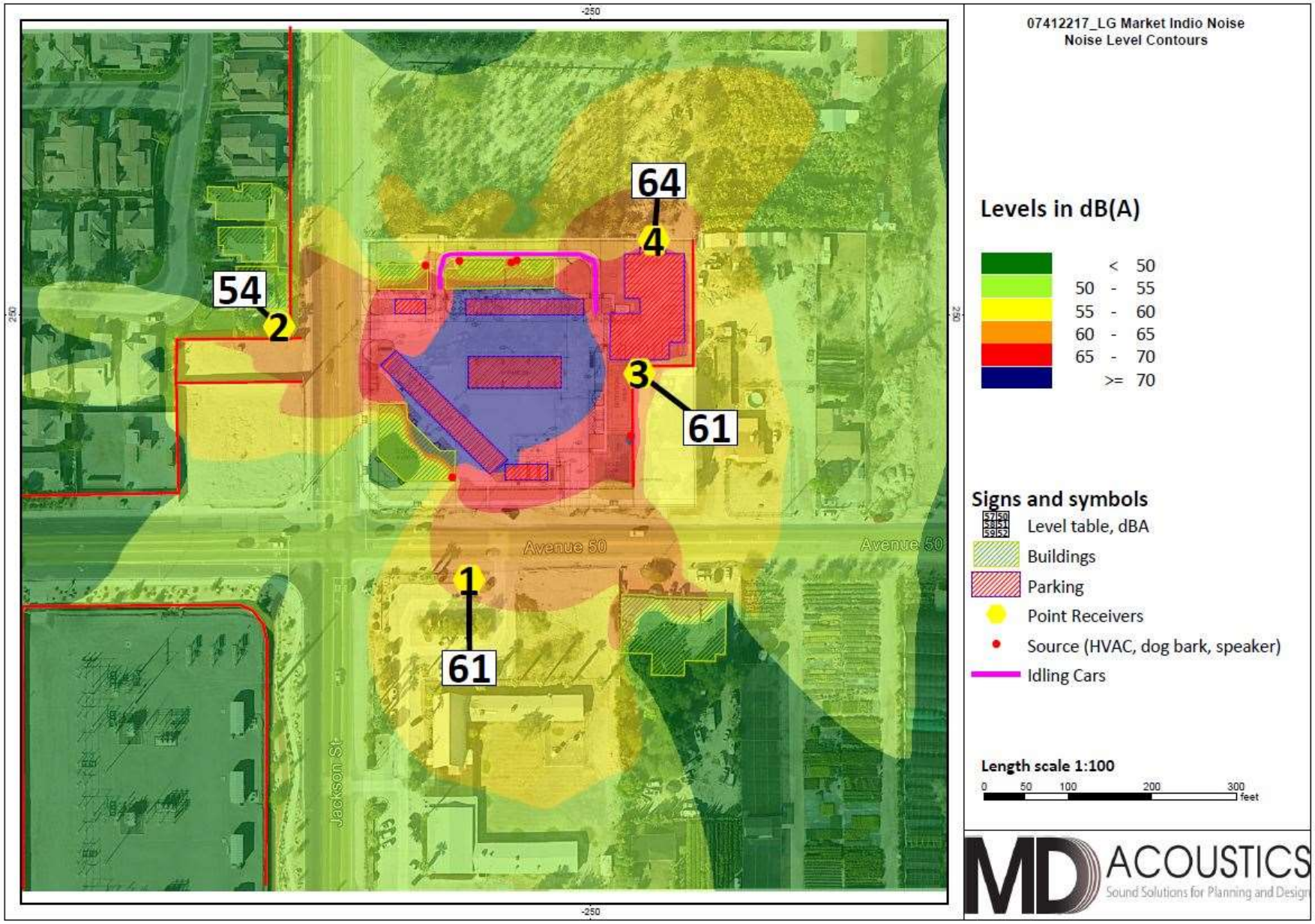
Notes:

1. R1 & R4 is commercial; R2 & R3 are residential.
2. See Exhibit F for the operational noise level projections at said receptors.

PDF-1: The project should incorporate a 6' tall solid wall at least 4.2 lbs/sqft along the eastern residential property line.

Exhibit F

Project CNEL Operational Noise Levels



8.0 Construction Noise and Vibration Impacts

The degree of construction noise may vary for different areas of the project site and also vary depending on the construction activities. Project construction will occur in four phases: grading, building construction, paving, and architectural coating. This section discusses noise and ground-borne vibration modeling efforts, impact analysis, and mitigation, if necessary.

8.1 Construction Noise

Typical construction equipment noise levels are presented in Table 7.

Table 7: Typical Construction Equipment Noise Levels[1]

EQUIPMENT POWERED BY INTERNAL COMBUSTION ENGINES

Type	Noise Levels (dBA) at 50 Feet
Earth Moving	
Compactors (Ground)	80
Front Loaders	80
Backhoes	80
Tractors	84
Scrapers, Graders	85
Pavers	85
Trucks	84
Materials Handling	
Concrete Mixers	85
Concrete Pumps	82
Cranes	85
Stationary	
Pumps	77
Generators	82
Compressors	80

IMPACT EQUIPMENT

Type	Noise Levels (dBA) at 50 Feet
Concrete Saws	90
Vibratory Pile Driver	95

Notes:
[1] Referenced Noise Levels from the FHWA Construction Noise Handbook

Construction noise associated with each phase of the project was calculated at nearby sensitive receptors utilizing methodology presented in the Federal Highway Administration (FHWA) Construction Noise Model together with several key construction parameters including distance to each sensitive receiver, equipment usage, percent usage factor, and baseline parameters for the project site.

Construction equipment typically moves back and forth across the site, and it is an industry standard to use the acoustical center of the site to model average construction noise levels.

Construction activities are anticipated to include six phases: demolition, site preparation, grading, building construction, paving, and architectural coating. Noise levels associated with each phase are shown in Table 8. The construction noise calculation output worksheet is located in Appendix D. Construction noise is projected to the closest sensitive receptor, the residential uses to the east. Construction noise at other locations will be lower.

Table 8: Construction Noise Level by Phase (dBA, Leq)

Location	Phase	Construction Noise Level (dBA, Leq)
East Residential	Demo	68.8
	Site Prep	68.6
	Grade	70.5
	Build	68.1
	Pave	67.5
	Arch Coat	58.6

As shown in Table 8, project construction noise will range between 59 to 71 dBA at adjacent eastern residential property line.

The Project will be required to adhere to Section 95C.08(3) of the Indio Municipal Code which outlines the allowed times for construction. The projected levels meet the FTA guidelines of 80 dBA for construction noise at residential uses.

8.2 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 primary vibration source during construction may be from a bulldozer. A large bulldozer has a vibration impact of 0.089 inches per second peak particle velocity (PPV) at 25 feet which is perceptible but below any risk to architectural damage.

The fundamental equation used to calculate vibration propagation through average soil conditions and distance is as follows:

$$PPV_{equipment} = PPV_{ref} (100/D_{rec})^{n}$$

Where: PPV_{ref} = reference PPV at 100ft.
D_{rec} = distance from equipment to receiver in ft.
n = 1.1 (the value related to the attenuation rate through the ground)

The thresholds from the Caltrans Transportation and Construction Induced Vibration Guidance Manual in Table 9 (below) provides general thresholds and guidelines as to the vibration damage potential from vibratory impacts.

Table 9: Guideline Vibration Damage Potential Threshold Criteria

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: Table 19, Transportation and Construction Vibration Guidance Manual, Caltrans, Sept. 2013.

Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Table 10 gives approximate vibration levels for particular construction activities. This data provides a reasonable estimate for a wide range of soil conditions.

Table 10: Vibration Source Levels for Construction Equipment

Equipment	Peak Particle Velocity (inches/second) at 25 feet	Approximate Vibration Level LV (dVB) at 25 feet
Pile driver (impact)	1.518 (upper range)	112
	0.644 (typical)	104
Pile driver (sonic)	0.734 upper range	105
	0.170 typical	93
Clam shovel drop (slurry wall)	0.202	94
Hydromill	0.008 in soil	66
(slurry wall)	0.017 in rock	75
Vibratory Roller	0.21	94
Hoe Ram	0.089	87
Large bulldozer	0.089	87
Caisson drill	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

Source: Transit Noise and Vibration Impact Assessment, Federal Transit Administration, May 2018.

The nearest existing building is 25 feet east of the project site. At this distance, a large bulldozer would yield a worst-case 0.210 PPV (in/sec) which is below the risk of architectural damage to older residential buildings. The ground-borne vibration worksheet is provided in Appendix E.

8.3 Construction Noise Reduction Policies

In addition to complying with Section 95C.08(3) of the Indio Municipal Code, the following policies are recommended to reduce construction noise:

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

2. 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.

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

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

9.0 References

Indio
2010 2040 General Plan
2024 Municipal Code

California Department of Transportation (Caltrans)
2013 Transportation and Construction Induced Vibration Guidance Manual.
2018 Technical Noise Supplement to the Traffic Noise Analysis Protocol. Sept.

Federal Highway Administration (FHWA)
2006 Construction Noise Handbook

Federal Transit Administration (FTA)
2018 Transit Noise and Vibration Impact Assessment Manual

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

Integrated Engineering Group
Traffic Impact Analysis (March 2021)

SoundPLAN International, LLC
2019 SoundPLAN Essential 8.1 Manual.

Appendix A:

Field Measurement Data

15-Minute Continuous Noise Measurement Datasheet

Project Name: L & G Market Noise

Project: #/Name: 0741-2022-017

Site Address/Location:

Date: 09/21/2022

Field Tech/Engineer: Jason Schuyler/Rachel Edelman

Site Observations:

Sound Meter: XL2, NTI **SN:** A2A-08562-E0

Settings: A-weighted, slow, 1-sec, 15-minute interval

Site Id: NM1, NM2



MD ACOUSTICS

15-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: L & G Market Noise

Site Address/Location:

Site Id: NM1, NM2

Figure 1: NM1



Figure 2: NM2



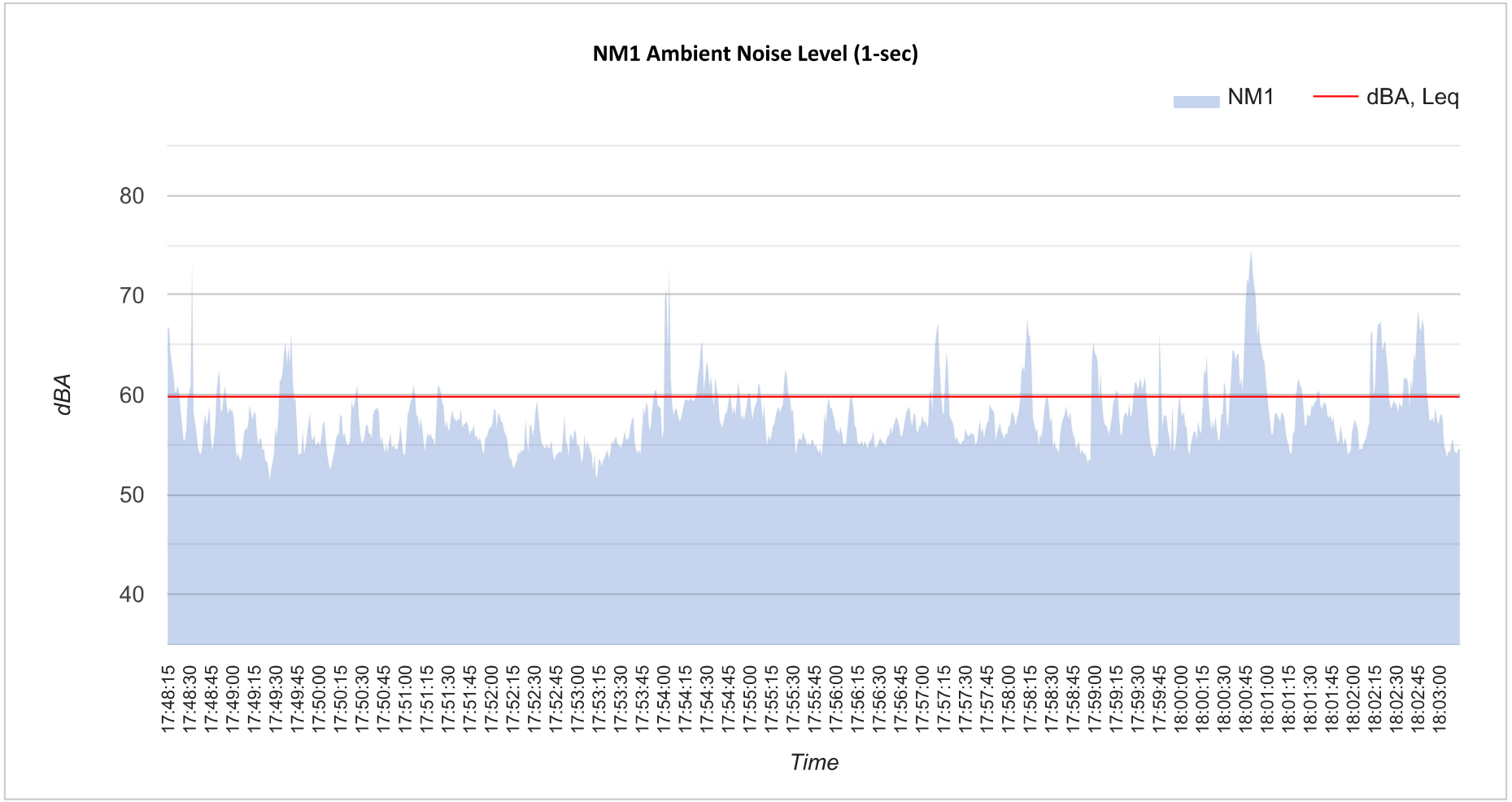
Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
NM1	5:48 PM	6:03 PM	59.8	73.9	52.0	67.1	63	59	57	54.3
NM2	6:05 PM	6:20 PM	55.6	65.0	48.1	61	58.6	56.3	54.5	51.7

MD ACOUSTICS

15-Minute Continuous Noise Measurement Datasheet - Cont.

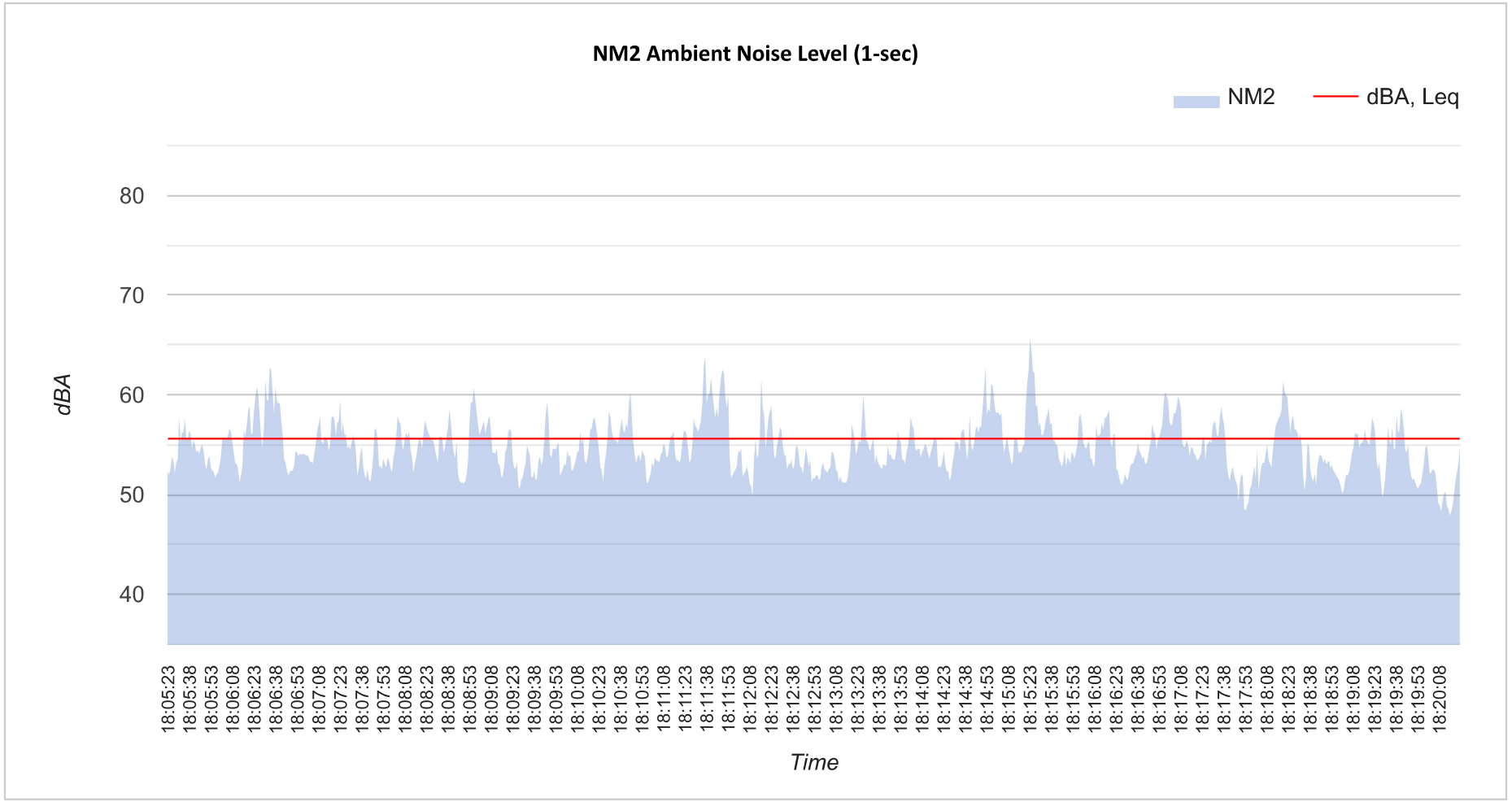
Project Name:	L & G Market Noise	**Site Topo:**	Flat, desert	**Noise Source(s) w/ Distance:**	
Site Address/Location:		**Meteorological Cond.:**	No wind, clear skies, around 96 degrees Fahrenheit		Road noise
Site Id:	NM1	**Ground Type:**	Desert conditions		



MD ACOUSTICS

15-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	L & G Market Noise	**Site Topo:**	Flat, desert	**Noise Source(s) w/ Distance:**	
Site Address/Location:		**Meteorological Cond.:**	No wind, clear skies, sunset, around 86 degrees Fahrenheit	Road noise	
Site Id:	NM2	**Ground Type:**	Desert conditions		



Appendix B:

SoundPLAN Noise Modeling Data

LG Market Indio Noise
Contribution level - 001 - LG Market Indio: Outdoor SP

Source	Source group	Source ty	Tr. lane	Ldn dB(A)	A dB	
Receiver R1 Fl G dB(A) Ldn 60.6 dB(A) Sigma(Ldn) 0.0 dB(A)						
Gas Canopy	Default parking lot noise	PLot		60.1	0.0	
C-Store	Default parking lot noise	PLot		48.7	0.0	
Retail Parking	Default parking lot noise	PLot		42.5	0.0	
Parking EV	Default parking lot noise	PLot		41.4	0.0	
EV parking lot	Default parking lot noise	PLot		40.2	0.0	
HVAC	Default industrial noise	Point		39.2	0.0	
Dog Bark	Default industrial noise	Point		37.6	0.0	
Flower Shop	Default parking lot noise	PLot		27.7	0.0	
Idling Cars	Default industrial noise	Line		25.2	0.0	
HVAC	Default industrial noise	Point		24.2	0.0	
HVAC	Default industrial noise	Point		24.0	0.0	
HVAC	Default industrial noise	Point		21.2	0.0	
Drive-Thru Speaker	Default industrial noise	Point		-3.6	0.0	
Receiver R2 Fl G dB(A) Ldn 53.8 dB(A) Sigma(Ldn) 0.0 dB(A)						
Gas Canopy	Default parking lot noise	PLot		53.1	0.0	
C-Store	Default parking lot noise	PLot		43.1	0.0	
Retail Parking	Default parking lot noise	PLot		37.4	0.0	
Flower Shop	Default parking lot noise	PLot		34.2	0.0	
EV parking lot	Default parking lot noise	PLot		33.4	0.0	
Dog Bark	Default industrial noise	Point		26.1	0.0	
HVAC	Default industrial noise	Point		25.5	0.0	
Parking EV	Default parking lot noise	PLot		24.8	0.0	
HVAC	Default industrial noise	Point		23.6	0.0	
HVAC	Default industrial noise	Point		21.7	0.0	
HVAC	Default industrial noise	Point		20.5	0.0	
Idling Cars	Default industrial noise	Line		17.4	0.0	
Drive-Thru Speaker	Default industrial noise	Point		3.8	0.0	
Receiver R3 Fl G dB(A) Ldn 59.3 dB(A) Sigma(Ldn) 0.0 dB(A)						
Gas Canopy	Default parking lot noise	PLot		58.4	0.0	
EV parking lot	Default parking lot noise	PLot		50.3	0.0	
Retail Parking	Default parking lot noise	PLot		42.9	0.0	
C-Store	Default parking lot noise	PLot		42.5	0.0	
Dog Bark	Default industrial noise	Point		39.4	0.0	
Parking EV	Default parking lot noise	PLot		33.5	0.0	
Flower Shop	Default parking lot noise	PLot		30.1	0.0	
HVAC	Default industrial noise	Point		27.8	0.0	
Idling Cars	Default industrial noise	Line		27.3	0.0	
HVAC	Default industrial noise	Point		24.9	0.0	
HVAC	Default industrial noise	Point		23.3	0.0	
HVAC	Default industrial noise	Point		22.9	0.0	
Drive-Thru Speaker	Default industrial noise	Point		1.2	0.0	
Receiver R4 Fl G dB(A) Ldn 63.9 dB(A) Sigma(Ldn) 0.0 dB(A)						
Gas Canopy	Default parking lot noise	PLot		61.2	0.0	

LG Market Indio Noise
Contribution level - 001 - LG Market Indio: Outdoor SP

Source	Source group	Source ty	Tr. lane	Ldn dB(A)	A dB	
EV parking lot	Default parking lot noise	PLot		60.3	0.0	
Retail Parking	Default parking lot noise	PLot		47.6	0.0	
C-Store	Default parking lot noise	PLot		45.9	0.0	
Idling Cars	Default industrial noise	Line		39.7	0.0	
Parking EV	Default parking lot noise	PLot		34.6	0.0	
HVAC	Default industrial noise	Point		33.4	0.0	
HVAC	Default industrial noise	Point		29.8	0.0	
HVAC	Default industrial noise	Point		29.0	0.0	
Dog Bark	Default industrial noise	Point		28.1	0.0	
HVAC	Default industrial noise	Point		27.0	0.0	
Flower Shop	Default parking lot noise	PLot		26.0	0.0	
Drive-Thru Speaker	Default industrial noise	Point		12.6	0.0	

LG Market Indio Noise
Hourly contribution level in dB(A) - 001 - LG Market Indio: Outdoor SP

Source	Ldn	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24
		o'clock	o'clock	o'clock	o'clock	o'clock	o'clock	o'clock	o'clock	o'clock	o'clock	o'clock	o'clock	o'clock	o'clock	o'clock	o'clock	o'clock	o'clock	o'clock	o'clock	o'clock	o'clock	o'clock	o'clock
	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Receiver R1 Fl G dB(A) Ldn 60.6 dB(A) Sigma(Ldn) 0.0 dB(A)																									
Gas Canopy	60.1	50.1	48.4	45.3	48.4	51.4	53.8	55.3	59.3	60.3	58.4	57.1	55.9	55.9	55.9	57.1	57.6	58.4	59.6	57.6	57.1	55.3	54.4	53.1	51.4
C-Store	48.7							47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5		
Retail Parking	42.5								43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0		
Parking EV	41.4								41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9		
EV parking lot	40.2								40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7		
HVAC	39.2	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5
Dog Bark	37.6								38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1		
Flower Shop	27.7								28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2		
Idling Cars	25.2								25.7	25.7	25.7	25.7	25.7	25.7	25.7	25.7	25.7	25.7	25.7	25.7	25.7	25.7	25.7		
HVAC	24.2	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
HVAC	24.0	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4
HVAC	21.2	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5
Drive-Thru Speaker	-3.6								-3.1	-3.1	-3.1	-3.1	-3.1	-3.1	-3.1	-3.1	-3.1	-3.1	-3.1	-3.1	-3.1	-3.1	-3.1		
Receiver R2 Fl G dB(A) Ldn 53.8 dB(A) Sigma(Ldn) 0.0 dB(A)																									
Gas Canopy	53.1	43.2	41.4	38.4	41.4	44.4	46.8	48.4	52.4	53.4	51.4	50.1	49.0	49.0	49.0	50.1	50.7	51.4	52.7	50.7	50.1	48.4	47.4	46.2	44.4
C-Store	43.1							42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0		
Retail Parking	37.4								37.9	37.9	37.9	37.9	37.9	37.9	37.9	37.9	37.9	37.9	37.9	37.9	37.9	37.9	37.9		
Flower Shop	34.2								34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6		
EV parking lot	33.4								33.9	33.9	33.9	33.9	33.9	33.9	33.9	33.9	33.9	33.9	33.9	33.9	33.9	33.9	33.9		
Dog Bark	26.1								26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5		
HVAC	25.5	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9
Parking EV	24.8								25.3	25.3	25.3	25.3	25.3	25.3	25.3	25.3	25.3	25.3	25.3	25.3	25.3	25.3	25.3		
HVAC	23.6	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0
HVAC	21.7	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1
HVAC	20.5	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8
Idling Cars	17.4								17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9		
Drive-Thru Speaker	3.8								4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3		
Receiver R3 Fl G dB(A) Ldn 59.3 dB(A) Sigma(Ldn) 0.0 dB(A)																									
Gas Canopy	58.4	48.5	46.7	43.7	46.7	49.7	52.2	53.7	57.7	58.7	56.7	55.5	54.3	54.3	54.3	55.5	56.0	56.7	58.0	56.0	55.5	53.7	52.7	51.5	49.7
EV parking lot	50.3								50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8		
Retail Parking	42.9								43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4		

LG Market Indio Noise
Hourly contribution level in dB(A) - 001 - LG Market Indio: Outdoor SP

Source	Ldn	0-1 o'clock	1-2 o'clock	2-3 o'clock	3-4 o'clock	4-5 o'clock	5-6 o'clock	6-7 o'clock	7-8 o'clock	8-9 o'clock	9-10 o'clock	10-11 o'clock	11-12 o'clock	12-13 o'clock	13-14 o'clock	14-15 o'clock	15-16 o'clock	16-17 o'clock	17-18 o'clock	18-19 o'clock	19-20 o'clock	20-21 o'clock	21-22 o'clock	22-23 o'clock	23-24 o'clock
	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
C-Store	42.5							41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3		
Dog Bark	39.4								39.9	39.9	39.9	39.9	39.9	39.9	39.9	39.9	39.9	39.9	39.9	39.9	39.9	39.9		
Parking EV	33.5								34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0		
Flower Shop	30.1								30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6		
HVAC	27.8	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1
Idling Cars	27.3								27.7	27.7	27.7	27.7	27.7	27.7	27.7	27.7	27.7	27.7	27.7	27.7	27.7	27.7		
HVAC	24.9	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3
HVAC	23.3	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7
HVAC	22.9	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3
Drive-Thru Speaker	1.2								1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7		
Receiver R4 Fl G dB(A) Ldn 63.9 dB(A) Sigma(Ldn) 0.0 dB(A)																								
Gas Canopy	61.2	51.2	49.4	46.4	49.4	52.4	54.9	56.4	60.4	61.4	59.4	58.2	57.0	57.0	57.0	58.2	58.7	59.4	60.7	58.7	58.2	56.4	55.4	54.2	52.4
EV parking lot	60.3								60.7	60.7	60.7	60.7	60.7	60.7	60.7	60.7	60.7	60.7	60.7	60.7	60.7	60.7	60.7		
Retail Parking	47.6								48.1	48.1	48.1	48.1	48.1	48.1	48.1	48.1	48.1	48.1	48.1	48.1	48.1	48.1	48.1		
C-Store	45.9							44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8		
Idling Cars	39.7								40.1	40.1	40.1	40.1	40.1	40.1	40.1	40.1	40.1	40.1	40.1	40.1	40.1	40.1	40.1		
Parking EV	34.6								35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1		
HVAC	33.4	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7
HVAC	29.8	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1
HVAC	29.0	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4
Dog Bark	28.1								28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6		
HVAC	27.0	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4
Flower Shop	26.0								26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5		
Drive-Thru Speaker	12.6								13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1		

LG Market Indio Noise
Octave spectra of the sources in dB(A) - 001 - LG Market Indio: Outdoor SP

Name	Source type	l or A	Li	R'w	L'w	Lw	KI	KT	LwMax	DO-Wall	Time histogram	Emission spectrum	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	16kHz
		m,m²	dB(A)	dB	dB(A)	dB(A)	dB	dB	dB(A)	dB			dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Dog Bark	Point				85.0	85.0	0.0	0.0		0	Daytime	Dog training facilities	23.5	37.4	54.6	76.9	82.8	78.7	64.9	55.9	
Drive-Thru Speaker	Point				72.3	72.3	0.0	0.0		0	Daytime	Drive Thru Speaker	43.9	50.9	58.0	65.2	69.3	65.3	59.3	50.5	45.1
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC @ 3ft - Carrier 50TFQ0006 - 5 Ton	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				79.7	79.7	0.0	0.0		0	100%/24h	HVAC @ 3ft - Carrier 50TFQ0006 - 5 Ton	56.0	64.8	67.6	72.4	74.1	73.9	70.9	66.5	54.8
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC @ 3ft - Carrier 50TFQ0006 - 5 Ton	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC @ 3ft - Carrier 50TFQ0006 - 5 Ton	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
Idling Cars	Line	85.83			62.9	82.2	0.0	0.0		0	Daytime	Idiling Car Every 6' Line Sources	65.8	67.3	70.1	75.1	75.7	77.0	73.5	65.5	58.8
C-Store	PLot	448.63			69.1	95.6	0.0	0.0		0	100%/24h	Typical spectrum	79.0	90.6	83.1	87.6	87.7	88.1	85.4	79.2	66.4
EV parking lot	PLot	873.93			67.8	97.2	0.0	0.0		0	Daytime 1/2	Typical spectrum	80.6	92.2	84.7	89.2	89.3	89.7	87.0	80.8	68.0
Flower Shop	PLot	55.90			68.5	86.0	0.0	0.0		0	Daytime	Typical spectrum	69.4	81.0	73.5	78.0	78.1	78.5	75.8	69.6	56.8
Gas Canopy	PLot	379.01			68.4	94.2	0.0	0.0		0	Gas Canopy	Typical spectrum	77.5	89.1	81.6	86.1	86.2	86.6	83.9	77.7	64.9
Parking EV	PLot	88.00			66.6	86.0	0.0	0.0		0	Daytime	Typical spectrum	69.4	81.0	73.5	78.0	78.1	78.5	75.8	69.6	56.8
Retail Parking	PLot	245.25			69.8	93.7	0.0	0.0		0	Daytime	Typical spectrum	77.1	88.7	81.2	85.7	85.8	86.2	83.5	77.3	64.5

Appendix C:

FHWA Roadway Noise Modeling Worksheets

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT: L&G Market
ROADWAY: 50th Ave
LOCATION: EXISTING

JOB #: 0741-2024-001
DATE: 29-Mar-24
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	11,424	
SPEED =	50	
PK HR % =	10	
NEAR LANE/FAR LANE DIS	30	
ROAD ELEVATION =	0.0	
GRADE =	0.0	%
PK HR VOL =	1,142	

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5.0
WALL DISTANCE FROM RECEIVER		50
PAD ELEVATION =		0.0
ROADWAY VIEW:	LF ANGLE=	-90
	RT ANGLE=	90
	DF ANGLE=	180

SITE CONDITIONS

AUTOMOBILES =	10	(10 = HARD SITE, 15 = SOFT SITE)
MEDIUM TRUCKS =	10	
HEAVY TRUCKS =	10	

WALL INFORMATION

HTH WALL	0.0	
AMBIENT=	0.0	
BARRIER =	0	(0 = WALL, 1 = BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.755	0.140	0.104	0.9200
MEDIUM TRUCK	0.480	0.020	0.500	0.0300
HEAVY TRUCKS	0.480	0.020	0.500	0.0500

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	47.79	- -
MEDIUM TRUCKS	4.0	47.71	- -
HEAVY TRUCKS	8.0	47.79	0.00

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	69.2	67.2	65.9	59.8	68.2	68.9
MEDIUM TRUCKS	62.0	58.0	50.2	59.4	65.6	65.6
HEAVY TRUCKS	68.4	64.4	56.7	65.9	72.0	72.1
NOISE LEVELS (dBA)	72.2	69.3	66.5	67.6	74.2	74.4

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	69.2	67.2	65.9	59.8	68.2	68.9
MEDIUM TRUCKS	62.0	58.0	50.2	59.4	65.6	65.6
HEAVY TRUCKS	68.4	64.4	56.7	65.9	72.0	72.1
NOISE LEVELS (dBA)	72.2	69.3	66.5	67.6	74.2	74.4

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	137	433	1370	4332
LDN	131	414	1310	4143

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT: L&G Market
ROADWAY: 50th Ave
LOCATION: EXISTING PLUS PROJECT

JOB #: 0741-2024-001
DATE: 29-Mar-24
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	13,692	
SPEED =	50	
PK HR % =	10	
NEAR LANE/FAR LANE DIS	30	
ROAD ELEVATION =	0.0	
GRADE =	0.0	%
PK HR VOL =	1,369	

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5.0
WALL DISTANCE FROM RECEIVER		50
PAD ELEVATION =		0.0
ROADWAY VIEW:	LF ANGLE=	-90
	RT ANGLE=	90
	DF ANGLE=	180

SITE CONDITIONS

AUTOMOBILES =	10	(10 = HARD SITE, 15 = SOFT SITE)
MEDIUM TRUCKS =	10	
HEAVY TRUCKS =	10	

WALL INFORMATION

HTH WALL	0.0	
AMBIENT=	0.0	
BARRIER =	0	(0 = WALL, 1 = BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.755	0.140	0.104	0.9200
MEDIUM TRUCK	0.480	0.020	0.500	0.0300
HEAVY TRUCKS	0.480	0.020	0.500	0.0500

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	47.79	- -
MEDIUM TRUCKS	4.0	47.71	- -
HEAVY TRUCKS	8.0	47.79	0.00

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.0	67.9	66.6	60.6	69.0	69.7
MEDIUM TRUCKS	62.8	58.8	51.0	60.2	66.4	66.4
HEAVY TRUCKS	69.2	65.2	57.4	66.7	72.8	72.8
NOISE LEVELS (dBA)	73.0	70.1	67.2	68.3	75.0	75.2

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.0	67.9	66.6	60.6	69.0	69.7
MEDIUM TRUCKS	62.8	58.8	51.0	60.2	66.4	66.4
HEAVY TRUCKS	69.2	65.2	57.4	66.7	72.8	72.8
NOISE LEVELS (dBA)	73.0	70.1	67.2	68.3	75.0	75.2

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	164	519	1642	5192
LDN	157	497	1570	4966

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT: L&G Market
ROADWAY: Jackson St
LOCATION: EXISTING

JOB #: 0741-2024-001
DATE: 29-Mar-24
ENGINEER C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	15,796	
SPEED =	50	
PK HR % =	10	
NEAR LANE/FAR LANE DIS	30	
ROAD ELEVATION =	0.0	
GRADE =	0.0	%
PK HR VOL =	1,580	

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5.0
WALL DISTANCE FROM RECEIVER		50
PAD ELEVATION =		0.0
ROADWAY VIEW:	LF ANGLE=	-90
	RT ANGLE=	90
	DF ANGLE=	180

SITE CONDITIONS

AUTOMOBILES =	10	(10 = HARD SITE, 15 = SOFT SITE)
MEDIUM TRUCKS =	10	
HEAVY TRUCKS =	10	

WALL INFORMATION

HTH WALL	0.0	
AMBIENT=	0.0	
BARRIER =	0	(0 = WALL, 1 = BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.755	0.140	0.104	0.9200
MEDIUM TRUCK	0.480	0.020	0.500	0.0300
HEAVY TRUCKS	0.480	0.020	0.500	0.0500

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	47.79	- -
MEDIUM TRUCKS	4.0	47.71	- -
HEAVY TRUCKS	8.0	47.79	0.00

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.6	68.6	67.3	61.2	69.6	70.3
MEDIUM TRUCKS	63.4	59.4	51.6	60.8	67.0	67.0
HEAVY TRUCKS	69.8	65.8	58.1	67.3	73.4	73.5
NOISE LEVELS (dBA)	73.7	70.8	67.9	69.0	75.6	75.8

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.6	68.6	67.3	61.2	69.6	70.3
MEDIUM TRUCKS	63.4	59.4	51.6	60.8	67.0	67.0
HEAVY TRUCKS	69.8	65.8	58.1	67.3	73.4	73.5
NOISE LEVELS (dBA)	73.7	70.8	67.9	69.0	75.6	75.8

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	189	599	1894	5990
LDN	181	573	1812	5729

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT: L&G Market
ROADWAY: Jackson St
LOCATION: EXISTING PLUS PROJECT

JOB #: 0741-2024-001
DATE: 29-Mar-24
ENGINEER C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	18,064	
SPEED =	50	
PK HR % =	10	
NEAR LANE/FAR LANE DIS	30	
ROAD ELEVATION =	0.0	
GRADE =	0.0	%
PK HR VOL =	1,806	

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5.0
WALL DISTANCE FROM RECEIVER		50
PAD ELEVATION =		0.0
ROADWAY VIEW:	LF ANGLE=	-90
	RT ANGLE=	90
	DF ANGLE=	180

SITE CONDITIONS

AUTOMOBILES =	10	(10 = HARD SITE, 15 = SOFT SITE)
MEDIUM TRUCKS =	10	
HEAVY TRUCKS =	10	

WALL INFORMATION

HTH WALL	0.0	
AMBIENT=	0.0	
BARRIER =	0	(0 = WALL, 1 = BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.755	0.140	0.104	0.9200
MEDIUM TRUCK	0.480	0.020	0.500	0.0300
HEAVY TRUCKS	0.480	0.020	0.500	0.0500

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	47.79	- -
MEDIUM TRUCKS	4.0	47.71	- -
HEAVY TRUCKS	8.0	47.79	0.00

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.2	69.1	67.8	61.8	70.2	70.9
MEDIUM TRUCKS	64.0	60.0	52.2	61.4	67.6	67.6
HEAVY TRUCKS	70.4	66.4	58.6	67.9	74.0	74.0
NOISE LEVELS (dBA)	74.2	71.3	68.4	69.5	76.2	76.4

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.2	69.1	67.8	61.8	70.2	70.9
MEDIUM TRUCKS	64.0	60.0	52.2	61.4	67.6	67.6
HEAVY TRUCKS	70.4	66.4	58.6	67.9	74.0	74.0
NOISE LEVELS (dBA)	74.2	71.3	68.4	69.5	76.2	76.4

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	217	685	2166	6850
LDN	207	655	2072	6551

Appendix D:

Construction Noise Modeling Output

Receptor - Residences to the East

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Edge of Site to Receptor, feet	Center of Site to Receptor, feet	Item Usage Percent[1]	Ground Factor[2]	Usage Factor	Receptor Item Lmax, dBA	Recptor. Item Leq, dBA
Demolition									
Concrete Saw	1	90	25	190	20	0.66	0.20	98.0	67.6
Dozer	1	82	25	190	40	0.66	0.40	90.0	62.6
							Log Sum	98.0	68.8
SITE PREP									
Grader	1	85	25	190	40	0.66	0.40	93.0	65.6
Tractor	1	84	25	190	40	0.66	0.40	92.0	64.6
Scraper	1	84	25	190	40	1.66	0.40	95.0	58.8
							Log Sum	95.0	68.6
GRADE									
Grader	1	85	25	190	40	0.66	0.40	93.0	65.6
Dozer	1	82	25	190	40	0.66	0.40	90.0	62.6
Tractor	2	84	25	190	40	0.66	0.40	92.0	64.6
								93.0	70.5
BUILD									
Crane	1	81	25	190	16	0.66	0.16	89.0	57.6
Man lift	2	75	25	190	20	0.66	0.20	83.0	52.6
Tractor	1	84	25	190	40	0.66	0.40	92.0	64.6
Generator	1	81	25	190	50	0.66	0.50	89.0	62.6
Welder/Torch	3	74	25	190	40	0.66	0.40	82.0	54.6
								92.0	68.1
PAVE									
Paver	1	77	25	190	50	0.66	0.50	85.0	58.6
Concrete Mixer Truck	1	79	25	190	40	0.66	0.40	87.0	59.6
Roller	2	80	25	190	20	0.66	0.20	88.0	57.6
Tractor	1	84	25	190	40	0.66	0.40	92.0	64.6
								92.0	67.5
ARCH COAT									
Compressor (air)	1	78	25	190	40	0.66	0.40	86.0	58.6
								86.0	58.6

[1]FHWA Construction Noise Handbook: Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Appendix E:

Construction Vibration Modeling Output

VIBRATION LEVEL IMPACT

Project:	L&G Market	Date: 3/29/24
Source:	Vibratory Roller	
Scenario:	Unmitigated	
Location:	Adjacent residences	
Address:	Jackson & 50th	

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

DATA INPUT

Equipment = Type	1	Vibratory Roller	INPUT SECTION IN BLUE
PPVref =	0.21	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 =	**0.210**	IN/SEC	OUTPUT IN RED