

#### **REPORT TO PLANNING COMMISSION**

To: Honorable Chair and Members of the Planning Commission

From: Damaris Abraham, Assistant Community Development Director

**Prepared by:** Carlos Serna, Associate Planner

Date: September 19, 2023

- **Subject:** Planning Application No. 2022-15 (Lake Pointe Apartments) Requesting to develop a 152-unit multi-family residential apartment complex with 336 parking spaces and related improvements on an 8.27-acre site
- Applicant: George Mears, Legacy Financial Group, LP

#### **Recommendation**

- Adopt A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF LAKE ELSINORE, CALIFORNIA, ADOPTING AN ADDENDUM TO MITIGATED NEGATIVE DECLARATION (MND NO. 2016-01, SCH NO. 2016071001) FOR PLANNING APPLICATION NO. 2022-15 (RESIDENTIAL DESIGN REVIEW NO. 2022-04);
- Adopt A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF LAKE ELSINORE, CALIFORNIA, ADOPTING FINDINGS THAT PLANNING APPLICATION NO. 2022-15 (RESIDENTIAL DESIGN REVIEW NO. 2022-04) IS CONSISTENT WITH THE WESTERN RIVERSIDE COUNTY MULTIPLE SPECIES HABITAT CONSERVATION PLAN; and
- 3. Adopt A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF LAKE ELSINORE, CALIFORNIA, APPROVING PLANNING APPLICATION NO. 2022-15 (RESIDENTIAL DESIGN REVIEW NO. 2022-04) PROVIDING BUILDING DESIGNS, PROJECT AMENITIES AND RELATED SITE IMPROVEMENTS FOR A 152-UNIT MULTI-FAMILY RESIDENTIAL APARTMENT COMPLEX LOCATED AT APN: 379-090-022.

#### Project Location

The proposed project is generally located northerly of Grand Avenue, southwesterly of Eisenhower Drive, on the westerly side of Riverside Drive, and adjacent to Lakeside High School, more specifically referred to as Assessor's Parcel Number (APN) 379-090-022.

	EXISTING LAND USE	GENERAL PLAN	ZONING
Project Site	Vacant	Residential Mixed Use (RMU)	Residential Mixed Use (RMU)
North	Vacant	Residential Mixed Use (RMU)	Residential Mixed Use (RMU)
South	RV Park	Recreational (R)	Recreational (R)
East	Shopping Center	Residential Mixed Use (RMU)	Residential Mixed Use (RMU)
West	High School	Public/Institutional (P/I)	Public/Institutional (P/I)
Table 1. Envi	ronmental Sett	ing	

#### **Environmental Setting**

Table 1: Environmental Setting

#### Background

On August 9, 2016, the City Council approved Mitigated Negative Declaration (MND) No. 2016-01 (SCH No. 2016071001) and Residential Design Review (RDR) No. 2014-05 for the Lake Pointe Apartments Project to develop a 150-unit multi-family residential apartment complex consisting of ten (10) individual buildings totaling 162,283 sq. ft., 336 total parking spaces with 152 covered parking spaces, an amenity area consisting of a clubhouse, pool, and tot-lot.

Between 2018 and 2020, RDR 2014-05 received City discretionary approvals totaling two (2) vears and an automatic legislative extension (AB 1561) totaling 1.5 years. RDR 2014-05 expired on February 9, 2022.

On June 22, 2022, the applicant submitted the subject application with a proposal to make minor changes to the original project which are summarized below:

- Building size reduction the new project reduces the size of the project from 162,283 sq. ft. to 158,786 sq. ft. (a 3,497 sq. ft. reduction from the original).
- Increase of density by two (2) dwelling units The project as originally approved included 150 units (18.13 du/ac), as proposed 152 units (18.4 du/ac).
- Change in unit types the unit types on the previous approval consisted of 34 1-bedroom. 88 2-bedroom, and 28 3-bedroom units. As proposed, the new unit types include 42 1bedroom (increase of 8 units), 88 2-bedroom (no change) and 22 3-bedroom units (decrease of 6 units).
- Changes to Architecture previously plans showed Spanish Colonial Architecture with one color, current proposal shows Spanish Monterey Architecture with two main colors.
- Changes to Site Plan the new site design keeps the same basic layout as the original approved plans with some notable differences. The primary access is now a driveway instead of a dedicated street and is still located adjacent to the shopping center to the north. The driveway from Riverside Drive terminates at a round-a-bout at the project midpoint, where the entrance is located. The entry feature has been enhanced to include a stamped concrete entrance, a gate kiosk/keypad and gated entrance, emergency access point and general circulation are similar to approved plans.

Detailed project description of the current proposal is provided below.

#### Project Description

Planning application No. 2022-15 (Residential Design Review No. 2022-04) proposes to develop a 152-unit multi-family residential apartment complex within eleven (11) buildings on the 8.27 acre site. The eleven (11) buildings are 158,786 sq. ft. in total and include nine (9) multi-family residential structures (two (2) three-story buildings and seven (7) two-story buildings), ranging in size from 8,544 sq. ft. to 25,632 sq. ft., a 2,212 sq. ft. clubhouse, and a 780 sq. ft. maintenance building. The project will provide 336 total parking spaces including152 covered parking spaces.

#### **On-site Amenities**

The project includes on-site recreational amenities located on both the north and south sides of the proposed Project. The 2,212 sq. ft. clubhouse building will house the leasing office, a conference room, multipurpose room, kitchen, pool equipment, and utility area. The pool will be located to the west of the clubhouse, which also includes an outdoor BBQ facility, cabanas, and a fireplace. The south side of the clubhouse will include an additional open space area and includes a patio trellis and sitting benches.

Building # and Building Type	Square Feet	1 Bedroom Units	2 Bedroom Units	3 Bedroom Units	Total Units
1 – Type A	8, <mark>544</mark>	-	8	-	8
2 – Type C	17,088	-	16	-	16
3 – Type B	15,272	8	8	-	16
4 – Type C	17,088	-	16	-	16
5 – Type C	17,088	-	16	-	16
6 – Type D	16,360	8	-	8	16
7 – Type F	25,632	-	24	-	24
8 – Type E	22,362	18	-	6	24
9 – Type D	16,360	8	-	8	16
Clubhouse	2,212	N/A	N/A	N/A	N/A
Maintenance	780	N/A	N/A	N/A	N/A
Totals	158,786	42	88	22	152

The building and unit breakdowns are shown in Table 2 below:

 Table 2: Building/Unit Breakdown

#### Floor Plans

The project includes one (1) to three (3) bedroom units distributed within the nine (9) residual buildings. Each unit will have common living areas, and a private patio or a private balcony. Three (3) floor plans are proposed as specified below:

*Plan 1*: 845 sq. ft. unit with 1 bedroom, 1 bathroom. *Plan 2*: 1,068 sq. ft. unit with 2 bedrooms, 2 bathrooms. *Plan 3*: 1,204 sq. ft. unit with 3 bedrooms, 3 bathrooms.

#### Architectural Design

The RMU zoning of the project site requires varied roofline heights. The project's buildings would range in height from 30' - 3 7/8" for the two-story buildings to 40 ft. for the three-story buildings. The clubhouse is 17' - 1 5/16" in height. The *Spanish Monterey Architectural* style was elected for the entirety of the project to enhance cohesion amongst the 11 buildings. The elevations feature concrete 'S' roof tile, tan or while stucco siding, shaped foam trim, and simulated stone veneer.

In addition, enhanced architectural treatments will be provided on all elevations including those that are visible from common areas and the public right-of-way.

#### Landscaping

The proposed landscaping plan has been designed to complement the architectural style and to conform to the water efficiency standards under Chapter 19.08 of the LEMC. The project boundary will be landscaped with drought tolerant shrubs and trees that will provide shaded areas and a defined border of the Project site. Trees will also be planted within the interior of the project site to break up the impervious areas and to provide shade within the parking areas.

#### Conceptual Wall and Fence Plan

Proposed walls and fencing consist of 6'-0" high wrought iron fence with stone pilasters located along Riverside Drive and the project's northerly boundary. A 6'-0" high CMU block wall will be provided along the project's western and southern boundary.

#### Site Access and Circulation

Access to the development will be provided by a full-access driveway on a newly constructed street at Riverside Drive on the north side of the project boundary. A two-way gated entrance is proposed at the new driveway which will also include an access easement for the adjoining 5-acre parcel located to the west of the project.

A secondary, gated emergency access (right-in/right out driveway) will be provided on the west side of the site exiting onto Riverside Drive, and a drive lane is proposed within the middle of the proposed project and the units will encircle the central parking areas and carports.

#### Street Improvements

Riverside Drive is classified as an Urban Arterial Highway in the General Plan, where full-width is 120 feet and curb-to-curb width is 96 ft. The applicant is required to dedicate in fee right-of-way of Riverside Drive adjacent to the property for a total right-of-way of 60 ft. from centerline to the project property line. Street improvements on Riverside Drive along the project site's frontage would include widened section of new AC pavement and base material, curb and gutter, sidewalks, parkway landscaping, utility undergrounding, utility relocations for street widening, streetlight relocations, and streetlight installations. Riverside Drive shall be restriped and widening shall include transition paving and striping to match existing conditions.

#### <u>Analysis</u>

#### General Plan Consistency

The project site has a General Plan Land Use Designation of Residential Mixed Use (RMU) and is located within the Lake Edge District. The intent of the RMU designation is to provide for a mix of residential and non-residential uses within a single proposed development area with an emphasis on high density residential uses. Uses such as retail, service, civic, and professional office are allowed in a subordinate capacity. Residential densities shall be between 19 and 24 dwelling units per net acre. The application proposes to construct 152 two-story attached residential units on an approximately 8.27-acre parcel at an approximate density of 21.1 dwelling units per net acre. The proposed multi-family residential development is consistent with the land use goals and policies of the General Plan and is therefore consistent with the General Plan.

#### Municipal Code Consistency

The current zoning for the project site is Residential Mixed Use (RMU). Per Section 17.86.020 (Table of land uses and glossary/definitions) of the RMU zone, apartment units are a permitted uses.

Staff has reviewed the proposed project for the relevant development standards as identified in the RMU zone, Section 17.86.100 (Mixed use development matrix) and has detailed the requirements and the proposed development standards as follows:

Development Standard	Required	Proposed
Predominant Use	Residential development is	100% Residential development
	required to be greater than 70	proposed on the entire 8.27-acre site
	% of the net lot area	
Floor Area Ratio	1.0:1 maximum	0.45:1
(FAR)		
Residential Density	19 to 24 dwelling units per	21.1 dwelling units per acre
	acre	

Setbacks	Street Front: 10-foot minimum Rear and side yard: None	Riverside Drive: 15 ft. Northern Driveway: 17 ft.
Building Height	Varied rooflines	Three-story Building.: 40 ft. Two-story Building: 30.32 ft. Clubhouse: 17.11 ft.

 Table 3: Development Standards

#### Parking Analysis

The project complies with the on-site parking standards listed in Chapter 17.148 (Parking Requirements) of the Lake Elsinore Municipal Code (LEMC) as outlined in Table 4 below:

Parking Standard	Required	Proposed
<ul> <li>2 or more bedrooms: 2.33 spaces (1 covered plus 1.33 open spaces)</li> <li>One bedroom: 1.66 spaces (1 covered plus 0.66 open space)</li> </ul>	152 covered 176 open	152 covered 184 open
	Total = 328	Total = 336

#### Table 4: Parking Standard

#### Design Review

The architectural design of the proposed building complies with the Residential Development Standards (Chapter 17.44) of the LEMC. The architecture of the building has been designed to achieve harmony and compatibility with the surrounding area. The colors and materials proposed will assist in blending the architecture into the existing landscape and are compatible with other colors and materials used on other properties near the project site. The proposed landscaping improvements enhance the building designs and soften building elevations' portions, providing shade and break-up pavement expanses.

The Design Review Committee, which includes staff from Planning, Building and Safety, Fire, and Engineering, has reviewed the proposed project, and have conditioned the project to ensure compliance with the general plan, the LEMC, and the related environmental document.

#### Environmental Determination

Pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15162, the project would not have a significant effect on the environment and no new environmental documentation is necessary because all potentially significant effects have been adequately analyzed in a previously adopted Mitigated Negative Declaration (MND No. 2016-01) prepared for the Project. MND No. 2016-01 (SCH No. 2016071001) was adopted by the City Council on August 9, 2016. Pursuant to CEQA Guidelines Section 15164, an Addendum providing minor additions and changes to MND No. 2016-01 has been prepared for the project and is included as Attachment 5 to this staff report. All potentially significant effects have been avoided or mitigated pursuant to MND No. 2016-01 (SCH No. 2016071001) and none of the conditions described in Section 15162 have occurred.

#### MSHCP Consistency

The project is consistent with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The project is not located within an MSHCP Criteria Cell area and therefore is not subject to Lake Elsinore Acquisition Process (LEAP) and Joint Project Review (JPR) requirements. The project complies with all other requirements of the MSHCP

#### Public Outreach

In October 2022 and September 2023, the applicant mailed advance notice of the development proposal to neighboring property owners within 300 feet of the project site.

#### Public Notice

Notice of the hearing for this application has been published in the Press-Enterprise newspaper and mailed to property owners within 300 feet of the subject property. As of the writing of this report, no written comments concerning this application have been received by staff.

#### <u>Attachments</u>

- Attachment 1 CEQA Resolution
- Attachment 2 MSHCP Resolution
- Attachment 3 RDR Resolution
- Attachment 4 Conditions of Approval
- Attachment 5 MND Addendum
- Attachment 6 GIS Package
- Attachment 7 Design Review Package
- Attachment 8 Public Notice Materials

#### RESOLUTION NO. 2023-\_\_\_

#### A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF LAKE ELSINORE, CALIFORNIA, ADOPTING AN ADDENDUM TO MITIGATED NEGATIVE DECLARATION (MND NO. 2016-01, SCH NO. 2016071001) FOR PLANNING APPLICATION NO. 2022-15 (RESIDENTIAL DESIGN REVIEW NO. 2022-04)

**Whereas**, George Mears, Legacy Financial Group, LP, has filed an application with the City of Lake Elsinore (City) requesting approval of Planning Application No. 2022-15 (Residential Design Review No. 2022-04) for the design and construction of a 152-unit multi-family residential apartment complex within nine (9) residential buildings including two (2) three-story buildings and seven (7) two-story buildings. The project also proposes a 2,212 sq. ft. clubhouse and a 780 sq. ft. maintenance building and other related site improvements on an 8.27-acre site located in the Residential Mixed Use Zoning District. The proposed project is generally located northerly of Grand Avenue, southwesterly of Eisenhower Drive, on the westerly side of Riverside Drive, and adjacent to Lakeside High School, more specifically referred to as Assessor's Parcel Number (APN) 379-090-022;

Whereas, the project is subject to the provisions of the California Environmental Quality Act (Public Resources Code §§ 21000, et seq.: "CEQA") and the State Implementation Guidelines for CEQA (14 California Code of Regulations Sections 15000, et seq.: "CEQA Guidelines") because the project involves an activity which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and involves the issuance of a lease, permit license, certificate, or other entitlement for use by one or more public agencies (Public Resources Code Section 21065);

**Whereas**, pursuant to CEQA, the City prepared a Mitigated Negative Declaration (MND No. 2016-01) to address the potential environmental impacts resulting from implementation of the Lake Pointe Apartments Project (RDR 2014-05);

**Whereas**, on August 9, 2016, the City Council (Council) adopted MND No. 2016-01 (SCH-No. 2016071001) and a corresponding Mitigation Monitoring and Reporting Program (MMRP);

**Whereas**, pursuant to CEQA Guidelines Section 15063, the City conducted an Initial Study to determine if the project would have a significant effect on the environment. The Initial Study revealed that the project would have potentially significant environmental impacts, but those potentially significant impacts could be mitigated to less than significant levels;

**Whereas**, based upon the results of the Initial Study (Environmental Review No. 2023-01), and based upon the standards set forth in CEQA Guidelines Section 15164, it was determined that it was appropriate to prepare an Addendum for the project;

**Whereas**, an Addendum to MND No. 2016-01 (SCH No. 2016071001) (Addendum) has been prepared to provide an evaluation of potential project-specific environmental effects that could result from the project in relation to the effects disclosed by MND No. 2016-01, and the Addendum concludes that the project would not result in new significant effects or increase the severity of any previously identified significant effects; PC Reso. No. 2023-\_\_\_\_ Page 2 of 3

**Whereas**, pursuant to CEQA Guidelines Section 15164(a), the Addendum includes necessary changes and additions to the MND necessary to assess project-specific environmental impacts; and

**Whereas**, on September 19, 2023, at a duly noticed Public Hearing, the Planning Commission (Commission) has considered evidence presented by the Community Development Department and other interested parties with respect to this item.

#### NOW, THEREFORE, THE PLANNING COMMISSION OF THE CITY OF LAKE ELSINORE DOES HEREBY RESOLVE, DETERMINE AND ORDER AS FOLLOWS:

**Section 1:** The Commission, based upon a thorough review of the proposed Addendum to MND No. 2016-01 and the evidence received to date, does determine as follows:

- 1. That in accordance with CEQA Guidelines Section 15162, the proposed project does not present substantial changes or reveal new information that would require subsequent or supplemental EIR analysis. However, some changes or additions to the information contained in the adopted MND is necessary in order to adequately evaluate the potential of environmental impacts resulting from the project. Pursuant to CEQA Guidelines Section 15164, an Addendum to MND No. 2016-01 has been prepared to provide an evaluation of potential project-specific environmental effects in comparison to those effects described in MND No. 2016-01, and concluded that the significant effects that would result from the project have been addressed in the previously adopted MND.
- 2. That the Addendum was prepared in compliance with the requirements of CEQA and the CEQA Guidelines.
- 3. That, based upon the evidence submitted and as demonstrated by the analysis included in the Addendum, none of the conditions described in Sections 15162 or 15163 of the CEQA Guidelines calling for the preparation of a subsequent or supplemental Environmental Impact Report or Negative Declaration have occurred; specifically:
  - a. There have not been any substantial changes with respect to the circumstances under which the proposed project is undertaken that require major revisions of the CEQA documents due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
  - b. There is no new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time MND No. 2016-01 was adopted, that shows any of the following:
    - i. The project will have one or more significant effects not discussed in MND No. 2016-01;
    - ii. Significant effects previously examined will be substantially more severe than shown in MND No. 2016-01;
    - iii. Mitigation measures or alternatives which are considerably different from those analyzed in MND No. 2016-01 would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measures or alternatives.

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<u>Section 2:</u> The Commission has evaluated all comments, written and oral, received from persons who have reviewed the Addendum. The Commission hereby finds and determines that all public comments have been addressed.

<u>Section 3:</u> The Commission hereby finds that the Addendum is adequate and has been completed in accordance with CEQA, the CEQA Guidelines, and City procedures concerning implementation of CEQA.

**Section 4:** Based upon the evidence presented and the above findings, the Commission hereby adopts the Addendum.

Section 5: This Resolution shall take effect immediately upon its adoption.

**Passed and Adopted** on this 19<sup>th</sup> day of September, 2023.

Michael Carroll, Chairman

Attest:

Damaris Abraham Assistant Community Development Director

STATE OF CALIFORNIA ) COUNTY OF RIVERSIDE ) ss. CITY OF LAKE ELSINORE )

I, Damaris Abraham, Interim Assistant Community Development Director of the City of Lake Elsinore, California, hereby certify that Resolution No. 2023-\_\_ was adopted by the Planning Commission of the City of Lake Elsinore, California, at a regular meeting held on September 19, 2023 and that the same was adopted by the following vote:

AYES: NOES: ABSTAIN: ABSENT:

> Damaris Abraham Assistant Community Development Director

#### RESOLUTION NO. 2023-\_\_\_

#### A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF LAKE ELSINORE, CALIFORNIA, ADOPTING FINDINGS THAT PLANNING APPLICATION NO. 2022-15 (RESIDENTIAL DESIGN REVIEW NO. 2022-04) IS CONSISTENT WITH THE WESTERN RIVERSIDE COUNTY MULTIPLE SPECIES HABITAT CONSERVATION PLAN

**Whereas**, George Mears, Legacy Financial Group, LP, has filed an application with the City of Lake Elsinore (City) requesting approval of Planning Application No. 2022-15 (Residential Design Review No. 2022-04) for the design and construction of a 152-unit multi-family residential apartment complex within nine (9) residential buildings including two (2) three-story buildings and seven (7) two-story buildings. The project also proposes a 2,212 sq. ft. clubhouse and a 780 sq. ft. maintenance building and other related site improvements on an 8.27-acre site located in the Residential Mixed Use Zoning District. The proposed project is generally located northerly of Grand Avenue, southwesterly of Eisenhower Drive, on the westerly side of Riverside Drive, and adjacent to Lakeside High School, more specifically referred to as Assessor's Parcel Number (APN) 379-090-022;

Whereas, Section 6.0 of the Multiple Species Habitat Conservation Plan (MSHCP) requires that all discretionary projects within a MSHCP Criteria Cell undergo the Lake Elsinore Acquisition Process (LEAP) and the Joint Project Review (JPR) to analyze the scope of the proposed development and establish a building envelope that is consistent with the MSHCP criteria;

**Whereas**, Section 6.0 of the MSHCP further requires that the City adopt consistency findings demonstrating that the proposed discretionary entitlement complies with the MSHCP Criteria Cell, and the MSHCP goals and objectives;

**Whereas**, pursuant to Section 17.415.050.E (Major Design Review) and of the LEMC, the Planning Commission (Commission) has the responsibility of reviewing and approving, conditionally approving, or denying design review applications; and

**Whereas**, on September 19, 2023, at a duly noticed Public Hearing the Commission has considered evidence presented by the Community Development Department and other interested parties with respect to this item.

#### NOW THEREFORE, THE PLANNING COMMISSION OF THE CITY OF LAKE ELSINORE DOES HEREBY RESOLVE, DETERMINE AND ORDER AS FOLLOWS:

<u>Section 1:</u> The Commission has considered the project and its consistency with the MSHCP prior to adopting Findings of Consistency with the MSHCP.

<u>Section 2:</u> That in accordance with the MSHCP, the Commission makes the following findings for MSHCP consistency:

1. The proposed development is a project under the City's MSHCP Resolution, and the City must make an MSHCP Consistency finding before approval.

The project site is not located within a MSHCP Criteria Cell. However, the property is within the Elsinore Plan Area and must be reviewed for consistency with the MSHCP "Plan Wide Requirements," including Section 6.1.2 Riparian/Riverine Areas and Vernal Pool Guidelines.

2. The project is subject to the City's LEAP and the Western Riverside County Regional Conservation Authority's (RCA) Joint Project Review (JPR) processes.

As stated above, the project site is not located within a Criteria Cell and therefore is not subject to LEAP and JPR procedures.

3. The project is consistent with the Riparian/Riverine Areas and Vernal Pools Guidelines.

According to the site reconnaissance survey by City Staff, no riparian/riverine areas or vernal pools were identified. Therefore, the project is consistent with the requirements for the Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools in Section 6.1.3 of the MSHCP, and no additional surveys or mitigation is required.

4. The project is consistent with the Protection of Narrow Endemic Plant Species Guidelines.

The project site is located outside the Narrow Endemic Plant Species Survey Areas as shown on Figure 6-1 of the MSHCP. Therefore, the project is consistent with the Protection of Narrow Endemic Plant Species Guidelines as set forth in Section 6.1.3 of the MSHCP and no additional surveys or mitigation is required.

5. The project is consistent with the Additional Survey Needs and Procedures.

The project site is not located within the Western Riverside County MSHCP Additional survey areas for amphibians, mammals, burrowing owl, or any special linkage areas. In addition, the project site is not located within the Western Riverside County MSHCP Criteria Area Plant Species Survey Area (CAPSSA) pursuant to Section 6.3.2 of the Western Riverside County MSHCP.

6. The project is consistent with the Urban/Wildlands Interface Guidelines.

The project site is not located within or adjacent to a Western Riverside County MSHCP Conservation Area; therefore, the project site is not required to address Section 6.1.4 of the Western Riverside County MSHCP.

7. The project is consistent with the Vegetation Mapping requirements.

There are no resources located on the project site requiring mapping as set forth in MSHCP Section 6.3.1. Therefore, the project is consistent with the Vegetation Mapping requirements.

8. The project is consistent with the Fuels Management Guidelines.

As stated above, the project site is completely surrounded by developed area. Therefore, the Fuels Management Guidelines as set forth in Section 6.4 of the MSHCP are not applicable to the project.

9. The project will be conditioned to pay the City's MSHCP Local Development Mitigation Fee.

A condition of approval has been added requiring payment of the City's MSHCP Local Development Mitigation Fee at the time of building permit issuance for the project.

10. The project is consistent with the MSHCP.

The project site is not within or adjacent to any MSHCP Criteria Cell or conservation areas, and, as described above, the Project complies and is consistent with the MSHCP.

**Section 3:** Based upon the evidence presented, both written and testimonial, and the above findings, the Commission hereby finds that the project is consistent with the MSHCP.

**Section 4:** This Resolution shall take effect immediately upon its adoption.

**Passed and Adopted** on this 19<sup>th</sup> day of September, 2023.

Michael Carroll, Chairman

Attest:

Damaris Abraham, Assistant Community Development Director PC Reso. No. 2023-\_\_\_ Page 4 of 4

STATE OF CALIFORNIA ) COUNTY OF RIVERSIDE ) ss. CITY OF LAKE ELSINORE )

I, Damaris Abraham, Interim Assistant Community Development Director of the City of Lake Elsinore, California, hereby certify that Resolution No. 2023-\_\_ was adopted by the Planning Commission of the City of Lake Elsinore, California, at a regular meeting held September 19, 2023 and that the same was adopted by the following vote:

AYES: NOES: ABSTAIN: ABSENT:

> Damaris Abraham, Assistant Community Development Director

#### **RESOLUTION NO. 2023-**

#### A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF LAKE ELSINORE, CALIFORNIA, APPROVING PLANNING APPLICATION NO. 2022-15 (RESIDENTIAL DESIGN REVIEW NO. 2022-04) PROVIDING BUILDING DESIGNS, PROJECT AMENITIES AND RELATED SITE IMPROVEMENTS FOR A 152-UNIT MULTI-FAMILY RESIDENTIAL APARTMENT COMPLEX LOCATED AT APN: 379-090-022

**Whereas**, George Mears, Legacy Financial Group, LP, has filed an application with the City of Lake Elsinore (City) requesting approval of Planning Application No. 2022-15 (Residential Design Review No. 2022-04) for the design and construction of a 152-unit multi-family residential apartment complex within nine (9) residential buildings including two (2) three-story buildings and seven (7) two-story buildings. The project also proposes a 2,212 sq. ft. clubhouse and a 780 sq. ft. maintenance building and other related site improvements on an 8.27-acre site located in the Residential Mixed Use Zoning District. The proposed project is generally located southwesterly of Eisenhower Drive, on the westerly side of Riverside Drive, and adjacent to Lakeside High School, more specifically referred to as Assessor's Parcel Number (APN) 379-090-022;

**Whereas**, pursuant to Section 17.415.050 (Major Design Review) of the Lake Elsinore Municipal Code (LEMC) the Planning Commission (Commission) has the responsibility of reviewing and approving, conditionally approving, or denying design review applications; and

**Whereas**, on September 19, 2023 at a duly noticed Public Hearing, the Commission has considered evidence presented by the Community Development Department and other interested parties with respect to this item.

#### NOW, THEREFORE, THE PLANNING COMMISSION OF THE CITY OF LAKE ELSINORE DOES HEREBY RESOLVE, DETERMINE AND ORDER AS FOLLOWS:

Section 1: The Commission has reviewed and analyzed the proposed project pursuant to the California Planning and Zoning Laws (Cal. Gov. Code §§ 59000 et seq.), the Lake Elsinore General Plan (GP), and the LEMC and finds and determines that the proposed project is consistent with the requirements of California Planning and Zoning Law and with the goals and policies of the GP and the LEMC.

Section 2: The Commission finds and determines that an Addendum to Mitigated Negative Declaration (MND) No. 2016-01 (SCH No. 2016071001) is necessary based upon the results of the Initial Study (Environmental Review No. 2023-01), and based upon the standards set forth in CEQA Guidelines Section 15164., Whereas all potentially significant effects have been adequately analyzed by both an earlier Mitigated Negative Declaration (MND) and its Addendum. All potentially significant impacts have been avoided or mitigated pursuant to the earlier MND and none of the conditions described in Section 15162 exist. MND No. 2016-01 (SCH No. 2016071001) was adopted in 2016 for the Project and evaluated environmental impacts that would result from development of the project area. The Addendum evaluated the potential environmental impacts pertaining to the minor changes made to the project total build out.

<u>Section 3:</u> That in accordance with Section 17.415.050.G of the LEMC, the Commission makes the following findings regarding Planning Application No. 2022-15 (Residential Design Review No. 2022-04):

1. The project, as approved, will comply with the goals and objectives of the General Plan and the zoning district in which the project is located.

The project site is in the Residential Mixed Use (RMU) General Plan designation. The intent of the RMU designation is to provide for a mix of residential and non-residential uses within a single proposed development area with an emphasis on high density residential uses. Uses such as retail, service, civic, and professional office are allowed in a subordinate capacity. Residential densities shall be between 19 and 24 dwelling units per net acre. The application proposes to construct 152 two-story attached residential units on an approximately 8.26 gross acres (7.21 acres net) at a density of 21.1 dwelling units per net acre. Therefore, the proposed multi-family residential development is consistent with the land use goals and policies of the General Plan and is therefore consistent with the General Plan.

2. The project complies with the design directives and all applicable provisions contained in the LEMC.

The project is appropriate to the site and surrounding developments. The architectural style proposed will create a distinctive street scene within the project site. Sufficient setbacks and onsite landscaping have been provided thereby creating interest and varying vistas. In addition, safe and efficient on-site circulation would be achieved.

3. Conditions and safeguards pursuant to Section 17.415.050.G.3 of the LEMC, including guarantees and evidence of compliance with conditions, have been incorporated into the approval of the project to ensure development of the property in accordance with the objectives of Section 17.415.050.

Pursuant to Section 17.415.050.E of the LEMC, the project was considered by the Planning Commission at a duly noticed Public Hearing held on September 19, 2023. The project, as reviewed and conditioned by all applicable City divisions, departments, and agencies, will provide a high-quality residential development within the surrounding community.

**Section 4:** Based upon the evidence presented and the above findings, the Commission hereby approves Planning Application No. 2022-15 (Residential Design Review No. 2022-04).

**Section 5:** This Resolution shall take effect immediately upon its adoption.

**Passed and Adopted** on this 19<sup>th</sup> day of September, 2023.

Michael Carroll, Chairman

PC Reso. No. 2023-\_\_\_\_ Page 3 of 3

#### Attest:

Damaris Abraham, Assistant Community Development Director

STATE OF CALIFORNIA ) COUNTY OF RIVERSIDE ) ss. CITY OF LAKE ELSINORE )

I, Damaris Abraham, Assistant Community Development Director of the City of Lake Elsinore, California, hereby certify that Resolution No. 2023-\_\_ was adopted by the Planning Commission of the City of Lake Elsinore, California, at a regular meeting held September 19, 2023 and that the same was adopted by the following vote:

AYES: NOES: ABSTAIN: ABSENT:

> Damaris Abraham, Assistant Community Development Director

#### **CONDITIONS OF APPROVAL**

PROJECT: PROJECT NAME: PROJECT LOCATION: APPROVAL DATE: EFFECTIVE DATE: EXPIRATION DATE: PA 2022-15 | RDR 2022-04 Lakepointe Apartments APNs: 379-090-022

#### **GENERAL**

- Planning Application No. 2022-15 (Residential Design Review No. 2022-04) proposes the design and construction of a 152-unt multi-family residential apartment complex within nine (9) residential buildings including two (2) three-story buildings and seven (7) two-story buildings. The project also proposes a 2,212 sq. ft. clubhouse and a 780 sq. ft. maintenance building and other related site improvements on an 8.27-acre site located in the Residential Mixed Use Zoning District. The proposed project is generally located northerly of Grand Avenue, southwesterly of Eisenhower Drive, on the westerly side of Riverside Drive, and adjacent to Lakeside High School, more specifically referred to as Assessor's Parcel Number (APN) 379-090-022.
- 2. The applicant shall defend (with counsel acceptable to the City), indemnify, and hold harmless the City, its Officials, Officers, Employees, Agents, and its Consultants (Indemnitees) from any claim, action, or proceeding against the Indemnitees to attack, set aside, void, or annul an approval of the City, its advisory agencies, appeal boards, or legislative body concerning approval, implementation and construction of RDR 2022-04, which action is bought within the time period provided for in California Government Code Sections 65009 and/or 66499.37, and Public Resources Code Section 21167, including the approval, extension or modification of RDR 2022-04 or any of the proceedings, acts or determinations taken, done, or made prior to the decision, or to determine the reasonableness, legality or validity of any condition attached thereto. The Applicant's indemnification is intended to include, but not be limited to, damages, fees and/or costs awarded against or incurred by Indemnitees and costs of suit, claim or litigation, including without limitation attorneys' fees, penalties and other costs, liabilities and expenses incurred by Indemnitees in connection with such proceeding. The City will promptly notify the applicant of any such claim, action, or proceeding against the City. If the project is challenged in court, the City and the applicant shall enter into formal defense and indemnity agreement, consistent with this condition.
- 3. Within 30 days of project approval, the applicant shall sign and complete an "Acknowledgment of Conditions" and shall return the executed original to the Community Development Department for inclusion in the case records.
- 4. The applicant shall submit a check for \$2,814.00 made payable to the County of Riverside for the filing of a Notice of Determination. The check shall be submitted to the Planning Division for processing within 48 hours of the project's approval.

#### PLANNING DIVISION

- 5. <u>Residential Design Review No. 2022-04</u> shall lapse and become void two years following the date on which the design review became effective, unless one of the following: (1) prior to the expiration of two years, a building permit related to the design review is issued and construction commenced and diligently pursued toward completion; or (2) prior to the expiration of two years, the applicant has applied for and has been granted an extension of the design review approval pursuant to subsections (1) and (2) of Lake Elsinore Municipal Code (LEMC) Section 17.415.050.I.1. Notwithstanding conditions to the contrary, a design review granted pursuant to LEMC Section 17.415.050.I.2 shall run with the land for this two-year period, subject to any approved extensions, and shall continue to be valid upon a change of ownership of the site, which was the subject of the design review application.
- 6. Prior to the issuance of a building permit, the applicant shall obtain and submit a "Will Serve" letter from Elsinore Valley Municipal Water District to the Director of Community Development. The "will serve" letter shall specifically indicate the specific water flow volumes for both domestic and fire protection water supply.
- 7. The applicant shall provide all project-related on-site and off-site improvements as required by these Conditions of Approval.
- 8. All Conditions of Approval shall be reproduced on page one of building plans prior to their acceptance by the Building and Safety Division, Community Development Department. All Conditions of Approval shall be met prior to the issuance of a Certificate of Occupancy.
- 9. All site improvements shall be constructed as indicated on the approved site plan and elevations. The applicant shall meet all required development standards as set forth in the Lake Elsinore Municipal Code (LEMC). Any other revisions to the approved site plan or building elevations shall be subject to the review of the Community Development Director or his designee. All plans submitted for Building Division Plan Check shall conform to the submitted plans as modified by these conditions of approval.
- 10. All materials and colors depicted on the approved plans shall be used. If the applicant wishes to modify any of the approved materials or colors depicted on the plans, the applicant shall submit a proposal setting forth the modifications for review by the Community Development Director or his designee.
- 11. All future development proposals shall be reviewed by the City on a project-by-project basis. If determined necessary by the Community Development Director or designee, additional environmental analysis will be required.
- 12. The Applicant shall comply with all applicable City codes and ordinances.
- 13. A cash bond of \$1,000.00 shall be required for any construction trailers placed on the site and used during construction. Bonds will be released after removal of trailers and restoration of the site to a state acceptable to and approved by the Community Development Director or his designee.
- 14. The Applicant shall comply with the City's Noise Ordinance. Construction activity shall be limited to the hours of 7:00 AM to 5:00 PM, Monday through Friday, and no construction activity shall occur on Saturdays, Sundays, or legal holidays.

- 15. Any exterior air conditioning or other mechanical equipment shall be ground mounted and screened so as to be invisible from neighboring property or public streets. Air conditioning units and related equipment may not encroach more than two feet (2') into the required minimum side yard setback.
- 16. Prior to issuance of a building permit, one (1) digital set of the Final Landscaping / Irrigation Detail Plans shall be submitted with appropriate fees to the Community Development Department for review and approval by the Community Development Director or his designee.
  - a) All planting areas shall have permanent and automatic sprinkler system with 50% plant coverage using a drip irrigation method.
  - b) All planting areas shall be separated from paved areas with a six inch (6") high and six inch (6") wide concrete curb. Runoff shall be allowed from paved areas into landscape areas. Planting within fifteen feet (15') of ingress/egress points shall be no higher than twenty-four inches (24").
  - c) Landscape planters shall be planted with an appropriate parking lot shade tree pursuant to the LEMC and Landscape Design Guidelines.
  - d) No required tree planting bed shall be less than 5 feet wide.
  - e) Root barriers shall be installed for all trees planted within 10 feet of hardscape areas to include sidewalks.
  - f) Any transformers and mechanical or electrical equipment shall be indicated on landscape plan and screened as part of the landscaping plan.
  - g) The landscape plan shall provide for ground cover, shrubs, and trees and meet all requirements of the City's adopted Landscape Guidelines.
  - h) All landscape improvements shall be bonded 100% for material and labor for two years from installation sign-off by the City. Release of the landscaping bond shall be requested by the applicant at the end of the required two years with approval/acceptance reviewed by the Landscape Consultant and approved by the Community Development Director or Designee.
  - i) All landscaping and irrigation shall be installed within affected portion of any phase at the time a Certificate of Occupancy is requested for any building.
  - j) Final landscape plan must be consistent with approved site plan.
  - k) Final landscape plans to include planting and irrigation details.
  - I) Final landscape plans shall include drought tolerant planting consistent with Elsinore Valley Municipal Water District standards subject to plan check and approval by the City's landscape plan check consultant.
  - m) No front-yard grass turf shall be permitted.
- 17. Walls or fencing adjacent to the public right-of-way shall be constructed of decorative masonry block wall (e.g., split-face block) pursuant to LEMC 17.44.080. Wrought iron or combination block and wrought iron fencing may be utilized upon review and approval of the Community Development Director.

- 18. All walls and/or fencing shall not be located on the property line. If the applicant proposes to place any walls and/or fencing on the property line, he/she must submit a notarized agreement between the subject project owners to the Planning Department prior to installing the fence.
- 19. The building address shall be a minimum of four inches (4") high and shall be easily visible from the public right-of-way. Care shall be taken to select colors and materials that contrast with building walls or trim.
- 20. Any planting within fifteen feet (15') of ingress/egress points shall be no higher than thirtysix inches (36") above grade.
- 21. For multiple-family development, laundry facilities shall be provided as required by the Lake Elsinore Municipal Code.
- 22. The applicant shall satisfy all conditions of approval prior to the issuance of a Certificate of Occupancy and release of utilities.
- 23. If any of the conditions of approval set forth herein fail to occur, or if they are, by their terms, to be implemented and maintained over time, if any of such conditions fail to be so implemented and maintained according to their terms, the City shall have the right to revoke or modify all approvals herein granted, deny or further condition issuance of all future building permits, deny, revoke, or further condition all certificates of occupancy issued under the authority of approvals herein granted; record a notice of violation on the property title; institute and prosecute litigation to compel their compliance with said conditions or seek damages for their violation.

#### BUILDING DIVISION

#### General Conditions

- 24. <u>Final Building and Safety Conditions</u>. Final Building and Safety Conditions will be addressed when building construction plans are submitted to Building and Safety for review. These conditions will be based on occupancy, use, the California Building Code (CBC), and related codes which are enforced at the time of building plan submittal.
- 25. <u>Compliance with Code</u>. All design components shall comply with applicable provisions of the 2022 edition of the California Building, Plumbing and Mechanical Codes: 2022 California Electrical Code; California Administrative Code, 2022 California Energy Codes, 2022 California Green Building Standards, California Title 24 Disabled Access Regulations, and Lake Elsinore Municipal Code.
- 26. <u>Disabled Access</u>. Applicant shall provide details of all applicable disabled access provisions and building setbacks on plans to include:
  - a. All ground floor units to be adaptable.
  - b. Disabled access from the public way to the entrance of the building.
  - c. Van accessible parking located as close as possible to the main entry.
  - d. Path of accessibility from parking to furthest point of improvement.
  - e. Path of travel from public right-of-way to all public areas on site, such as clubhouse, trach enclosure tot lots and picnic areas.

- 27. <u>Street Addressing</u>. Applicant must obtain street addressing for all proposed buildings by requesting street addressing and submitting a site plan for commercial or multi-family residential projects or a recorded final map for single- family residential projects. It takes 10 days to issue address and notify other agencies. Please contact Sonia Salazar at <u>ssalazar@lake-elsinore.org</u> or 951-674-3124 X 277.
- 28. <u>Clearance from LEUSD</u>. A receipt or clearance letter from the Lake Elsinore School District shall be submitted to the Building and Safety Department evidencing the payment or exemption from School Mitigation Fees.
- 29. <u>Obtain Approvals Prior to Construction</u>. Applicant must obtain all building plans and permit approvals prior to commencement of any construction work.
- 30. <u>Obtaining Separate Approvals and Permits</u>. Trash enclosures, patio covers, light standards, and any block walls will require separate approvals and permits.
- 31. <u>Sewer and Water Plan Approvals</u>. On-site sewer and water plans will require separate approvals and permits. Septic systems will need to be approved from Riverside County Environmental Health Department before permit issuance.
- 32. <u>House Electrical Meter</u>. Applicant shall provide a house electrical meter to provide power for the operation of exterior lighting, irrigation pedestals and fire alarm systems for each building on the site. Developments with single user buildings shall clearly show on the plans how the operation of exterior lighting and fire alarm systems when a house meter is not specifically proposed.

#### At Plan Review Submittal

# The Applicant must submit Grading Plans to the Engineering Department prior to submitting plans to the Building Division. Building will not accept plans if they have not been submitted to Engineering first.

- 33. <u>Submitting Plans and Calculations</u>. Applicant must submit to Building and Safety online portal for electronic plan check and permitting:
  - a. An electrical plan including load calculations and panel schedule, plumbing schematic, and mechanical plan applicable to scope of work.
  - b. A Sound Transmission Control Study in accordance with the provisions of the Section 5.507, of the 2019 edition of the California Green Code.
  - c. A precise grading plan to verify accessibility for the persons with disabilities.
  - d. Truss calculations that have been stamped by the engineer of record of the
  - e. building and the truss manufacturer engineer.

#### Prior to Issuance of Grading Permit(s)

- 34. <u>Onsite Water and Sewer Plans</u>. Onsite water and sewer plans, submitted separately from the building plans, shall be submitted to Building and Safety for review and approval.
- 35. <u>Demolition Permits.</u> A demolition permit shall be obtained if there is an existing structure to be removed as part of the project. Asbestos report and lead base paint reports are required before demo permit will be issued.

#### Prior to Issuance of Building Permit(s)

36. <u>Plans Require Stamp of Registered Professional</u>. Applicant shall provide appropriate stamp of a registered professional with original signature on the plans. Provide C.D. of approved plans to the Building Division.

#### Prior to Beginning of Construction

37. <u>Pre-Construction Meeting.</u> A pre-construction meeting is required with the building inspector prior to the start of the building construction.

#### ENGINEERING DEPARTMENT

#### **GENERAL**

- 38. All new submittals for plan check or permit shall be made using the City's online Citizen Service Portal (<u>CSSP</u>).
- 39. All engineering plans shall be prepared by a registered Civil Engineer using the City's standard title block.
- 40. All required soils, geology, seismic, and hydrology and hydraulic reports shall be prepared by a registered Civil Engineer and Soils Engineer, as applicable.
- 41. All slopes and landscaping within the public right-of-way shall be maintained by the property owner, owner's association, firms contracted by the property owner's association, or another maintenance entity approved by the City Council.
- 42. All open space and slopes except for public parks and schools and flood control district facilities, outside the public right-of-way shall be owned and maintained by the property owner or property owner's association.
- 43. Any portion of a drainage system that conveys runoff from open space shall be installed within a drainage easement.
- 44. Any grading that affects "waters of the United States", wetlands or jurisdictional streambeds, shall require approval and necessary permits from respective Federal and/or State Agencies.
- 45. In accordance with the City's Franchise Agreement for waste disposal & recycling, the applicant shall be required to contract with CR&R, Inc. for removal and disposal of all waste material, debris, vegetation and other rubbish generated both during cleaning, demolition, clear and grubbing or all other phases of construction and during occupancy.
- 46. Applicant shall submit a detailed hydrology and hydraulic study for review for the sufficient containment and conveyance of the storm water to a safe and adequate point as approved by the City Engineer.
- 47. The site will accommodate all construction activity, building activity, vehicles, etc. No staging on public streets, or private property belonging to others shall be conducted without the written permission of the property owner.

- 48. Minimum good housekeeping and erosion and sediment control Best Management Practices (BMPs) as identified by the City shall be implemented.
- 49. Applicant shall install permanent benchmarks to Riverside County Standards and at locations to be determined by the City Engineer.

#### <u>FEES</u>

- 50. Applicant shall pay all applicable permit application and Engineering assessed fees, including without limitation plan check and construction inspection fees, at the prevalent rate at time of payment in full.
- 51. Applicant shall pay all applicable Mitigation and Development Impact Fees at the prevalent rate at time of payment in full. Fees are subject to change. Mitigation and Development Impact Fees include without limitation:
  - a. Master Plan of Drainage Fee Due prior to grading permit issuance.
  - b. Traffic Infrastructure Fee (TIF) Due prior to building permit issuance.
  - c. Transportation Uniform Mitigation Fee (TUMF) Due prior to occupancy.
  - d. Stephen's Kangaroo Rat Mitigation Fee (K-Rat) Due prior to grading permit issuance.

#### LAND DIVISION

52. Applicant shall dedicate in fee right-of-way of Riverside Drive adjacent to the property for a total right-of-way of 60 feet from centerline to the project property line. Riverside Drive is classified as an Urban Arterial Highway in the City's General Plan, where full-width is 120 feet and curb-to-curb width is 96 feet.

#### STORM WATER MANAGEMENT / POLLUTION PREVENTION / NPDES

#### <u>Design</u>

- 53. The project is responsible for complying with the Santa Ana Region National Pollutant Discharge Elimination System (NPDES) Permits as warranted based on the nature of development and/or activity.
- 54. A Final Water Quality Management Plan (WQMP) shall be prepared using the Santa Ana Region 8 approved template and guidance and submitted for review and approval to the City. The Final WQMP shall be approved by the City prior to any permit for construction.
- 55. The Final WQMP shall document the following:
  - a. Detailed site and project description.
  - b. Potential stormwater pollutants.
  - c. Post-development drainage characteristics.
  - d. Low Impact Development (LID) BMP selection and analysis.
  - e. Structural and non-structural source control BMPs.
  - f. Treatment Control BMPs.
  - g. Site design and drainage plan (BMP Exhibit).

- h. Documentation of how vector issues are addressed in the BMP design, operation and maintenance.
- i. GIS Decimal Minute Longitude and Latitude coordinates for all LID and Treatment Control BMP locations.
- j. Hydraulic Conditions of Concern (HCOC) demonstrate that discharge flow rates, velocities, duration and volume for the post construction condition from a 2-year, 24-hour rainfall event will not cause adverse impacts on downstream erosion and receiving waters, or measures are implemented to mitigate significant adverse impacts downstream public facilities and water bodies. Evaluation documentation shall include pre- and post-development hydrograph volumes, time of concentration and peak discharge velocities, construction of sediment budgets, and a sediment transport analysis. If HCOC applies, the project shall implement measures to limit disturbance of natural water bodies and drainage impacts from urban runoff (<u>Note the facilities may need to be larger due to flood mitigation for the 10-year, 6- and 24-hour rain events</u>).
- k. Operations and Maintenance (O&M) Plan and Agreement (using City approved form) as well as documentation of formation of funding district for long term maintenance costs.
- 56. Parking lot landscaping areas shall be designed to provide for treatment, retention or infiltration of runoff.
- 57. Project hardscape areas shall be designed and constructed to provide for drainage into adjacent landscape.
- 58. Project trash enclosure shall be covered, bermed, and designed to divert drainage from adjoining paved areas and regularly maintained.
- 59. If CEQA identifies resources requiring Clean Water Act Section 401 Permitting, the applicant shall obtain certification through the Santa Ana Regional Water Quality Control Board and provide a copy to the Engineering Department.
- 60. All storm drain inlet facilities shall be appropriately marked "Only Rain in the Storm Drain" using the City authorized marker.
- 61. The project shall use either volume-based and/or flow-based criteria for sizing BMPs in accordance with NPDES Permit Provision XII.D.4.
- 62. The project site shall implement full trash capture methods/devices approved by the Regional Water Quality Control Board. This shall include installation of connector pipe screens on all onsite and offsite catch basins to which the project discharges.

#### **Construction**

- 63. A Storm Water Pollution Prevention Plan (SWPPP) (as required by the NPDES General Construction Permit) and compliance with the Green Building Code for sediment and erosion control are required for this project.
- 64. Prior to grading or building permit for construction or demolition and/or weed abatement activity, projects subject to coverage under the NPDES General Construction Permit shall

demonstrate that compliance with the permit has been obtained by providing a copy of the Notice of Intent (NOI) submitted to the State Water Resources Control Board and a copy of the notification of the issuance of a Waste Discharge Identification (WDID). A copy of the SWPPP shall be kept at the project site, updated, and be available for review upon request.

65. Erosion & Sediment Control – Prior to the issuance of any grading or building permit for construction or demolition, the applicant shall submit for review and approval of an Erosion and Sediment Control Plan as a separate sheet of the grading plan submittal to demonstrate compliance with the City's NPDES Program and state water quality regulations for grading and construction activities. A copy of the plan shall be incorporated into the SWPPP, kept updated as needed to address changing circumstances of the project site, be kept at the project site, and available for review upon request.

#### Post-Construction

- 66. Prior to the issuance of a certificate of use and/or occupancy, the applicant shall demonstrate compliance with applicable NPDES permits for construction, industrial/commercial, MS4, etc. to include:
  - a. Demonstrate that the project has compiled with all non-structural BMPs described in the project's WQMP.
  - b. Provide signed, notarized certification from the Engineer of Work that the structural BMPs identified in the project's WQMP are installed in conformance with approved plans and specifications and operational.
  - c. Submit a copy of the fully executed, recorded City approved Operations and Maintenance (O&M) Plan and Agreement for all structural BMPs.
  - d. The Operation and Maintenance (O&M) Plan and Agreement shall: (1) describe the long-term operation and maintenance requirements for BMPs identified in the BMP Exhibit; (2) identify the entity that will be responsible for long-term operation and maintenance of the referenced BMPs; (3) describe the mechanism for funding the long-term operation and maintenance of the referenced BMPs; and (4) provide for annual certification for water quality facilities by a Registered Civil Engineer. The City format shall be used.
  - e. Provide documentation of annexation into a CFD for funding facilities to be maintained by the City.
  - Demonstrate that copies of the project's approved WQMP (with recorded O&M Plan attached) are available for each of the initial occupants.
  - g. Agree to pay for a Special Investigation from the City of Lake Elsinore for a date twelve (12) months after the issuance of a Certificate of Use and/or Occupancy for the project to verify compliance with the approved WQMP and O&M Plan. A signed/sealed certification from the Engineer of Work dated 12 months after the Certificate of Occupancy will be considered in lieu of a Special Investigation by the City.
  - h. Provide the City with a digital .pdf copy of the Final WQMP.

#### **UTILITIES**

67. All arrangements for relocation of utility company facilities (power poles, vaults, etc.) out of the roadway shall be the responsibility of the applicant, property owner, and/or his agent. Overhead utilities (34.5 kV or lower) shall be undergrounded (LEMC Section 16.64).

- 68. Underground water rights shall be dedicated to the City pursuant to the provisions of Section 16.52.030 in the Lake Elsinore Municipal Code (LEMC), and consistent with the City's agreement with the Elsinore Valley Municipal Water District.
- 69. Applicant shall apply for, obtain and submit to the City Engineering Department a letter from Southern California Edison (SCE) indicating that the construction activity will not interfere with existing SCE facilities. Non-Interference Letter (NIL) shall be provided prior to issuance of grading permit.
- 70. Submit a "Will Serve" letter to the City Engineering Department from the applicable water agency stating that water and sewer arrangements have been made for this project and specify the technical data for the water service at the location, such as water pressure, volume, etc. Will Serve letters shall be provided prior to issuance of grading permit.

#### **IMPROVEMENTS**

- 71. Applicant shall implement traffic mitigation measures identified in the Traffic Impact Analysis by RFK Engineering Group, Inc., dated January 7, 2021, as specified in Section 7, Findings and Recommendations.
- 72. Project will be responsible for the following improvements:
  - a. Construction of ultimate half-width street improvements adjacent to the project frontage on Riverside Drive (120-foot right-of-way). Improvements shall include widened section of new AC pavement and base material, curb and gutter, sidewalks, parkway landscaping, utility undergrounding, utility relocations for street widening, streetlight relocations, and streetlight installations. Riverside Drive shall be restriped and widening shall include transition paving and striping to match existing conditions.
  - b. Construction of driveway approaches per California Department of Transportation and City of Lake Elsinore approved standards.
  - c. Modification of existing and installation of new signing striping for required improvements. The project shall be responsible for any additional paving and/or striping removal resulting by the striping plan.
  - d. Construction of ADA compliant curb ramps on the proposed corners of the property along Riverside Drive.
  - e. Relocate existing signal along Riverside Drive property frontage to accommodate ultimate half-width improvements.
  - f. Reconstruct and realign the cross gutters along Riverside Drive affected by the ultimate half-width curb alignment.
  - i. Coordination with the adjacent school is required prior to construction.
  - g. Construct cross gutter and curb return along the private road entrance from Riverside Drive. Taper cross gutter to align with the existing curb line.
- 73. Sight distance into and out and throughout the project location shall comply with Caltrans

standards. Project shall ensure facilities are installed outside the line of sight of drivers.

- 74. Project will be responsible to design and install streetlights on Riverside Drive and the private road. Streetlight system shall be designed as LS-2B system. Streetlight plans shall include but are not limited to details such as location, pole and luminaire type, and pull box design. Streetlight plans may be included as part of the Street Improvement plan set.
- 75. 10-year storm runoff shall be contained within the curb and the 100-year storm runoff shall be contained within the street right-of-way. When either of these criteria are exceeded, drainage facilities shall be provided.
- 76. All drainage facilities in this project shall be constructed to Riverside County Flood Control District Standards.
- 77. A drainage study shall be provided. The study shall identify the following: identify storm water runoff from and upstream of the site; show existing and proposed off-site and on-site drainage facilities; and include a capacity analysis verifying the adequacy of the facilities. The drainage system shall be designed to ensure that runoff from a 10-year storm of 6 hours and 24 hours duration under developed condition is equal or less than the runoff under existing conditions of the same storm frequency. Both 6-hour and 24-hour storm duration shall be analyzed to determine the detention requirements to accomplish the desired results.
- 78. All natural drainage traversing the site shall be conveyed through the site, or shall be collected and conveyed by a method approved by the City Engineer. All off-site drainage, if different from historic flow, shall be conveyed to a public facility.
- 79. Existing capacity of affected California Department of Transportation's drainage systems cannot be exceeded. Should 100-year project runoff volumes be determined to exceed the maximum capacity of the existing State drainage facilities, construction of on-site detention basins, new drainage systems or other impact mitigation will be required.
- 80. All existing tributary areas, area drainage patterns and runoff volumes having an impact to adjacent SR-74 drainage facilities must be identified and analyzed in a project hydrology study.
- 81. Review of project drainage design will include an evaluation of runoff impacts to adjacent California Department of Transportation right of way. Where applicable, compliance with pertinent National Pollutant Discharge Elimination System (NPDES)/water quality standards will be required.
- 82. Ensure that "best management practices" (BMP's) used to treat site runoff entering California Department of Transportation comply with all applicable National Pollution Discharge Elimination System (NPDES) or State Regional Water Resources Board regulations.
- 83. Roof drains shall not be allowed to outlet directly through coring in the street curb. Roofs should drain to a landscaped area.
- 84. The site shall be planned and developed to keep surface water from entering buildings (California Green Building Standards Code 4.106.3).

Applicant's Initials: \_\_\_\_\_

- 85. All existing storm drain inlet facilities adjacent to the subject properties shall be retrofitted with a storm drain filter; all new storm drain inlet facilities constructed by this project shall include a storm drain filter.
- 86. A registered Civil Engineer shall prepare the improvements (for public and private), signing and striping, and traffic signal plans required for this project. Improvements shall be designed and constructed to City Standards and Codes (LEMC 12.04 and 16.34).

#### Permitting/Construction

- 87. An Encroachment Permit shall be obtained prior to any work on City right-of-way. The developer shall submit the permit application, required fees, and executed agreements, security and other required documentation prior to issuance.
- 88. An Encroachment Permit from California Department of Transportation shall be obtained prior to any work within California Department of Transportation right of way. Permit shall be obtained prior to issuance of City permits.
- 89. A landscape maintenance agreement with California Department of Transportation will be required and provided to the City of Lake Elsinore prior to issuance of City permits.
- 90. The rough/precise grading, drainage, landscape, and building plans shall be reviewed by the California Department of Transportation and the developer shall provide the City of Lake Elsinore written construction clearance.
- 91. Project drainage impacts affecting California Department of Transportation right of way should be identified and addressed prior to project approval.
- 92. All compaction reports, grade certification, monument certification (with tie notes delineated on 8 ½ X 11" Mylar) shall be submitted to the Engineering Department before final inspection of public works improvements will be scheduled and approved.

#### PRIOR TO GRADING PERMIT

- 93. A grading plan signed and stamped by a registered Civil Engineer shall be submitted for City review and approval for all addition and/or movement of soil (grading) on site. The plan shall include separate sheets for erosion control, haul route and traffic control. The grading submittal shall include all supporting documentation and be prepared using City standard title block, standard drawings, and design manual.
- 94. All grading plan contours shall extend to minimum of 50 feet beyond property lines to indicate existing drainage pattern.
- 95. The grading plan shall show that no structures, landscaping, or equipment are located near the project entrances that could reduce sight distance.
- 96. A Hydrology and Hydraulic Report shall be reviewed and approved prior to issuance of grading permits.
- 97. Applicant shall obtain all necessary off-site easements and/or permits for off-site grading and the applicant shall accept drainage from the adjacent property owners.

- 98. Applicant shall mitigate to prevent any flooding and/or erosion downstream caused by development of the site and/or diversion of drainage.
- 99. All natural drainage traversing the site (historic flow) shall be conveyed through the site in a manner consistent with the historic flow or to one or a combination of the following: to a public facility; accepted by adjacent property owners by a letter of drainage acceptance; or conveyed to an approved drainage easement.
- 100. Project grading impacts affecting California Department of Transportation right of way shall be identified and addressed with Caltrans prior to project approval.

#### Permitting/Construction

- 101. Applicant shall execute and submit grading and erosion control agreement, post grading security, and pay permit fees as a condition of grading permit issuance.
- 102. Any grading that affects "waters of the United States", wetlands or jurisdictional streambeds require approval and necessary permits from respective Federal and/or State Agencies.
- 103. No grading shall be performed without first having obtained a Grading Permit. A grading permit does not include the construction of retaining walls or other structures for which a Building Permit is required.
- 104. A preconstruction meeting with the City Engineering Inspector (Engineering Department) is required prior to commencement of any grading activity.
- 105. Hauling in excess of 5,000 cubic yards shall be approved by the City Council (LEMC 15.72.065). Prior to commencement of grading operations, applicant shall provide to the City a map of all proposed haul routes to be used for movement of export material. All such routes shall be subject to the review and approval. Haul route shall be submitted prior to issuance of a grading permit.
- 106. All grading shall be done under the supervision of a geotechnical engineer. Slopes steeper than 2 to 1 shall be evaluated for stability and proper erosion control and approved by the City.
- 107. Review and approval of the project sediment and erosion control plan shall be completed. As warranted, a copy of the current SWPPP shall be kept at the project site and be available for review upon request.
- 108. Approval of the project Final Water Quality Management Plan (WQMP) shall be received prior to issuance of a grading permit.
- 109. Applicant shall obtain applicable environmental clearance from the Planning Department and submit applicable clearance document to the Engineering Department. This approval shall specify that the project complies with all required environmental mitigation triggered by the proposed grading activity.

#### PRIOR TO BUILDING PERMIT

- 110. Provide soils, geology and seismic report, including recommendations for parameters for seismic design of buildings and walls prior to building permit.
- 111. All public improvement plans shall be completed and approved.
- 112. Any dedications and easements shall be recorded with the recorded copy provided to the City prior to issuance of a building permit including without limitation an access easement providing access to APNs: 379-090-012, 013, and 023 starting from Riverside Drive that runs along the project's northerly edge.

#### PRIOR TO OCCUPANCY / FINAL APPROVAL / PROJECT CLOSEOUT

- 113. All public improvements shall be constructed in accordance with the approved plans prior to issuance of first occupancy.
- 114. Proof of acceptance of maintenance responsibility of slopes, open spaces, landscape areas, and drainage facilities shall be provided.
- 115. In the event of the damage to City roads from hauling or other construction related activity, applicant shall pay full cost of restoring public roads to the baseline condition.
- 116. All final studies and reports, final soil report showing compliance with recommendations, compaction reports, grade certifications, monument certification (with tie notes delineated on 8 ½ X 11" Mylar) shall be submitted in .tif format on a USB flash drive or electronically to the Engineering Department before final inspection will be scheduled.
- 117. All required public right-of-way dedications, easements, vacations, and easement agreement(s) shall be recorded with a recorded copy provided to the City prior to first occupancy.
- 118. Applicant shall pay all outstanding applicable processing and development fees prior to occupancy and/or final approval.
- 119. Applicant shall submit documentation pursuant to City's Security Release handout.
- 120. Applicant shall submit as-built all Engineering Department approved project plan sets. After City approval of paper copy, applicant is responsible for revising the original mylar plans. Once the original mylars have been approved, the developer shall provide the City with a digital copy of the "as-built" plans in .tif format.
- 121. Applicant shall provide AutoCAD and GIS Shape files of all Street and Storm Drain plans. All data must be in projected coordinate system: NAD 83 State Plane California Zone VI U.S. Fleet. All parts and elements of the designed system shall be represented discretely. Include in the attribute table basic data for each feature, such as diameter and length, as applicable, and for pipes include material (PVC, RCP, etc.) and slope.

#### CITY OF LAKE ELSINORE FIRE MARSHAL

122. The applicant/operator shall comply with all requirements of the Riverside County Fire

Department Lake Elsinore Office of the Fire Marshal. Questions should be directed to the Riverside County Fire Department, Lake Elsinore Office of the Fire Marshal at 130 S. Main St., Lake Elsinore, CA 92530. Phone: (951) 671-3124 Ext. 225.

- 123. If the project is to be constructed in phases, each phase of development must comply with all fire department requirements, including emergency vehicle access and water supply.
- 124. Hazardous Fire Area: this project is near a Very High Fire Hazard Severity Zone of Riverside County as shown on a map on file with the Clerk of the Board of Supervisors. As the State of California revises the High Fire Area maps, this project could be included in the VHFHSZ. Any building constructed within this zone must comply with the special construction provisions contained in the Lake Elsinore Municipal Code, California Fire Code, California Residential Code, and the California Building Code
- 125. The developer shall provide fire hydrants in accordance with the following:
  - a. Prior to placing any combustibles on site, provide an approved water source for firefighting purposes.
  - b. Prior to building permit issuance, submit plans to the water district for a water system capable of delivering fire flow as required by the California Fire Code and Fire Department standards. Fire hydrants shall be spaced in accordance with the California Fire Code. Hydrants must produce the required fire flow per the California Fire Code.
  - c. Required fire flow is estimated to be 2,124 GPM at 20 PSI for a 2-hour duration based on the 2109 California Fire Code and 25,632 square foot building area with Type V-B construction.
- 126. Prior to building permit issuance, install the approved water system, approved roads, and contact the Fire Department for a verification inspection.
- 127. All residential buildings and all other buildings 5,00 square feet and larger are required to have a fire sprinkler system per Lake Elsinore Municipal Code.
- 128. Gates must meet Fire Department standards at the time of building permit application. Current standards require that gates have a Knox rapid entry system, an infrared gate opener, and be set back up to 35 feet allow emergency vehicles to safely stop away from traffic flow.
- 129. California Fire Code requires fire department access to within 150 feet of all portions of all buildings. Where access exceeds 150 feet, mitigating measures or alternative materials and methods may be required. Mitigation require Fire Department approval prior to building permit issuance.

#### DEPARTMENT OF ADMINISTRATIVE SERVICES

#### Annex into CFD 2015-1 (Safety) Law Enforcement, Fire and Paramedic Services CFD

130. Prior to issuance of a grading permit, the applicant shall submit an application to the Department of Administrative Services to initiate the annexation process into the Community Facilities District No. 2015-2 (Maintenance Services) or current Community Facilities District in place at the time of annexation to fund the on-going operation and maintenance of the

public right-of-way landscaped areas and neighborhood parks to be maintained by the City and for street lights in the public right-of-way for which the City will pay for electricity and a maintenance fee to Southern California Edison, including parkways, street maintenance, open space and public storm drains constructed within the development and federal NPDES requirements to offset the annual negative fiscal impacts of the project. The annexation process shall be completed prior to issuance of the first certificate of occupancy for the project. Alternatively, the applicant may propose alternative financing mechanisms to fund the annual negative fiscal impacts of the project with respect to Maintenance Services. Applicant shall make a non-refundable deposit of \$15,000 or at the current rate in place at the time of annexation toward the cost of annexation, formation or other mitigation process, as applicable.

# Annex into the City of Lake Elsinore Community Facilities District No. 2015-2 (Maintenance Services)

131. Prior to issuance of a grading permit, the applicant shall submit an application to the Department of Administrative Services to initiate the annexation process into the Community Facilities District No. 2015-2 (Maintenance Services) or current Community Facilities District in place at the time of annexation to fund the on-going operation and maintenance of the public right-of-way landscaped areas and neighborhood parks to be maintained by the City and for street lights in the public right-of-way for which the City will pay for electricity and a maintenance fee to Southern California Edison, including parkways, street maintenance, open space and public storm drains constructed within the development and federal NPDES requirements to offset the annual negative fiscal impacts of the project. The annexation process shall be completed prior to issuance of the first certificate of occupancy for the project. Alternatively, the applicant may propose alternative financing mechanisms to fund the annual negative fiscal impacts of \$15,000 or at the current rate in place at the time of annexation toward the cost of annexation, formation or other mitigation process, as applicable.

#### MITIGATION MONITORING AND REPORTING PROGRAM

132. The applicant shall comply with all mitigation measures identified in the Mitigation Monitoring
 & Reporting Program for the Mitigated Negative Declaration (MND No. 2016-01; SCH No. 2016071001) prepared for the Project.

I hereby state that I acknowledge receipt of the approved Conditions of Approval for the above named project and do hereby agree to accept and abide by all Conditions of Approval as approved by the City Council of the City of Lake Elsinore on \_\_\_\_\_\_. I also acknowledge that all Conditions shall be met as indicated.

Date:	
Applicant's Signature:	
Print Name:	
Address:	
Phone Number:	

# ADDENDUM NO. 1 TO THE INITIAL STUDY / MITIGATED NEGATIVE DECLARATION NO. 2016-01 (SCH # 2016071001) LAKE POINTE APARTMENTS

Prepared for:

### **City of Lake Elsinore**

130 South Main Street Lake Elsinore, California 92530

Prepared by:

Tom Dodson & Associates P.O. Box 2307 San Bernardino, California 92406

Mitigated Negative Declaration Adopted: July 2016 Addendum No. 1 Completed: September 2023

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## PROJECT DESCRIPTION

## ADDENDUM NO. 1 TO THE LAKE POINTE APARTMENT PROJECT RDR 2022-15 INITIAL STUDY / NEGATIVE DECLARATION

## 1. PROJECT DESCRIPTION

## A. <u>2016 Approved Project</u>

In July 2016 the City of Lake Elsinore (City) approved the following project: Lake Pointe Apartment Project (Original Project) to allow development of a 150-unit apartment complex and associated recreational amenities on an approximate 8.27-acre site (APN 379-090-022), located in the City of Lake Elsinore. This site is located on Riverside Drive north of Grand Avenue, southwest of Eisenhower Drive, immediately north of Lakeside High School. See the attached aerial photo, Figure 1. An application for Residential Design Review, RDR 2014-05, was submitted to the City and an Initial Study/Mitigated Negative Declaration (MND 2016-01) was adopted by the City for this project. The proposed project was approved in July 2016.

In detail, the project proposed to construct ten individual buildings, size range between ~9,000 square feet (SF) and 22,000 SF as shown on Figure 2. The site footprint shown on Figure 2 shows the ten structures, the proposed parking areas in the center of the site, the amenity area (clubhouse, pool etc., and the proposed access road on the north side of the site. A total of 339 parking spaces will be provided, including 150 covered parking spaces. The Notice of Determination (NOD) for the Initial Study/Mitigated Negative Declaration (MND 2016-01) was posted in July 2016. The reader of this Addendum is referred to the attached copy of the IS/MND for this project (which is reproduced in Appendix 1) for a more detailed discussion of the approved project.

## B. <u>Proposed Modifications</u>

To date the project site has not been developed and the land was recently purchased by the Legacy Financial Group, LP (Legacy). Legacy has redesigned the site plan with the new development plan shown on Figure 3. An application for Residential Design Review, RDR 2022-15, was submitted to the City for processing. The number of buildings has been reduced from 10 to 9 and the number of units has been increased from 150 to 152 (an increase of two units). The access roadway has been redesigned and an access easement has been included in the site plan to access the 5-acre property west of the project site. The number of parking spaces has been reduced by 3 from 339 to 336 overall spaces, and several electric vehicle charging spaces have been included in the design. Refer to Figure 3. The project amenities have been included at the same location as in the 2016 design, and the bio-retention basin is also at the same site as in the 2016 site design.

In summary, the 2022 project consists of a new apartment complex that would install 152 apartment units on the 8.27-acre site located in the City of Lake Elsinore. Thus, the overall density of the apartment complex is about 8.4 units/acre. The apartment complex will consist of nine apartment buildings ranging in size from about 9,000 sf to about 22,000 SF. Seven of the apartment buildings will be two-stories and two of the buildings will be three stories. Primary

access to the site will be a new street along the north side of the project site, that will also provide additional access to the development west of the project site. The apartment buildings are located around the edges of the property, with the parking areas and internal access provided in the central portion of the project site. This includes 336 overall parking spaces, with many covered spaces where the covers could be used to support solar panels, and with several electric vehicle charging spaces. He onsite support facilities include the bioretention basin, a clubhouse, a pool and outdoor playing courts. The project will require about one year to construct and occupancy could begin as early as winter quarter 2024.

This Addendum document compiles the necessary information required to update the City's CEQA certified IS/MND in accordance with Sections 15162 and 15164 of the State CEQA Guidelines.

#### C. <u>Environmental Review Process</u>

The City has prepared this Addendum in accordance with the current (2022) CEQA Statute and Guidelines for implementing CEQA. State CEQA Guidelines Section 15164 includes the following procedures for the preparation and use of an Addendum:

- (b) An addendum to an adopted negative declaration may be prepared if only minor technical changes or additions are necessary and none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or negative declaration have occurred.
- (c) An addendum need not be circulated for public review but can be included in or attached to the Final EIR or adopted negative declaration.
- (d) The decision-making body shall consider the addendum with the Final EIR or adopted negative declaration prior to making a decision on the project.
- (e) A brief explanation of the decision not to prepare a subsequent EIR pursuant to Section 15162 should be included in an addendum to an EIR, the lead agency's required findings on the project, or elsewhere in the record. The explanation must be supported by substantial evidence.

Note that Section 15164(b) addresses use of an Addendum in conjunction with a negative declaration, which is the procedure being used in this document. If changes to a project or its circumstances occur or new information becomes available after adoption of a negative declaration, the lead agency may: (1) prepare a subsequent EIR if the criteria of State CEQA Guidelines Section 15162(a) are met, (2) prepare a subsequent negative declaration, (3) prepare an addendum, or (4) prepare no further documentation. (State CEQA Guidelines Section 15162(b)) When only minor technical changes or additions to an adopted negative declaration (ND) are necessary and none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or ND have occurred, CEQA allows the lead agency to prepare and adopt an Addendum. (State CEQA Guidelines, Section 15164(b)).

Under Section 15162, a subsequent EIR is required only when:

- (1) Substantial changes are proposed in the project which will require major revisions of the previous negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- (2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the negative declaration due to the involvement of any new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
- (3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the negative declaration was adopted, shows any of the following:
  - (A) The project will have one or more significant effects not discussed in the previous negative declaration;
  - (B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;
  - (C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measures or alternative; or
  - (D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

Based on the data contained in this environmental document, the City has concluded that an Addendum is the appropriate environmental determination for this second-tier environmental review process to comply with the CEQA.

### D. <u>Summary of Project Modifications Being Considered by the City of Lake Elsinore</u>

In summary, the following modifications have been made to the Lake Pointe Apartment Project approved by the City in 2016. Total number of buildings will be reduced from ten to nine; the total number of units will be increased by two, from 150 to 152. The project site is the same, but the access has been slightly modified and access has been provided to the landlocked parcel to the east in the 2023 version of the site plan. The total number of parking spaces has been reduced by three, from 339 to 336 and a total of 37 EVC spaces will be provided in the 2023 design. Otherwise, all elements of the site development will remain essentially the same: earthwork quantities will be approximately the same to prepare the site for the new structures; and all onsite and offsite infrastructure will remain the same as originally envisioned and conditioned. Regardless, as subsequently illustrated in the analysis provided below, none of the changes described above would result in any new significant physical environmental impacts nor in any increased physical impacts beyond the impacts that were already evaluated for the original project MND 2016-01, see Appendix 1.

## 2. PROCEDURAL CONSIDERATIONS

In 2016 the City of Lake Elsinore approved Residential Design Review (RDR) 2014-05 to allow development of a 150-unit multi-family apartment complex on an approximately 8.27-acre site, located east of Riverside Drive in the City. The City must now determine whether the proposed project described in Section 1.B and D above (modified project) results in new significant impacts that were not evaluated in the adopted IS/MND, which could trigger the need for an alternative CEQA environmental determination. The City must also decide whether an Addendum is the appropriate environmental determination for this modified project (Lake Pointe Apartments) if it chooses to approve the proposed requested project entitlement, RDR 2022-15. The adopted 2016 IS/MND and RDR 2014-05 provides a baseline and cumulative environmental evaluation and determination for the original project.

This Addendum No. 1 has been prepared in order to determine whether the proposed project modifications, summarized above, would result in conditions that would require a subsequent or supplemental environmental impact report, Negative Declaration (ND) and/or Mitigated Negative Declaration (MND) to be prepared because of new or additional adverse environmental impacts. This Addendum also reviews any new information of substantial importance that was not known and could not have been known with exercise of reasonable diligence at the time the IS/MND was adopted in June 2016. This examination includes an analysis in accordance with the provisions of Sections 15164 and 15162 of the State CEQA Guidelines (summarized above), which outline the criteria and procedures for preparing an Addendum to a previously adopted IS/MND.

Also, pursuant to CEQA and the State CEQA Guidelines, the City's environmental review of the proposed project modifications is limited to examining the environmental effects associated with the physical changes in the environment from implementing the modified project in comparison to the approved project, i.e., addressing the effects of outlined in Section D above. This narrow focus is due to the fact that the IS/MND has already addressed the environmental impacts of constructing and operating the original project.

This Addendum, combined with the original adopted IS/MND, serves as the basis for this secondtier environmental review of the City's decision to consider the Lake Pointe Apartment Project entitlement. Addendum No. 1 modifies the IS/MND adopted by the City in 2016 as its California Environmental Quality Act (CEQA) environmental determination. No other changes than those outlined in the preceding text are proposed at this time.

Pursuant to the provisions of CEQA and the State CEQA Guidelines, the City of Lake Elsinore is the Lead Agency for the proposed project revisions and is charged with the responsibility of deciding whether or not to approve the proposed modifications to the project as described above (Section D) and relying on this Addendum as the second-tier CEQA environmental determination. As part of its decision-making process, the City is required to review and consider the potential environmental effects that could result from implementing the modified project relative to the previously approved project RDR 2014-05. The City has compiled this Addendum as the basis for making a second-tier CEQA environmental determination for the modified project being proposed by Legacy Financial Group, LP.

## 3. ENVIRONMENTAL ANALYSIS OF THE PROJECT MODIFICATION

Following the City's receipt of the revised application from Legacy Financial Group, LP for the project site, it became clear to the City that the project was modified to an extent that when combined with new environmental issues that have been incorporated into the CEQA review process since 2016, a second-tier environmental document/determination would be needed to support an entitlement decision for the revised project. After reviewing the data compiled for this Addendum, a decision was made by the City to prepare and process an Addendum to provide an evaluation of potential project changes that could result from approving the proposed project modifications compared to the project described and approved under the 2016 adopted IS/MND. This is a relative comparison of the revised Lake Point Apartment design to the original approved facility to assess the potential environmental impacts that would result from these project changes, in comparison to the impact forecast contained in the 2016 IS/MND. The following evaluation provides a comparative analysis of potential environmental impacts in relation to the facts and findings contained in the original adopted IS/MND document. The following conclusions were developed regarding potential impacts from approval and implementation of the project modifications. This analysis follows the format for determining significance in a standard Initial Study Environmental Checklist Form (Appendix G State CEQA Guidelines).

## ENVIRONMENTAL CHECKLIST

#### INTRODUCTION

1.	Project Title:	Lake Pointe Apartment Project
2.	Lead Agency Name and Address:	City of Lake Elsinore 130 South Main Street, Lake Elsinore, CA 92530
3.	Contact Person: Phone Number:	Carlos Serna (951) 674-3124, x916
4.	Project Location:	Riverside Drive, north of Grand Avenue, southwest of Eisenhower Avenue, immediately north of Lakeside High School
5.	Project Sponsor's Name and Address:	Legacy Financial Group, LP, Mr. George Mears 41663 Date Street, Suite 200, Murrieta, CA 92562
6.	General Plan Designation: Resi	dential Mixed Use (RMU)

- 7. Zoning Classification: Residential Mixed Use (RMU)
- 8. Project Description: In summary, the 2022 project consists of a new apartment complex that would install 152 apartment units on the 8.27-acre site located in the City of Lake Elsinore. Thus, the overall density of the apartment complex is about 8.4 units/acre. The apartment complex will consist of nine apartment buildings ranging in size from about 9,000 sf to about 22,000 SF. Seven of the apartment buildings will be two-stories and two of the buildings will be three stories. Primary access to the site will be a new street along the north side of the project site, that will also provide additional access to the development west of the project site. The apartment buildings are located around the edges of the project site. This includes 336 overall parking spaces, with many covered spaces where the covers could be used to support solar panels, and with several electric vehicle charging spaces. He onsite support facilities include the bioretention basin, a clubhouse, a pool and outdoor playing courts. The project will require about one year to construct and occupancy could begin as early as winter quarter 2024.
- 9. Surrounding land uses and setting: (Briefly describe the project's surroundings)
  - North: commercial center and open space,
  - East: Riverside Drive and Lake Elsinore recreation area,
  - South: Lakeside High School, and
  - West: single-family residential.
- 10. Other agencies whose approval is required (e.g., permits, financing approval, or participation agreement.) Caltrans (encroachment permit) and General Construction Permit, State Water Resources Control Board and Santa Ana Regional Water Quality Control Board.

11. Have California Native American tribes traditionally and cultural affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun? Not needed for an Addendum.

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 21083.3.2.) 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.

## ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

Aesthetics	Agriculture and Forestry Resources	🗌 Air Quality
Biological Resources	⊠ Cultural Resources	Energy
🛛 Geology / Soils	Greenhouse Gas Emissions	$\boxtimes$ Hazards & Hazardous Materials
Hydrology & Water Quality	Land Use / Planning	Mineral Resources
🛛 Noise	Population / Housing	Public Services
Recreation	⊠ Transportation	🛛 Tribal Cultural Resources
Utilities / Service Systems	U Wildfire	Mandatory Findings of Significance

## DETERMINATION

$\boxtimes$	I find that the proposed modified project COULD NOT have a significant effect on the environment, and an ADDENDUM will be prepared.
	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Carlos Serna, Associate Planner

Date

Insert Figures

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
I. AESTHETICS: Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?				$\boxtimes$
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				$\boxtimes$
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning or other 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?				$\boxtimes$

a-d. No Impact – The following findings were included in the 2016 IS/MND: for issue (a) the finding was less than significant based on the finding that mandated landscaping and "four-sided" architecture would achieve compatible design on all four sides of the project, including the front of the buildings on Riverside Drive; under issue (b) the finding was made that due to the lack of a nearby scenic highway the proposed project would cause no adverse impacts; for issue (c) the finding was made hat the project would be consistent with the adjacent urban development based on consistency of aesthetic and design requirements of the City's design guidelines; and for issue (d) the finding would be controlled and directed away from adjacent development and light and glare impacts would be reduced to a less than significant impact level.

The modified project will occupy the same site with an overall design that is very similar to the original project, including similar buildings, similar access and parking; and a minimal increase in overall apartment units. There have been no substantial aesthetic changes at the project site since 2016. The City's design review requirements will ensure that landscaping and four-sided architecture will be consistent with the surrounding urban uses. Finally, with implementation of mitigation measure AES-1 potential light and glare impacts on adjacent properties can be controlled to a less than significant impact level. Thus, the modified project will have approximately the same visual appearance as the approved project. The proposed implementation of the modified project is not forecast to cause any significant negative alteration of any aesthetic impacts will result from implementing the modified project. Approval of the modified project does not result in any new significant impacts or in a substantial increase in the severity of the impacts evaluated in the IS/MND that would trigger subsequent environmental review under Sections 15162 and 15164 or that would require preparation of a subsequent document other than this Addendum.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
<b>II. AGRICULTURE AND FORESTRY RESOURCES</b> : In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest Carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				$\boxtimes$
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?				$\boxtimes$
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				
d) Result in the loss of forest land or conversion of forest land to non-forest use?				$\boxtimes$
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				$\boxtimes$

- a-c. No Impact The following findings were included in the 2016 IS/MND: for issues a-c, the findings were all No Impact, which was based on the following substantiation: the site is designated as "Urban-Built-up land or of Local Importance, the site is not being farmed at this time, and thus no impact on important farmland; the site is not zoned for agricultural use nor is it in a Williamson Act preserve; and no other changes caused by the project will occur that could convert farmland to nonagricultural use. Overall finding for the agricultural issues were no adverse impact.
- d-e. *No Impact* The modified project will occupy the same site with the same multi-family use. There have been no changes since 2016 relative to the agricultural resources onsite or in the project area. Thus, the modified project will have approximately the same agricultural resources impacts as the approved project. The new Checklist Form also includes questions regarding potential impacts to forestry resources. However, the site did not have and does not have any forestry resources or

resource values. The proposed implementation of the modified project is not forecast to cause any significant change in conclusions regarding agricultural and forestry resources when compared to the 2016 IS/MND. No new or greater negative agricultural or forestry resource impacts will result from implementing the modified project. Approval of the modified project does not result in any new significant impacts or in a substantial increase in the severity of the impacts evaluated in the IS/MND that would trigger subsequent environmental review under Sections 15162 and 15164 or that would require preparation of a subsequent document other than this Addendum.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
<b>III. AIR QUALITY</b> : Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?			$\boxtimes$	
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?			$\boxtimes$	
c) Expose sensitive receptors to substantial pollutant concentrations?			$\boxtimes$	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			$\boxtimes$	

Air quality issues are discussed in the 2016 IS/MND in Section C. The City primarily based its findings on an air quality technical study of the original proposed project. All impacts were found less than significant, during both construction and operation with mitigation measures identified primarily for construction activities and following standard South Coast Air Quality Management District (SCAQMD) rules and regulations. Since 2016 regional air quality has improved as SCAQMD has implemented more stringent air quality management rules and regulations and additional requirements through the more current Air Quality Management Plans (2020). Other contributions to improvements have included reductions in fugitive dust emissions and equipment exhaust since 2016 and major improvements in vehicle exhaust, building energy consumption (current 2022 State Building and Energy codes), and the contribution of the renewable energy generation component of Southern California Edison's energy generation portfolio (currently estimated to be about 39%). In general, overall emissions from construction and occupancy of the modified project are less than or comparable to those identified in the 2016 Initial Study and impacts remain less than significant. Also, note that the Initial Study Checklist Form for Air Quality has changed and now comprises four issues rather than five (see above form). The original (2016) and 2022 air quality technical studies are provided in Appendix 2 of this document.

- a. Less Than Significant Impact The original project was evaluated against two consistency requirements, i.e., potential for the project to increase the frequency or severity of violations and will be project meet the City's General Plan land use designation and development requirements. The IS/MND concluded that the original project would meet these consistency requirements. The same consistency requirements were evaluated for the modified project and the new air quality technical study includes a similar evaluation of the modified project (see Section 6.4) and reached the same conclusion for this project. Under present conditions the proposed modified project has impacts that are comparable to the original project and impacts under this topic are less than significant.
- b&c. Less Than Significant Impact Table C-1 of the 2016 IS/MND concluded that all construction emissions would be below significance thresholds. RK Engineering Group prepared an updated construction emission forecast for the modified project. Table 21 of this study shows emissions from the modified project to be generally lower when compared to the original project emission forecast, with both project construction emissions deemed less than significant. Table C-3 summarized the operational/occupancy emissions for the original project (2016). Table 23 in the 2023 air study

indicates all operational air emissions of the modified project will also be less than significant, with ozone precursors being slightly lower than the 2016 forecast in Table C-3. All operational impacts are forecast to be less than significant. Mitigation measures identified in the 2016 Initial Study must be implemented by the modified project.

Several other issues (Toxics, CO Hotspots, Asbestos and Diesel Particulate Matter) were evaluated and concluded to be less than significant for both original and modified projects.

d. Less Than Significant Impact – Table C-2 of the 2016 IS/MND provides the values for Localized Significance Thresholds (LSTs) from the original project construction activities. This evaluation concluded that none of the analyzed criteria pollutants would exceed LSTs. Table 22 relies on current LST evaluation methodology and thresholds, but the same conclusion is reached, i.e., construction LST thresholds will not be exceeded by the modified project under stricter thresholds than in 2016. Table C-4 provides the comparable values for LSTS from the original project operational/occupancy activities. This evaluation concluded that none of the analyzed criteria pollutants would exceed LSTs. Table 24 relies on current LST methodology and thresholds for operational emissions of the modified project, but the same conclusion is reached, i.e., operational LST thresholds will not be exceeded by the modified project. Thus, for both the original and the modified projects potential impacts on sensitive receptors will be less than significant.

As previously noted, several other issues (Toxics, CO Hotspots, Asbestos and Diesel Particulate Matter) were evaluated and concluded to be less than significant for both original and modified projects. The 2016 and 2023 air mission technical studies also evaluated the potential for odor impacts from the proposed multi-family apartment project and both concluded that no significant odors would be generated by the proposed original or modified projects.

Thus, approval of new project entitlements for the modified project does not result in any new significant air quality impacts or in a substantial increase in the severity of the impacts evaluated in the IS/MND that would trigger subsequent environmental review under Sections 15162 and 15164 and that would require preparation of a subsequent document other than this Addendum.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
IV. BIOLOGICAL RESOURCES: Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?			$\boxtimes$	
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or 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 protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				$\boxtimes$
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?			$\boxtimes$	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				$\boxtimes$
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?			$\boxtimes$	

No technical study was required for the Project for biological resources in 2016. According to the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Report for the Project site (APN 379-090-022) (Appendix 3), the Project site is not located in a criteria cell. A site reconnaissance survey by City Staff revealed that no riparian, riverine, vernal pool/fairy shrimp habitat or other aquatic resources exist on the site. Based upon mapped information, the Project site is not located within any Narrow Endemic Plant Species Survey Areas or Critical Species Survey Areas. The Project site is not within or adjacent to any Multiple Species Habitat Conservation Plan (MSHCP) criteria or conservation areas. Based on a site survey in 2023, the project site has been maintained in its disturbed, graded condition to the present. No natural habitat exists on the project site, and it remains surrounded by urban uses.

a. Less Than Significant Impact – Currently, the project site does not contain any natural habitat and limited weedy (ruderal) vegetation. As in 2016, the proposed project will be required to pay the current applicable MSHCP Mitigation Fee. This is a standard condition and is not considered unique mitigation under CEQA. With payment of this fee, any impacts on special status species are considered less than significant.

- b. *No Impact* In 2023 the project site remains free of riparian or other sensitive natural habitat. No mitigation is required, other than payment of mandatory MSHCP fees.
- c. *No Impact* In 2023 the project site remains free of any wetlands of any type. No mitigation is required, other than payment of mandatory MSHCP fees.
- d. Less Than Significant Impact The project site remains surrounded by urban uses. Therefore, the project site has no potential to serve as an animal movement corridor, and based on the lack of overall vegetation, the potential for impacting nesting birds is considered less than significant. No additional mitigation is required.
- e. *No Impact* No trees are located on the project site. Thus, no conflicts with local policies or ordinances can occur. No mitigation is required.
- f. Less Than Significant Impact The project site is located within the area covered by the MSHCP. As noted, the project site is not located in a criteria cell, and due to past disturbance does not contain any natural habitat of interest under this Plan. The only requirement of being within the boundary of the Plan area is a requirement to pay the Mitigation Fee, which will be implemented by the City. Impact is less than significant, and no additional mitigation is required.

Based on a careful review of the 2016 data and the lack of any native biological resources on the project site, there are no sensitive biological resources and development of the Lake Pointe Apartment Project would have no adverse impact to such resources. Thus, approval of RDR 2022-15 does not result in any new significant impacts or in a substantial increase in the severity of the impacts evaluated in the IS/MND that would trigger subsequent environmental review under Sections 15162 and 15164 and that would require preparation of a subsequent document other than this Addendum.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
V. CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?		$\boxtimes$		
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?		$\boxtimes$		
c) Disturb any human remains, including those interred outside of formal cemeteries?		$\boxtimes$		

No technical study was required for the proposed Project for cultural resources in 2016. The City had informal consultation with the Pechanga Band of Luiseño Indians (Tribe) to discuss the Project, potential Project impacts, avoidance methods and potential mitigation. The Tribe indicated that their standard mitigation measures would be sufficient as part of this IS/MND. Since circumstances at the site have not changed substantially, the impacts are assumed to remain the same with implementation of six mitigation measures listed in the 2016 IS/MND. Note that paleontological resource issues have been transferred into the Geology Section of the Initial Study for 2023 and Tribal Cultural Resource issues are now found in its own section of Addendum and will be addressed in that section for this Addendum.

- a. Less Than Significant With Mitigation Incorporated No historic resources were identified within the project site. To address the potential for accidental exposure of subsurface historical resources, Mitigation Measure CUL-1 will be implemented. With implementation of this measure, potential historical resource impacts will be less than significant.
- b. Less Than Significant With Mitigation Incorporated Archeological are known to occur within the project area. To address the potential for accidental exposure of subsurface archaeological resources, Mitigation Measures CUL-1 through CUL-6 will be implemented. With implementation of these measures, potential historical resource impacts will be less than significant.
- c. Less Than Significant With Mitigation Incorporated Based on historic use of the project site, human remains are not anticipated to be encountered within the project area. To address the potential for accidental exposure of human remains, Mitigation Measure CUL-2 will be implemented. With implementation of this measure, potential human remain impacts will be less than significant.

Thus, the proposed modified project represents a comparable condition relative to the previous findings for cultural resource impacts when compared to the original project. Approval of RDR 2022-15 does not result in any new significant impacts or in a substantial increase in the severity of the impacts evaluated in the IS/MND that would trigger subsequent environmental review under Sections 15162 and 15164 and that would require preparation of a subsequent document other than this Addendum.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
VI. ENERGY: Would the project:				
a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operations?			$\boxtimes$	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			$\boxtimes$	

The topic of Energy was not included in the 2016 IS/MND. Regardless, the use of energy by the modified project will substantially reduce long-term energy use (operation) at the site relative to the original approved project if it had been constructed in 2016 and 2017. This is based on the reduced energy consumption of the current building code (2020, about a 7% reduction relative to the previous code) and demand for less fuel by the 2023 vehicle fleet in southern California relative to 2016. Further, Southern California Edison (SCE) is now achieved approximately 39% of its electricity from alternative energy resources (solar, wind, and hydro). Thus, the proposed modified project will consume less overall energy during future occupancy than the approved project had it been constructed in 2016-2017.

- a. Less Than Significant Impact Based on the rationale provided under the Discussion, approval of the proposed project does not result in any new significant impacts or in a substantial increase in the severity of the energy impacts evaluated in the 2016 IS/MND that would trigger subsequent environmental review under Sections 15162 and 15164 and that would require preparation of a subsequent document other than this Addendum.
- b. Less Than Significant Impact Approval of the proposed project does not result in any conflict with or obstruction of state or local energy plans or policies because the City will require the project to implemented in conformance with the new building codes. Therefore, the modified project can be implemented with no new significant impacts or in a substantial increase in the severity of the energy impacts evaluated in the 2016 IS/MND that would trigger subsequent environmental review under Sections 15162 and 15164 and that would require preparation of a subsequent document other than this Addendum.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
VII. GEOLOGY AND SOILS: Would the project:				
<ul> <li>a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:</li> </ul>				
<ul> <li>(i) 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? Refer to Division of Mines and Geology Special Publication 42.</li> </ul>		$\boxtimes$		
(ii) Strong seismic ground shaking?		$\boxtimes$		
(iii) Seismic related ground failure, including liquefaction?		$\boxtimes$		
(iv) Landslides?				$\boxtimes$
b) Result in substantial soil erosion or the loss of topsoil?			$\boxtimes$	
c) 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 land- slide, lateral spreading, subsidence, liquefaction or collapse?				
d) 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?		$\boxtimes$		
e) 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?				$\boxtimes$
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		$\boxtimes$		

A site geology study was utilized by the 2016 IS/MND to substantiate the findings for the proposed project. Since the geology of a site does not change over short time periods, this study is relied upon for the following evaluation. The study is titled: "*Geotechnical Investigation and Liquefaction Evaluation. Proposed Multi-Family Residential Development, Riverside Drive SW of Eisenhower Drive, Lake Elsinore, California*" prepared by Southern California Geotechnical dated December 8, 2005.

a. (i) Ground Rupture

*Less Than Significant With Mitigation Incorporated* – The project site remains outside of any known fault zone, although it is close (about one-quarter mile from the Elsinore Fault Zone). Mitigation was required, GEO-1, and combined with standard code provisions the 2016 IS/MND concluded that with implementation of the Geotechnical study design requirements, implementation of the proposed

project would be possible without causing a significant adverse impact. This finding remains valid for the modified project in 2023. No additional mitigation is required.

#### (ii) Strong Seismic Ground Shaking

Less Than Significant With Mitigation Incorporated – The modified project will be exposed to the same level of ground shaking, and in order to avoid significant impact, the modified project must implement Mitigation Measure GEO-1. Implementation of the modified project with GEO-1 and standard code provisions will be sufficient to control potential ground shaking impacts to a less than significant level.

#### (iii) Seismic-related Ground Failure Including Liquefaction

Less Than Significant With Mitigation Incorporated – The modified project will be exposed to the same level of liquefaction hazard as the approved project. In order to avoid significant impact, the modified project must implement Mitigation Measure GEO-1. Implementation of the modified project with GEO-1 and standard code provisions will be sufficient to control potential ground shaking impacts to a less than significant level.

#### (iv) Landslides

*No Impact* – The project site and the surrounding developed site topography do not have any elevated areas that could contribute to a landslide. Therefore, implementation of the modified project will not increase exposure to this type of hazard and no adverse landslide impact will result under this issue. This is consistent with the finding in the 2016 IS/MND.

- b. Less Than Significant Impact The 2016 analysis concluded that City requirement to implement a Storm Water Pollution Prevention Plan (SWPPP) for construction and a Water Quality Management Plan (WQMP) would be sufficient to control potential erosion on this essentially flat project site. The same circumstances apply to the modified project. Impacts under this issue will remain less than significant with implementation of a project and site specific SWPPP during construction and WQMP for the long-term.
- c. Less Than Significant With Mitigation Incorporated The modified project will be exposed to the same level of liquefaction instability as the approved project. Otherwise, the project site is not exposed to other ground instability issues. In order to avoid significant impact, the modified project must implement Mitigation Measure GEO-1. Implementation of the modified project with GEO-1 and standard code provisions will be sufficient to control potential ground shaking impacts to a less than significant level.
- d. Less Than Significant With Mitigation Incorporated The modified project will not be exposed to expansive soil as was the case with the 2016 approved project. Regardless, the City determined that in order to avoid significant impact, the 2016 project must implement Mitigation Measure GEO-1. Implementation of the modified project with GEO-1 and standard code provisions will be sufficient to control potential ground shaking impacts to a less than significant level.
- e. *No Impact* The 2023 modified project will also connect to the local sewer collection system. Therefore, implementation of the modified project will not be impacted by the soil suitability for onsite subsurface wastewater disposal systems. This is consistent with the finding in the 2016 IS/MND.
- f. Less Than Significant With Mitigation Incorporated According to Figure 3.2-3, City of Lake Elsinore Paleontological Resources, of the General Plan EIR, the project site has a "Low" potential for paleontological resources. However, since these resources are located below the surface, any excavation or other ground-disturbing activities will require paleontological monitoring to ensure that no important, nonrenewable vertebrate fossils are adversely affected. Based on these findings, all earthmoving operations shall be monitored for paleontological resources. Mitigation Measure CUL-7

has been included, requiring the development and implementation of a paleontological resource impact mitigation program, prior to any ground disturbing activity. The modified project will be subject to similar paleontological issues and will also be required to implement measure CUL-7 to ensure a less than significant impact finding.

Based on the preceding findings, the proposed revised project will not contribute to new or greater geology or soil impacts to human beings. Approval of RDR 2022-15 does not result in any new significant impacts or in a substantial increase in the severity of direct or indirect geology and soil impacts to humans evaluated in the 2016 IS/MND that would trigger subsequent environmental review under Sections 15162 and 15164 and that would require preparation of a subsequent document other than this Addendum.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
VIII. GREENHOUSE GAS EMISSIONS: Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			$\boxtimes$	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			$\boxtimes$	

- a. Less Than Significant Impact Table C-5 of the 2016 IS/MND concluded that GHG would be below significance thresholds (3,000 MTC02e) at 1,501.9-2,048.35 MTCO2e. RK Engineering Group prepared an updated GHG emission forecast for the modified project. Table 26 of this study shows emissions from the modified project to be in the middle of the 2016 estimates, but still well below the SCAQMD threshold at 1,741.88 MTCO2e. Thus, long-term GHG operational impacts are forecast to be less than significant.
- b. Less Than Significant Impact The City of Lake Elsinore adopted a Climate Action Plan (CAP) to ensure that the City meets the State policies (AB32 and Executive Order S-3-05) for reducing GHG emissions. The 2016 IS/MND concluded that the proposed project would meet the City's GHG emission reduction standard. The 2023 GHG study (page 7-3, Appendix 2) also concluded that the City's GHG emission reductions will meet the City's standards. Thus, impacts under this topic are less than significant.

Approval of RDR 2022-15 does not result in any new significant impacts or in a substantial increase in the severity of the GHG impacts evaluated in the 2016 IS/MND that would trigger subsequent environmental review under Sections 15162 and 15164 and that would require preparation of a subsequent document other than this Addendum.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
IX. HAZARDS AND HAZARDOUS MATERIALS: Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?		$\boxtimes$		
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) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?				
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			$\boxtimes$	
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?				$\boxtimes$

A site study of potential hazards was utilized in the 2016 IS/MND to substantiate these findings for the proposed project. Since the historic use conditions at the project has not changed since the original approval, the following study is relied upon for the following current evaluation. The study is titled: "Phase I Environmental Site Assessment Proposed Multi-Family Residential Development Riverside Drive *southwest of Eisenhower Drive, Lake Elsinore, California*" prepared by Southern California Geotechnical dated December 8, 2006.

- a. Less Than Significant With Mitigation Incorporated The primary concern with the proposed project in 2016 was that its implementation would result in accidental spills that could harm humans or the environment. Mitigation measure HAZ-1 was imposed on the project to address this potential adverse impact. The proposed project does not include any different issues and will be required to implement measure HAZ-1.
- b. Less Than Significant Impact The proposed project was determined to create a less than significant impact due to upset or accident primarily because the occupied site will be residences and any use of hazardous materials generally be of household hazardous material size and quantity. The modified

project has the same uses at the same general level of occupation. Therefore, with compliance with mitigation measure HAZ-1, the potential impacts under this issue are less than significant for the 2023 modified project.

- c. Less Than Significant Impact The project site is located adjacent to Lakeside High School. However, this residential project does not include the emission of any acutely toxic materials and will emit minimal hazardous emissions during construction and future occupancy. Potential impact is forecast to be less than significant.
- d. Less Than Significant Impact Over the past 7 years (2016-2023), no activities have occurred that would have caused significant contamination at the project site. Therefore, the findings in the 2016 IS/MND are still valid. There are no contaminated locations on the project site, and therefore, the finding of less than significant impact is consistent with the original project finding. No mitigation is required.
- e. Less Than Significant Impact According to Figure 2.7, City of Lake Elsinore Airport Influence Areas, of the General Plan, the Project sites are not located in proximity to a private airstrip. The closest airport is a public airport, Skylark Field, located at the south end of Lake Elsinore, approximately five miles south southeast of the Project sites. The Project sites are not located an airport land use plan. Based on this information, neither the original project nor the modified project, have a potential to contribute to a potential significant conflict with an airport.
- f. Less Than Significant Impact The proposed project will be implemented within the project site, and not will not include major activities within Riverside Avenue. Those minor incursions into Riverside will be controlled by a traffic management plan that is mandatory by the City and Caltrans. The modified project will have the same impacts as the original approved project (2016) and no mitigation is required.
- g. *No Impact* The project site is located in a moderate fire wildfire hazard area because it is located within the developed portion of the Lake Elsinore urban area. The proposed project continues to be located in a moderate wildfire hazard area and its implementation will not change the background wildfire threat. No impact on wildfire hazards is forecast from implementing the modified project.

Thus, approval of RDR 2022-15 does not result in any new significant impacts or in a substantial increase in the severity of wildfire impacts to humans evaluated in the 2016 IS/MND that would trigger subsequent environmental review under Sections 15162 and 15164 and that would require preparation of a subsequent document other than this Addendum.

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
<b>Х. Н</b> proje	YDROLOGY AND WATER QUALITY: Would the act:				
a) Vi disch degra	olate any water quality standards or waste narge requirements or otherwise substantially ade surface or groundwater quality?		$\boxtimes$		
b) Su interf the p mana	ubstantially decrease groundwater supplies or fere substantially with groundwater recharge such project may impede sustainable groundwater agement of the basin?				$\boxtimes$
c) Su the s cours impe	ubstantially alter the existing drainage pattern of ite or area, including through the alteration of the se of a stream or river or through the addition of rvious surfaces, in a manner which would:			$\boxtimes$	
(i)	result in substantial erosion or siltation onsite or offsite?			$\boxtimes$	
(ii)	substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite?		$\boxtimes$		
(iii)	create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?; or,		$\boxtimes$		
(iv)	impede or redirect flood flows?				$\boxtimes$
d) In relea	flood hazard, tsunami, or seiche zones, risk se of pollutants due to project inundation?				$\boxtimes$
e) Co quali mana	onflict with or obstruct implementation of a water ty control plan or sustainable groundwater agement plan?			$\boxtimes$	

The project site is located within an urban watershed. Due to surrounding land uses, the project site does not receive substantial runoff from upstream of the project site. This is characterized in the technical study prepared for the 2016 project site: "*Project Specific Water Quality Management Plan, Lakepointe Apartments*" prepared by M:L Engineering dated January 12, 2016. Due to the revisions in the site plan, a new WQMP has been prepared for the project site. There is no stream channel on the property and runoff appears to leave the site as sheet flow. Runoff leaves the site after being collected in the detention basin and bio-swales. The developed site runoff is less than the existing runoff undeveloped.

a. Less Than Significant With Mitigation Incorporated – Waste discharge requirement are usually issue for point source discharges from industrial or commercial operations. The proposed project is a residential apartment complex that will not generate any point source discharges. The second type of activity that can result in degradation of water quality is management of domestic wastewater, i.e., sewage. The proposed projects sewage will be collected in the adjacent sewer system and delivered to the regional wastewater treatment plant (WWTP) in the City. This WWTP operates in compliance with it waste discharge requirements without major water quality violations. Finally, water quality can

be degraded by increases in storm water runoff and inclusion of pollutants in this runoff. The project will implement a project specific Water Quality Management Plan (WQMP), which is required by law and by mitigation measure HYD-1. A detailed discussion of these issues is provided in the 2016 IS/MND. The modified project will comply with all water quality management requirements, including HYD-1, through connection to the sewer collection system and implementation of a new onsite WQMP.

- b. No Impact The 2016 IS/MND concluded that the original project would not grade deep enough to intercept the groundwater table beneath the project site (est. 18 feet below ground surface) and it would not install any wells that would directly intercept the groundwater table. The proposed modified project will also not interact directly with the groundwater table and thus, will have the same no impact finding as the original project.
- c. Less Than Significant Impact The 2016 IS/MND concluded that the original project would modify onsite drainage, but that through implementation of the WQMP the surface runoff be directed to the same discharge location and the volume will of discharge will not be increased. Thus, a finding of less than significant impact was identified. The modified project will also change the onsite drainage in a slightly different manner due to the different locations for buildings and parking, but a new WQMP has been prepared that will mimic the previous stormwater management onsite. The proposed modified project will direct runoff through a similarly placed bioretention basin on the property and the volume of discharge will from the site not be increased. Therefore, a finding of less than significant impact for this issue remains for this site.
- c. <u>i. Result in substantial erosion or siltation onsite or offsite?</u>

*Less Than Significant Impact* – Please reference the discussion in c) above. The proposed modified project will not increase the discharge stormwater from the project site in a manner that will result in offsite flooding downstream. Thus, the modified project will have a level of impact similar to the approved 2016 project on downstream flooding.

# ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite?

Less Than Significant With Mitigation Incorporated – The original project was required to implement a WQMP that would not discharge runoff that would exceed the existing local flood control system and/or increase pollution in the runoff. A WQMP was submitted to the City under mitigation measure HYD-1 to achieve the stormwater volume and quality management goals. The proposed modified project includes an updated WQMP that will meet the HYD-1 design requirements. Therefore, the proposed modified project will result in impacts to that are comparable to the original 2016 project.

# iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less Than Significant With Mitigation Incorporated – The original project was required to implement a WQMP that would not discharge runoff that would increase pollution in the runoff. A WQMP was submitted to the City under mitigation measure HYD-1 to achieve the stormwater quality management goals. The proposed modified project includes an updated WQMP that will meet the HYD-1 design requirements. Therefore, the proposed modified project will result in impacts that are comparable to the original 2016 project.

#### iv. Impede or redirect flood flows?

*No Impact* – The 2016 IS/MND concluded that the original project was not exposed to the 100-year flood hazard area. The proposed modified project will also not be located in a 100-year flood hazard area thus, will have the same no impact finding as the original project.

- d. *No Impact* The 2016 IS/MND concluded that the project site would not be subject extreme flood hazards due to its location on the western edge of Lake Elsinore and above any seiche elevation associated with the Lake. The modified project occupies the same location and will not alter the conclusion of the 2016 IS/MND.
- e. Less Than Significant Impact This final question in the new checklist was not directly a part of the Checklist Form in 2016. Other questions raised concerns over water quality (issue X.a) and groundwater management sustainability (issue X.b), but the potential to conflict with a water quality control plan or sustainable groundwater management plan has not been directly addressed. However, the implementation of the WQMP will ensure that the modified project will not conflict with the Santa Ana Regional Water Quality Control Boards water quality control plan. Similarly, previous approval of the water supply to the project site by the Elsinore Valley Municipal Water District (District) indicates that it has sufficient water resources to meet the water demand for this project without conflict with the local sustainable groundwater management plan. No mitigation is required.

Site conditions have not changed since 2016. Thus, the proposed modified project will not cause or contribute to site specific or cumulative hydrology or water quality impacts at this location. Approval of RDR 2022-15 does not result in any new significant impacts or in a substantial increase in the severity of the hydrology/water quality impacts evaluated in the IS/MND that would trigger subsequent environmental review under Sections 15162 and 15164 and that would require preparation of a subsequent document other than this Addendum.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XI. LAND USE AND PLANNING: Would the project:				
a) Physically divide an established community?				$\boxtimes$
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?				

The Initial Study Environmental Checklist Form for 2023 removed the question regarding conflict with any habitat conservation plan and transferred this question to the Biology Section. The other two questions regarding land use address physical divisions and conflict with the City's General Plan land use designation and policies.

- a. *No Impact* The original project was considered an infill project that would fit the scale of development in the project neighborhood. The proposed modified project is essentially the same as the original project and it will also conform to the City's development vision for the project site. Thus, the modified project has no potential to physically divide the established community.
- b. No Impact The project site was and is designated for multi-family residential uses and both the original and modified project are consistent with this proposed land use designation. The 2016 IS/MND concluded that no impact were anticipated, and no land use mitigation measures were or are required for the development of the site for multi-family residential uses. No potential for any significant impact will result from implementing the modified project.

Thus, the land use and planning impacts from the modified project will be comparable and also result in a less than significant land use and planning impact. Approval of RDR 2022-15 does not result in any new significant impacts or in a substantial increase in the severity of the land use and planning impacts evaluated in the 2016 IS/MND that would trigger subsequent environmental review under Sections 15162 and 15164 and that would require preparation of a subsequent document other than this Addendum.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XII. MINERAL RESOURCES: Would the 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?				$\boxtimes$
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				$\boxtimes$

The project site is not identified as containing any mineral resources and it is not designated for such use.

- a. *No Impact* The 2016 IS/MND determined the project site is identified as MRZ-3, and concluded the original project would not conflict with availability of any known resource of value to residents of the region or state. This same finding applies to the modified project as no new information indicates the site contains important mineral resources. Thus, implementation of the modified project will not have any adverse impact on mineral resources.
- b. No Impact The 2016 IS/MND determined the project site is identified as MRZ-3, and concluded the original project would not conflict with availability of any known resource of value to residents of the region or state. This same finding applies to the modified project as no new information indicates the site contains important mineral resources. Thus, implementation of the modified project will not have any adverse impact on the loss of a locally important mineral resource recovery site delineated on the City's General Plan or any other land use plan.

Therefore, implementation of the proposed modified development plan for the property and this finding remains the same at present. The proposed modified project has no potential to cause any adverse impact to mineral resource values.

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

Between 2016 and 2023 the number of issues to be addressed in Checklist was consolidated from six topics into 3 topics. To substantiate the noise findings in the 2016 IS/MND, a noise study was compiled. This study was titled: "*Noise Impact Analysis, Lakepointe Apartments Project, City of Lake Elsinore*" prepared by Vista Environmental dated November 25, 2015. With implementation of mitigation measures, the study concluded potential noise impacts would be less than significant with implementation of two mitigation measures. The 2023 applicant had a new noise study prepared by RK Engineering Group, Inc. This report is titled "*Lake Pointe Apartments Noise Impact Study City of Lake Elsinore, California*" dated November 8, 2022. With implementation of mitigation measures and project design features, the study concluded potential noise impacts result in a less than significant impact.

a. Less Than Significant With Mitigation Incorporated – The original and modified noise studies identified the same sensitive noise receptors in the vicinity of the project site: Lakeside High School; RV campsites across Riverside Avenue; and single-family residences located to the north-northwest. Relying on the City's Municipal Code significance thresholds, the 2016 noise forecast concluded that one mitigation measure (NOI-1) should be implemented to reduce construction noise levels to a less than significant impact. Similarly, a second noise mitigation measure (design features) was required to prevent the multi-family units adjacent to Riverside Avenue from exposure too significant traffic noise levels. With implementation of these measures, both construction and occupancy noise impacts were forecast to be less than significant.

The new noise study prepared by RK Engineering reached the same conclusion but instead of two measures, the 2022 noise study identified a total of 10 measures and design features to reach same noise finding of a less than significant impact for both construction and occupancy. Because new mitigation measures cannot be implemented through an Addendum, the applicant proposes to implement the identified measures and features as part of the proposed project, i.e., project construction and building occupancy. Thus, the net effect of the new modified project will be to achieve the same or better reductions in construction and occupancy noise when compared to the 2016 original project.

b. Less Than Significant Impact – Both the 2016 and 2022 noise studies concluded that vibration impacts would fall well below the City's vibration significance threshold without mitigation. This is primarily due to the distance between the proposed project and the nearest sensitive receptors. No mitigation was required.

c. *No Impact* – Both the 2016 and 2022 noise studies concluded that the project site is not subject to significant noise activity from a public or private airport. This is primarily due to the distance between the proposed project and the nearest public and private airports.

Thus, from a noise perspective the proposed modified project site will have a comparable noise impact relative to the originally approved project. Approval of RDR 2022-15 does not result in any new significant impacts or in a substantial increase in the severity of noise impacts evaluated in the 2016 IS/MND that would trigger subsequent environmental review under Sections 15162 and 15164 and that would require preparation of a subsequent document other than this Addendum.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XIV. POPULATION AND HOUSING: Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			$\boxtimes$	
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				$\boxtimes$

The 2023 Checklist Form consolidates the questions the 2016 Form into two questions instead of three. Regardless, the same topics are addressed for the modified project which includes an increase in the total number of units from 150 (2016) to 152 (2023), a minor increase in the density of units on the 8.27-acre site from 18.14 du/a to 18.37 du/a.

- a. Less Than Significant Impact The 2016 IS/MND concluded that the proposed project was consistent with the land use designation and the zoning classification and no significant adverse impact, such as unplanned population growth, would occur from implementing the 150-units multi-family residential apartment complex. For the 2023 modified project, the total number of units has been increased from 150 units to 152 units, a *de minimis* increase in the number of units. The modified project remains consistent with the City's land use designations and will also not induce substantial unplanned growth within the City.
- b. *No Impact* The project site remains vacant, and implementation of the proposed modified project will not cause displacement of any people or housing that could require construction of replacement housing elsewhere.

Approval of RDR 2022-15 does not result in any new significant impacts or in a substantial increase in the severity of population or housing impacts evaluated in the 2016 IS/MND that would trigger subsequent environmental review under Sections 15162 and 15164 and that would require preparation of a subsequent document other than this Addendum.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
<b>XV. PUBLIC SERVICES</b> : Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental 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 public services:				
a) Fire protection?			$\boxtimes$	
b) Police protection?			$\boxtimes$	
c) Schools?			$\boxtimes$	
d) Parks?			$\boxtimes$	
e) Other public facilities?			$\boxtimes$	

Public Services to the project site will be served by existing service providers within the City of Lake Elsinore as a full-service city. It is rare when a specific project is large enough to create sufficient new demand to require new public service facilities to be constructed. As the City acknowledges in the 2016 IS/MND, Development Impact Fees (DIF) must be paid by the project developer to incrementally offset the cumulative demand from individual projects. The circumstances remain the same under the current environmental setting except the DIF may have been adjusted to reflect current costs for these services.

- a. Less Than Significant Impact Fire protection and emergency response services are provided the Riverside County Fire Department from Station No. 85, which is located at 29405 Grand Avenue. The 2016 IS/MND concluded that through payment of DIF fees as a standard condition of approval, the original project's incremental impacts to Fire/emergency response would be less than significant. These circumstances have not changed for the modified project and impacts will remain less than significant with no mitigation.
- b. Less Than Significant Impact Police protection services are provided the Riverside County Sheriff's Department from its station in Lake Elsinore. The 2016 IS/MND concluded that through payment of DIF fees as a standard condition of approval, the original project's incremental impacts to police protection services would be less than significant. These circumstances have not changed for the modified project and impacts will remain less than significant with no mitigation.
- c. Less Than Significant Impact The original project contained 150 units from which an undefined number of students will be generated. Thus, the original project was forecast to increase enrollment in schools operated by the Lake Elsinore Unified School District (District). To offset potential impacts to the school system, the Project will pay a mandatory fee established by the State Legislature, SB 50. This fee must be paid concurrent with building permit issuance. These circumstances have slightly changed for the modified project because it proposed 152 residential units. Regardless, the impacts will remain less than significant with no mitigation by payment of additional fees for the additional units.
- d. Less Than Significant Impact Park services are provided by the City and when a project increases demand for park and recreation services, it is required to pay the applicable Park Capital Improvement Fund Fees. The 2016 IS/MND concluded that through payment of this fee as a standard condition of approval, the original project's incremental impacts to park services would be

less than significant. These circumstances have not changed for the modified project and impacts will remain less than significant with no mitigation.

e. Less Than Significant Impact – Other public services are provided by the City (library, and other community support services) and when a project increases demand for such services. A project is required to pay the applicable fees. The 2016 IS/MND concluded that through payment of this fee as a standard condition of approval, the original project's incremental impacts to other City public services would be less than significant. These circumstances have not changed for the modified project and impacts will remain less than significant with no mitigation.

Therefore, the proposed modified project will result in a similar less than significant contribution to demand for public services and recreation facilities. Approval of RDR 2022-15 does not result in any new significant impacts or in a substantial increase in the severity of public service and recreation facility impacts evaluated in the 2016 IS/MND that would trigger subsequent environmental review under Sections 15162 and 15164 and that would require preparation of a subsequent document other than this Addendum.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XVI. RECREATION:				
a) Would the project 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?			$\boxtimes$	
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?			$\boxtimes$	

The recreation section of the IS/MND remains the same and no major changes in circumstances have occurred since the original evaluation, with the possible exception of the amount of the current Park Capital Improvement Fund Fees.

- a. Less Than Significant Impact The original project included onsite recreational uses for future residents of the apartment complex. Park services are provided by the City and when a project increases demand for park and recreation services, it is required to pay the applicable Park Capital Improvement Fund Fees. The 2016 IS/MND concluded that through payment of this fee as a standard condition of approval, the original project's incremental impacts to park services would be less than significant. The modified project also includes onsite recreation facilities for residents. Further, the circumstances described above regarding payment of Fund Fees have not changed for the modified project and with payment of these fees, the modified project's impacts will remain less than significant with no mitigation.
- b. Less Than Significant Impact The original project included onsite recreational uses for future residents of the apartment complex. The impact of installing these facilities is included in the overall analysis of the 2016 IS/MND and this Addendum. Similarly, any fees used to enhance City park and recreation facilities would require preparation and approval of a project specific CEQA environmental document at the time such improvements will be implemented. The modified project would also pay fees that could be used for improvements to City recreation and approval of a project specific CEQA environmental document at the time such improvements to City recreation and approval of a project specific CEQA environmental document at the time such improvements will be implemented. Thus, the circumstances described above regarding payment of Fund Fees for the modified project, the modified project's impacts will remain less than significant with no mitigation.

Approval of RDR 2022-15 does not result in any new significant impacts or in a substantial increase in the severity of recreation impacts evaluated in the 2016 IS/MND that would trigger subsequent environmental review under Sections 15162 and 15164 and that would require preparation of a subsequent document other than this Addendum.
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XVII. TRANSPORTATION: Would the project:				
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?		$\boxtimes$		
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?			$\boxtimes$	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?		$\boxtimes$		
d) Result in inadequate emergency access?				$\boxtimes$

### Discussion

Between 2016 and 2023 the number of issues to be addressed in Checklist was consolidated from seven topics into four topics. To substantiate the traffic findings in the 2016 IS/MND, a traffic study was compiled. This study was titled: "Traffic Impact Analysis, Lakeshore Pointe, Lake Elsinore California" prepared by Infrastructure Group, Inc. dated October 22, 2015 (TIA). With implementation of mitigation measures, the study concluded potential traffic impacts would be less than significant with implementation of two mitigation measures. A new traffic study was prepared in July 2021 by RK Engineering Group, Inc., titled "Lakepointe Apartments Vehicle Miles Traveled Analysis." In 2021 the modified project contained 150 units and the trip generation remained the same as in 2015, i.e., 1,098 daily trips with 69 trips in the AM Peak Hour and 84 trips in the PM Peak Hour. The 2023 application had a new traffic study prepared by RK Engineering Group, Inc. This report is titled "Lakepointe Apartments Project Focused Traffic Impact Analysis, City of Lake Elsinore, CA" dated November 9, 2022. This study indicated an additional estimated 15 trips per day, with no change in the findings. Thus, with implementation of mitigation measures and project design features, the study concluded potential traffic impacts result in a less than significant impact. In addition to the standard TIA that can be requested by a local jurisdiction, the State of California has mandated that traffic be evaluated using Vehicle Miles Traveled (VMT) to comply with State Law. VMT became a topic on the Checklist Form in 2020 and prior to this date is did not exist. This is discussed in the text below. The VMT evaluation for the modified project was prepared by RK Engineering Group, Inc. in October 2022. The short report is titled: "Lakepointe Apartments Vehicle Miles Traveled Analysis, City of Lake Elsinore, CA" All three traffic studies are provided in Appendix 5a-c of this Addendum.

- a. Less Than Significant With Mitigation Incorporated The proposed modified project will generate about 1,013 daily trips and with implementation of mitigation measures TR-1 and TR-2 from the 2015 Traffic Study, the modified project with 152 multi-family residential units will have a comparable impact on the local circulation system. The area is already served by bus transit service with a bus stop within 300 feet of the project site. Based on this comparative evaluation of the local circulation system, the modified project will result in a less than significant impact with mitigation incorporated.
- b. Less Than Significant Impact The current (2022) VMT analysis of the modified project provides a screening evaluation of the current 152-unit multi-family project. Based on the screening thresholds in Appendix 5a-c, the proposed project screens out of the necessity to prepare a detailed VMT evaluation because it is a multi-family development with fewer than 200 units. Based on this evaluation, the proposed modified project and the original project would have screened and determined to be a less than significant impact under this finding.
- c. Less Than Significant With Mitigation Incorporated The 2016 IS/MND identified the project frontage on Riverside Drive as a potential concern for hazardous interactions of concern. To address the

issue of residents accessing this roadway from the property, mitigation measure TR-2 requires that the design of access from the property to Riverside Drive be coordinated with both the City and Caltrans to ensure no significant hazards are created. The modified project would be required to implement the same measure to reduce potential hazards to a less than significant impact level.

d. No Impact – The 2016 IS/MND evaluated the project design of the original project and concluded that it would have no adverse impact on emergency access at the site or at other locations. The modified project includes a different access design, but it will improve overall access to the project site and adjacent areas. Therefore, the current project design will not degrade or create an inadequate emergency access. No mitigation is required.

Approval of RDR 2022-15 does not result in any new significant impacts or in a substantial increase in the severity of traffic and circulation impacts evaluated in the 2016 IS/MND that would trigger subsequent environmental review under Sections 15162 and 15164 and that would require preparation of a subsequent document other than this Addendum.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
<b>XVIII. TRIBAL CULTURAL RESOURCES:</b> Would the project cause a substantial change in the significance of 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 the California Native American tribe, and that is:				
a) 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				
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in sub- division (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 lead agency shall consider the significance of the resource to a California Native American tribe.				

#### Discussion

A Tribal Resources is defined in the Public Resources Code section 21074 and includes the following:

- Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe that are either of the following: included or determined to be eligible for inclusion in the California Register of Historical Resources or included in a local register of historical resources as defined in subdivision (k) of Section 5020.1;
- 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 Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purpose of this paragraph, the lead agency shall consider the significance of the resources to a California American tribe;
- A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape; and/or
- A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "non-unique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal resource if it conforms with the criteria of subdivision (a).

The issue of Tribal Cultural Resources (TCR) was added to the Checklist Form in 2015. In the 2016 IS/MND the City evaluated this issue under the Cultural Resources heading, not a separate topic. In the 2023 Checklist Form TCR issues are discussed under the preceding evaluation sections.

a. Less Than Significant With Mitigation Incorporated – In the 2016 IS/MND the City conducted informal consultation with the Pechanga Band of Luiseno Indians. Based on this consultation mitigation measures CUL-1 through CUL-6 will be implemented to ensure that no Tribal Cultural Resources (TCR) are harmed during ground disturbing activities. The modified project is obligated to implement

these measures which ensures that all TCR are handled properly if accidentally unearthed during ground disturbing activities. With implementation of these measures, potential TCR resources will be managed in a manner to protect their value to the Tribe.

b. Less Than Significant With Mitigation Incorporated – Based on the City and applicant's commitment to implement these six measures for the modified project, the significance of any exposed subsurface resources will be treated with dignity and respect. No additional mitigation is required in 2023.

Approval of RDR 2022-15 does not result in any new significant impacts or in a substantial increase in the severity of tribal cultural resource impacts (not evaluated in the 2016 IS/MND) that would trigger subsequent environmental review under Sections 15162 and 15164 and that would require preparation of a subsequent document other than this Addendum.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XIX. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?				
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			$\boxtimes$	
c) Result in a determination by the wastewater treat- ment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			$\boxtimes$	
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?			$\boxtimes$	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			$\boxtimes$	

#### Discussion

As has occurred in other sections of the 2023 Initial Study, the topics under this issue have been consolidated from seven questions in 2016 to the above five questions in to 2023. Although there are fewer questions, all of the topics are covered.

- a. Less Than Significant Impact According to the analysis in the 2016 IS/MND, adequate capacity to serve the site exists in all of the utility systems either in the adjacent roadway (Riverside Drive) or in close proximity to the project site. No new major system upgrades or expansion will be required for these systems. Water, wastewater, electricity, natural gas and communication systems already exist with sufficient capacity to serve the project site. This is still the appropriate finding for the slightly larger modified project. Accessing the adjacent utility systems will not result in a significant impact to the environment from connecting them to the proposed modified project site.
- b. Less Than Significant Impact According to the analysis in the 2016 IS/MND, the EVMWD indicated it adequate water capacity to serve the site based on its input to the planning process to date. No new major system upgrades or expansion will be required for the system to serve the project site. This is still the appropriate finding for the slightly larger modified project. Accessing the adjacent water utility system will not result in a significant impact to the environment from connecting them to the proposed modified project site.
- c. Less Than Significant Impact According to the analysis in the 2016 IS/MND, the EVMWD indicated it adequate wastewater collection and treatment capacity to serve the site based on its input to the planning process to date. No new major system upgrades or expansion will be required for the wastewater systems. This is still the appropriate finding for the slightly larger modified project.

Accessing the adjacent wastewater utility system will not result in a significant impact to the environment from providing wastewater services to the proposed modified project site.

- d. Less Than Significant Impact According to the analysis in the 2016 IS/MND, a detailed analysis of City-wide solid waste generation indicates that the future volume of waste and the capacity of the regional disposal sites used by the City (primarily Lambs Canyon and El Sobrante, will be adequate for future development within the City. These two landfills are still operational and still have substantial disposal capacity. In the interim, substantial new emphasis is now being placed on composing organic waste to further reduce waste disposal volumes beyond the 50% now required. No new major system upgrades or expansion will be required for the solid waste disposal systems. This is still the appropriate finding for the slightly larger modified project. Accessing the solid waste collection system in the City will not result in a significant impact to the environment from providing solid waste management service to the proposed modified project site.
- e. Less Than Significant Impact According to the analysis in the 2016 IS/MND, the City's solid waste management system was already in compliance with the various referenced statutes. The proposed modified project will be integrated into the existing compliant system and will have a less than significant potential for conflict with these laws and regulations in the future.

Thus, approval of RDR 2022-15 does not result in any new significant impacts or in a substantial increase in the severity of utility and service impacts that would trigger subsequent environmental review under Sections 15162 and 15164 and that would require preparation of a subsequent document other than this Addendum.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
<b>XX. WILDFIRE</b> : If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				$\boxtimes$
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 wildfire?				$\boxtimes$
c) Require the installation or 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?				$\boxtimes$
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?				$\boxtimes$

### Discussion

In 2016 the Wildfire issue was not a separate issue within the Checklist Form. The issue was nominally addressed under the Hazards Section in the 2016 IS/MND. In 2020 Wildfire hazards were a major concern of California society, so this topic was added to the Checklist to expanded to further discuss this issue in more detail. According to the 2016 IS/MND the project site is located in a moderate fire wildfire hazard area because it is located within the developed portion of the Lake Elsinore urban area. The site is surrounded by urban uses, include a water body (Lake Elsinore) across Riverside Drive. The proposed project continues to be located in a moderate wildfire hazard area in 2023 and its implementation will not alter the background wildfire threat. No impact on wildfire hazards was forecast in the Hazards Section from implementing the original or modified project.

- a. *No Impact* The proposed modified project will result in the same wildfire hazard impacts as forecast in the 2016IS/MND. It is an infill development with a moderate wildfire hazard at its location. The project will enhance emergency access to the project site compared to the present situation. No adverse impact under this issue from implementing the proposed modified project.
- b. *No Impact* Since the project site is not located near any existing wildfire areas, no potential has been identified for the project site to be exposed to downwind pollutant concentrations or wildfire. This is due to the relatively flat topography of the alluvial fan on which it sits and the lack on any fuel vegetation load in the project area.
- c. *No Impact* Since the project site is not located near any existing wildfire areas, no potential has been identified for the project to construct new roadways or other infrastructure that could exacerbate a potential for wildland fire or fire hazards. This is due to the relatively flat topography of the alluvial fan on which it sits and the lack on any fuel vegetation load in the project area.
- d. *No Impact* Since the project site is not located near any existing wildfire areas, there is no potential for exposure to secondary wildfire hazards such as severe runoff, slope instability or landslides at the existing project site. This is due to the relatively flat topography of the alluvial fan on which it sits and the presence of urban development or a lake on all four sides of the project site.

The following are Mandatory Findings of Significance in accordance with Section 21083 of CEQA and Section 15065 of the CEQA Guidelines.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XXI. MANDATORY FINDINGS OF SIGNIFICANCE:				
a) Does the 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 a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		$\boxtimes$		
b) Does the 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)?		$\boxtimes$		
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?		$\boxtimes$		

#### Discussion

The analysis in this Initial Study and the findings reached indicate that the proposed project can be implemented without causing any new project specific or cumulatively considerable unavoidable significant adverse environmental impacts. Mitigation is required to control potential environmental impacts of the proposed project to a less than significant impact level. The following findings are based on the detailed comparative analysis of the 2015 approved project and proposed modified project for all environmental topics and the implementation of the mitigation measures identified in the previous text and summarized following this section.

- a. Less Than Significant With Mitigation Incorporated The site biological resource impacts are comparable and because there are a minimum of sensitive biological resources on the project site, no biological resource mitigation measures are required to be implemented. The cultural resources evaluation indicates that the site does not contain any known historical or archaeological resources, but to ensure that any sub-surface cultural resources exposed during construction are managed without significant impact, seven cultural resource mitigation measures were identified and will be implemented by the modified project.
- b. Less Than Significant With Mitigation Incorporated The environmental issues that have a potential to contribute to cumulative impacts include the following: aesthetics, agricultural/forestry resources, air quality, energy, greenhouse gas emissions, hydrology and water quality, land use/planning, noise, population/housing, public services, recreation, transportation, tribal cultural resources, and utilities/service systems. Potential cumulative impacts were compared between the original approved and proposed modified projects and no cumulatively considerable adverse impacts were identified for either project. Mitigation measures in the original Initial Study were identified for the following environmental Issues: aesthetics, hydrology and water quality, noise, recreation, transportation, and utilities/service systems. To ensure that issues requiring mitigation are managed without significant

impact, the mitigation measures that were identified will be implemented by the modified project. With implementation of these mitigation measures, no new cumulatively considerable adverse impacts will be caused by implementing the proposed modified project.

c. Less Than Significant With Mitigation Incorporated – The environmental issues that have a potential to cause direct or indirect impact on humans include the following: air quality, hazards and hazardous materials, hydrology and water quality, noise, and wildfire. Potential impacts on humans were compared between the original approved and proposed modified projects and no new significant cumulatively considerable adverse impacts were identified for either project. Mitigation measures in the original Initial Study were identified for the following environmental Issues: aesthetics, hydrology and water quality, noise, and. To ensure that issues requiring mitigation are managed without significant impact, the mitigation measures that were identified will be implemented by the modified project. With implementation of these mitigation measures, no new significant human adverse impacts will be caused by implementing the proposed modified project.

Revised 2019 Authority: Public Resources Code sections 21083 and 21083.09 Reference: Public Resources Code sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3/ 21084.2 and 21084.3

Note: Authority cited: Sections 21083 and 21083.05, Public Resources Code. Reference: Section 65088.4, Gov. Code; Sections 21080(c), 21080.1, 21080.3, 21083, 21083.05, 21083.3, 21093, 21094, 21095, and 21151, Public Resources Code; *Sundstrom v. County of Mendocino*,(1988) 202 Cal.App.3d 296; *Leonoff v. Monterey Board of Supervisors*, (1990) 222 Cal.App.3d 1337; *Eureka Citizens for Responsible Govt. v. City of Eureka* (2007) 147 Cal.App.4th 357; *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th at 1109; San *Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656.

# 4. CONCLUSION

The information presented in the 2016 IS/MND for the RDR 2014-05 Project was used as a basis for the analysis in this Addendum, updated with current information from sources cited, referenced, and attached. Upon review of the 2016 IS/MND, the information and findings in this Addendum and all supporting evidence, this Addendum concludes that the potential adverse environmental impacts from implementing the proposed modified project, as described in Section 1.B of this document (RDR 2022-15), will not cause any new or substantially more severe significant impacts to the environment than forecasted in the 2016 IS/MND as summarized in this Addendum and provided in Appendix 1. The proposed RDR 2022-15 project will be required to comply with the adopted 2016 IS/MND mitigation measures and conditions of approval as applicable for construction and operation of the multi-family project. A copy of all mitigation measures is provided for review in Appendix 1 of this document. There are no new or substantially more severe environmental impacts that result from the proposed revised project modifications, based on continuing to implement the commitments in the 2016 IS/MND. For most issues the impacts from the RDR 2022-15 project will be comparable or slightly greater than would occur if the approved project was implemented, because the revised project is slightly denser with 2 more residential units than the Original Project. In no instance will any new significant impact result from modified project implementation.

This Addendum provides the City of Lake Elsinore with new and updated information substantiating the conclusion that the proposed revised project modifications will not cause substantial new or more significant physical changes to the environment that would require preparation and processing of a new negative declaration or a new environmental impact report. Such documentation would only be required due to the involvement of new significant environmental effects, new mitigation measures being available or required, or a substantial increase in the severity of previously identified significant effects from implementing the original project (Section 15162, State CEQA Guidelines). The facts and findings cited above and provided in this Addendum allow the City to use an Addendum in accordance with Section 15164 of the State CEQA Guidelines for considering approval of the RDR 2022-15 project.

Pursuant to CEQA Section 15164, the IS/MND adopted in 2016, as updated with this Addendum, can be relied upon for documentation of the effects of approving the RDR 2022-15 project. Because the changes in this project do not exceed the thresholds outlined in Sections 15162 and 15164 of the State CEQA Guidelines, no further analysis of the environmental impacts of the project is required in a Supplemental/Subsequent EIR or a new MND. The proposed revised project does not substantially alter the conclusions contained in the IS/MND as adopted by the City in 2016. The analysis presented above of the changes to the approved RDR 2015-05 project provides substantial evidence in support of the City's adoption of Addendum No. 1 to the City's original 2014 IS/MND.

This Addendum No. 1 to the 2016 IS/MND for the proposed RDR 2022-15 project includes the changes or additions necessary to make the adopted environmental document adequate under CEQA for the proposed project modifications and new entitlement. This Addendum incorporates the adopted 2016 IS/MND, this document, and all staff reports, and information submitted to the decision-makers regarding environmental issues affected by the proposed revised project. This Addendum is intended to provide additional information for decision makers and others, as appropriate, to review with an objective assessment of the potential environmental impacts associated with the implementation of the proposed project as defined in the RDR 2022-15 project.

# 5. **REVIEW AUTHORITY**

The City of Lake Elsinore serves as the CEQA lead agency for this project. It is recommended that an Addendum be adopted as the appropriate CEQA environmental determination for the proposed project modifications, which are outlined in the RDR 2022-15 application to allow installation of a 152-unit multi-family apartment project on an 8.27-acre property in the City of Lake Elsinore, the supporting application, and the supporting findings and conditions of approval. All documents supporting the Addendum, as well as the prior environmental documents, are located at the City of Lake Elsinore Planning Division at 130 South Main Street, Lake Elsinore, CA 92530.

# 6. CERTIFICATION

Signature	Date
Project Planner	For: Community Development Director
Printed Name	

# 7. REFERENCES

- Infrastructure Group, Inc. "Traffic Impact Analysis, Lakeshore Pointe, Lake Elsinore California" dated October 22, 2015
- Matthew Fagan Consulting Services, Inc., "Initial Study & Mitigated Negative Declaration for the Lakepointe Apartments, RDR 2014-05, MND 2016-01" dated July 2016
- M:L Engineering, "Project Specific Water Quality Management Plan, Lakepointe Apartments" dated January 12, 2016
- RK Engineering Group, Inc., *Lake Pointe Apartments Air Quality and Greenhouse Gas Impact Study, City of Lake Elsinore, California*" dated November 8, 2022
- RK Engineering Group, Inc., *"Lake Pointe Apartments Noise Impact Study, City of Lake Elsinore, California"* dated November 8, 2022
- RK Engineering Group, Inc., *"Lakepointe Apartments Project Focused Traffic Impact Analysis, City of Lake Elsinore, CA"* dated November 9, 2022
- RK Engineering Group, Inc., "Lakepointe Apartments Vehicle Miles Traveled Analysis, City of Lake Elsinore, CA" dated October 24, 2022
- Southern California Geotechnical, "Geotechnical Investigation and Liquefaction Evaluation. Proposed Multi-Family Residential Development, Riverside Drive SW of Eisenhower Drive, Lake Elsinore, California" dated December 8, 2005
- Southern California Geotechnical, "Phase I Environmental Site Assessment Proposed Multi-Family Residential Development Riverside Drive southwest of Eisenhower Drive, Lake Elsinore, California" dated December 8, 2006
- Vista Environmental, "Noise Impact Analysis, Lakepointe Apartments Project, City of Lake Elsinore" dated November 25, 2015
- Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Report for the Project site (APN 379-090-022)

# FIGURES



# FIGURE 1

**Tom Dodson & Associates** Environmental Consultants

Aerial Map (Site Location)



**Tom Dodson & Associates** Environmental Consultants

Site Location



# FIGURE 3

**Tom Dodson & Associates** Environmental Consultants

# **Schematic Site Plan**

# **APPENDIX 1**

# **INITIAL STUDY**

&

# MITIGATED NEGATIVE DECLARATION FOR THE

# LAKEPOINTE APARTMENTS

Residential Design Review (RDR 2014-05)

Mitigated Negative Declaration (MND 2016-01)

Lead Agency:

City of Lake Elsinore 130 South Main Street Lake Elsinore, CA 92530 951.674.3124 Ext. 284 Point of Contact: Justin Kirk, Principal Planner Jkirk@lake-elsinore.org

Prepared By:

Matthew Fagan Consulting Services, Inc. 42011 Avenida Vista Ladera Temecula, CA 92591 951.265.5428 Point of Contact: Matthew Fagan, Owner <u>matthewfagan@roadrunner.com</u>

Applicant:

Lakeside Pointe, LLC 43414 Business Park Dr. Temecula, CA 92590 951.551.5433 Point of Contact: Steve Rawlings ser@rawlingspm.com

# July 2016

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## TECHNICAL APPENDICES (Located in the CD in a pocket at the back of this IS/MND)

- Appendix A: Air Quality and GHG Emissions Impact Analysis, Lakepointe Apartments Project, City of Lake Elsinore, prepared by Vista Environmental, November 19, 2015.
- Appendix B: Western Riverside County Multiple Species Habitat Conservation Plan Report, accessed on June 13, 2016.
- Appendix C: Geotechnical Investigation and Liquefaction Evaluation. Proposed Multi-Family Residential Development, Riverside Drive SW of Eisenhower Drive. Lake Elsinore. California, prepared by Southern California Geotechnical, December 8, 2005.
- Appendix D: Phase I Environmental Site Assessment Proposed Multi-Family Residential Development Riverside Drive, southwest of Eisenhower Drive Lake Elsinore, California, prepared by Southern California Geotechnical, January 3, 2006.
- Appendix E: Project Specific Water Quality Management Plan, Lakepointe Apartments, prepared by MLB Engineering, January 12, 2016.
- Appendix F: Noise Impact Analysis, Lakepointe Apartments Project, City of Lake Elsinore, prepared by Vista Environmental, November 25, 2015.
- Appendix G: *Traffic Impact Analysis, Lakeshore Pointe, Lake Elsinore California*, prepared by Infrastructure Group, Inc., October 22, 2015.
- Appendix H: Elsinore Valley Municipal Water District Pre-Planning Letter No. CRS# 1767, May 15, 2014.
- **Appendix I:** Notice of Availability and Intent to Adopt.
- **Appendix J:** Notice of Completion.
- Appendix K: IS/MND Distribution List.

# I. INTRODUCTION

# A. PURPOSE.

This document is an Initial Study and Mitigation Negative Declaration (IS/MND), which has been prepared to evaluate the environmental impacts resulting from implementation of a 150-unit multi-family development, on an approximate 8.27-acre site, located northerly of Grand Avenue, southwesterly of Eisenhower Drive, and known as Assessor's Parcel Number 379-090-022 ("Project"). Reference Figure 1, *Vicinity Map.* 

One (1) application has been submitted to the City of Lake Elsinore in association with the Project:

• Residential Design Review (RDR 2014-05).

# B. CALIFORNIA ENVIRONMENTAL QUALITY ACT REQUIREMENTS.

As defined by Section 15063, *Initial Study*, of the State California Environmental Quality Act Guidelines (State CEQA Guidelines), an Initial Study is prepared primarily to provide the Lead Agency with information to use as the basis for determining whether an Environmental Impact Report (EIR), Negative Declaration (ND), or Mitigated Negative Declaration (MND) would be appropriate for providing the necessary environmental documentation and clearance for any proposed project.

According to Section 15065(a), *Mandatory Findings of Significance*, of the State CEQA Guidelines, an EIR is deemed appropriate for a particular proposal if the following conditions occur:

- The project has 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 an endangered, rare or threatened species; or eliminate important examples of the major periods of California history or prehistory.
- The project has the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals.
- The project has possible environmental effects that are individually limited but cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.
- The environmental effects of a project will cause substantial adverse effects on human beings, either directly or indirectly.

According to Section 15070(a), *Decision to Prepare a Negative of Mitigated Negative Declaration*, of the State CEQA Guidelines, a Negative Declaration is deemed appropriate if initial study shows that there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment.

According to Section 15070(b), *Decision to Prepare a Negative of Mitigated Negative Declaration*, of the State CEQA Guidelines, a Mitigated Negative Declaration is deemed appropriate if identifies potentially significant effects, but:

• Revisions in the project plans or proposals made by or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and

• There is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment.

This IS/MND has determined that the Project will result in potentially significant environmental impacts; however, mitigation measures are proposed that will reduce any potentially significant impact to less than significance levels. As such, a MND is deemed as the appropriate document to provide necessary environmental evaluations and clearance.

This IS/MND has been prepared in conformance with the California Environmental Quality Act of 1970, as amended (Public Resources Code, Section 21000 et. seq.); Section 15070 of the State Guidelines for Implementation of the California Environmental Quality Act of 1970, as amended (California Code of Regulations, Title 14, Chapter 3, Section 15000, et. seq.); applicable requirements of the City of Lake Elsinore; and the regulations, requirements, and procedures of any other responsible public agency or an agency with jurisdiction by law.

The City of Lake Elsinore City Council is designated the Lead Agency, in accordance with Section 15050, *Lead Agency Concept*, of the State CEQA Guidelines. The Lead Agency is the public agency which has the principal responsibility for carrying out or approving a project which may have significant effects upon the environment.

# C. INTENDED USES OF INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION.

This IS/MND is an informational document which is intended to inform City of Lake Elsinore decision makers, other responsible or interested agencies, and the general public of potential environmental effects of the Project. The environmental review process has been established to enable public agencies to evaluate environmental consequences and to examine and implement methods of eliminating or reducing any potentially adverse impacts. While CEQA requires that consideration be given to avoiding environmental damage, the Lead Agency and other responsible public agencies must balance adverse environmental effects against other public objectives, including economic and social goals.

The Notice of Availability and Intent to Adopt prepared for the MND will be circulated for a period of 30 days for public and agency review. Comments received on the document will be considered by the Lead Agency before it acts on the proposed applications.

### D. CONTENTS OF INITIAL STUDY/MITIGATED NEGATIVE DECLARATION.

This IS/MND is organized to facilitate a basic understanding of the existing setting and environmental implications of the proposed applications.

**I. INTRODUCTION** presents an introduction to the entire report. This section identifies City of Lake Elsinore contact persons involved in the process, scope of environmental review, environmental procedures, and incorporation by reference documents.

**II. PROJECT DESCRIPTION** describes the Project, a description of discretionary approvals and permits required for Project implementation is also included.

**III. ENVIRONMENTAL CHECKLIST' FORM** contains the City's Environmental Checklist Form. The checklist form presents the results of the environmental evaluation for the Project and those issue areas that would have either a significant impact, potentially significant impact, or no impact.

**IV. ENVIRONMENTAL ANALYSIS** evaluates each response provided in the environmental checklist form. Each response checked in the checklist form is discussed and supported with sufficient data and

analysis. As appropriate, each response discussion describes and identifies specific impacts anticipated with Project implementation. In this section, mitigation measures are also recommended, as appropriate, to reduce adverse impacts to levels of less than significance. This Section also includes the Mandatory Findings of Significance, in accordance with Section 15065, *Mandatory Findings of Significance*, of the State CEQA Guidelines.

**V. PERSONS AND ORGANIZATIONS CONSULTED** identifies those persons consulted and involved in preparation of this IS/MND.

# E. SCOPE OF ENVIRONMENTAL ANALYSIS.

For evaluation of environmental impacts, each question from the Environmental Checklist Form is stated and responses are provided according to the analysis undertaken as part of the Initial Study. All responses will take into account the whole action involved, including offsite as well as onsite, cumulative as well as Project-level, indirect as well as direct, and construction as well as operational impacts. Project impacts and effects will be evaluated and quantified, when appropriate. To each question, there are four possible responses, including:

- **No Impact:** A "No Impact" response is adequately supported if the referenced information sources show that the impact simply does not apply as a result of implementation of the Project.
- Less Than Significant Impact: Development associated with Project implementation will have the potential to impact the environment. These impacts, however, will be less than the levels of thresholds that are considered significant and no additional analysis is required.
- Less Than Significant With Mitigation Incorporated: This applies where incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The Lead Agency must describe the mitigation measures, and explain how the measures reduce the effect to a less than significant level.
- **Potentially Significant Impact:** Future implementation will have impacts that are considered significant and additional analysis and possibly an EIR are required to identify mitigation measures that could reduce these impacts to less than significant levels.

This environmental document evaluates impacts resulting from the implementation of the Project during the construction and operational phases.

Regarding mitigation measures, it is not the intent of this document to "overlap" or restate conditions of approval or standard Project design features that are established for the Project. Additionally, those other standard requirements and regulations that any development must comply with, that are outside the City's jurisdiction, are also not considered mitigation measures and therefore, may or may not be identified in this document.

# F. TIERED DOCUMENTS, INCORPORATION BY REFERENCE, AND TECHNICAL STUDIES.

Information, findings, and conclusions contained in this document are based on incorporation by reference of tiered documentation, and technical studies that have been prepared for the Project, which are discussed in the following section.

# a) <u>Tiered Documents</u>.

As permitted in Section 15152(a), *Tiering*, of the State CEQA Guidelines, information and discussions from other documents can be included into this document. Tiering is defined as follows:

"Tiering refers to using the analysis of general matters contained in a broader EIR (such as the one prepared for a general plan or policy statement) with later EIRs and negative declarations on narrower projects; incorporating by reference the general discussions from the broader EIR; and concentrating the later EIR or negative declaration solely on the issues specific to the later project."

For this document, the "City of Lake Elsinore General Plan Update Final EIR" (adopted in 2011) serves as the broader document, since it analyzes the entire City area, which includes the Project site. However, as discussed, site-specific impacts which the broader document (City of Lake Elsinore General Plan Update Final EIR) cannot adequately address, may occur for certain issue areas. This IS/MND evaluates each of those specific environmental issue area sand will rely upon analysis contained within the City of Lake Elsinore General Plan Update Final EIR (General Plan EIR) with respect to remaining issue areas.

Tiering also allows this document to comply with Section 15152(b), *Tiering*, of the State CEQA Guidelines, which discourages redundant analyses, as follows:

"Agencies are encouraged to tier the environmental analyses which they prepare for separate but related projects including the general plans, zoning changes, and development projects. This approach can eliminate repetitive discussion of the same issues and focus the later EIR or negative declaration on the actual issues ripe for decision at each level of environmental review. Tiering is appropriate when the sequence of analysis is from an EIR prepared for a general plan, policy or program to an EIR or negative declaration for another plan, policy, or program of lesser scope, or to a site-specific EIR or negative declaration."

Further, Section 15152(d), *Tiering*, of the State CEQA Guidelines states:

"Where an EIR has been prepared and certified for a program, plan, policy, or ordinance consistent with the requirements of this section, any lead agency for a later project pursuant to or consistent with the program, plan, policy, or ordinance should limit the EIR or negative declaration on the later project to effects which:

(1) Were not examined as significant effects on the environment in the prior EIR; or

(2) Are susceptible to substantial reduction or avoidance by the choice of specific revisions in the project, by the imposition of conditions, or other means."

### 2. Incorporation By Reference.

Incorporation by reference is a procedure for reducing the size of EIRs and is most appropriate for including long, descriptive, or technical materials that provide general background information, but do not contribute directly to the specific analysis of the project itself. This procedure is particularly

useful when an EIR or Negative Declaration relies on a broadly-drafted EIR for its evaluation of cumulative impacts of related projects (*Las Virgenes Homeowners Federation v. County of Los Angeles* [1986, 177 Ca.3d 300]). If an EIR or Negative Declaration relies on information from a supporting study that is available to the public, the EIR or Negative Declaration cannot be deemed unsupported by evidence or analysis (*San Francisco Ecology Center v. City and County of San Francisco* [1975, 48 Ca.3d 584, 595]). This document incorporates by reference the document from which it is tiered, the General Plan EIR, prepared in 2011.

When an EIR or Negative Declaration incorporates a document by reference, the incorporation must comply with Section 15150, *Incorporation By Reference*, of the State CEQA Guidelines as follows:

- The incorporated document must be available to the public or be a matter of public record (State CEQA Guidelines Section 15150[a]), *Incorporation By Reference*. The General Plan EIR shall be made available, along with this document, at the City of Lake Elsinore, Community Development Department, 130 South Main Street, Lake Elsinore, CA 92530.
- This document must be available for inspection by the public at an office of the lead agency (State CEQA Guidelines Section 15150[b]), *Incorporation By Reference*. This document is available at the City of Lake Elsinore, Community Development Department, 130 South Main Street, Lake Elsinore, CA 92530.
- This document must summarize the portion of the document being incorporated by reference or briefly describe information that cannot be summarized. Furthermore, this document must describe the relationship between the incorporated information and the analysis in the General Plan EIR (State CEQA Guidelines Section 15150[c]), *Incorporation By Reference*. As discussed above, the General Plan EIR addresses the entire City of Lake Elsinore and provides background and inventory information and data which apply to the Project site. Incorporated information and/or data will be cited in the appropriate sections.
- This document must include the State identification number of the incorporated document (State CEQA Guidelines Section 15150[d]), *Incorporation By Reference*. The State Clearinghouse Number for the General Plan EIR is 2005121019.
- The material to be incorporated in this document will include general background information (State CEQA Guidelines Section 15150[f]), *Incorporation By Reference*.

# G. TECHNICAL STUDIES.

The following technical studies were prepared for the Project and are available on the CD located in a pocket at the back of this IS/MND:

- Air Quality and GHG Emissions Impact Analysis, Lakepointe Apartments Project, City of Lake Elsinore, prepared by Vista Environmental, November 19, 2015.
- Geotechnical Investigation and Liquefaction Evaluation. Proposed Multi-Family Residential Development, Riverside Drive SW of Eisenhower Drive. Lake Elsinore. California, prepared by Southern California Geotechnical, December 8, 2005.
- Phase I Environmental Site Assessment Proposed Multi-Family Residential Development Riverside Drive, southwest of Eisenhower Drive Lake Elsinore, California, prepared by Southern California Geotechnical, January 3, 2006.
- *Project Specific Water Quality Management Plan, Lakepointe Apartments*, prepared by MLB Engineering, January 12, 2016.
- Noise Impact Analysis, Lakepointe Apartments Project, City of Lake Elsinore, prepared by Vista Environmental, November 25, 2015.
- *Traffic Impact Analysis, Lakeshore Pointe, Lake Elsinore California*, prepared by Infrastructure Group, Inc., October 22, 2015.

# **II. PROJECT DESCRIPTION**

# A. PROJECT LOCATION AND SETTING.

The Project site is generally located northerly of Grand Avenue, southwesterly of Eisenhower Drive, adjacent to Lakeside High School. Refer to Figure 1, *Vicinity Map*. The site is contained within portions of Sections 11, 2, and 3, Township 6 South and Range 5 West of the United States Geological Survey (USGS) Topographic Map, 7.5 Minute Series, Alberhill, California Quadrangle and known as Assessor's Parcel Number 379-090-022.

The proposed Project site totals approximately 8.27 acres. The proposed Project site is located west of Riverside Drive and north of Grand Avenue and Lakeside High School. It is bordered on the west by vacant land, and on the north by a small commercial center. There is a single-family development west of the vacant land and north of the commercial center.

The proposed Project site has elevations ranging from about 1,268 - 1,284 feet above mean sea level (MSL). An unimproved dirt road trending roughly northwest/southeast traverses the Project site from Riverside Drive to the northwesterly adjacent residential neighborhood. A small walnut grove is present in the north corner of the Project site. The ground surface cover consists of exposed soil with moderate native grass and weed growth over the majority of the Project site and exposed soil with sparse native grass and weed growth in the walnut grove area. There are no water resources on the proposed Project site; however, it is approximately 0.26 miles west of Lake Elsinore, across Riverside Drive.

# **B. PROJECT DESCRIPTION**

# 1. Introduction

Lakeside Pointe, LLC (Project proponent) is proposing to implement a 150-unit multi-family Project with associated recreational amenities – tot lot, swimming pool, and clubhouse on an approximate 8.27-acre site, located within the City of Lake Elsinore, western Riverside County, California. Residential Design Review 2014-05 allows for 150 multi-family units, associated landscaping, parking, as well as recreational uses on the entire approximately 8.27-acre proposed Project site, for an overall Project density of approximately 18.14 dwelling units per acre. A more detailed Project description is provided in the following text.

# 2. Residential Design Review (RDR 2014-05)

The City of Lake Elsinore has deemed a quality physical environment as being necessary for the protection of the public's health, safety and welfare and has therefore enacted Chapter 17.184, *Design Review*, of the City's Municipal Code in order to establish a design review process for development proposals and design concepts in order to ensure that new development, or the alteration of existing development, occurs in a manner which enhances the character and quality of surrounding properties and that the scale, special relationships and architectural treatment of structures including materials, colors, and design, visually contribute to the area and environment in which they are located. The design review process is also intended to apply to the ancillary elements of projects such as signs and landscaping in order to ensure that the overall development maintains the same integrity of design as approved for the primary structure(s).

# 3. Overall Description

A total of 150 units are proposed within ten (10) individual buildings. The proposed Project will be a gated complex. Access to the proposed Project will be via the proposed street on the north side of the Project site, which will be a cul-de-sac. A secondary, gated emergency access will be provided on the west side of the Project

site, exiting onto Riverside Drive. A drive lane is proposed in the middle of the proposed Project and the units will encircle the central parking areas. All structures will be internal to the proposed Project site. There will be ten residential buildings total. Buildings will range from 8,986 square feet (sq. ft.) to 22,100 sq. ft. Refer to Figure 2, *Residential Design Review 2014-05 Site Plan.* 

Building	Square Feet	1 Bedroom	2 Bedroom	3 Bedroom	Total Units
Number		Units	Units	Units	
1	22,100	18	0	4	22
2	17,276	8	0	8	16
3	17,276	8	0	8	16
4	8,986	0	8	0	8
5	17,921	0	16	0	16
6	17,921	0	16	0	16
7	17,921	0	16	0	16
8	15,975	0	8	8	16
9	17,921	0	16	0	16
10	8,986	0	8	0	8
Totals	162,283	34	88	28	150

The building/unit breakdowns are as follows:

Site breakdowns (by overall site percentage of the Project site) are as follows:

- Buildings: approximately 22.5%;
- Hardscape/pavement/parking: approximately 53.6%; and
- Landscaping/open space: approximately 23.9%.

On-site recreational amenities will be located in both the north and south portions of the proposed Project site. On the north part of the Project site, adjacent to the main entry, there will be a 1,619 square foot clubhouse that will house the leasing office, a conference room, multi-purpose room, kitchen, pool equipment, and utility area. The proposed pool area is west of the clubhouse and includes a b-b-q counter, cabanas, and a fireplace. A tot lot is provided on the south side of the Project site between buildings 6 and 7.

Drive lane widths internal to the proposed Project will be a minimum of 28'. Per the City's Development Code, 150 covered parking spaces and 178 open parking spaces are required; 150 covered parking spaces and 189 uncovered spaces are provided. There are 339 spaces total, including 17 ADA spaces.

#### **Building Architecture and Materials**

Buildings 2 through 10 are two-stories, approximately 28' tall. Building 1 is three-stories and is 38' tall. The clubhouse is one-story and is 17' 4" tall. The buildings are to be designed with stucco exterior walls in 2 colors with decorative window surrounds and a stone wainscot. Concrete tile roofing is proposed.

Building colors and finishes are:

- Stucco Color 1: Frazee "Cheer"
- Stucco Color 2: Frazee "Arizona White"
- Roof Tile: American Eagle Ponderosa 5530 Weathered Adobe
- Stone: *El Dorado Pacific Ledge Stone Color: Cordovan*

Refer to Figures 3a and 3b, Residential Design Review 2014-05 Elevations.

# Circulation

The Project proposes one primary access point from to be taken from the proposed cul-de-sac at the north of the site. The roadway will be built to City standards and offered for dedication to the City. Until the City accepts the dedication, it will be maintained by the apartment owner. A secondary, gated, emergency access will be provided on to Riverside Drive. No daily traffic will utilize this access.

A traffic signal warrant analysis was conducted at the intersection of Riverside Drive/Grand Avenue for the Cumulative condition. The Caltrans Warrant 3 (Peak Hour) Analysis shows that the minor street approach (Grand Avenue) meets and exceeds the volume required to warrant a traffic signal (354 AM peak hour vehicles and 442 PM peak hour vehicles), regardless of the through traffic on Riverside Drive.

# Drainage / Hydrology / Water Quality

Drainage will be channeled from the buildings and imperious surfaces into storm drain facilities, bio retention landscape areas, flowing into a bioretention swale, as depicted on Figure 4, Preliminary WOMP Site Plan, through a system of roof drains and storm drains, respectively. Flows will be released into the exiting curb and gutter on Riverside Avenue, and will be picked up by existing Caltrans facilities.

#### Sewer and Water Facilities

The proposed Project will tie into existing water Elsinore Valley Municipal Water District (EVMWD) facilities. An existing 8" water line is located to the north of the proposed Project access street and continues into Riverside Drive. Wastewater treatment will also be handled by EVMWD facilities. The Project will have to construct an 8" sewer line that will tie into the existing sewer on the SE side of Riverside Drive, along the Project's frontage.

### Utilities

All utilities and public services are currently available on, or adjacent to, the proposed Project site. Utility and Service providers are as follows:

- Electricity: Southern California Edison
- Elsinore Valley Municipal Water District Water:
- Sewer: Elsinore Valley Municipal Water District •
- Verizon/Time Warner • Cable:
- Southern California Gas Company Gas:
- Verizon/Time Warner • Telephone:

### **Construction Scenario**

The Project is expected to begin construction in December 2016 and take approximately eleven (11) months to complete.

The phases of the construction activities described below are as outlined in the Air Quality and Greenhouse Gas Report prepared for the Project and is provided as Appendix A of this IS/MND.

#### Site Preparation

The site preparation phase would consist of removing any vegetation, tree stumps, and stones onsite prior to Lakepointe Apartments 8

grading. The site preparation phase was anticipated to start around June 2016 and was modeled as occurring over two weeks. The site preparation activities would require up to 18 worker trips per day. In order to account for water truck emissions, six vendor truck emissions were added to the site preparation phase. The onsite equipment would consist of three rubber tired dozers and four of either a tractor, loader, or backhoe, which is based on the California Emission Estimator Model (CalEEMod) default equipment mix. The mitigation of water all exposed areas three times per day was chosen in order to account for the fugitive dust reduction that would occur through adhering to South Coast Air Quality Management District (SCAQMD) Rule 403, which requires that the Best Available Control Measures be utilized to reduce fugitive dust emissions.

### Grading

The grading phase would occur after the completion of the site preparation phase and is anticipated to take approximately four weeks to complete. The proposed grading is balanced, which would result in no dirt being imported or exported from the Project site. The grading activities would require up to 15 worker trips per day. In order to account for water truck emissions, six vendor truck emissions were added to the grading phase. The onsite equipment would consist of the simultaneous operation of one excavator, one grader, one rubber tired dozer, and three of either a tractor, loader or backhoe, which is based on the CalEEMod default equipment mix. The mitigation of water all exposed areas three times per day was chosen in order to account for the fugitive dust reduction that would occur through adhering to SCAQMD Rule 403, which requires that the Best Available Control Measures be utilized to reduce fugitive dust emissions.

### **Building Construction**

The building construction would occur after the completion of the grading phase. The building construction phase was modeled based on occurring over 11 months. The building construction would require up to 112 worker trips and 17 vendor trips per day. The onsite equipment would consist of the simultaneous operation of one crane, three forklifts, one generator set, one welder, and three of either a tractor, loader, or backhoe, which is based on the CalEEMod default equipment mix.

### Paving

The paving would occur after the completion of the building construction phase. The paving phase was modeled based on the paving of the onsite roads and parking spaces that would require paving approximately two acres of the Project site. The paving activities would occur over four weeks and would require up to 15 worker trips per day. The onsite equipment would consist of the simultaneous operation of two pavers, two paving equipment, and two rollers, which is based on the CalEEMod default equipment mix.

### Architectural Coating

The application of architectural coatings would occur after the completion of the paving phase. The architectural coating phase was modeled based on covering 307,800 square feet of residential interior area, 102,600 square feet of residential exterior area, and 325 square feet of non-residential area. The architectural coating phase would occur over two months and would require approximately 22 worker trips per day. The onsite equipment would consist of one air compressor, which is based on the CalEEMod default equipment mix.

# **III. ENVIRONMENTAL CHECKLIST**

# A. BACKGROUND.

- 1. Project Title: Lakepointe Apartments: Residential Design Review (RDR 2014-05).
- 2. Lead Agency Name and Address: City of Lake Elsinore; 130 South Main Street; Lake Elsinore, CA.92530
- 3. Contact Person and Phone Number: Justin Kirk, Principal Planner, (951) 674-3124, extension 284.

### 4. Project Location:

Northerly of Grand Avenue, southwesterly of Eisenhower Drive, and known as Assessor's Parcel Number (APN) 379-090-022 ("Project"). Reference Figure 1, *Vicinity Map*.

5. Project Sponsor's Name and Address: Lakeside Pointe, LLC, 43414 Business Park Drive, Temecula, CA 92590.

### 6. General Plan Designation:

• Residential Mixed-Use (RMU), Reference Figure 5, General Plan Map

# 7. Zoning:

• Residential Mixed-Use (RMU), Reference Figure 6, Zoning Map

## 8. Description of Project:

Lakeside Pointe, LLC (Project proponent) is proposing to implement a 150-unit multi-family Project with associated recreational amenities – tot lot, swimming pool, and clubhouse on an approximate 8.27-acre site, located within the City of Lake Elsinore, western Riverside County, California. Residential Design Review 2014-05 allows for 150 multi-family units, associated landscaping, parking, as well as recreational uses on the entire approximately 8.27-acre proposed Project site.

### 9. Surrounding Land Uses and Setting:

The proposed Project site is located west of Riverside Drive and north of Grand Avenue and Lakeside High School. It is bordered on the west by vacant land, and on the north by a small commercial center. There is a single-family development west of the vacant land and north of the commercial center. Figure 7, *Aerial Photo.* 

### 10. Other Public Agencies Whose Approval is Required:

• Department of Transportation, District 8.

#### B. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a "Potentially Significant Impact," as indicated by the checklist on the following pages.

$\boxtimes$	Aesthetics		Agricultural Resources		Air Quality & GHG
	Biological Resources	$\square$	Cultural Resources	$\boxtimes$	Geology/Soils
$\boxtimes$	Hazards/Hazardous Matl's.	$\square$	Hydrology/Water Quality		Land Use/Planning
	Mineral Resources	$\square$	Noise		Population/Housing
	Public Services		Recreation	$\square$	Transportation/Traffic
	Utilities/Service Systems	$\bowtie$	Mandatory Findings of Signi	ficance	:

#### C. DETERMINATION

On the basis of this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because of the incorporated mitigation measures and revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
  - I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
  - I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
  - I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Justin Kirk for Grant Taylor, Director of Community Development

7-1-16

# IV. ENVIRONMENTAL ANALYSIS

	Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
А.	AESTHETICS. Would the Project:				
a)	Have a substantial adverse effect on a scenic vista?			$\checkmark$	
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcrops, and historic buildings within a state scenic highway?				√
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?			$\checkmark$	
d)	Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?		$\checkmark$		
В.	AGRICULTURE RESOURCES. In determining significant environmental effects, lead agencies Evaluation and Site Assessment Model (1997) pr as an optional model to use in assessing impa Project:	g whether in may refer repared by t acts on agr	mpacts to agric to the Californi he California D iculture and far	ultural reso a Agricultu ept. of Con rmland. W	urces are ral Land servation ould the
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (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?				$\checkmark$
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?				$\checkmark$
C.	AIR QUALITY & GREENHOUSE GAS EMM criteria established by the applicable air quality r be relied upon to make the following determination	MISSIONS. nanagemen ons. Would	Where availa t or air pollution the Project:	ble, the sign control dis	nificance strict may
a)	Conflict with or obstruct implementation of the applicable air quality plan?			$\checkmark$	
b)	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			$\checkmark$	
c)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)? Expose sensitive receptors to substantial			√ √	
u)	pollutant concentrations?			v	

	_	Less Than		
Issues	Potentially Significant Impact	Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
<ul> <li>e) Create objectionable odors affecting a substantial number of people?</li> </ul>		-	√	
<ul> <li>f) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?</li> </ul>			$\checkmark$	
g) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			$\checkmark$	
D. BIOLOGICAL RESOURCES. Would the Proje	ct:			
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?			~	
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?			$\checkmark$	
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) 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?				~
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				$\checkmark$
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan?				$\checkmark$
E. CULTURAL RESOURCES. Would the Projec	t:			
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?		$\checkmark$		
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?		$\checkmark$		

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
c) Directly or indirectly destroy a unique paleonto- logical resource or site or unique geologic feature?		$\checkmark$		
d) Disturb any human remains, including those interred outside of formal cemeteries?		$\checkmark$		
e) Cause a substantial adverse change in the significance of a tribal cultural resources as defined in Public Resources Code 21074?		$\checkmark$		
F. GEOLOGY AND SOILS. Would the Project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
<ul> <li>i) 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?</li> </ul>		$\checkmark$		
ii) Strong seismic ground shaking?		$\checkmark$		
iii) Seismic-related ground failure, including liquefaction?		$\checkmark$		
iv) Landslides?				$\checkmark$
b) Result in substantial soil erosion or the loss of topsoil?			$\checkmark$	
c) 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 on- or off- site landslide, lateral spreading, subsidence, liquefaction or collapse?		$\checkmark$		
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?		$\checkmark$		
e) 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?				$\checkmark$
G. HAZARDS AND HAZARDOUS MATERIALS.	Would the I	Project:		
a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?		$\checkmark$		
b) Create a significant hazard to the public or the environment through reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			~	

	Ţ	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	
	Issues	Impact	Incorporation	Impact	No Impact
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)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles or a public airport or public use airport, would the Project result in a safety hazard for people residing or working in the Project area?				~
f)	For a project within the vicinity of a private airstrip, would the Project result in a safety hazard for people residing or working in the Project area?				$\checkmark$
g)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				$\checkmark$
h)	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				~
H.	HYDROLOGY AND WATER QUALITY. Would	d the Projec	ct:		
a)	Violate any water quality standards or waste discharge requirements?		$\checkmark$		
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				~
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?			$\checkmark$	

	Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact	
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 substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off- site?			✓		
e)	Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?		$\checkmark$			
f)	Otherwise substantially degrade water quality?		$\checkmark$			
g)	Place housing within a 100-year flood hazard area as mapped on a federal Flood hazard Boundary of Flood Insurance Rate Map or other flood hazard delineation map?				$\checkmark$	
h)	Place within 100-year flood hazard area structures, which would impede or redirect flood flows?				$\checkmark$	
i)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				$\checkmark$	
j)	Inundation by seiche, tsunami, or mudflow?				$\checkmark$	
I.	I. LAND USE AND PLANNING. Would the Project:					
a)	Physically divide an established community?				~	
b)	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				~	
c)	Conflict with any applicable habitat conservation plan or natural community conservation plan?				$\checkmark$	
J.	MINERAL RESOURCES. Would the Project:					
a)	Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?				$\checkmark$	
b)	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				$\checkmark$	
K.	NOISE. Would the Project result in:	·				
	Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact	
----	---	--	--	---	--	
a)	Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		~			
b)	Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			$\checkmark$		
c)	A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?			$\checkmark$		
d)	A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?		✓			
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?				~	
f)	For a project within the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels?				✓	
L.	POPULATION AND HOUSING. Would the Pro-	oject:				
a)	Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			$\checkmark$		
b)	Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				√	
c)	Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				$\checkmark$	
M	I. PUBLIC SERVICES. Would the Project associated with the provision of new or phy new or physically altered governmental fac significant environmental impacts, in order times or other performance objectives for any	result in su vsically alter cilities, the to maintain of the publi	ubstantial advert red government construction of a acceptable services:	rse physica al facilities f which co rvice ratios,	l impacts , need for uld cause response	
a)	Fire protection?			$\checkmark$		
b)	Police protection?			$\checkmark$		
c)	Schools?			$\checkmark$		
d)	Parks?				$\checkmark$	

			Less Than		
	Issues	Potentially Significant Impact	Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
e)	Other public facilities?			$\checkmark$	
N.	<b>RECREATION</b> . Would the Project:	<u> </u>			
a)	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?		~		
b)	Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?			$\checkmark$	
0.	TRANSPORTATION/TRAFFIC. Would the Pr	oject:			
a)	Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?		~		
b)	Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?			$\checkmark$	
c)	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				$\checkmark$
d)	Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?		$\checkmark$		
e)	Result in inadequate emergency access?				$\checkmark$
f)	Result in inadequate parking capacity?				$\checkmark$
g)	Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				$\checkmark$
P.	UTILITIES AND SERVICE SYSTEMS. Would	the Project:			
a)	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?			$\checkmark$	
b)	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			$\checkmark$	

	Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
c)	Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			$\checkmark$	
d)	Have sufficient water supplies available to serve the Project from existing entitlements and resources or are new or expanded entitlements needed?			$\checkmark$	
e)	Result in a determination by the wastewater treatment provider, which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?			$\checkmark$	
f)	Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?			$\checkmark$	
g)	Comply with federal, state, and local statutes and regulations related to solid waste?			$\checkmark$	
Q.	MANDATORY FINDINGS OF SIGNIFICANC	Е.			
a)	Does the Project have the potential to 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, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		$\checkmark$		
b)	Does the 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 Project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?		$\checkmark$		

This section provides an evaluation of the impact categories and questions contained in the Environmental Checklist.

# A. AESTHETICS

# a) Would the Project have a substantial adverse effect on a scenic vista?

## Less Than Significant Impact

The Project is located in the northwestern corner of Lake Elsinore (Lake View District) and will be visible from the lake, from the west, and from some parts of the community on the eastside of Lake Elsinore. The views of Lake Elsinore and the escarpments of the Santa Ana Mountains (to the west) constitute the most prominent scenic features of the community.

According to the General Plan, the greatest variety of residential and commercial opportunities exists within the southeastern areas of the Lake View District particularly along Riverside Drive. (reference Figure LV-1, *Lake View District*, of the General Plan). As the mixed-use corridor along Riverside Drive transitions into a neighborhood commercial district, additional opportunities will increase and provide a catalyst for redevelopment and development of the entire area. It will be important to maintain and enhance pedestrian paths to these areas and recreational camping areas just south of Riverside Drive. As the northwestern and northeastern portions of the Lake View District are developed, it will be important to integrate these more remote areas to the central and southeastern areas of the Lake View District. As such, the Lake View District will result in a transition from a higher density and mixed-use area in the southeast to the lower density uses in the central, northern and western areas with strong pedestrian oriented ties throughout.

Development of the Project will not affect the scenic views of the Santa Ana Mountains because the site is adjacent to the Lake and the proposed structures are not tall enough to visually intrude into the face of the mountain escarpment which tower more than 1,500 feet above the area (the highest elevation of structures on the site is 1,315 feet while, the mountain escarpments behind the lake range between 2,800 and 3,000 feet in height.). The colors and materials of the Project are similar to the other new development along Riverside Avenue. Because the visual backdrop of the community is not being affected by the Project, the Project will not have a significant impact on any scenic vista.

At a Project level, the Project sites will be visible from Riverside Avenue, adjacent residents, and by the high school. The view from Riverside Avenue will be of the landscaped frontage and building fronts. Views of the Project from adjacent uses will be mitigated by the required site landscaping and the architectural details and building colors. Any Project-level visual impacts will be addressed through the City's design review process which will ensure compliance with City zoning and design standards regulating building design, mass, bulk, height, colors, etc. In addition, the City has a policy to require that the principles of four-sided architecture be applied to all projects. Project architecture consists of the inclusion of appropriate architectural detailing on all exterior elevations of the building. Implementing four-sided architecture means that the Project will be compatible on all sides with the surrounding area. Based upon this discussion of the large and small-scale aesthetic issues, the Project will have a less than significant adverse effect on a scenic vista. As a result, any scenic impacts are considered less than significant and no additional mitigation measures are required.

# b) Would the Project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway?

#### No Impact

The Project is located adjacent to State Route 74 (Riverside Avenue). Riverside Avenue has not been designated a scenic highway where it is adjacent to the Project site. There are no scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings on the Project site. Therefore, the Project will not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway. No impacts are anticipated. No mitigation is required.

# c) Would the Project substantially degrade the existing visual character or quality of the site and its surroundings?

## Less Than Significant Impact

The development of the Project site is not expected to degrade the existing visual character of the area. The proposed Project site is located west of Riverside Drive and north of Grand Avenue and Lakeside High School. It is bordered on the west by vacant land, and on the north by a small commercial center. There is a single-family development west of the vacant land and north of the commercial center. Given the current General Plan land use designation and the overall visual character of the surrounding area, the aesthetic character of the area will not be compromised by the Project. This aesthetic and design consistency is ensured through the City's design review process. As a result, any impacts are considered less than significant, and no additional mitigation measures are required.

# d) Would the Project create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?

#### Less Than Significant Impact with Mitigation Incorporation

Light and glare from new street lights, vehicles, and the future land uses will be generated and will contribute to the amount of light and glare experienced in the Project vicinity. The Project sites are located within an urbanized area which already experiences some levels of light and/or glare from the existing development. Development of the Project will require design review approval by the City of Lake Elsinore. The City's design review process is intended to ensure that future development will be designed to ensure design compatibility and to alleviate light and/or glare disturbances outside of the Project boundary. With the implementation of the Mitigation Measure AES-1, below, any impacts will remain less than significant. No additional mitigation is required.

#### MITIGATION MEASURES

AES-1. Prior to the issuance of any building permit, the Building Department shall ensure that all exterior light fixtures and outside area lighting is directed away from off-site residences and uses to comply with City design standards and building codes.

## **B.** AGRICULTURE RESOURCES

#### a) Would the Project Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

## No Impact

According to the Riverside County Information Technology (RCIT), located at the following web address that contains information specific to the Project APN, the Project site is designated as "Urban-Built Up Land" and "Local Importance":

http://tzvmag01.rivcoit.org/Riverside\_Report/PublicAPN\_Report.aspx?APN=379090022&Lat=2189933.56 751812&Long=6217827.93264567&MapURL=http%3a%2f%2ftzvmag01.rivcoit.org%2fGeocortex%2fEssen tials%2fREST%2fTempFiles%2fExport.png%3fguid%3d13a3305f-1317-46ec-860ed30033f9213d%26contentType%3dimage%252Fpng&ImageryURL=http%3a%2f%2ftzvmag01.rivcoit.org%2 fGeocortex%2fEssentials%2fREST%2fTempFiles%2fExport.png%3fguid%3dc7db395a-c503-42e9-adc0abea43a2e50c%26contentType%3dimage%252Fpng&st=

No farming is currently being conducted on the Project site, or in the immediate area. Therefore, development of the Project will not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency (<u>ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2012/riv12 w.pdf</u>), to non-agricultural use. Reference Figure 10, *Farmland*. No impacts are anticipated. No mitigation is required.

#### b) Would the Project conflict with existing zoning for agricultural use, or a Williamson Act contract?

#### No Impact

According to the RCIT, located at the aforementioned web address that contains information specific to the Project APN, the Project site is not with existing zoning for agricultural use, or a Williamson Act contract. Reference Figure 11, *Agricultural Preserves/Williamson Act*. Therefore, implementation of the Project (both Project sites) will not 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?

#### No Impact

According to a site visit and review of an aerial photo, the Project site, and adjacent parcels are not being utilized for agricultural cultivation. Based on this information, implementation of the Project will not involve other changes in the existing environment, which, due to their location or nature, could result in conversion of farmland to non-agricultural uses. No impacts are anticipated. No mitigation measures are required.

#### MITIGATION MEASURES

None required.

# C. AIR QUALITY

The following technical study was prepared to address issues related to air quality, and is available on the CD located in the back pocket of this IS/MND:

• Air Quality and GHG Emissions Impact Analysis, Lakepointe Apartments Project, City of Lake Elsinore, prepared by Vista Environmental, November 19, 2015 (AQ/GHG Analysis).

Please refer to Section 1.0 (Introduction), Section 2.0 (Pollutants), Section 3.0 (Air Quality Management), Section 4.0 (Atmospheric Setting), Section 5.0 (Modeling Parameters and Assumptions), and 6.0 (Thresholds of Significance) of the AQ/GHG Study, for additional details utilized for the impact analysis below.

## a) Would the Project conflict with or obstruct implementation of the applicable air quality plan?

## Less Than Significant Impact

State CEQA Guidelines Section 15125, *Environmental Setting*, requires a discussion of any inconsistencies between a proposed project and applicable General Plans (GPs) and regional plans. The regional plan that applies to the proposed Project includes the South Coast Air Quality Management District (SCAQMD) Air Quality Master Plan (AQMP).

The SCAQMD CEQA Handbook states that "New or amended GP Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP." Strict consistency with all aspects of the plan is usually not required. A proposed project should be considered to be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies. The SCAQMD CEQA Handbook identifies two key criteria of consistency:

- Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP; and/or,
- Whether the project will exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

Both of these criteria are evaluated below.

#### Criterion 1 - Increase in the Frequency or Severity of Violations?

Based on the air quality modeling analysis contained in the AQ/GHG Analysis, short-term regional construction air emissions would not result in significant impacts based on SCAQMD regional thresholds of significance or local thresholds of significance. The long-term operation of the proposed Project would not result in significant impacts. The analysis in the AQ/GHG Analysis found that the operation of the proposed Project would generate air pollutant emissions that are inconsequential on a regional basis. The analysis for long-term local air quality impacts showed that local pollutant concentrations would not be projected to exceed the local thresholds of significance. Therefore, no long-term impact would occur and no mitigation would be required.

Based on the information provided above, the proposed Project would be consistent with the first criterion.

#### Criterion 2 - Exceed Assumptions in the AQMP?

Consistency with the AQMP assumptions is determined by performing an analysis of the proposed Project with the assumptions in the AQMP. The emphasis of this criterion is to insure that the analyses conducted for the proposed Project are based on the same forecasts as the AQMP. The 2012-2035 Regional Transportation/Sustainable Communities Strategy, prepared by Southern California Association of Governments (SCAG), consists of three sections: Core Chapters, Ancillary Chapters, and Bridge Chapters. The Growth Management, Regional Mobility, Air Quality, Water Quality, and Hazardous Waste Management chapters constitute the Core Chapters of the document. These chapters currently respond directly to federal and state requirements placed on SCAG. Local governments are required to use these as the basis of their plans for purposes of consistency with applicable regional plans under CEQA. For this Project, the City of Lake Elsinore Lake View District Land Use Plan defines the assumptions that are represented in the AQMP.

The Project site is currently designated as Residential Mixed Use in the General Plan and is zoned Residential/Mixed-Use (RMU). The proposed Project would consist of the development of 150 apartment units on 8.27-acres, which would result in a density of 18.14 dwelling units per acre. The proposed Project is not consistent with Municipal Code Section 17.86.040, that limits projects with only residential units in the RMU zone to a maximum density of 18 dwelling units per acre. However, Riverside Transit Bus Route 8 has a bus stop that is located approximately 210 feet northeast of the Project site and Municipal Code Section 17.86.060(B)(7) allows projects that are located within 1,500 feet of the Project site a density bonus up to 35 dwelling units per acre. As such, the proposed Project would be within the allowable density that is allowed for RMU and would not result in an inconsistency with the current land use designation. Therefore, the proposed Project is not anticipated to exceed the AQMP assumptions for the Project site and is found to be consistent with the AQMP for the second criterion.

Based on the above, the proposed Project will not result in an inconsistency with the SCAQMD AQMP. Any impacts are considered less than significant. No additional mitigation is required.

# b) Would the Project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

#### Less Than Significant Impact

Construction emissions have been analyzed for both regional and local air quality impacts as well as potential toxic air impacts.

#### Construction-Related Regional Impacts

The CalEEMod model has been utilized to calculate the construction-related regional emissions from the proposed Project and the input parameters utilized in this analysis have been detailed in Section 5.1 of the AQ/GHG Analysis. The worst-case daily construction-related criteria pollutant emissions from the proposed Project for each phase of construction activities are shown below in Table C-1, Construction-Related Criteria Pollutant Emissions. The CalEEMod daily printouts are shown in Appendix A of the AQ/GHG Analysis.

	Pollutant Emissions (pounds/day)						
Activity	VOC	NOx	CO	$SO_2$	$\mathbf{PM}_{10}$	<b>PM</b> <sub>2.5</sub>	
Site Preparation <sup>1</sup>							
Onsite <sup>2</sup>	5.08	54.63	41.11	0.04	9.98	6.58	
Offsite <sup>3</sup>	0.12	0.60	1.55	0.00	0.25	0.07	
Total	5.20	55.23	42.66	0.04	10.23	6.65	
Grading <sup>1</sup>							
Onsite	3.67	38.45	26.08	0.03	4.75	3.34	
Offsite	0.10	0.59	1.38	0.00	0.22	0.07	
Total	3.77	39.04	27.46	0.03	4.97	3.41	
Building Construction							
Onsite	3.41	28.51	18.51	0.03	1.97	1.85	
Offsite	0.56	2.00	7.85	0.02	1.39	0.40	
Total	3.97	30.51	26.36	0.05	3.36	2.25	
Paving							
Onsite	2.17	20.30	14.73	0.02	1.14	1.05	
Offsite	0.05	0.07	0.76	0.00	0.17	0.05	
Total	2.22	20.37	15.49	0.02	1.31	1.10	
Architectural Coatings							
Onsite	26.83	2.19	1.87	0.00	0.17	0.17	
Offsite	0.08	0.10	1.12	0.00	0.25	0.07	
Total	26.91	2.29	2.99	0.00	0.42	0.24	
SCQAMD Thresholds	75	100	550	150	150	55	
Exceeds Threshold?	No	No	No	No	No	No	

# Table C-1 Construction-Related Criteria Pollutant Emissions

Notes:

<sup>1</sup>Site preparation and grading emissions based on adherence to fugitive dust suppression requirements from SCAQMD Rule 403.

<sup>2</sup>Onsite emissions from equipment not operated on public roads.

<sup>3</sup> Offsite emissions from vehicles operating on public roads.

Table C-1 shows that none of the analyzed criteria pollutants would exceed the regional emissions thresholds. Therefore, a less than significant regional air quality impact would occur from construction of the proposed Project. No mitigation is required.

#### Construction-Related Local Impacts

Construction-related air emissions may have the potential to exceed the State and Federal air quality standards in the Project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin. The proposed Project has been analyzed for the potential local criteria pollutant impacts created from construction-related fugitive dust and construction equipment and from toxic air contaminants created from diesel emissions.

#### Local Criteria Pollutant Impacts from Construction

The local air quality emissions from Project construction were analyzed through utilizing the methodology described in the Localized Significance Threshold Methodology (LST Methodology). The LST Methodology found the primary criteria pollutant emissions of concern are Nitrogen Oxide (NOx), Carbon Monoxide (CO), particulate matter 10 micrometers or less in diameter ( $PM_{10}$ ), and particulate matter 2.5 micrometers or less in diameter ( $PM_{2.5}$ ). In order to determine if any of these pollutants require a detailed analysis of the local air quality impacts, each phase of construction was screened using the SCAQMD's Mass Rate LST Look-up

#### Lakepointe Apartments

Tables. The Look-up Tables were developed by the SCAQMD in order to readily determine if the daily onsite emissions of CO, NOx, PM<sub>10</sub>, and PM<sub>2.5</sub> from the proposed Project could result in a significant impact to the local air quality. Table C-2, Local Criteria Pollutant Construction Emissions at the Nearest Receptors, shows the onsite emissions from the CalEEMod model for the different construction phases.

	Pollutant Emissions (pounds/day)					
Phase	NOx	CO	$\mathbf{PM}_{10}$	<b>PM</b> <sub>2.5</sub>		
Site Preparation <sup>1</sup>	54.63	41.11	9.98	6.58		
Grading <sup>1</sup>	38.45	26.08	4.75	3.34		
Building Construction	28.51	18.51	1.97	1.85		
Paving	20.30	14.73	1.14	1.05		
Architectural Coatings	2.19	1.87	0.17	0.17		
SCAQMD Thresholds for 150 feet (46 meters) <sup>2</sup>	408	2,586	35	10		
Exceeds Threshold?	No	No	No	No		

## Table C-2 Local Criteria Pollutant Construction Emissions at the Nearest Receptors

Notes:

<sup>1</sup>Site preparation and grading emissions based on adherence to fugitive dust suppression requirements from SCAQMD Rule 403. <sup>2</sup> The nearest sensitive receptor is Lakeside High School with structures as near as 150 feet (46 meters) from the Project site.

The data provided in Table C-2 shows that none of the analyzed criteria pollutants would exceed the local emissions thresholds. Therefore, a less than significant local air quality impact would occur from construction of the proposed Project. No mitigation is required.

# Construction-Related Toxic Air Contaminant Impacts

The greatest potential for toxic air contaminant emissions would be related to diesel particulate emissions associated with heavy equipment operations during construction of the proposed Project. According to SCAQMD's methodology, health effects from carcinogenic air toxics are usually described in terms of "individual cancer risk." "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of toxic air contaminants over a 70-year lifetime will contract cancer, based on the use of standard riskassessment methodology. Given the relatively limited number of heavy-duty construction equipment and the short-term construction schedule, the proposed Project would not result in a long-term (i.e., 70 years) substantial source of toxic air contaminant emissions and corresponding individual cancer risk. Therefore, no significant short-term toxic air contaminant impacts would occur during construction of the proposed Project. No mitigation is required.

# **Operational Emissions**

The on-going operation of the proposed Project would result in a long-term increase in air quality emissions. This increase would be due to emissions from the Project-generated vehicle trips and through operational emissions from the on-going use of the proposed Project. The following section provides an analysis of potential long-term air quality impacts due to: regional air quality and local air quality impacts with the ongoing operations of the proposed Project. The potential operations-related air emissions have been analyzed below for the regional and local criteria pollutant emissions and cumulative impacts.

# Operations-Related Regional Criteria Pollutant Analysis

The operations-related regional criteria air quality impacts created by the proposed Project have been analyzed through use of the CalEEMod model and the input parameters utilized in Section 5.2 of the AQ/GHGAnalysis. The worst-case summer or winter volatile organic compound (VOC), NOx, CO, Sulfur Dioxode (SO2), PM10, and PM2.5 daily criteria pollutant emissions created from the proposed Project's long-term Lakepointe Apartments

operations have been calculated and are summarized below in Table C-3, Operational Regional Criteria Air Pollutant Emissions. The CalEEMod daily emissions printouts are shown in Appendix A of the AQ/GHG Analysis.

	Pollutant Emissions (pounds/day)					
Activity	VOC	NOx	CO	$SO_2$	$\mathbf{PM}_{10}$	<b>PM</b> <sub>2.5</sub>
Area Sources <sup>1</sup>	3.83	0.15	12.70	0.00	0.07	0.07
Energy Usage <sup>2</sup>	0.06	0.53	0.22	0.00	0.04	0.04
Mobile Sources <sup>3</sup>	3.90	12.85	43.64	0.12	8.06	2.27
Total Emissions	7.79	13.53	56.56	0.12	8.17	2.38
SCQAMD Operational Thresholds	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

#### Table C-3 Operational Regional Criteria Air Pollutant Emissions

Notes:

<sup>1</sup>Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.

<sup>2</sup>Energy usage consist of emissions from natural gas usage.

<sup>3</sup> Mobile sources consist of emissions from vehicles and road dust.

The data provided in Table C-3, above shows that none of the analyzed criteria pollutants would exceed the regional emissions thresholds. Therefore, a less than significant regional air quality impact would occur from operation of the proposed Project. No mitigation is required.

## Operations-Related Local Air Quality Impacts

Project-related air emissions may have the potential to exceed the State and Federal air quality standards in the Project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin. The proposed Project has been analyzed for the potential local CO emission impacts from the Project-generated vehicular trips and from the potential local air quality impacts from onsite operations. The following analysis analyzes the vehicular CO emissions, local impacts from onsite operations, and toxic air contaminant impacts from onsite diesel trucks.

# Local CO Hotspot Impacts from Project-Generated Vehicular Trips

CO is the pollutant of major concern along roadways because the most notable source of CO is motor vehicles. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of potential local air quality impacts. Local air quality impacts can be assessed by comparing future without and with Project CO levels to the State and Federal CO standards of 20 ppm over one hour or 9 ppm over eight hours.

At the time of the 1993 Handbook, the Air Basin was designated nonattainment under the **California** Ambient Air Quality Standards (CAAQS) and National Air Quality Standards (NAAQS) for CO. With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the Air Basin and in the state have steadily declined. A detailed CO analysis was conducted in the *Federal Attainment Plan for Carbon Monoxide* (CO Plan) for SCAQMD's 2003 Air Quality Management Plan. The locations selected for microscaling modeling in the CO Plan were the busiest intersections in Los Angeles during the peak morning and afternoon periods and did not predict a violation of CO standards. Since the nearby intersections to the proposed Project are much smaller with less traffic than what was analyzed by the SCAQMD, no local CO Hotspot are anticipated to be created from the proposed Project and no CO Hotspot modeling was performed. Therefore, a less than significant long-term air quality impact is anticipated to local air quality with the on-going use of the proposed Project. No mitigation is required.

#### Local Criteria Pollutant Impacts from Onsite Operations

Project-related air emissions from on-site sources such as architectural coatings, landscaping equipment, and onsite usage of natural gas appliances may have the potential to create emissions areas that exceed the State and Federal air quality standards in the Project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin.

The local air quality emissions from on-site operations were analyzed using the SCAQMD's Mass Rate LST Look-up Tables and the methodology described in LST Methodology. The Look-up Tables were developed by the SCAQMD in order to readily determine if the daily emissions of CO, NOx, PM<sub>10</sub>, and PM<sub>2.5</sub> from the proposed Project could result in a significant impact to the local air quality. Table C-4, *Local Criteria Pollutant Operational Emissions at the Nearest Receptors*, shows the onsite emissions from the CalEEMod model that includes area sources, energy usage, and vehicles operating on-site and the calculated emissions thresholds.

Table C-4
Local Criteria Pollutant Operational Emissions at the Nearest Receptors

	Pollutant Emissions (pounds/day)						
<b>On-Site Emission Source</b>	NOx	СО	$\mathbf{PM}_{10}$	<b>PM</b> <sub>2.5</sub>			
Area Sources	0.07	6.40	0.03	0.03			
Energy Usage	0.66	0.28	0.05	0.05			
Onsite Vehicle Emissions <sup>1</sup>	1.13	4.11	0.72	0.20			
Total Emissions	1.86	10.79	0.80	0.28			
SCAQMD Thresholds for 150 feet (46 meters) <sup>2</sup>	270	1,746	4	2			
Exceeds Threshold?	No	No	No	No			
Number							

<sup>1</sup>Onsite vehicle emissions based on 1/8 of the gross vehicular emissions, which is the estimated portion of vehicle emissions occurring within a quarter mile of the Project site.

<sup>2</sup> The nearest sensitive receptor is Lakeside High School with structures as near as 150 feet (46 meters) from the Project site.

The data provided in Table C-4 shows that the on-going operations of the proposed Project would not exceed the local NOx, CO,  $PM_{10}$  and  $PM_{2.5}$  thresholds of significance discussed above in Section 6.2 of the AQ/GHG Analysis. Therefore, the on-going operations of the proposed Project would create a less than significant operations-related impact to local air quality due to onsite emissions. No mitigation is required.

#### Operations-Related Toxic Air Contaminant Impacts

Particulate matter (PM) from diesel exhaust is the predominant TAC in most areas and according to The California Almanac of Emissions and Air Quality 2013 Edition, prepared by CARB, about 80 percent of the outdoor TAC cancer risk is from diesel exhaust. Some chemicals in diesel exhaust, such as benzene and formaldehyde have been listed as carcinogens by State Proposition 65 and the Federal Hazardous Air Pollutants program. Due to the nominal number of diesel truck trips generated by the proposed residential Project, a less than significant toxic air contaminant impact would occur during the on-going operations of the proposed Project. No mitigation is required.

Based on the information above, implementation of the Project will not violate any air quality standard or contribute substantially to an existing or projected air quality violation. Impacts will remain less than significant. No mitigation is required.

c) Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?

## Less Than Significant Impact

Cumulative projects include local development as well as general growth within the Project area. However, as with most development, the greatest source of emissions is from mobile sources, which travel throughout the local area. Therefore, from an air quality standpoint, the cumulative analysis would extend beyond any local projects and when wind patterns are considered would cover an even larger area. Accordingly, the cumulative analysis for the project's air quality must be generic by nature. The Project area is out of attainment with Federal and/or State standards for ozone and PM<sub>10</sub>, and PM<sub>2.5</sub>. In accordance with CEQA Guidelines Section 15130(b), this analysis of cumulative impacts incorporates a three-tiered approach to assess cumulative air quality impacts.

- Consistency with the SCAQMD project specific thresholds for construction and operations;
- Project consistency with existing air quality plans; and
- Assessment of the cumulative health effects of the pollutants.

## Consistency with Project Specific Thresholds

## Construction-Related Impacts

The Project site is located in the South Coast Air Basin, which is currently designated by the EPA as a nonattainment area for ozone and  $PM_{2.5}$ . Development of the proposed Project would result in less than significant regional emissions of the precursors to ozone and  $PM_{2.5}$  during construction of the proposed Project. Therefore, a less than significant cumulative impact would occur from construction of the proposed Project. No mitigation is required.

#### Operational-Related Impacts

The greatest cumulative operational impact on the air quality to the Air Basin will be the incremental addition of pollutants mainly from increased traffic from residential, commercial, and industrial development. In accordance with SCAQMD methodology, projects that do not exceed SCAQMD criteria or can be mitigated to less than criteria levels are not significant and do not add to the overall cumulative impact. On-going operations activities for the proposed Project, the VOC, NOx, CO, SO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions would not exceed the SCAQMD thresholds of significance. With respect to long-term emissions, the proposed Project would create a less than significant cumulative impact. No mitigation is required.

#### Consistency with Air Quality Plans

The Project site is currently designated as Residential Mixed Use in the General Plan and is zoned Residential/Mixed-Use (RMU). The proposed Project would consist of the development of 150 apartment units on 8.27-acres, which would result in a density of 18.14 dwelling units per acre. The proposed Project is not consistent with Municipal Code Section 17.86.040, that limits projects with only residential units in the RMU zone to a maximum density of 18 dwelling units per acre. However, Riverside Transit Bus Route 8 has a bus stop that is located approximately 210 feet northeast of the Project site and Municipal Code Section 17.86.060(B)(7) allows projects that are located within 1,500 feet of the project site a density bonus up to 35 dwelling units per acre. As such, the proposed Project would be within the allowable density that is allowed for RMU and would not result in an inconsistency with the current land use designation. Therefore, the

proposed Project is not anticipated to exceed the AQMP assumptions for the Project site and is found to be consistent with the AQMPs for the Air Basin.

# Cumulative Health Impacts

The Air Basin is designated as nonattainment for ozone,  $NO_2$ ,  $PM_{10}$ , and  $PM_{2.5}$ , which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect public health, including the health of sensitive individuals (elderly, children, and the sick). Therefore, when the concentrations of those pollutants exceeds the standard, it is likely that some sensitive individuals in the population would experience health effects. The regional analysis found that the proposed Project would not exceed the SCAQMD regional significance thresholds for VOC, NOx (ozone precursors),  $PM_{10}$  and  $PM_{2.5}$ . Therefore, the proposed Project would result in a less than significant cumulative health impact.

Based on the information above, implementation of the Project will not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors). Impacts will remain less than significant. No mitigation is required.

# d) Would the Project create objectionable odors affecting a substantial number of people?

# Less Than Significant Impact

## Construction-Related Odor Impacts

Potential sources that may emit odors during construction activities include the application of materials such as asphalt pavement, paints and solvents and from emissions from diesel equipment. The objectionable odors that may be produced during the construction process would be temporary and would not likely be noticeable for extended periods of time beyond the Project boundaries. Due to the transitory nature of construction odors, impacts are considered less than significant. No mitigation is required.

#### Potential Operations-Related Odor Impacts

Potential sources that may emit odors during the on-going operations of the proposed project would primarily occur from odor emissions from the trash storage areas. Pursuant to City regulations, permanent trash enclosures that protect trash bins from rain as well as limit air circulation would be required for the trash storage areas. Due to the distance of the nearest receptors from the Project site and through compliance with SCAQMD's Rule 402, no significant impact related to odors would occur during the on-going operations of the proposed Project. Impacts are considered less than significant. No mitigation is required.

# e) Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

# Less Than Significant Impact

The City of Lake Elsinore adopted the *City of Lake Elsinore Climate Action Plan (CAP)*, on December 13, 2011 that requires a 22.3 percent reduction in GHG emissions between years 2007 and 2020. In order to determine if the proposed Project would comply with the Climate Action Plan's Standards, the GHG emissions from the proposed Project were analyzed for both year 2010, (nearest year available in CalEEMod to 2007) and year 2020. Using year 2010 versus 2007 provides a worst-case scenario; since the State has enacted several laws that took effect between 2007 and 2010 that reduce GHG emissions, and using the latter date means that less GHG reductions can be accounted for from the State measures. A summary of the results is shown below in

Table C-5, *Project Related Greenhouse Gas Annual Emissions*. The CalEEMod model run for the year 2010 and the year 2020 are provided in Appendix B and Appendix C of the *AQ/GHG Analysis*, respectively.

	Greenhouse Gas Emissions (Metric Tons per Year)							
Category	Bio-CO <sub>2</sub>	NonBio-CO <sub>2</sub>	Total CO <sub>2</sub>	CH <sub>4</sub>	$N_2O$	CO <sub>2</sub> e		
Year 2010 Emissions								
Area Sources <sup>1</sup>	0.00	2.57	2.57	0.00	0.00	2.64		
Energy Usage <sup>2</sup>	0.00	289.94	289.94	0.01	0.00	291.31		
Mobile Sources <sup>3</sup>	0.00	1,634.27	1,634.27	0.09	0.00	1,636.14		
Solid Waste <sup>4</sup>	14.19	0.00	14.19	0.84	0.00	31.81		
Water and Wastewater <sup>5</sup>	3.14	56.75	59.89	0.33	0.01	69.25		
Construction <sup>6</sup>	0.00	17.13	17.13	0.00	0.00	17.20		
Total 2010 Emissions	17.33	2,000.66	2,017.99	1.27	0.01	2,048.35		
Year 2020 Emissions								
Area Sources	0.00	2.57	2.57	0.00	0.00	2.62		
Energy Usage	0.00	260.26	260.26	0.01	0.00	261.47		
Mobile Sources	0.00	1,148.04	1,148.04	0.03	0.00	1,148.76		
Solid Waste	7.10	0.00	7.10	0.42	0.00	15.90		
Water and Wastewater	2.51	48.16	50.67	0.26	0.01	58.17		
Construction	0.00	17.13	17.13	0.00	0.00	17.20		
Vegetation <sup>7</sup>						-2.12		
<b>Total 2020 Emissions</b>	9.61	1,476.16	1,485.77	0.72	0.01	1,501.99		
Percent Reduction betwee	een 2010 and 2	2020				26.7%		
City of Lake Elsinore Re	duction Three	shold				22.3%		
SCAQMD Draft Thresho Notes:	old of Significa	ance for Residen	tial Uses			3,500		

# Table C-5 Project Related Greenhouse Gas Annual Emissions

<sup>1</sup> Area sources consist of GHG emissions from hearths, consumer products, architectural coatings, and landscaping equipment.

<sup>2</sup> Energy usage consist of GHG emissions from electricity and natural gas usage (not including hearths).

<sup>3</sup> Mobile sources consist of GHG emissions from vehicles.

<sup>4</sup> Waste includes the CO2 and CH4 emissions created from the solid waste placed in landfills.

<sup>5</sup>Water includes GHG emissions from electricity used for transport of water and processing of wastewater.

<sup>6</sup> Construction emissions amortized over 30 years.

<sup>7</sup> Vegetation sequestration amortized over 30 years.

The data provided in Table C-5 above shows that the proposed Project would create 2,048.35 million metric tons of carbon dioxide equivalent (MTCO2e) per year based on the default year 2010 GHG emissions rates and in year 2020 would produce 1,501.99 MTCO2e per year that is based on approved Statewide GHG reduction regulations that would be fully implemented by year 2020 as well as from GHG emission reduction design features that have been incorporated into the proposed site plan. Table C-5 shows that through implementation of Executive Order (EO) S-1-07, that establishes performance standards for the carbon intensity of transportation fuels, Assembly Bill (AB) 149, which limits GHG emissions from new vehicles sold in California, implementation of the California Code of Regulations (CCR) Title 24, Part 6 2013 Building Energy Efficiency Standards and CCR Title 24 Part 11 2013 CalGreen Standards that improves the energy efficiency of the proposed Project, and Project design features such as providing sidewalks, locating the Project site near a transit station, and meeting the Climate Action Plan's minimum tree planting requirements, the proposed Project's GHG emissions would be reduced by 26.7 percent and would meet the City of Lake Elsinore's minimum 22.3 percent GHG reduction standard. In addition, the proposed Project would be below the SCAQMD draft residential significance threshold of 3,500 MTCO2e per year for both the year 2010

and year 2020 GHG emissions.

Based on the analysis and conclusions above, impacts from GHG emissions as a result of development and operation of the proposed Project would be considered less than significant. No additional mitigation is required.

# f) Would the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

## Less Than Significant Impact

The applicable plan for the proposed Project is the CAP, adopted December 13, 2011. The CAP provides specific measures to be implemented in new developments to reduce GHG emissions as well as a GHG emissions reduction target based on a community-wide emissions reduction to 6.6 MTCO2e per service population per year by 2020. This is a 22.3 percent reduction from the 2008 rate of 8.5 MTCO2e per service population. These efficiency-based targets were derived by dividing the statewide AB 32 targeted emissions levels for 2020 and statewide EO S-3-05 targeted emissions level for 2030 by the 2020 and 2030 statewide service population respectively. These targets represent the maximum quantity of emissions levels necessary to achieve the statewide AB 32 and Executive Order S-3-05 GHG emissions reduction goals. Therefore, the proposed Project would be considered to be inconsistent with the CAP if the proposed Project did not implement all applicable measures identified in the Climate Action Plan and if the proposed Project's GHG emissions are not 22.3 percent less than GHG emissions from business-as-usual conditions for a similar size project in year 2008.

The *CAP* applicable measures to the proposed Project have been detailed above in Section 3.1 of the AQ/GHG Analysis, and the method of adherence to each measure has been detailed above in Section 5.2 of the AQ/GHG Analysis. Section 5.2 found that through implementation of required statewide regulations and implementation of Project Design Features, that the proposed Project would conform to the applicable measures in the *CAP*. In addition, through implementation of the statewide regulations and Project Design Features, the proposed Project's GHG emissions would be reduced by 26.7 percent and would exceed the 22.3 percent reduction in GHG emissions required by the Climate Action Plan. Finally, the GHG emissions calculations show that both the year 2010 business-as-usual GHG emissions and the year 2020 GHG emissions would be below the SCAQMD draft residential significance threshold of 3,500 MTCO2e per year.

Therefore, the proposed Project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. Any impacts are considered less than significant. No additional mitigation is required.

# MITIGATION MEASURES

None.

## D. BIOLOGICAL RESOURCES

No technical study was required for the proposed Project for biological resources. According to the Western Riverside County Multiple Species Habitat Conservation Plan Report for the Project site (APN 379-090-022) (Appendix B), the Project site is not located in a criteria cell. A site reconnaissance survey by City Staff revealed that no riparian, riverine, vernal pool/fairy shrimp habitat or other aquatic resources exist on the site. Based upon mapped information, the Project site is not located within any Narrow Endemic Plant Species Survey Areas or Critical Species Survey Areas. The Project site is not within or adjacent to any Multiple Species Habitat Conservation Plan (MSHCP) criteria or conservation areas. Appendix B is available on the CD located in the back pocket of this IS/MND:

a) Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

# Less Than Significant Impact

According to the Western Riverside County Multiple Species Habitat Conservation Plan Report for the Project site (APN 379-090-022) (Appendix B), the Project site is not located in a criteria cell. A site reconnaissance survey by City Staff revealed that no riparian, riverine, vernal pool/fairy shrimp habitat or other aquatic resources exist on the site. Based upon mapped information, the Project site is not located within any Narrow Endemic Plant Species Survey Areas or Critical Species Survey Areas.

The Project will be required to pay the applicable MSCHP Mitigation Fee pursuant to Chapter 16.85, *Local Development Mitigation Fee for Funding the Preservation of Natural Ecosystems* of the Municipal Code. The current fee is \$1,015 for residential density greater than 14.0 dwelling units per acre. According to Chapter 16.85.010, the use of the development impact fees to mitigate the impacts to the City's and the region's natural ecosystems is reasonably related to the type and extent of impacts caused by development within the City. This is a standard condition, and is not considered unique mitigation under CEQA.

Therefore, with the payment of the MSCHP Mitigation Fee, implementation of the proposed Project will not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. Any impacts are considered less than significant. No additional mitigation is required.

b) Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

#### Less Than Significant Impact

Please reference the discussion in D.a, above. A site reconnaissance survey by City Staff revealed that no riparian, riverine, vernal pool/fairy shrimp habitat or other aquatic resources exist on the site. Based upon mapped information, the Project site is not located within any Narrow Endemic Plant Species Survey Areas or Critical Species Survey Areas.

Therefore, with the payment of the MSCHP Mitigation Fee, implementation of the proposed Project will not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. Any impacts are considered less than significant. No additional mitigation is required.

c) Would the Project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

## No Impact

A site reconnaissance survey by City Staff revealed that no riparian, riverine, vernal pool/fairy shrimp habitat or other aquatic resources exist on the site. Based upon mapped information, the Project will not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. Therefore, the Project will not interfere 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. No impacts are anticipated.

# d) Would the Project 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?

## No Impact

A site reconnaissance survey by City Staff revealed that no riparian, riverine, vernal pool/fairy shrimp habitat or other aquatic resources exist on the site. Based upon mapped information, the Project site is not located within any Narrow Endemic Plant Species Survey Areas or Critical Species Survey Areas. Therefore, the Project will not interfere 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. No impacts are anticipated.

# e) Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

# No Impact

Section 3.8, *Biological Resources*, of the General Plan EIR analyzed biological resources. The General Plan EIR determined that buildout of the General Plan would potentially result in significant impacts to MSHCP protected trees, including the native California oak tree, and locally important heritage trees, including the significant palm tree as defined by Chapter 5.116, *Significant Palm Trees*, of the City's Municipal Code, which are present throughout the City and Sphere of Influence (SOI). No California oak tree, and locally important heritage trees, including the significant palm trees are located on the Project site. No impacts are anticipated. No mitigation is required.

# f) Would the Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

#### No Impact

The Project is located within the adopted Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) area. The MSHCP is a comprehensive, multi-jurisdictional Habitat Conservation Plan focusing on conservation of species and associated habitats in Western Riverside County. The MSHCP will serve as a HCP pursuant to Section 10(a)(1)(B) of the federal Endangered Species Act of 1973, as amended, as well as a Natural Communities Conservation Plan (NCCP) under the NCCP Act of 2001. The overall goal of the MSHCP is the conservation of 500,000 acres and focuses on the conservation of 146 plant and animal species.

The City is required to collect local development impact fees for all projects within the MSHCP area. As such, the applicant will be required to pay these fees as mitigation for impacts to species and habitat covered under the MSHCP. With the payment of these fees, the Project is consistent with this section of the MSHCP. Payment of these standard fees are not considered unique mitigation under CEQA.

The Project site is not located within the Fee Area Boundary of the Stephens Kangaroo Rat Habitat Conservation Plan (Stephens Kangaroo Rat HCP). As a result, the Project is not in conflict with the requirements of the HCP (and is not required to pay the mitigation fees prior to the issuance of a grading permit).

Based upon the information provided, the Project implements, and is consistent with, the requirements of the MSHCP, and the Stephens Kangaroo Rat HCP. As a result, no impacts are anticipated.

# MITIGATION MEASURES

None.

## E. CULTURAL RESOURCES

No technical study was required for the proposed Project for cultural resources. The City has had informal consultation with the Pechanga Band of Luiseño Indians (Tribe) to discuss the Project, potential Project impacts, avoidance methods and potential mitigation. The Tribe has indicated that their standard mitigation measures would be sufficient as part of this IS/MND.

# a) Would the Project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

#### Less Than Significant Impact With Mitigation Incorporation

There are no known historical resources located within the Project site. However, it is possible to uncover the presence of subsurface historical resources within the Project site during ground disturbance(s). The Project will need to comply with Mitigation Measure CUL-1, which requires on-going monitoring by a qualified archaeologist during ground disturbing activities. With mandatory compliance to Mitigation Measure CUL-1, potential impacts will be reduced to a less than significant level. No additional mitigation is required.

# b) Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

#### Less Than Significant Impact With Mitigation Incorporation

Archaeological resources are known to exist in the general area. As part of the informal consultation, the City has met with the Pechanga Band of Luiseño Indians to discuss the Project, potential Project impacts, avoidance methods and potential mitigation. Mitigation Measures CUL-1 through CUL-6 have been added to address the concerns raised by the Pechanga Tribe. With the incorporation of these Mitigation Measures, Project impacts will remain less than significant. No additional mitigation is required.

# c) Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

#### Less Than Significant Impact with Mitigation Incorporation

According to Figure 3.2-3, *City of Lake Elsinore Paleontological Resources*, of the General Plan EIR, the Project site has a "Low" potential for paleontological resources. However, since these resources are located below the surface, any excavation or other ground-disturbing activities will require paleontological monitoring to ensure that no important, nonrenewable vertebrate fossils are adversely affected. Based on these findings, all earth-moving operations shall be monitored shall be required for paleontological resources. Mitigation Measure CUL-7 has been included, requiring the development and implementation of a paleontological resource impact mitigation program, prior to any ground disturbing activity, to prevent adverse effects on important, nonrenewable vertebrate fossils, or to reduce such effects to a level less than significant. No additional mitigation is required.

# d) Would the Project disturb any human remains, including those interred outside of formal cemeteries?

#### Less Than Significant Impact With Mitigation Incorporation

Development of this Project is not expected to disturb any human remains, including those interred outside of formal cemeteries. If during Project grading any human remains are discovered, the provisions of Mitigation Measure CUL-2 shall apply. With the incorporation of Mitigation Measure CUL-2, any impacts will be

reduced to a less than significant. No additional mitigation is required.

# e) Would the Project cause a substantial adverse change in the significance of a tribal cultural resources as defined in Public Resources Code 21074?

#### Less Than Significant Impact With Mitigation Incorporation

According to Section 21080.3.1, *Consultation with Responsible Agencies; Assistance By Office of Planning and Research*, of the Public Resources Code, prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report for a project, the lead agency shall begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed. For purposes of this section and Section 21080.3.2, *Consultation with Responsible Agencies; Assistance By Office of Planning and Research*, of the Public Resources Code, "consultation" shall have the same meaning as provided in Section 65352.4 of the Government Code. Section 6552.4 of the Government Code states:

"For purposes of Section 65351, 65352.3, and 65562.5, "consultation" means the meaningful and timely process of seeking, discussing, and considering carefully the views of others, in a manner that is cognizant of all parties' cultural values and, where feasible, seeking agreement. Consultation between government agencies and Native American tribes shall be conducted in a way that is mutually respectful of each party's sovereignty. Consultation shall also recognize the tribes' potential needs for confidentiality with respect to places that have traditional tribal cultural significance."

The City has had informal consultation with the Pechanga Band of Luiseño Indians to discuss the Project, potential Project impacts, avoidance methods and potential mitigation. Mitigation Measures CUL-1 through CUL-6 have been added to address the concerns raised by the Pechanga Tribe.

Based on this information, the City concludes that this prior consultation, as well as the circulation of a portion of current environmental document, along with the proposed mitigation measures, will ensure that there will not be a substantial adverse change in the significance of a tribal cultural resources as defined in Public Resources Code 21074. With the incorporation of Mitigation Measures CUL-1 through CUL-6, impacts will remain less than significant. No additional mitigation is required.

#### MITIGATION MEASURES

- CUL-1 An archeological monitor shall be present during all earthmoving to insure protection of any accidentally discovered potentially significant resources. All cultural resources unearthed by Project construction activities shall be evaluated by a qualified archeologist. Any unanticipated cultural resources that are discovered shall be evaluated and a final report prepared. The report shall include a list of the resources recovered, documentation of each site/locality, and interpretation of resources recovered. The City shall designate repositories in the event the significant resources are recovered.
- CUL-2 If human remains are encountered, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to California Public Resources Code Section 5097.98(b) remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made.
- CUL-3 At least 30 days prior to seeking a grading permit, the Project applicant shall contact the

appropriate Tribe<sup>1</sup> to notify the Tribe of grading, excavation and the monitoring program, and to coordinate with the City of Lake Elsinore and the Tribe to develop a Cultural Resources Treatment and Monitoring Agreement. The Agreement shall address the treatment of known cultural resources, the designation, responsibilities, and participation of Native American Tribal monitors during grading, excavation and ground disturbing activities; Project grading and development scheduling; terms of compensation; and treatment and final disposition of any cultural resources, sacred sites, and human remains discovered on the site.

- CUL-4 The landowner shall relinquish ownership of all cultural resources, including sacred items, burial goods and all archaeological artifacts that are found on the Project area to the appropriate Tribe for proper treatment and disposition.
- CUL-5 All sacred sites, should they be encountered within the Project area, shall be avoided and preserved as the preferred mitigation, if feasible.
- CUL-6 If inadvertent discoveries of subsurface archaeological resources are discovered during grading, the Developer, the Project archaeologist, and the appropriate Tribe shall assess the significance of such resources and shall meet and confer regarding the mitigation for such resources. If the Developer and the Tribe cannot agree on the significance or the mitigation for such resources, these issues will be presented to the Community Development Director (CDD) for decision. The CDD shall make the determination based on the provisions of the CEQA with respect to archaeological resources and shall take into account the religious beliefs, customs, and practices of the appropriate Tribe. Notwithstanding any other rights available under the law, the decision of the Community Development Director shall be appealable to the City of Lake Elsinore.
- CUL-7 Prior to any ground disturbing activity, a mitigation program shall be developed in accordance with the provisions of CEQA as well as the proposed guidelines of the Society of Vertebrate Paleontology. Said mitigation program shall include, but not be limited to, the following:
  - 1. Excavations in areas identified as likely to contain paleontologic resources should be monitored by a qualified paleontological monitor. The monitor should be prepared to quickly salvage fossils, if they are unearthed, to avoid construction delays, but must have the power to temporarily halt or divert construction equipment to allow for removal of abundant or large specimens.
  - 2. Samples of sediments should be collected and washed to recover small invertebrate and vertebrate fossils.
  - 3. Recovered specimens should be identified and curated at a repository with permanent retrievable storage that would allow for further research in the future.
  - 4. A report of findings, including, when appropriate, an itemized inventory of recovered specimens and a discussion of their significance, should be prepared upon completion of the steps outlined above. The report and inventory, when submitted to the appropriate lead agency, would signify completion of the program to mitigate impacts on paleontologic resources.

<sup>&</sup>lt;sup>1</sup> It is anticipated that the Pechanga Band of Luiseño Indians will be the "appropriate" Tribe due to their prior and extensive coordination with the City in determining potentially significant impacts and appropriate mitigation measures.

# F. GEOLOGY AND SOILS

The following technical studies were prepared to address issues related to geology and soils, and are available on the CD located in the back pocket of this IS/MND:

- "Geotechnical Investigation and Liquefaction Evaluation. Proposed Multi-Family Residential Development, Riverside Drive SW of Eisenhower Drive. Lake Elsinore. California," prepared by Southern California Geotechnical, December 8, 2005 (Geo Investigation, Appendix C).
- a) Would the Project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - i) 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? (Refer to Division of Mines and Geology Special Publication 42.)

# Less Than Significant Impact With Mitigation Incorporation

The Project is located within seismically active Southern California and is expected to experience strong ground motions from earthquakes caused by both local and regional faults. According to the *Geo Investigation*, research of available maps indicates that the Project site is not located within an Alquist-Priolo Earthquake Fault Zone. Furthermore, there was no evidence of faulting revealed during the geotechnical investigation.

The potential impacts related to the closest fault zone, the County Fault Zone, which is located approximately 434 feet to the south of the Project site (reference Figure 12, *Fault Zone*), as well as other regional faults are addressed through compliance with standard measures contained in the most recent Uniform Building Code (UBC) and City Municipal Code and the recommended mitigation contained in Mitigation Measure GEO-1. Mitigation Measure GEO-1 requires the geotechnical recommendations contained in the Geo Investigation be implemented. With the implementation of the standard code provisions and Mitigation Measure GEO-1, the anticipated impacts from regional ground shaking shall be reduced to a less than significant level. No additional mitigation is required.

# ii) Strong seismic ground shaking?

#### Less Than Significant Impact with Mitigation Incorporation

The Project site is located in an area of high regional seismicity and may experience horizontal ground acceleration during an earthquake along the Elsinore/Wildomar Fault Zone, or other fault zones throughout the region. Because of this, the Project site has been and will continue to be directly affected by seismic activity to some degree. Given that the Project site is not located immediately adjacent to a seismic study area, the Project will not be affected by ground shaking any more than any other area in seismically active Southern California. Compliance with standard measures contained in the most recent UBC and City Municipal Code regarding structures and construction and Mitigation Measure GEO-1 ensures that any impacts will be less than significant. No additional mitigation is required.

# iii) Seismic-related ground failure, including liquefaction?

# Less Than Significant Impact with Mitigation Incorporation

According to the Geo Investigation, a review of the Riverside County Geographic Information Systems (GIS

website indicates that the Project site is located within a mapped zone of high to very high liquefaction susceptibility. The results of the liquefaction evaluation in the *Geo Investigation* identified liquefiable soils at three boring locations on the Project site. The *Geo Investigation* contains a number of recommendations are expected to minimize the actual liquefaction hazard once the Project is constructed. Compliance with specific recommendations identified in Mitigation Measure GEO-1 and the standard requirements contained in the most recent UBC and City Municipal Code are expected to reduce the impacts associated with ground failure hazards, including liquefaction, to a less than significant level. No additional mitigation is required.

## iv) Landslides?

## No Impact

The Project site and surrounding environs are relatively flat. There is no evidence of landslides occurring on Project site, or at the immediate surrounding environs. The Project is not expected expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death from landslides. As a result, no impacts are anticipated; therefore, no additional mitigation measures are required.

## b) Would the Project result in substantial soil erosion or the loss of topsoil?

## Less Than Significant Impact

As with any development, soil erosion can result during construction, as grading and construction can loosen surface soils and make soils susceptible to effects of wind and water movement across the surface. According to the geotechnical report, the on-site soils have a moderate to high erosions potential unless specific erosion control measures are implemented. The City routinely requires the submittal of detailed Erosion Control Plans with any grading plans. The implementation of this standard requirement is expected to address any erosional issues associated with the grading of the site. As a result, these impacts are not considered to be significant with the implementation of the necessary erosion and runoff control measures required as part of the approval of a grading plan. No additional mitigation measures are required.

# c) Would the Project 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 on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

# Less Than Significant Impact with Mitigation Incorporation

The *Geo Investigation* did not indicate any concerns regarding slope stability with respect to the Project site. Landslides were determined not to be a design consideration for the Project (reference discussion in F.a.iv, above). Due to the lack of natural slopes near the site, the potential for rock fall hazard is also not a design consideration.

With the implementation of the standard code provisions and Mitigation Measure GEO-1, the anticipated impacts from being 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 on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse, are expected to be reduced to a less than significant level. No additional mitigation is required.

# d) Would the Project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

#### Less Than Significant Impact with Mitigation Incorporation

According to pp. 14 and 15 of the *Geo Investigation*, the Project is located in an area with "non-expansive) soil as defined in the most recent UBC. However, the site development recommendations to address the potential liquefaction hazard would also address any issues related to highly expansive soils. As a result, to significant impacts are anticipated and specific mitigation measures are required.

Any potential impacts are addressed through compliance with standard measures contained in the most recent UBC and City Municipal Code and the recommended mitigation contained in Mitigation Measure GEO-1. Specific recommendations within said report shall apply to all structures on site. With the implementation of the standard code provisions and the mitigation measure identified below, the anticipated impacts from being located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property, are expected to be reduced to a less than significant level. No additional mitigation is required.

e) Would the Project have soils capable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

## No Impact

The Project will be connected to the existing public wastewater treatment system and will not be serviced by septic tanks or other alternative wastewater disposal systems; consequently, no impacts are anticipated and no mitigation measures are required.

# MITIGATION MEASURES

GEO-1 The Project shall comply with the recommendations to address geology and soils impacts within the *Geotechnical Investigation and Liquefaction Evaluation. Proposed Multi-Family Residential Development, Riverside Drive SW of Eisenhower Drive. Lake Elsinore. California*, prepared by Southern California Geotechnical, December 8, 2005 (*Geo Investigation*, Appendix C), including, but not limited to: seismic ground shaking, subsidence, liquefaction, expansive soils, and corrosive soils, for all structures on site.

# G. HAZARDS AND HAZARDOUS MATERIALS

The following technical studies have been prepared to address issues related to hazards and hazardous materials, and are available on the CD located in the back pocket of this IS/MND:

• Phase I Environmental Site Assessment Proposed Multi-Family Residential Development Riverside Drive, southwest of Eisenbower Drive Lake Elsinore, California, prepared by Southern California Geotechnical, January 3, 2006.

# a) Would the Project create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?

#### Less Than Significant Impact with Mitigation Incorporation

The Project may create an additional possible hazard to the public or the environment through the routine transport, use or disposal of hazardous materials; however, due to the quantity and nature of these materials, these impacts will be considered less than significant. During construction and operational phases there is a potential for accidental release of petroleum products in sufficient quantity to pose a hazard to people and the environment. Prior to initiating construction, a Stormwater Pollution Prevention Plan will be approved by the City to address any construction-related spills or accidents. This requirement is included in Mitigation Measure HAZ-1. With Mitigation Measure HAZ-1, the Project is not expected to result in a significant impact on the environment.

In addition, the Project is located immediately adjacent to, or in immediate proximity to, State Route 74 (Riverside Avenue). It is possible that an accident or spill may expose future building occupants to hazardous materials. However, the likelihood of this type of event is rare and it is not considered to be significant. In addition, some hazardous materials will be stored on the premises; however, those used are commonly associated with typical residential development. No impacts are anticipated beyond those commonly associated with this type of development.

# b) Would the Project create a significant hazard to the public or the environment through reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

#### Less Than Significant Impact

The Project may create a hazard to the public or the environment through reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment; however, due to the quantity and nature of these materials, these impacts will be considered less than significant. An additional discussion is found in Section G.a. above. No impacts are anticipated beyond those commonly associated with residential development. No additional mitigation measures are required.

# c) Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

#### No Impact

The Project is not expected to result in the release of any hazardous emissions. Lakeside High School is located immediately west of the Project site. Due to the residential nature of the Project, as the fact that the only hazardous materials associated with residential uses are those associated with typical residential households, no impacts are anticipated. No mitigation is required.

d) Would the Project 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?

# No Impact

The provisions in Government Code Section 65962.5 are commonly referred to as the "Cortese List" (after the Legislator who authored the legislation that enacted it). The list, or a site's presence on the list, has bearing on the local permitting process as well as on compliance with CEQA.

According to the California State Waterboards GEOTRACKER site (http://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=java+hut), which provides information regarding Leaking Underground Storage Tanks, the Project site is not 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 not create a significant hazard to the public or the environment. There are two permitted underground storage tanks within one mile of the Project site. Refer to Figure 11, *Geotracker Site*.

The Department of Toxic Substances Control's Hazardous Waste and Substances Site List (Cortese List) site (<u>http://www.envirostor.dtsc.ca.gov/public/mapfull.asp?global\_id=&x=-</u>

119&y=37&zl=18&ms=640,480&mt=m&findaddress=True&city=32397%20Riverside%20Dr,%20Lake%20 Elsinore,%20CA%2092530&zip=&county=&federal superfund=true&state response=true&voluntary clean up=true&school cleanup=true&ca site=true&tiered permit=true&evaluation=true&military evaluation=true e&school investigation=true&operating=true&post closure=true&non operating=true) does not show any Hazardous Waste and Substances Sites currently located on the Project sites. Refer to Figure 12, *Envirostor Site*.

Based upon the available data, there is no evidence to support that hazardous wastes or contamination would be present on the sites. No additional mitigation is required.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles or a public airport or public use airport, would the Project result in a safety hazard for people residing or working in the Project area?

# No Impact

According to Figure 2.7, *City of Lake Elsinore Airport Influence Areas*, of the General Plan, the Project sites is not located within the Skylark Airport Influence Areas. The public airport closest to the Project sites is Skylark Field. Skylark Field is located at the south end of Lake Elsinore, approximately five miles south southeast of the Project sites. There is no approved airport land use plan for this facility. The Project sites are not located within two miles of this public airport. Based on this information, no impacts are anticipated from implementation of the Project. No mitigation measures are required.

# f) For a project within the vicinity of a private airstrip, would the Project result in a safety hazard for people residing or working in the Project area?

# No Impact

According to Figure 2.7, *City of Lake Elsinore Airport Influence Areas*, of the General Plan, the Project sites are not located in proximity to a private airstrip. The closest airport is a public airport, Skylark Field, located at the south end of Lake Elsinore, approximately five miles south southeast of the Project sites (see discussion in G.e., above). The Project sites are not located within two miles of a private airstrip. Based on this information, no impacts are anticipated from implementation of the Project. No mitigation measures are required.

# g) Would the Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

## No Impact

Section 3.10, "Hazards and Hazardous Materials," of the General Plan EIR analyzed a variety of hazardous materials and public safety issues related to the implementation of the General Plan. The GPEIR determined that new developments associated with the buildout of the General Plan would be required to comply with all applicable local and state regulatory standards for adequate emergency access, and as such would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The General Plan EIR concluded that impacts would be less than significant with no mitigation required.

The Project, as proposed is a new development associated with the buildout of the General Plan, and as designed and developed, is consistent with the General Plan. The Project will include an access point off improved roadways, and include site access sufficient for fire apparatus turning radius. Based on this information, implementation of the Project has no potential to impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. No mitigation is required.

# h) Would the Project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

#### No Impact

The Project site is located within a substantially built up area about a mile east of the eastern escarpment of the Santa Ana Mountains. This eastern escarpment area has been classified as a high wildland fire hazard area. According to Figure 3.10-2, *Wildfire Susceptibility*, of the General Plan EIR, the Project site has a moderate potential to be impacted by a wildland fires. Per the General Plan EIR, new development under the General Plan Update (GPU) would extend into areas of the SOI that are considered highly susceptible to wildfires. A fire that ignites in these areas has the potential to spread to areas within the SOI. Therefore, a substantial risk of loss and damage exists to new developments in these areas. However, with prevention strategies and response programs, these risks can be reduced greatly. Nevertheless, increased development throughout the City and SOI in accordance with the proposed Land Use Plan could expose more people and additional development to potentially significant hazards from wildfires. As indicated, the Project site is not in a Moderate, High, or Very High designation. This moderate designation does not create a potentially significant impact because of the layout of the sites, and the proposed building materials are expected to reduce or minimize any the potential hazards. As a result, no impacts are anticipated and no additional mitigation measures are necessary.

#### MITIGATION MEASURES

HAZ-1 All spills or leakage of petroleum products during construction and operational activities shall be remediated in compliance with applicable state and local regulations regarding cleanup and disposal of the contaminant released. The contaminated waste will be collected and disposed of at an appropriately licensed disposal or treatment facility. This measure shall be incorporated into the Stormwater Pollution Prevention Plan prepared for the Project development.

# H. HYDROLOGY AND WATER QUALITY

The following technical studies were prepared to address issues related to hydrology and water quality, and are available on the CD located in the back pocket of this IS/MND:

• "Project Specific Water Quality Management Plan, Lakepointe Apartments, prepared by MLB Engineering, January 12, 2016.

## a) Would the Project violate any water quality standards or waste discharge requirements?

# Less Than Significant Impact with Mitigation Incorporation

According to the General Plan EIR (p. 3.9-19), the Santa Ana Regional Water Quality Control Board (SARWQCB) sets water quality standards for all ground and surface waters within its region. Water quality standards are defined under the Clean Water Act to include both the beneficial uses of specific water bodies and the levels of water quality that must be met and maintained to protect those uses (water quality objectives). The 1995 *Water Quality Control Plan Santa Ana River Basin* documents the water quality standards for all ground and surface waters overseen by the SARWQCB. Beneficial uses consist of all the various ways that water can be used for the benefit of people and/or wildlife.

Twenty beneficial uses are recognized within the Santa Ana Region. Nine of these beneficial uses have been designated for surface water bodies and groundwater in the vicinity of the City (reference Table 3.9-2, *Beneficial Uses for Water Bodies within City and Sphere of Influence-SOI*).

All listed water quality objectives governing water quality in inland surface waters were evaluated for potential impacts from development within the City; however, only those numeric and narrative water quality objectives that are most likely to be relevant to the implementation of the General Plan are listed in Table 3.9-3, *Water Quality Objectives for Water Bodies within City and SOI*, Table 3.9-4, *Applicable Narrative Surface Water Quality Objectives*, and Table 3.9-5, *Applicable Narrative Groundwater Quality Objectives*, of the General Plan EIR, respectively. Water quality standards are attained when designated beneficial uses are achieved and water quality objectives are being met. The regulatory program of the SARWQCB is designed to minimize and control discharges to surface and groundwater within the region, largely through permitting, such that water quality standards are effectively attained.

The General Plan EIR indicates that development consistent with the GPU could result in increased nonpoint source and point source contamination from common urban sources, construction activity, and vehicle use. In general, increased development and population growth in the City and SOI may be expected to result in increased generation of urban water contaminants. In addition to increased sediment related to construction activities, development in the City could increase other types of non-point source pollution. Runoff from residential, commercial, and institutional urban uses typically includes sediment, herbicides, pesticides, nutrients from fertilizers, organic debris, coloform, trash, grease, solvents, metals, salts, and other contaminants. Runoff from streets and parking lots contains typical urban pollutants including oil, grease, fuel, rubber, heavy metals, solvents, coloform, and trash. Motor vehicle exhaust also generates lead and particulates that could be picked up by runoff and carried into nearby surface water bodies such as Lake Elsinore. The increased pollutants carried in runoff into the streams, rivers, and lake in and around the City is a potentially significant impact of the implementation of the GPU.

The proposed Project has been reviewed and conditioned by the City, to mitigate any potential impacts as listed above through site design and the preparation of a Water Quality Management Plan (WQMP) and adherence to the requirements of the National Pollutant Discharge Elimination System (NPDES). The Project does drain into an existing Caltrans facility. Approvals will be required from Caltrans as part of the permitting process. These are standards condition and are not considered unique mitigation under CEQA.

With the inclusion of these standard conditions, any impacts from implementation of the proposed Project that would violate any water quality standards or waste discharge requirements, are considered less than significant. No additional mitigation is required.

The implementation of these practices is expected to minimize or eliminate any impacts to water quality. The requirements to obtain City approval of the Final WQMP is incorporated into Mitigation Measure HYD-1. As a result of the Best Management Practices (BMPs) (site design BMPs, source control BMPs, and treatment control BMPs), and other measures contained in the Preliminary WQMP, the Project will not violate any water quality standards, waste discharge requirements, or have a significant impact on the environment.

b) Would the Project substantially deplete groundwater supplies or interfere substantially with groundwater recharge, such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

# No Impact

The Project does not propose to drill any wells or extract ground water. the historic high groundwater level for the Project site is considered to be about  $18\pm$  feet (p. 7 of the *Geo Investigation*). This depth will not expose any groundwater during future site development, including grading onsite and installation of offsite infrastructure. Under present conditions the Project site has no impervious surfaces within its boundaries. Some unquantifiable amount of the precipitation and sheet flow that currently enters the property will percolate through the onsite soils. The proposed Project will retain rainfall onsite by directing flows to the bioretention planters and basins where the first increment of each storm will be captured and percolated, and then the stored runoff will add additional percolated. The small reduction will not cause significant adverse impacts to groundwater supplies.

Based on this information, implementation of the Project will not substantially deplete groundwater supplies or interfere substantially with groundwater recharge, such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted). No mitigation is required.

c) Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in flooding on- or off-site?

# Less Than Significant Impact

The proposed Project site's existing drainage pattern will be altered, but the proposed Project engineering plans have taken considerable care to ensure that future runoff patterns are maintained, and that the volume of water discharged will not exceed the current volumes as required by the City and the SARWQCB.

The Project, as proposed, will result in minimal changes in the onsite drainage pattern, as the flow patterns will be consistent with the existing topography of the Project site. The proposed Project will alter the drainage pattern; however, it will not alter the course of a stream or river and it will not substantially increase the rate or amount of surface runoff in a manner that will cause any significant flooding on-site, or off-site.

Based on this information, impacts are considered less than significant from implementation of the Project. No mitigation measures are required.

d) Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?

## Less Than Significant Impact

Please reference the discussion in Sections H.a., and c. (above), and H.e. (below), of this IS/MND. The Project will not substantially alter the existing drainage pattern of the sites or area or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site. None of the proposed facilities will increase the rate or amount of surface runoff.

Based on this information, impacts are considered less than significant from implementation of the Project. No mitigation measures are required.

e) Would the Project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

#### Less Than Significant Impact with Mitigation Incorporation

The requirements of the urban runoff program for the Santa Ana River Basin require that post-development flows be similar to the pre-development flows. As a result, the final Project design shall be required to reduce run-off volumes to pre-development levels by a combination of reductions in impervious area, on-site detention, or other methods identified in the Preliminary WQMP, and implemented with the Final WQMP, as approved by the City of Lake Elsinore. This requirement is contained in Mitigation Measure HYD-1. With the implementation of Mitigation Measure HYD-1, any impacts are considered less than significant. No additional mitigation is required.

#### f) Would the Project otherwise substantially degrade water quality?

#### Less Than Significant Impact with Mitigation Incorporation

The Project as proposed will not otherwise substantially degrade water quality. Compliance with the requirements of the Stormwater Pollution Prevention Program (Mitigation Measures HAZ-1), Preliminary WQMP (Mitigation Measure HYD-1), and the City's erosion control requirements will ensure that significant water quality impacts and violations of standards and requirements do not occur. With these mitigation measures and standard requirements, any water quality impacts are expected to be less than significant. No additional mitigation measures are required.

# g) Would the Project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary of Flood Insurance Rate Map or other flood hazard delineation map?

#### No Impact

The Project will not place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary of Flood Insurance Rate Map or other flood hazard delineation map. Because the proposed structures are not located within the 100-year flood hazard area, no impacts are anticipated. No mitigation is required.

#### h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?

## No Impact

The Project will not place within a 100-year flood hazard area structures and will not place materials within the lake area, which would impede or redirect flood flows. As a result, no impacts are anticipated. No mitigation measures are required.

i) Would the Project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

## No Impact

The Project will not construct habitable structures within a designated flood area or within an identified dam inundation area. According to pp. 3.9-6 and 3.9-7 of the General Plan EIR, inundation of property (City) and the potential loss of life due to failure of the Railroad Canyon Dam is a hazard in the Railroad Canyon Road area and the eastern floodplain of the lake. The Project site is located on the western floodplain of the lake; therefore, it is not in proximity to inundation. Consequently, the Project will not expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam. No impacts are anticipated. No mitigation required.

## j) Would the Project be subject to inundation by seiche, tsunami, or mudflow?

## No Impact

The Project is located along near the northwest corner of Lake Elsinore and is not located in an area that is subject to mudflows or tsunamis. A seiche is a standing wave in an enclosed or partially enclosed body of water (similar to the sloshing of water in a bathtub). Seiches have been observed on larger lakes, reservoirs, harbors and bays, and in smaller ocean areas that are substantially surrounded by land (such as the Gulf of California or the Adriatic Sea). In contrast to these larger bodies of water, Lake Elsinore is relatively small rectangular lake (less than 2 miles in width and about 3 miles in length). Because the Project site is not located along the shore of Lake Elsinore, there is no potential that a seismic event could result in a seiche that could affect the Project. No impacts are anticipated. No mitigation is required.

#### MITIGATION MEASURES

HYD-1 Prior to the approval of the grading permit, the City shall review and approve the Final Water Quality Management Plan as required by the program requirements in effect at that time. The Final Water Quality Management Plan shall further demonstrate that post-development runoff flows are no greater that pre-development run-off flows.

# I. LAND USE AND PLANNING

## a) Would the Project physically divide an established community?

## No Impact

The Project represents an in-fill development which is consistent with the scale of development of their type and generally consistent with the development that is found in the area. The Project will neither physically divide nor improve connections within the surrounding neighborhood. No impacts are anticipated. No mitigation is required.

b) Would the Project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

#### No Impact

The Project sites are identified for residential uses on the City of Lake Elsinore General Plan Land Use Map. These are the same types of land uses proposed with the Project. Therefore, the Project will not conflict with any applicable land use plan, policy, or regulation. As a result, no impacts are anticipated and no mitigation measures are required.

# c) Would the Project conflict with any applicable habitat conservation plan or natural community conservation plan?

#### No Impact

The Project will not conflict with the provisions of the adopted MSHCP. A more detailed discussion on the Project's compliance and consistency with the MSHCP is found in Section D.f. of this IS/MND. As a result, no impacts are anticipated and no mitigation measures are required over and above the payment of MSHCP fees, discussed in Section D.f above.

#### **MITIGATION MEASURES**

None required.

## J. MINERAL RESOURCES

a) Would the Project result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?

## No Impact

According to Figure 3.12-1, *City of Lake Elsinore Mineral Resource Zones*, of the General Plan EIR (GP EIR), the Project site is located in an area designated MRZ3. According to the GP EIR, MRZ-3 is defined as areas containing known mineral deposits that may qualify as mineral resources. Further exploration work within these areas could result in the reclassification of specific localities into the MRZ-2a or MRZ-2b categories. As shown in Table 3.12-1 of the GP EIR, MRZ-3 is divided on the basis of knowledge of economic characteristics of the resources. MRZ-3a areas are considered to have a moderate potential for the discovery of economic mineral deposits. MRZ-3b is applied to land where geologic evidence leads to the conclusion that it is plausible that economic mineral deposits are present. Consequently, the Project will not result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state. No impacts are anticipated. No mitigation required.

# b) Would the Project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

## No Impact

According to Figure 3.12-1, *City of Lake Elsinore Mineral Resource Zones*, of the GP EIR, the Project sites are located in an area designated MRZ3. According to the GP EIR, MRZ-3 is defined as areas containing known mineral deposits that may qualify as mineral resources. Further exploration work within these areas could result in the reclassification of specific localities into the MRZ-2a or MRZ-2b categories. As shown in Table 3.12-1 of the GP EIR, MRZ-3 is divided on the basis of knowledge of economic characteristics of the resources. MRZ-3a areas are considered to have a moderate potential for the discovery of economic mineral deposits. MRZ-3b is applied to land where geologic evidence leads to the conclusion that it is plausible that economic mineral deposits are present. The Project will not result in the loss of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. No impacts are anticipated. No mitigation required.

#### MITIGATION MEASURES

None required.

# K. NOISE

The following technical study was prepared to address issues related to noise, and is available on the CD located in the back pocket of this IS/MND:

• Noise Impact Analysis, Lakepointe Apartments Project, City of Lake Elsinore, prepared by Vista Environmental, November 25, 2015 (NLA).

Please refer to Section 1.0 (Introduction), Section 2.0 (Noise Fundamentals), Section 3.0 (Ground-Bourne Vibration Fundamentals), Section 4.0 (Regulatory Setting), Section 5.0 (Existing Noise Conditions), and 6.0 (Modeling Parameters and Assumptions) of the *NLA*, for additional details utilized for the impact analysis below.

a) Would the Project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

#### Less Than Significant Impact with Mitigation Incorporation

#### Construction-Related Noise

The construction activities for the proposed Project are anticipated to include site preparation and grading of the 8.27-acre project site, building construction of the 150 apartment units, paving of the onsite roads and parking areas, and application of architectural coatings. Noise impacts from construction activities associated with the proposed Project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities. The nearest sensitive receptors to the Project site consist of the structures at Lakeside High School as near as 150 feet southwest of the Project site, Recreational Vehicle (RV) campsites as near as 230 feet southeast of the Project site, and single-family homes as near as 350 feet northwest of the Project site.

Section 17.176.080(F)(1) of the City's Municipal Code restricts construction activities from occurring between the weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on weekends or holidays. Section 17.176.080(F)(2) of the City's Municipal Code limits construction noise that occurs during the allowable times for construction activities to occur to 85 A-weighted decibels (dBA) for mobile equipment and 70 dBA for stationary equipment, which are based on the Type III areas that are classified as semi-residential/commercial.

Construction noise impacts to the nearby sensitive receptors have been calculated through use of the Roadway Construction Noise Model (RCNM) and the parameters and assumptions detailed in Section 6.1 of the NIA, including Table H – Construction Equipment Noise Emissions and Usage Factors. The results are shown below in Table K-1, *Worst-Case Construction Noise Levels at Nearest Receptors*. The RCNM printouts are provided in Appendix C of the *NIA*.

	lassroom	Neare	Nearest RV Site		Nearest Home	
Construction Phase	Distance (feet)	Noise Level (dBA Leq)	Distance (feet)	Noise Level (dBA Leq)	Distance (feet)	Noise Level (dBA Leq)
Site Preparation	150	73	230	70	350	68
Grading	150	73	230	70	350	68
<b>Building Construction</b>	165	73	245	70	365	68
Paving	155	68	230	66	440	61
Painting	165	63	245	60	365	56
City's Mobile Equipment Threshold <sup>1</sup>		85		85		85
City's Stationary Equipment Threshold <sup>1</sup>		70		70		70

 Table K-1

 Worst-Case Construction Noise Levels at Nearest Receptors

<sup>1</sup> City construction noise threshold from Section 17.176.080(F)(2) of the Municipal Code for Type III Areas.

Table K-1 shows that greatest noise impacts would occur during the site preparation, grading and building construction phases of construction, with a noise level as high as 73 A-weighted equivalent sound level (dBA Leq) at the nearest classroom at Lakeside High School. Table K-1 also shows that none of the construction phases would exceed the City's mobile equipment threshold, however the site preparation, grading, and building construction phases would have the potential to exceed the City's stationary equipment threshold. Mitigation Measure NOI-1 is provided that would require any stationary construction equipment that is used within 50 feet of the project's southwest property line to place a temporary sound barrier between the stationary equipment and Lakeside High School. With implementation of Mitigation Measure NOI-1, construction-related noise impacts would be reduced to within the City noise standards.

#### **Operational-Related Noise**

The proposed Project would consist of the development of 150 residential apartment units. The proposed Project would be adjacent to Riverside Drive, which may create noise levels in excess of City standards at the proposed residential uses.

The City's General Plan Policy 7.1 requires that new multi-family residential development limit the exterior noise impacts to all proposed private patios and balconies to 60 A-weighted day-night equivalent level (dBA Ldn) and limit the interior noise levels to 45 dBA Ldn. The exterior and interior noise impacts to the proposed apartment units have been analyzed separately below.

#### Exterior Patio and Balcony Noise

All residential buildings are anticipated to have either a private patio or balcony. These private patios and balconies have the potential to exceed the City's 60 dB Ldn noise standard. The anticipated noise levels have been calculated for the nearest patios and balconies on proposed Building 8 to Riverside Drive. This analysis has been limited to Building 8 as that is the only building where the balconies and patios have an unobstructed view of Riverside Drive. The noise levels were calculated three feet in from the proposed walls and five feet above ground level for the patios and 3 feet above floor level for the balconies. A summary of the results are shown below in Table K-2, *Proposed Exterior Patio/Balcony Noise Levels Prior to Mitigation*. The Federal Highway Administration (FHWA) model printouts of the proposed patio/balcony noise calculations are provided in Appendix D of the *NLA*.
#### Table K-2 Proposed Exterior Patio/Balcony Noise Levels Prior to Mitigation

Building Number	Floor	Patio/Balcony Noise Levels (dBA L <sub>da</sub> )	Sound Wall Height (feet)
0	First	64	3.5
8	Second	59	3.5

Notes:

Exceedance of City's 60 dBA L<sub>th</sub> noise standard shown in bold.

Table K-2 shows that the proposed first floor patios on Building 8 that face Riverside Drive would exceed the City's 60 dBA Ldn residential exterior noise standard. Table K-2 also shows that the second floor balconies on Building 8 that face Riverside Drive would be within the City's 60 dBA Ldn residential exterior standard, provided that the proposed 3.5-foot high balcony wall is made of a solid material that is free of any cutouts or openings.

Mitigation Measure NOI-2 is provided that would require the applicant to construct a minimum 5.0-foot high solid wall around the perimeter of any first floor patios that are constructed on the Riverside Drive side of Building 8 and require all second floor balconies on Building 8 that face Riverside Drive to have 3.5-foot high perimeter walls that are constructed of a solid material (e.g., glass, wood or plaster) that are free of any cutouts or openings.

The exterior patio and balcony noise levels have been recalculated based on construction of the 5.0-foot high solid walls for the first floor patios detailed in Mitigation Measure NOI-1 and the results are shown in Table K-3, *Proposed Mitigated Exterior Patio/Balcony Noise Levels*.

Building Number	Floor	Patio/Balcony Noise Levels (dBA Ldn)	Sound Wall Height (feet) <sup>1</sup>
7	First	60	5.0
/	Second	59	3.5

### Table K-3 Proposed Mitigated Exterior Patio/Balcony Noise Levels

Notes:

<sup>1</sup> Calculated noise levels based on the wall heights detailed in Mitigation Measure 1.

Table K-3 shows that with application of the proposed 5.0-foot high first floor patio sound walls specified in Mitigation Measure NOI-2, the noise levels at the proposed patios and balconies would be reduced to within the City's exterior residential noise standard. Impacts would be less than significant after implementation of the recommended mitigation.

### Interior Noise

To assess the interior noise levels related to the compliance with the City's 45 dBA Ldn criteria, the exterior to interior attenuation rates of the units facing Riverside Drive were calculated and compared to the calculated exterior noise levels at the first and second floor building facades in order to calculate the interior noise levels within the future on-site residential units.

The architectural plans were utilized to calculate the exterior to interior attenuation rates of each style interior room that is anticipated to face Riverside Drive. For each room the floor area covered by carpet or linoleum was calculated along with the total square footage of the ceilings and walls, in order to determine the sound

absorption rate of the room. The area of exterior walls, windows, and exterior doors were also calculated in order to determine the exterior transmission levels. The windows were based on standard dual pane windows that have a 26 Sound Transmission Class (STC) Rating, standard doors that have a 26 STC Rating, and standard stucco walls that have a 46 STC Rating. Dual pane windows and doors are required due to California's Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations Title 24, Part 6). The exterior to interior noise reduction was then determined by combining the calculated room absorption rate to the exterior to interior transmission calculations. Table K-4, *Exterior to Interior Noise Reduction Rates.* Appendix E of the *NLA* shows the calculated exterior to interior noise reduction rates for standard dual pane windows and doors.

### Table K-4 Exterior to Interior Noise Reduction Rates

Building	Floor Plan	Room	Exterior to Interior Noise Reduction (dBA) <sup>1</sup>
2 and 1 BR	A1	Living Room	33
2 and 1 BR	Al	Bedroom 1	31
2 and 1 BR	Al	Bedroom 2	33
2 and 1 BR	G1	Living Room	34
2 and 1 BR	G1	Bedroom	33
	Minim un	Exterior to Interior Noise Reduction	31

Notes:

<sup>1</sup> Based on standard dual pane windows and doors with a 26 STC rating, which are required per Title 24 energy saving requirements.

Table K-4 shows that the minimum exterior to interior attenuation rate with standard dual pane windows would be 31 dBA. According to Table K-2, the exterior noise levels at the facades of the proposed structures that face Riverside Drive would be as high as 64 dBA Ldn. Based on a 31 dBA attenuation rate, this would result in an interior noise level of 33 dBA Ldn and would be within the City's 45 dBA Ldn interior residential standard. Impacts would be considered less than significant. No additional mitigation is required.

# b) Would the Project result in an exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

### Less Than Significant Impact

### Construction-Related Vibration Impacts

The nearest sensitive receptors to the Project site consist of the structures at Lakeside High School as near as 150 feet southwest of the Project site, RV campsites as near as 230 feet southeast of the Project site, and single-family homes as near as 350 feet northwest of the Project site.

Section 17.176.080(G) of the City's Municipal Code restricts the operation of any device that creates a vibration which is above the vibration threshold of any individual at or beyond the property boundary of the source. Since the City's Municipal does not provide a quantifiable vibration level, Caltrans guidance has been utilized, which defines the threshold of perception from transient sources at 0.25 inch per second peak particle velocity (PPV).

The primary source of vibration during construction would be from the operation of a bulldozer. From Table L of the NLA, a large bulldozer would create a vibration level of 0.089 inch per second PPV at 25 feet. Based on typical propagation rates, the vibration level at the nearest offsite receptor (150 feet away) would be 0.01 inch per second PPV. The vibration level at the nearest offsite receptor would be within the 0.25 inch per

second PPV threshold detailed above. Impacts would be less than significant.

#### **Operations-Related Vibration Impacts**

The on-going operation of the proposed Project would not include the operation of any known vibration sources. Therefore, impacts from the operation of the proposed Project would be considered less than significant. No mitigation is required.

Based on the analysis above, the Project will not result in an exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels. Impacts are considered less than significant. No mitigation is required.

### c) Would the Project result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?

#### Less Than Significant Impact

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

Neither the General Plan nor the CEQA Guidelines define what constitutes a "substantial permanent increase to ambient noise levels", as such, this impact analysis has utilized guidance from the Federal Transit Administration for a moderate impact that has been detailed in Table A of the *NIA*.

The potential offsite traffic noise impacts created by the on-going operations of the proposed project have been analyzed through utilization of the FHWA model and parameters. The FHWA model noise calculation spreadsheets are provided in Appendix F of the *NIA*. The proposed Project's potential offsite noise impacts have been calculated through a comparison of the without Project scenario to the with Project scenarios for existing year, opening year 2017, and year 2017 with cumulative projects conditions. The results of this comparison are shown in Table K-5, *Project-Related Traffic Noise Contributions*.

		dBA CNEL at Nearest Receptor <sup>1</sup>			Increase
Roadway	Segment	No Project	With Project	<b>Project Increase</b>	Threshold <sup>2</sup>
<b>Existing Conditi</b>	ons				
Riverside Drive	North of Lakeshore Drive	68.1	68.2	0.1	+1 dBA
<b>Riverside Drive</b>	North of Lincoln Street	63.9	64.0	0.2	+2 dBA
Riverside Drive	North of La Harve Street	69.4	69.6	0.2	+1 dBA
Riverside Drive	South of La Harve Street	65.4	65.6	0.2	+1 dBA
Riverside Drive	South of Lakeside HS Stadium Way	63.1	63.3	0.2	+2 dBA
Lakeshore Drive	West of Riverside Drive	69.4	69.5	0.1	+1 dBA
<b>Opening Year 20</b>	)17 Conditions				
Riverside Drive	North of Lakeshore Drive	68.3	68.4	0.1	+1 dBA
Riverside Drive	North of Lincoln Street	64.0	64.2	0.1	+2 dBA
Riverside Drive	North of La Harve Street	69.6	69.8	0.2	+1 dBA
Riverside Drive	South of La Harve Street	65.6	65.8	0.2	+1 dBA
Riverside Drive	South of Lakeside HS Stadium Way	63.3	63.5	0.2	+2 dBA
Lakeshore Drive	West of Riverside Drive	69.6	69.7	0.1	+1 dBA
Year 2017 With	Cumulative Project Conditions				
Riverside Drive	North of Lakeshore Drive	68.6	68.7	0.1	+1 dBA
Riverside Drive	North of Lincoln Street	64.5	64.5	0.0	+2 dBA
Riverside Drive	North of La Harve Street	70.1	70.2	0.1	+1 dBA
Riverside Drive	South of La Harve Street	66.2	66.3	0.1	+1 dBA
Riverside Drive	South of Lakeside HS Stadium Way	63.9	64.0	0.1	+2 dBA
Lakeshore Drive	West of Riverside Drive	69.8	69.8	0.0	+1 dBA

### Table K-5Project-Related Traffic Noise Contributions

<sup>1</sup> Distance to nearest residential use shown in Table I of the NIA, does not take into account existing noise barriers.

Table K-5 shows that for all scenarios analyzed, the proposed Project's permanent noise increases to the nearby homes from the generation of additional vehicular traffic would not exceed the increase thresholds detailed above. Therefore, the proposed Project would not result in a substantial permanent increase in ambient noise levels. Impacts would be less than significant. No additional mitigation is required.

### d) Would the Project result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?

### Less Than Significant Impact with Mitigation Incorporated

Noise impacts from construction activities associated with the proposed Project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities.

The greatest noise impacts would occur during the site preparation, grading and building construction phases of construction, with a noise level as high as 73 dBA Leq at the nearest classroom at Lakeside High School. None of the construction phases would exceed the City's mobile equipment threshold, however the site preparation, grading, and building construction phases would have the potential to exceed the City's stationary equipment threshold.

Mitigation Measure NOI-1 is provided that would require any stationary construction equipment that is used within 50 feet of the Project's southwest property line to place a temporary sound barrier between the stationary equipment and Lakeside High School. With implementation of Mitigation Measure NOI-1, the proposed Project would not create a substantial temporary or periodic increase in ambient noise levels. Impacts would remain less than significant. No additional mitigation is required.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?

### No Impact

The Project site is not located within the influence area for any airport. The closest airfield is a private airstrip, Skylark Airport, which is located approximately 5 miles to the southeast of the site. Skylark Airport is use primarily by skyliving aircraft. As a result, no impacts are anticipated and no mitigation measures are required.

### f) For a project within the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels?

### No Impact

Skylark Field is located approximately 5 miles to the southeast of the Project sites. Skylark Airport is used primarily by skydiving aircraft. Given the type of aircraft that routinely use the airfield and the distance to the Project sites, no significant impacts are anticipated and no mitigation measures are required.

### **MITIGATION MEASURES**

- NOI-1 The Project applicant shall require any construction contractor that needs to use stationary construction equipment within 50 feet of the Project's southwest property line to place a temporary sound barrier between the stationary equipment and Lakeside High School.
- NOI-2 The Project applicant shall construct a minimum 5.0-foot high solid wall around the perimeter of any first floor patios that are constructed on the Riverside Drive side of Building 8 and require all second floor balconies on Building 8 that face Riverside Drive to have 3.5-foot high perimeter walls that are constructed of a solid material (e.g., glass, wood or plaster) that are free of any cutouts or openings.

### L. POPULATION AND HOUSING

a) Would the Project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

### Less Than Significant Impact

The Project will add permanent people to the City's population. The existing General Plan designation for the Project site anticipated population growth from the residential uses that would ultimately be constructed on the Project site. The proposed Project will result in an additional increment of area-wide population growth consistent with the adopted General Plan. As a result, any impacts are considered less than significant and no additional mitigation measures are required.

### b) Would the Project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

### No Impact

The Project site is currently vacant. As a result, the Project will not displace any existing housing or residents. Consequently, no impacts are anticipated; therefore, no mitigation is required.

### c) Would the Project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

### No Impact

Because the Project site is vacant, the Project will not displace a substantial numbers of people, necessitating the construction of replacement housing elsewhere. As a result, no impacts are anticipated; and no mitigation is required.

### **MITIGATION MEASURES**

None required.

### M. PUBLIC SERVICES

Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental 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 public services:

#### a) Fire protection?

### Less Than Significant Impact

The Riverside County Fire Department provides fire protection and safety services to the City. The nearest fire station is Station No. 85, located at 29405 Grand Ave, northwest of the Project site. Ambulance and paramedic services are provided by Goodhew Ambulance Service. The Project will participate in the Development Impact Fee Program as adopted by the City of Lake Elsinore to mitigate impacts to fire protection resources. This will provide funding for capital improvements such as land, equipment purchases, and fire station equipment. As a result, the Project will not result in activities that create significant impacts. Any impacts will be considered incremental and can be offset through the payment of the appropriate Development Impact Fee. This is a standard condition, and not considered unique mitigation under CEQA. Impacts are considered less than significant and no additional mitigation is required.

#### b) Police protection?

#### Less Than Significant Impact

Police protection services are provided by the City's Police Department as part of the Riverside County Sheriff's Department. The nearest sheriff's station is located at 333 Limited Street in Lake Elsinore. Traffic enforcement is provided for Riverside County in this area by the California Highway Patrol with additional support from the local County Sheriff's Department. The Project shall participate in the Development Impact Fee Program as adopted by the City of Lake Elsinore to mitigate impacts to police protection resources. As a result, the Project will not result in activities that create significant impacts. Any impacts will be considered incremental and can be offset through the payment of the appropriate Development Impact Fee. This is a standard condition, and not considered unique mitigation under CEQA. Impacts are considered less than significant and no additional mitigation is required.

#### c) Schools?

### Less Than Significant Impact

The Project is residential in nature and will directly increase student enrollment at schools within the Lake Elsinore Unified School District (LEUSD). Based upon its current enrollment pattern, LEUSD has calculated typical student enrollment factors for elementary, middle and high schools within the District. To offset any potential impacts, the Project is required to pay appropriate school. These fees, which are considered a standard condition, are payable prior to building permit issuance. As a result, any impacts are considered less than significant level after the payment of school mitigation fees. No other mitigation measures are required.

### d) Parks?

### Less Than Significant Impact

The Project will increase the areas permanent population and associated burden on parks in the area; thereby,

resulting in the demand for parks and recreational facilities. The Project will be required to pay the applicable Park Capital Improvement Fund Fees, which have been established to mitigate impacts from Projects to existing and proposed park facilities. At the current time, the fee is \$1,400 per unit. These fees, which are considered a standard condition, are payable prior to building permit issuance. As a result, any impacts are considered less than significant level after the payment of Park Capital Improvement Fund Fees. No other mitigation is required.

### e) Other public facilities?

### Less Than Significant Impact

The Project will permanently increase the local population and will subsequently result in an increase for the demand for other governmental services such as the library and the other community support services commonly provided by the City of Lake Elsinore. The Project will be required to pay the applicable Park Capital Improvement Fund Fees, which have been established to mitigate impacts from Projects to existing and proposed park facilities. At the current time, the fee is \$150 per unit. In addition, the Project will be required to pay City Hall & Public Works fees (currently \$404/unit), Community Center Fees (currently \$272 per unit), Marina Facilities Fees (currently \$389/unit), and Animal Shelter Facility Fees (currently \$174/unit).

These fees, which are considered standard conditions, are payable prior to building permit issuance. As a result, any impacts are considered less than significant level after the payment of these fees. No other mitigation is required.

### **MITIGATION MEASURES**

None required.

### N. RECREATION

a) Would the Project 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?

### Less Than Significant Impact

The Project will provide on-site recreational uses for use by residents at the site. The Project will be required to pay the applicable Park Capital Improvement Fund Fees, which have been established to mitigate impacts from Projects to existing and proposed park facilities. At the current time, the fee is \$1,400 per unit. These fees, which are considered a standard condition, are payable prior to building permit issuance. As a result, any impacts from the Project that will result in an 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 are considered less than significant level after the payment of Park Capital Improvement Fund Fees. No other mitigation is required.

### b) Does the Project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

### Less Than Significant Impact

The Project includes recreational amenities that are intended to meet a portion of the recreational demands of the residents. The Project will be required to pay the applicable Park Capital Improvement Fund Fees, which have been established to mitigate impacts from Projects to existing and proposed park facilities. At the current time, the fee is \$1,400 per unit. These fees, which are considered a standard condition, are payable prior to building permit issuance. As a result, any impacts from the Project that would require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment, are considered less than significant level after the payment of Park Capital Improvement Fund Fees. No other mitigation is required.

### **MITIGATION MEASURES**

None required.

### O. TRANSPORTATION/TRAFFIC

The following technical study was prepared to address issues related to traffic, and is available on the CD located in the back pocket of this IS/MND:

• Traffic Impact Analysis, Lakeshore Pointe, Lake Elsinore California, prepared by Infrastructure Group, Inc., October 22, 2015 (TIA).

Please refer to Section 1.0 (Introduction), Section 2.0 (Area Conditions), Section 3.0 (Project Future Traffic), and Section 4.0 (Cumulative Traffic), of the *TLA*, for additional details utilized for the impact analysis below.

a) Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?

### Less Than Significant Impact with Mitigation Incorporation

#### Existing Plus Project Traffic Volumes

Traffic generated by the proposed Project was added to the existing traffic volumes (with two growth factor) to determine the existing plus Project condition. Figure O-1, *Existing Plus Project Traffic Volumes* illustrates the existing plus Project traffic volumes and daily traffic on roadway segments.



Figure O-1 Existing Plus Project Traffic Volumes

### Existing Plus Project Level of Service

Table O-1, *Existing Plus Project Level of Service Summary*, provides the results of the existing plus Project Level of Service (LOS) analysis during the AM and PM peak hours. As shown in Table O-1, all study area intersections currently operate at acceptable LOS (LOS D or better) with the exception of Riverside Drive/Lincoln Street (LOS E in the AM peak hour) Riverside Drive/Grand Avenue (LOS F in the AM and PM peak hours).

		AM Peak Hour		PM Peak Hour	
Intersection	Control	Delay (sec)	LOS	Delay (sec)	LOS
1. Riverside Drive/Lakeshore Drive	Signalized	30.8	С	28.5	C
2. Riverside Drive/Lincoln Street	Signalized	64.8	E	30.5	C
3. Riverside Drive/Lakeside High School- Le Harve Street	Signalized	6.0	A	14.7	В
4. Riverside Drive/Lakeside High School- Stadium Way	Signalized	7.8	A	14.9	B
5. Riverside Drive/Grand Avenue	Stop Controlled (EB)	>50.0	F	>50.0	F

Table O-1 Existing Plus Project Level of Service Summary

### Existing with Ambient Growth Rate (Opening Year 2017) Plus Project Traffic Conditions

Traffic generated by the proposed Project was added to the existing traffic volumes plus a six (6) percent growth factor to determine the Opening Year plus Project condition. Figure O-2, *Opening Year (2017) Plus Project Traffic Volumes*, illustrates the Opening Year plus Project traffic volumes and daily traffic on roadway segments.

537,476 33116 Not To See 20/13 320/167 205/224-223/191 2571269 LEGEND 158/108-157/131. Project Site VIIIII Riverside/Lakeshore Study Intersection AM/PM Traffic Volumes 1. XX/YY 16/227 660/680 Lokeshore Dr XXX ADT Volume 339/241 275/87 18.545 152/1/6-Riverside/Lincoln 2. 16/280 · 688/667 414 12/6 21/240. 2/2 13/34 8138 -10461577-4 Riverside/Lakeside High School-La harve 613/567 26/62 15/7 1/2 43/113. 1/3 0/2 25/125. 25/136-Riverside/Lakeside High School Stadium Horve St 125/71 Grand ł AL0 71/82 198/304-302/162 955/574

Figure O-2 Opening Year (2017) Plus Project Traffic Volumes

Riverside/Grand

5.

### Opening Year 2017 Plus Project Level of Service

Table O-2, *Opening Year Plus Project Level of Service Summary*, provides the results of the existing plus Project LOS analysis during the AM and PM peak hours. As shown in Table O-2, all study area intersections currently operate at acceptable LOS (LOS D or better) with the exception of Riverside Drive/Lincoln Street (LOS E in the AM peak hour) Riverside Drive/Grand Avenue (LOS F in the AM and PM peak hours).

		AM Peak Hour		PM Peak Hour	
Intersection	Control	Delay (sec)	LOS	Delay (sec)	LOS
1. Riverside Drive/Lakeshore Drive	Signalized	27.0	C	28.9	C
2. Riverside Drive/Lincoln Street	Signalized	74.8	E	34.9	C
3. Riverside Drive/Lakeside High School- Le Harve Street	Signalized	6.3	A	14.6	В
4. Riverside Drive/Lakeside High School- Stadium Way	Signalized	7.9	A	15.2	В
5. Riverside Drive/Grand Avenue	Stop Controlled (EB)	>50.0	- F	>50.0	F

Table O-2Opening Year plus Project Level of Service Summary

Cumulative Traffic Conditions

Project trips from the three cumulative projects were added to the existing traffic volumes, along with a four percent growth rate, to determine the cumulative traffic volumes. Figure O-3, *Cumulative Traffic Volumes*, illustrates the cumulative AM and PM peak hour volumes at the study area intersections, and the cumulative daily traffic on roadway segments.

Figure O-3 Cumulative Traffic Volumes



### Cumulative Level of Service

Table O-3, *Cumulative Level of Service Summary*, provides the results of the existing plus Project LOS analysis during the AM and PM peak hours. As shown in Table O-3, all study area intersections currently operate at acceptable LOS (LOS D or better) with the exception of Riverside Drive/Lincoln Street (LOS F in the AM peak hour) Riverside Drive/ Grand Avenue (LOS F in the AM and PM peak hours).

		AM Peak Hour		PM Peak Hour	
Intersection	Control	Delay (sec)	LOS	Delay (sec)	LOS
1. Riverside Drive/Lakeshore Drive	Signalized	35.7	D	31.5	C
2. Riverside Drive/Lincoln Street	Signalized	95.0	F	44.7	D
3. Riverside Drive/Lakeside High School- Le Harve Street	Signalized	6.5	A	15.0	В
4. Riverside Drive/Lakeside High School- Stadium Way	Signalized	8.0	A	15.1	В
5. Riverside Drive/Grand Avenue	Stop Controlled (EB)	>50.0	F	>50.0	F

Table O-3Cumulative Level of Service Summary

Prior to occupancy, the Project developer shall pay fair share contributions as outlined on page 29 of the Project TIA. The fair share contributions should be collected and used to construct the offsite improvements to maintain the acceptable LOS.

In addition, the developer will be required to mitigate any Project impacts by paying its fair share toward the City of Lake Elsinore's Development Impact Fee (DIF) program and the regional Transportation Uniform Mitigation Fee (TUMF) program. These are standard conditions, and are not considered unique mitigation under CEQA. With the inclusion of Mitigation Measure TR-1, and payment of TUMF and DIF, any impacts are anticipated to remain at a less than significant level.

# b) Would the Project exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

### Less Than Significant Impact

The Project will not exceed, when analyzed cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways. Please reference the discussion under Item O.a. above. Riverside Avenue in front of the Project site is not designated as a Congestion Management Program (CMP) roadway. Consequently, the Project will not significantly affect the designated CMP road network. As a result, no significant impacts are anticipated. No additional mitigation is required.

# c) Would the Project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

### No Impact

The Project will not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks. None exist on-site or are proximate to this site. No impacts are foreseen; therefore, no mitigation measures are required.

### d) Would the Project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

### Less Than Significant Impact With Mitigation Incorporation

The Project will not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). Access and roadway improvements will be designed to comply with design criteria contained in the Caltrans Design Manual and other City requirements and standards. Sight distance and signing and pavement striping to and at the Project driveways will be reviewed at the time of final grading, landscape and street improvement plans. Mitigation Measure TR-2 requires street improvements, signing and striping on Riverside Avenue along the Project frontage shall be installed as directed by Caltrans and the City Prior to occupancy. With the implementation of this mitigation measure, Project impacts will be considered less than. No additional mitigation is required.

### e) Would the Project result in inadequate emergency access?

### No Impact

The Project has no potential to result in inadequate emergency access. Access to and from the site will be provided via Riverside Avenue (State Route 74). The potential for inadequate emergency access is considered to be minimal and non-significant. As a result, no significant impacts are anticipated and no mitigation is required.

### f) Would the Project result in inadequate parking capacity?

### No Impact

On-site parking spaces will be required in accordance with the City's Zoning Code requirements for the proposed uses. Therefore, the Project will not result in inadequate parking capacity. As a result, no impacts are anticipated and no mitigation is required.

### g) Would the Project conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

### No Impact

The General Plan (Figure 2.5, *City of Lake Elsinore Bikemay Plan*) requires that a Class II bikeway be provided along Riverside Avenue in front of the Project. The Class II bikeway is incorporated into the standard street cross-section for Urban Arterial roadways (Figure 2.2, *City of Lake Elsinore Roadway Cross Sections*). In addition, the Riverside Transit Agency (RTA) Route 8 bus travels along this section of Riverside Avenue as part of its route around the west side of Lake Elsinore between Outlet Center and the community of Wildomar.

(www.riversidetransit.com/home/images/stories/DOWNLOADS/ROUTES/008.pdf)

This route offers daily services between the hours of 5:45 a.m. and approximately 7:45 p.m. on weekdays and between the hours of approximately 6:30 a.m. and 6:30 p.m. on weekends. The Project is not in conflict with other transit policies or programs. As a result, no significant impacts are expected and no mitigation is required.

### MITIGATION MEASURES

TR-1 Prior to occupancy, the Project developer shall pay fair share contributions as outlined on page 29 of

the Project TIA.

TR-2 Prior to occupancy, street improvements, signing and striping for Riverside Avenue shall be installed as directed by Caltrans and the City.

### P. UTILITIES AND SERVICE SYSTEMS

### a) Would the Project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

### Less Than Significant Impact

The Santa Ana RWQCB regulates wastewater discharges within the drainage area around Lake Elsinore. The proposed residential Project will be connecting to the wastewater treatment system operated by the EVMWD. As discussed in Sections P.b. and P.e, the sewer services provided by EVMWD are currently available in Riverside Avenue adjacent to the Project site and the Project site is within the anticipated service area for the District. The development of the Project is not expected to create any exceedances in wastewater treatment standards. While the Project will contribute an additional increment of wastewater flow to EVMWD's wastewater treatment facilities, the Project will also contribute connection fees to address infrastructure impacts and monthly service charges to address operational impacts. As a result, no significant impacts are anticipated and no additional mitigation measures are required. (Urban runoff-related water quality impacts associated with Project construction and operations are discussed in Section H, Hydrology and Water Quality, of this IS/MND).

b) Would the Project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

### Less Than Significant Impact

The Project is within the service boundary for the Elsinore Valley Municipal Water District (EVMWD), which shall provide water and wastewater service to the Project. Pre-Planning Letter No. CRS# 1767 (Appendix H) dated May 15, 2014 indicates that the applicant needs to complete and submit a District Plan Check Application Package, as well as obtain a Will Serve/Service Commitment Letter from EVMWD. The letter states that the developer will be required to pay all applicable District Plan Check, Inspection & Sewer Capacity Fees prior to development. Based on this letter, EVWMD has the capacity and intent to service the water and wastewater needs of the Project.

Therefore, the Project will not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities; the construction of which could cause significant environmental effects. As a result, any potential impacts are considered incremental and less than significant. Other than the standard requirements to connect to the District's water supply and wastewater treatment networks and the payment of connection fees, no additional mitigation is required.

# c) Would the Project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

### Less Than Significant Impact

The Project will not result in the construction or expansion of new area-wide storm drainage facilities. The Project will connect to the existing drainage facility located immediately adjacent to the site. These connections would convey on-site runoff into the existing drainage system after treatment by the best management practices identified in the Water Quality Management Plan (and discussed in in Section H, Hydrology and Water Quality, of this IS/MND). Since no new or expanded storm drain facilities are proposed, no significant impacts are anticipated and mitigation measures are required.

# d) Would the Project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

### Less Than Significant Impact

Reference Response P.B. The Project will create additional demand for potable water supplies, however this additional increment is considered to be less than significant, as EVWMD has the capacity and intent to service the water and wastewater needs of the Project. Other than the standard mandatory connection and services fees and installation of onsite utility infrastructure, no additional mitigation is required.

# e) Would the Project result in a determination by the wastewater treatment provider, which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?

#### Less Than Significant Impact

As described above, the Project will result in an additional increment of demand for wastewater treatment capacity. According to the best available data, there is expected to be sufficient wastewater treatment capacity to handle the additional increment generated by this Project within the existing system. The collection and treatment systems are also addressed in responses P.a and P.b above. Because impacts are minor and incremental, they are considered to be less than significant. Other than the standard mandatory connection and services fees and installation of onsite utility infrastructure, no additional mitigation is required.

### f) Would the Project be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?

#### Less Than Significant Impact

The proposed Project will generate demand for solid waste service system capacity and has a potential to contribute to potentially significant cumulative demand impacts on the solid waste system. The proposed Project will generate demand for solid waste service system capacity.

According to the Section 3.16, "Utilities and Service Systems," of the GP EIR, implementation of the General Plan will result in population increases and increases in commercial, industrial and other non-residential uses which would potentially impact solid waste disposal services and the capacity of landfill facilities that serve the City. As shown in Table 3.16-12, *Projected Increase in Solid Waste Generation – General Plan Buildout – 2030*, of the GPEIR, implementation of the General Plan would generate an additional 719 tons per day of solid waste, or 175,493 tons of solid waste per year at buildout. However, pursuant to the Integrated Waste Management Act, the State of California has established 50 percent as the minimum waste reduction rate for all cities. According to the California Department of Resources Recycling and Recovery's "Jurisdictional Profile for City of Lake Elsinore", the City had a diversion rate of 50 percent in 2006. Compliance with State law will result in a minimum of 50 percent of the estimated increase in City's generated solid waste being diverted from landfills.

Therefore, the maximum estimated increase in solid waste that would be placed into landfills at General Plan buildout (2030) would be 87,747 tons per year. This represents approximately 2.1 percent of the current combined daily permitted capacity (25,054 tons per day) of all landfills currently serving the City. Although buildout of the General Plan will result in an increase in the amount of solid waste that is sent to landfills, the remaining combined capacity at the landfills is sufficient to accommodate buildout of the General Plan.

The Project is not expected to create solid wastes other than typical municipal solid waste consistent with the General Plan expectations for the area. Combined with the City's mandatory source reduction and recycling program, the Project is not forecast to cause any significant adverse impact to the solid waste management

system. Impacts, while incremental, are considered less than significant and no additional mitigation is required.

### g) Would the Project comply with federal, state, and local statutes and regulations related to solid waste?

### Less Than Significant Impact

The Project will comply with federal, state, and local statutes and regulations related to solid waste. Please refer to Response P.f., above. The Project does not any propose activities that would conflict with the any applicable programmatic requirements. In addition, any future development shall comply with construction and debris removal and recycling requirements and shall contract with the City's waste hauler/franchisee for all bins and their removal in accordance with City Ordinance. As a result, the Project will comply with all of the applicable requirements and any impacts will be less than significant. No additional mitigation measures are required.

### MITIGATION MEASURES

None required.

### Q. MANDATORY FINDINGS OF SIGNIFICANCE

The following are Mandatory Findings of Significance in accordance with Section 15065, *Mandatory Findings of Significance*, of the State CEQA Guidelines.

a-c) Does the Project have the potential to 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, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory; 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.); and/or, have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?

### Less Than Significant Impact with Mitigation Incorporation

The proposed Project has been determined to be consistent with the City's General Plan. It can be implemented without causing significant adverse environmental effects with implementation of mitigation measures outlined in the preceding evaluation of environmental issues. The City will require the implementation of mitigation to ensure that potentially significant impacts do not occur to any of the following resource values or physical conditions that occur within the proposed improvements area: aesthetics, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, and transportation/traffic. Based on the data contained in this document and supporting technical studies, the City proposes to issue a Notice of Intent to Adopt a Mitigated Negative Declaration as the appropriate environmental determination to comply with the California Environmental Quality Act.

### V. PERSONS AND ORGANIZATIONS CONSULTED

This section identifies those persons who prepared or contributed to preparation of this document. This section is prepared in accordance with Section 15129, *Organizations and Persons Consulted*, of the State CEQA Guidelines.

### A. CITY OF LAKE ELSINORE

• Justin Kirk, Principal Planner

### **B. ENVIRONMENTAL CONSULTANTS**

- Vista Environmental (Air Quality, Greenhouse Gasses, and Noise)
- Southern California Geotechnical, Inc. (Geotechnical and Phase 1 Environmental)
- MLB Engineering (Hydrology, Water Quality Management Plan)
- Infrastructure Group, Inc. (Traffic)

### C. OTHER AGENCY REPRESENTATIVES

None.

### MITIGATED NEGATIVE DECLARATION 2016-01- City of Lake Elsinore

The following Mitigated Negative Declaration is being circulated for public review in accordance with the California Environmental Quality Act Section 21091 and 21092 of the Public Resources Code.

Project Name:	Lakepointe Apartments: Residential Design Review (RDR 2014-05).
Project Applicant:	Lakeside Pointe, LLC, 43414 Business Park Drive, Temecula, CA 92590.
Project Locations:	Northerly of Grand Avenue, southwesterly of Eisenhower Drive, and known as Assessor's Parcel Number (APN) 379-090-022.
Project Description:	Lakeside Pointe, LLC (Project proponent) is proposing to implement a 150-unit multi- family Project with associated recreational amenities – tot lot, swimming pool, and clubhouse on an approximate 8.27-acre site, located within the City of Lake Elsinore, western Riverside County, California. Residential Design Review 2014-05 allows for 150 multi-family units, associated landscaping, parking, as well as recreational uses on the entire approximately 8.27-acre proposed Project site, for an overall Project density of approximately 18.14 dwelling units per acre.

#### FINDING

This is to advise that the City of Lake Elsinore, acting as the lead agency, has conducted an Initial Study to determine if the Project may have a significant effect on the environmental and is proposing this Mitigated Negative Declaration based upon the following findings:

The Initial Study identifies potentially significant effects but:

- (1) Proposals made or agreed to by the applicant before this proposed Mitigated Negative Declaration was released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur.
- (2) There is no substantial evidence before the agency that the Project may have a significant effect on the environment.
- (3) Mitigation measures are required to ensure all potentially significant impacts are reduced to a less than significance level.

A MITIGATED NEGATIVE DECLARATION will be prepared.

If adopted, the Mitigated Negative Declaration means that an Environmental Impact Report will not be required. Reasons to support this finding are included in the attached Initial Study. The Project file and all related documents are available for review at the City of Lake Elsinore, Planning Division, 130 South Main Street, Lake Elsinore, CA 92530.

#### NOTICE

The public is invited to comment on the proposed Mitigated Negative Declaration during the review period.

7-1-16

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Justin Kirk for Grant Taylor, Director of Community Development

Date of Determination

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Lakepointe Apartments

### **ATTACHMENT A - FIGURES**

FIGURE 1 VICINITY MAP



FIGURE 2 RESIDENTIAL DESIGN REVIEW 2014-05 SITE PLAN





FIGURE 3a RESIDENTIAL DESIGN REVIEW 2014-05 ELEVATIONS





FIGURE 3b RESIDENTIAL DESIGN REVIEW 2014-05 ELEVATIONS





### FIGURE 4 PRELIMINARY WQMP POST-CONSTRUCTION BMP SITE PLAN



### FIGURE 5 GENERAL PLAN MAP





### FIGURE 6 ZONING MAP





FIGURE 7 AERIAL PHOTO



### FIGURE 8 GEOTRACKER SITE



### FIGURE

#### **ENVIROSTOR SITE**








## **APPENDIX 2**

# LAKEPOINTE APARTMENTS AIR QUALITY AND GREENHOUSE GAS IMPACT STUDY City of Lake Elsinore, California







traffic engineering & design transportation planning parking acoustical engineering air quality & ghg

## LAKE POINTE APARTMENTS AIR QUALITY AND GREENHOUSE GAS IMPACT STUDY City of Lake Elsinore, California

#### Prepared for:

Mr. Kirk Bowlus LAKEPOINTE APARTMENTS LLC. 1662 Dustin Place Riverside, CA 92506

#### Prepared by:

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#### Bryan Estrada, AICP, PTP

November 8, 2022

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# 1.0 Introduction

This report has been updated to reflect the minor modifications to the project description, based on the modified site plan, dated 9/12/22. The project now includes a total of 152 dwelling units (an increase of two units from what was previously studied). However, overall, the site plan has not significantly changed, and the modified project would affect the findings of this analysis, and no new or more severe impacts would occur. All previously identified mitigation measures and project design features are still applicable. Hence, the findings of the previous March 31, 2021, analysis are still accurate and adequately address all project impacts. No additional changes have been made to this updated report beyond reference to the latest site plan.

The purpose of this air quality and greenhouse gas (GHG) analysis is to determine whether the estimated criteria air pollutants and greenhouse gas emissions generated from the construction and operation of the proposed Lake Pointe Apartments Project (hereinafter referred to as project) would cause significant impacts to air resources.

This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000, et seq.). The methodology follows the California Air Resources Board (CARB), the South Coast Air Quality Management District (SCAQMD), and City of Lake Elsinore recommendations for quantification of emissions and evaluation of potential impacts.

## 1.1 <u>Site Location</u>

The project site is located at the northerly corner of Riverside Drive (SR-74) and Lakeside High School/Le Harve Avenue, in the City of Lake Elsinore, California. The project site is located within the South Coast Air Basin (SCAB), the SCAQMD Hemet/Elsinore General Forecast Area, and the Lake Elsinore Source Receptor Area (SRA) 25.

The project site is bounded by commercial uses to the northeast, Lakeside High School to the southwest, Riverside Drive to the southeast and vacant land use to the northwest.

The project site is zoned for Residential Mixed Use (RMU) in the City of Lake Elsinore Zoning Map and Lake Elsinore City Plan General Plan Land Use Designation Map.

The project location map is provided in Exhibit A.



## 1.2 **Project Description**

The project proposes to construct and operate 152 residential apartment dwelling units on an approximately 8.26 acre vacant site. The site plan used for this analysis, provided by ROBERT BEERS is illustrated in Exhibit B. Table 1 summarizes the proposed project land uses.

Table 1					
Land	Use	Summary			

Land Use	Quantity <sup>1</sup>	Metric
Low Rise Apartment Units	152	Dwelling Units

<sup>1</sup> It should be noted that the emissions analysis is based on the previous site plan of 150 dwelling units. The minor modification to the current site plan, which adds two additional units, would not significantly affect the findings of this analysis, and no new or more severe impacts would occur. All previously identified mitigation measures and project design features are still applicable.

The site requires export of approximately 12,200 cubic yards of earthwork material during grading phase.

Construction of the project is estimated to begin in the year 2021 and requires approximately 14 months for the final completion of the project. Construction activities are expected to consist of site preparation, grading, building construction, paving, and architectural coating. The project is expected to be complete in the year 2023.

## 1.3 <u>Sensitive Receptors</u>

Sensitive receptors are considered land uses or other types of population groups that are more sensitive to air pollution exposure. Sensitive population groups include children, the elderly, the acutely and chronically ill, and those with cardio-respiratory diseases. For CEQA purposes, the SCAQMD considers a sensitive receptor to be a location where a sensitive individual could remain for 24-hours or longer, such as residences, hospitals, and schools (etc), as described in the Localized Significance Threshold Methodology (SCAQMD 2008a, page 3-2). Sensitive receptors are located within 25 meters of the project site.

Several sensitive land uses are considered to be present around the site, including:

1. Residential homes located at approximately 275 feet to the northeast of the project site.



- 2. Lakeside High School located adjacent to the project site to the southwest.
- 3. Residential homes located at approximately 340 feet to the northwest of the site.

#### 1.4 <u>Summary of Analysis Results</u>

Table 2 provides a summary of the CEQA air quality impact analysis results.

	Air Quality Impact Criteria	Potentially Significant	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact	
Wo	ould the project:					
a)	Conflict with, or obstruct implementation of, the applicable air quality plan?			х		
c)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable Federal or State ambient air quality standard?			х		
d)	Expose sensitive receptors to substantial pollutant concentrations?		х			
e)	Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			х		

Table 2 CEQA Air Quality Impact Criteria

Table 3 provides a summary of the CEQA GHG impact criteria analysis results.

GHG Impact Criteria		Potentially Significant	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
Wo	uld the project:				
a)	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			х	
b)	Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of greenhouse gases?			х	

Table 3 CEQA GHG Impact Criteria

#### 1.5 <u>Recommended Mitigation Measures</u>

The following mitigation measures are recommended to help ensure the project does not expose sensitive receptors to substantial pollutant concentrations. In particular, given the close proximity of sensitive receptors, including the existing high school immediately adjacent to the site, several standard dust control measures have been included as mitigation to ensure adequate enforcement and compliance.

#### **Construction Mitigation Measures:**

- MM-1 The project must follow the standard SCAQMD rules and requirements with regards to fugitive dust control, which includes, but are not limited to the following:
  - 1. All active construction areas shall be watered two (2) times daily.
  - 2. Speed on unpaved roads shall be reduced to less than 15 mph.
  - 3. Any visible dirt deposition on any public roadway shall be swept or washed at the site access points within 30 minutes.
  - 4. Any on-site stockpiles of debris, dirt or other dusty material shall be covered or watered twice daily.
  - 5. All operations on any unpaved surface shall be suspended if winds exceed 15 mph.
  - 6. Access points shall be washed or swept daily.
  - 7. Construction sites shall be sandbagged for erosion control.
  - 8. Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).
  - 9. Cover all trucks hauling dirt, sand, soil, or other loose materials, and maintain at least 2 feet of freeboard space in accordance with the requirements of California Vehicle Code (CVC) section 23114.
  - 10. Pave or gravel construction access roads at least 100 feet onto the site from the main road and use gravel aprons at truck exits.
  - 11. Replace the ground cover of disturbed areas as quickly possible.
  - 12. A fugitive dust control plan should be prepared and submitted to SCAQMD prior to the start of construction.
- MM-2 Require all construction equipment to have Tier 4 low emission "clean diesel" engines (OEM or retrofit) that include diesel oxidation catalysts and diesel particulate filters that meet the latest CARB best available control technology.



- **MM-3** Construction equipment shall be maintained in proper tune.
- **MM-4** All construction vehicles shall be prohibited from excessive idling. Excessive idling is defined as five (5) minutes or longer.
- **MM-5** Minimize the simultaneous operation of multiple construction equipment units.
- **MM-6** The use of heavy construction equipment and earthmoving activity should be suspended during Air Alerts when the Air Quality Index reaches the "Unhealthy" level.
- **MM-7** Establish an electricity supply to the construction site and use electric powered equipment instead of diesel-powered equipment or generators, where feasible.
- **MM-8** Establish staging areas for the construction equipment that are as distant as possible from adjacent sensitive receptors (High School).
- **MM-9** Use haul trucks with on-road engines instead of off-road engines for on-site hauling.
- **MM-10** Prepare and implement a Construction Management Plan which will include the required mitigation measures to be submitted to the City of Lake Elsinore and followed by construction contractors and personnel.

#### 1.6 <u>Recommended Project Design Features</u>

The following recommended project design features are considered standard building code requirements and best practices that will be included in the project design.

- **DF-1.** Comply with the mandatory requirements of the California Building Standards Code, Title 24, Part 6 (Energy Code) and Part 11 (CALGreen), including:
  - Install low flow fixtures and toilets, water efficient irrigation systems, drought tolerant/native landscaping, and reduce the amount of turf.
  - Provide the necessary infrastructure to support electric vehicle charging.
  - Provide solar installations necessary for meeting the prescribed Energy Design Rating.



- **DF-2.** Comply with the mandatory requirements of CalRecycle's residential recycling program and implement zero waste strategies.
- **DF-3.** Encourage the property management company and landscape maintenance crews to use electric powered landscaping equipment for landscape maintenance.
- **DF-4.** Utilize zero VOC and low VOC paints and solvents, wherever possible.



## 2.0 Air Quality Setting

The Federal Clean Air Act (§ 7602) defines air pollution as any agent or combination of such agents, including any physical, chemical, biological, or radioactive substance which is emitted into or otherwise enters the ambient air. Household combustion devices, motor vehicles, industrial facilities and forest fires are common sources of air pollution. Air pollution can cause disease, allergies and death. It affects soil, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility, and climate. It can also cause damage to and deterioration of property, present hazards to transportation, and negatively impact the economy.

This section provides background information on criteria air pollutants, the applicable federal, state and local regulations concerning air pollution, and the existing physical setting of the project within the context of local air quality.

## 2.1 <u>Description of Air Pollutants</u><sup>1</sup>.

The following section describes the air pollutants of concern related to the project. Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health. The following descriptions of criteria air pollutants have been provided by the SCAQMD.

• **Carbon Monoxide (CO)** is a colorless, odorless, toxic gas produced by incomplete combustion of carbon-containing fuels (e.g., gasoline, diesel fuel, and biomass). Sources include motor vehicle exhaust, industrial processes (metals processing and chemical manufacturing), residential wood burning, and natural sources. CO is somewhat soluble in water; therefore, rainfall and fog can suppress CO conditions. CO enters the body through the lungs, dissolves in the blood, and competes with oxygen, often replacing it in the blood, thus reducing the blood's ability to transport oxygen to vital organs in the body. The ambient air quality standard for carbon monoxide is intended to protect persons whose medical condition already compromises their circulatory system's ability to deliver oxygen. These medical conditions include certain heart ailments, chronic lung diseases, and anemia. Persons with these conditions have reduced exercise capacity even when exposed to relatively low levels of CO. Fetuses are at risk because their blood has an even greater affinity to bind with CO. Smokers are also at risk from ambient CO levels because smoking

<sup>&</sup>lt;sup>1</sup> SCAQMD. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning (May 6, 2005)



increases the background level of CO in their blood. The South Coast basin has recently achieved attainment status for carbon monoxide by both USEPA and CARB.

- Nitrogen Dioxide (NO<sub>2</sub>) is a byproduct of fuel combustion. The principal form of nitrogen oxide produced by combustion is nitric oxide (NO), but NO reacts quickly to form NO<sub>2</sub>, creating the mixture of NO and NO<sub>2</sub> commonly called NO<sub>x</sub>. NO<sub>2</sub> acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO<sub>2</sub> is only potentially irritating. There is some indication of a relationship between NO<sub>2</sub> and chronic pulmonary fibrosis. Some increase in bronchitis in young children has also been observed at concentrations below 0.3 parts per million (ppm). NO<sub>2</sub> absorbs blue light which results in a brownish red cast to the atmosphere and reduced visibility. Although NO<sub>2</sub> concentrations have not exceeded national standards since 1991 and the state hourly standard since 1993, NO<sub>x</sub> emissions remain of concern because of their contribution to the formation of O<sub>3</sub> and particulate matter.
- **Ozone** (O<sub>3</sub>) is one of a number of substances called photochemical oxidants that are formed when volatile organic compounds (VOC) and NO<sub>x</sub> react in the presence of ultraviolet sunlight.  $O_3$  concentrations in the South Coast basin are typically among the highest in the nation, and the damaging effects of photochemical smog, which is a popular name for a number of oxidants in combination, are generally related to the concentrations of O<sub>3</sub>. Individuals exercising outdoors, children, and people with preexisting lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the subgroups most susceptible to O<sub>3</sub> effects. Short-term exposures (lasting for a few hours) to O<sub>3</sub> at levels typically observed in southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. In recent years, a correlation between elevated ambient O<sub>3</sub> levels and increases in daily hospital admission rates, as well as mortality, has also been reported. The South Coast Air Basin is designated by the USEPA as an extreme nonattainment area for ozone. Although O3 concentrations have declined substantially since the early 1990s, the South Coast basin continues to have peak  $O_3$  levels that exceed both state and federal standards.
- Fine Particulate Matter (PM<sub>10</sub>) consists of extremely small suspended particles or droplets 10 microns or smaller in diameter that can lodge in the lungs, contributing to respiratory problems. PM<sub>10</sub> arises from such sources as re-entrained road dust, diesel soot, combustion products, tire and brake abrasion, construction operations, and fires. It is also formed in the atmosphere from NO<sub>x</sub> and SO<sub>2</sub> reactions with ammonia. PM<sub>10</sub> scatters light and significantly reduces visibility. Inhalable particulates



pose a serious health hazard, alone or in combination with other pollutants. More than half of the smallest particles inhaled will be deposited in the lungs and can cause permanent lung damage. Inhalable particulates can also have a damaging effect on health by interfering with the body's mechanism for clearing the respiratory tract or by acting as a carrier of an absorbed toxic substance. The South Coast basin has recently achieved federal attainment status for PM<sub>10</sub>, but is non-attainment based on state requirements.

- Ultra-Fine Particulate Matter (PM<sub>2.5</sub>) is defined as particulate matter with a diameter less than 2.5 microns and is a subset of PM<sub>10</sub>. PM<sub>2.5</sub> consists mostly of products from the reaction of NO<sub>x</sub> and SO<sub>2</sub> with ammonia, secondary organics, finer dust particles, and the combustion of fuels, including diesel soot. PM<sub>2.5</sub> can cause exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease, declines in pulmonary function growth in children, and increased risk of premature death from heart or lung diseases in the elderly. Daily fluctuations in PM<sub>2.5</sub> levels have been related to hospital admissions for acute respiratory conditions, school absences, and increased medication use in children and adults with asthma. The South Coast basin is designated as non-attainment for PM<sub>2.5</sub> by both federal and state standards.
- **Sulfur dioxide (SO<sub>2</sub>)** is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Health effects include acute respiratory symptoms and difficulty in breathing for children. Individuals with asthma may experience constriction of airways with exposure to SO<sub>2</sub>. Though SO<sub>2</sub> concentrations have been reduced to levels well below state and federal standards, further reductions in SO<sub>2</sub> emissions are needed because SO<sub>2</sub> is a precursor to sulfate and PM<sub>10</sub>. The South Coast basin is considered a SO<sub>2</sub> attainment area by USEPA and CARB.
- Lead (Pb) is a toxic heavy metal that can be emitted into the air through some industrial processes, burning of leaded gasoline and past use of lead-based consumer products. Lead is a neurotoxin that accumulates in soft tissues and bones, damages the nervous system, and causes blood disorders. It is particularly problematic in children, in that permanent brain damage may result, even if blood levels are promptly normalized with treatment. Concentrations of lead once exceeded the state and federal air quality standards by a wide margin, but as a result of the removal of lead from motor vehicle gasoline, ambient air quality standards for lead have not been exceeded since 1982. Though special monitoring sites immediately downwind of lead sources recorded localized violations of the state standard in 1994, no violations have been recorded since. Consequently, the South Coast basin is designated as an attainment area for lead by both the USEPA and CARB. This report



does not analyze lead emissions from the project, as it is not expected to emit lead in any significant measurable quantity.

- Volatile Organic Compounds (VOC), although not actually a criteria air pollutant, VOCs are regulated by the SCAQMD because they cause chemical reactions which contribute to the formation of ozone. VOCs are also transformed into organic aerosols in the atmosphere, contributing to higher PM<sub>10</sub> and lower visibility levels. Sources of VOCs include combustion engines, and evaporative emissions associated with fuel, paints and solvents, asphalt paving, and the use of household consumer products such as aerosols. Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations of VOC. Some hydrocarbon components classified as VOC emissions are hazardous air pollutants. Benzene, for example, is a hydrocarbon component of VOC emissions that are known to be a human carcinogen. The term reactive organic gases (ROG) are often used interchangeably with VOC.
- **Toxic Air Contaminants (TACs)** are defined as air pollutants which may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health, and for which there is no concentration that does not present some risk. This contrasts with the criteria pollutants, in that there is no threshold level for TAC exposure below which adverse health impacts are not expected to occur. The majority of the estimated health risk from TACs can be attributed to a relatively few compounds, the most common being diesel particulate matter (DPM) from diesel engine exhaust. In addition to DPM, benzene and 1,3-butadiene are also significant contributors to overall ambient public health risk in California.

## 2.2 <u>Federal and State Ambient Air Quality Standards</u>

The Federal Clean Air Act, which was last amended in 1990, requires the EPA to set National Ambient Air Quality Standards (NAAQS) for criteria pollutants considered harmful to public health and the environment. The State of California has also established additional and more stringent California Ambient Air Quality Standards (CAAQS) in addition to the seven criteria pollutants designated by the federal government.

AAQS are designed to protect the health and welfare of the populace with a reasonable margin of safety. The standards are divided into two categories, primary standards and secondary standards. Primary standards are implemented to provide protection for the "sensitive" populations such as those with asthma, or the children and elderly. Secondary standards are to provide protection against visible pollution as well as damage to the surrounding environment, including animals, crops, and buildings.



Table 3 shows the Federal and State Ambient Air Quality Standards.

Air Pollutant	Averaging Time <sup>2</sup>	Federal Standard (NAAQS) <sup>2</sup>	California Standard (CAAQS) <sup>2</sup>			
0	1 Hour		0.09 ppm			
Ozone	8 Hour	0.070 ppm	0.070 ppm			
Carbon Monoxide	1 Hour	35 ppm	20 ppm			
(CO)	8 Hour	9 ppm	9 ppm			
Nitrogen Dioxide	1 Hour	0.100 ppm	0.18 ppm			
(NO <sub>2</sub> )	Annual	0.053 ppm	0.030 ppm			
	1 Hour	0.075 ppm	0.25 ppm			
(SO <sub>2</sub> )	3 Hour	0.5 ppm <sup>3</sup>				
	24 Hour		0.04 ppm			
Particulate Matter	24 Hour	150 μg/m³	50 μg/m³			
(PM <sub>10</sub> )	Mean		20 µg/m³			
Particulate Matter	24 Hour	35 μg/m³				
(PM2.5)	Annual	12 μg/m³	12 μg/m³			
	30-day		1.5 <i>μ</i> g/m			
Lead	Quarter	1.5 <i>μ</i> g/m				
	3-month average	0.15 µg/m				
Visibility reducing particles	8 Hour		0.23/km extinction coefficient. (10-mile visibility standard)			
Sulfates	24 Hour		25 μg/m			
Vinyl chloride	24 Hour		0.01 ppm			
Hydrogen sulfide	24 Hour		0.03 ppm			

Table 4Federal and State Ambient Air Quality Standards (AAQS)1

<sup>1</sup> Source: USEPA: https://www.epa.gov/criteria-air-pollutants/naaqs-table and

CARB: https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards

 $^{2}$  ppm = parts per million of air, by volume;  $\mu$ g/m3 = micrograms per cubic meter; Annual = Annual

Arithmetic Mean; 30-day = 30-day average; Quarter = Calendar quarter.

<sup>3</sup> Secondary standards

Several pollutants listed in Table 4 are not addressed in this analysis. Lead is not included because the project is not anticipated to emit lead. Visibility-reducing particles are not explicitly addressed in this analysis because particulate matter is addressed. The project is not expected to generate or be exposed to vinyl chloride because proposed project uses do not utilize the chemical processes that create this pollutant and there are no such uses in the project vicinity. The proposed project is not expected to cause exposure to hydrogen sulfide because it would not generate hydrogen sulfide in any substantial quantity.

## 2.3 <u>Attainment Status</u>

The Clean Air Act requires states to prepare a State Implementation Plan (SIP) to ensure air quality meets the NAAQS. The California Air Resources Board (CARB) provides designations of attainment for air basins where AAQS are either met or exceeded. If the AAQS are met, the area is designated as being in "attainment", if the air pollutant concentrations exceed the AAQS, than the area is designated as being "nonattainment". If there is inadequate or inconclusive data to make a definitive attainment designation, the area is considered "unclassified."

National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. Each standard has a different definition, or 'form' of what constitutes attainment, based on specific air quality statistics. For example, the Federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the federal annual PM<sub>2.5</sub> standard is met if the three-year average of the annual average PM<sub>2.5</sub> concentration is less than or equal to the standard.

When a state submits a request to the EPA to re-designate a nonattainment area to attainment, the Clean Air Act (CAA) section 175A(a) requires that the state (or states, if the area is a multi-state area) submit a maintenance plan ensuring the area can maintain the air quality standard for which the area is to be re-designated for at least 10 years following the effective date of re-designation. Table 4 lists the attainment status for the criteria pollutants in the South Coast Air Basin (SCAB).



Pollutant	State Status	National Status
Ozone	Nonattainment	Nonattainment (Extreme) <sup>2</sup>
Carbon monoxide	Attainment	Attainment (Maintenance)
Nitrogen dioxide	Attainment	Attainment (Maintenance)
<b>PM</b> 10	Nonattainment	Attainment (Maintenance)
PM2.5	Nonattainment	Nonattainment
Lead	Attainment	Nonattainment (Partial) <sup>3</sup>

Table 5South Coast Air Basin Attainment Status1

<sup>1</sup> Source: California Air Resources Board. <u>http://www.arb.ca.gov/desig/adm/adm.htm</u>

<sup>2</sup> 8-Hour Ozone.

<sup>3</sup> Partial Nonattainment designation – Los Angeles County portion of Basin only.

#### 2.4 South Coast Air Quality Management District (SCAQMD)

The agency responsible for air pollution control for the South Coast Air Basin (SCAB) is the South Coast Air Quality Management District (SCAQMD). SCAQMD is responsible for controlling emissions primarily from stationary sources. SCAQMD maintains air quality monitoring stations throughout the SCAB. SCAQMD, in coordination with the Southern California Association of Governments, is also responsible for developing, updating, and implementing the Air Quality Management Plan (AQMP) for the SCAB. An AQMP is a plan prepared and implemented by an air pollution district for a county or region designated as nonattainment of the federal and/or California ambient air quality standards. The term nonattainment area is used to refer to an air SCAB where one or more ambient air quality standards are exceeded.

Every three (3) years the SCAQMD prepares a new AQMP, updating the previous plan and having a 20-year horizon. The latest version is the 2016 AQMP. The 2016 AQMP is a regional blueprint for achieving the federal air quality standards and healthful air. While air quality has dramatically improved over the years, the SCAB still exceeds federal public health standards for both ozone and particulate matter (PM) and experiences some of the worst air pollution in the nation. The 2016 AQMP includes both stationary and mobile source strategies to ensure that rapidly approaching attainment deadlines are met, that public health is protected to the maximum extent feasible, and that the region is not faced with burdensome sanctions if the Plan is not approved or if the NAAQS are not met on time.



The most significant air quality challenge in the SCAB is to reduce nitrogen oxide (NOx) emissions sufficiently to meet the upcoming ozone standard deadlines. Based on the inventory and modeling results, 522 tons per day (tpd) of total SCAB NOx 2012 emissions are projected to drop to 255 tpd and 214 tpd in the 8-hour ozone attainment years of 2023 and 2031 respectively, due to continued implementation of already adopted regulatory actions ("baseline emissions"). The analysis suggests that total SCAB emissions of NOx must be reduced to approximately 141 tpd in 2023 and 96 tpd in 2031 to attain the 8-hour ozone standards. This represents an additional 45 percent reduction in NOx in 2023, and an additional 55 percent NOx reduction beyond 2031 levels.

The SCAQMD establishes a program of rules and regulations to obtain attainment of the state and federal standards in conjunction with the AQMP. Several of the rules and regulations that may be applicable to this project include, but are not limited to, the following:

**SCAQMD Rule 402** prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

**SCAQMD Rule 403** governs emissions of fugitive dust during construction and operation activities. Compliance with this rule is achieved through application of standard Best Management Practices, such as application of water or chemical stabilizers to disturbed soils, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 miles per hour, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph, and establishing a permanent ground cover on finished sites.

**SCAQMD Rule 445** restricts wood burning devices from being installed into any new development and is intended to reduce the emissions of particulate matter for wood burning devices.

**SCAQMD Rule 1113** governs the sale, use, and manufacturing of architectural coating and limits the VOC content in paints and paint solvents. This rule regulates the VOC content of paints available during construction. Therefore, all paints and solvents used during construction and operation of project must comply with Rule 1113.

**SCAQMD Rule 1143** governs the manufacture, sale, and use of paint thinners and solvents used in thinning of coating materials, cleaning of coating application equipment,



and other solvent cleaning operations by limiting their VOC content. This rule regulates the VOC content of solvents used during construction. Solvents used during the construction phase must comply with this rule.

**SCAQMD Rule 1186** limits the presence of fugitive dust on paved and unpaved roads and sets certification protocols and requirements for street sweepers that are under contract to provide sweeping services to any federal, state, county, agency or special district such as water, air, sanitation, transit, or school district.

**SCAQMD Rule 1303** governs the permitting of re-located or new major emission sources, requiring Best Available Control Measures and setting significance limits for PM10 among other pollutants.

**SCAQMD Rule 2202** On-Road Motor Vehicle Mitigation Options, is to provide employers with a menu of options to reduce mobile source emissions generated from employee commutes, to comply with federal and state Clean Air Act requirements, Health & Safety Code Section 40458, and Section 182(d)(1)(B) of the federal Clean Air Act. It applies to any employer who employs 250 or more employees on a full or part-time basis at a worksite for a consecutive six-month period calculated as a monthly average.

## 2.5 <u>South Coast Air Basin</u>

The project is located within the South Coast Air SCAB (SCAB). To the west of the SCAB is the Pacific Ocean. To the north and east are the San Gabriel, San Bernardino, and San Jacinto mountains, while the southern limit of the SCAB is the San Diego County line. The SCAB consists of Orange County, all of Los Angeles County except for the Antelope Valley, the non-desert portion of western San Bernardino County, and the western and Coachella Valley portions of Riverside County.

The local dominant wind blows predominantly from the south-southwest with relatively low velocities. The annual average annual wind speed is about 10 miles per hour. Summer wind speeds average slightly higher than winter wind speeds. Low average wind speeds, together with a persistent temperature inversion limit the vertical dispersion of air pollutants throughout the SCAB.

The region also experiences periods of hot, dry winds from the desert, known as Santa Ana winds. If the Santa Ana winds are strong, they can surpass the sea breeze, which blows from the ocean to the land, and carry the suspended dust and pollutants out to the ocean. If the winds are weak, they are opposed by the sea breeze and cause stagnation, resulting in high pollution events.



The annual average temperature varies little throughout much of the SCAB, ranging from the low to middle 60s (°F). With more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas.

The mountains surrounding the region form natural horizontal barriers to the dispersion of air contaminants. Air pollution created in the coastal regions and Los Angeles metropolitan area are transported inland until reaching the mountains, where the combination of mountains and temperature inversion layers generally prevent further dispersion. This poor ventilation results in a gradual degradation of air quality from the coastal areas to inland areas of the SCAB. Air stagnation may occur during the early evening and early morning periods of transition between day and nighttime flows.

Temperature inversions are an important feature that limits the vertical depth through which pollution can be mixed. During the summer, coastal areas are characterized by a sharp discontinuity between the cool marine air at the surface and the warm, sinking air aloft within the high-pressure cell over the ocean to the west. This marine/subsidence inversion allows for good local mixing, but acts like a giant lid over the SCAB. The air remains stagnant, as the average wind speed in downtown Los Angeles becomes less than five mph.

The second type of inversion forms on clear winter nights when cold air off the mountains sinks to the valley floor while the air aloft over the valley remains warm. This forms radiation inversions. These inversions, in conjunction with calm winds, trap pollutants such as those from automobile exhaust near their source. They lead to air pollution "hotspots" in heavily developed coastal areas of the SCAB, although onshore breezes often push the pollutants along canyons into the inland valleys. Summers are often periods of hazy visibility and occasionally unhealthful air, while winter air quality impacts tend to be highly localized and can consist of elevated levels of nitrogen dioxide and fine particulate matter.

## 2.6 Local Climate and Meteorology

The weather station closest to the project site is a National Weather Service Cooperative weather station located at Elsinore station, (042805). Climatological data from the National Weather Service at this station is summarized in Table 6.



Marsh	Average Temperature (°F)			Mean Precipitation	
Wonth	Max.	Min.	Mean	(inches)	
January	65.4	36.4	50.9	2.47	
February	67.5	38.7	53.1	2.54	
March	71.0	41.2	56.2	2.03	
Total	76.3	44.7	60.5	0.75	
May	81.8	49.8	65.8	0.23	
June	90.5	54.1	72.3	0.02	
July	98.1	59.4	78.7	0.08	
August	98.1	59.8	79.0	0.12	
September	93.5	55.8	74.6	0.26	
October	83.7	48.8	66.2	0.51	
November	74.1	41.1	57.5	0.99	
December	66.9	36.5	51.7	2.01	
Annual	80.6	47.2	63.9	12.01	

Table 6 Meteorological Summary<sup>1</sup>

<sup>1</sup> Source: Western Regional Climate Center 2016-2019. Averages derived from measurements recorded between 1897 and 2012 at Elsinore Station, (042805).

## 2.7 Local Air Quality

The air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the air basin. Estimates of the existing emissions in the Basin provided in the Final 2016 Air Quality Management Plan, prepared by SCAQMD, March 2017, indicate that collectively, mobile sources account for 60 percent of the VOC, 90 percent of the NOx emissions, 95 percent of the CO emissions and 34 percent of directly emitted PM2.5, with another 13 percent of PM2.5 from road dust.

The SCAQMD has divided the SCAB into fourteen general forecasting areas and thirty eight Source Receptor Areas (SRA) for monitoring and reporting local air quality. The SCAQMD provides daily reports of the current air quality conditions in each general forecast area and SRA. The monitoring areas provide a general representation of the local meteorological, terrain, and air quality conditions within the SCAB.

The project is located within the Hemet/Elsinore general forecasting area and Lake Elsinore air monitoring area (SRA-25).



Table 7 summarizes the published air quality monitoring data from 2017 through 2019, which is the most recent 3-year period available. These pollutant levels were used to comprise a "background" for the project location and existing local air quality. For criteria pollutants not monitored at the Lake Elsinore station, data from the nearest monitoring station with a comparable setting were used.

Air Pollutant Location	Averaging Time	ltem	2017	2018	2019
Carbon Monoxide	1 Hour	Max 1-Hour (ppm)	1.1	1.1	1.6
		Exceeded State Standard (20 ppm)	No	No	No
		Exceeded National Standard (35 ppm)	No	No	No
		Max 8 Hour (ppm)	0.7	0.8	0.7
Lake Eisinore	8 Hour	Exceeded State Standard (9 ppm)	No	No	No
		Exceeded National Standard (9 ppm)	No	No	No
	1 Hour	Max 1-Hour (ppm)	0.121	0.116	0.108
Ozone		Days > State Standard (0.09 ppm)	0	0	0
		Max 8 Hour (ppm)	0.098	0.095	0.089
Lake Elsinore	8 Hour	Days > State Standard (0.07 ppm)	54	30	28
		Days >National Standard (0.070 ppm)	54	30	28
Nitrogon Diovido	1 Hour	Max 1-Hour (ppm)	0.049	0.0413	0.0413
		Exceeded State Standard (0.18 ppm)	No	No	No
	Annual	Annual Average (ppm)	0.0082	0.0085	0.0068
Lake Elsinore		Exceeded >State Standard (0.030 ppm)	No	No	No
		Exceeded >National Standard (0.053 ppm)	No	No	No
Sulfur Diovido	1 Hour	Max 1 Hour (ppm)			
		Exceed State Standard (0.25 ppm)			
Lake Elsinore		Exceed National Standard (0.075 ppm)			
	24 Hour	Max 24-Hour (µg/m³)	134	104	93
<b>Coarse Particles</b>		Days $>$ State Standard (50 $\mu$ g/m <sup>3</sup> )	11	9	5
(PM10)		Days >National Standard (150 $\mu$ g/m <sup>3</sup> )	0	0	0
Lake Elsinore	Annual	Annual Average (µg/m³)	23.1	22.4	18.7
		Exceeded State Standard (20 $\mu$ g/m <sup>3</sup> )	Yes	Yes	No
Fine Particulates (PM2.5)	24 Hour	Max 24-Hour (µg/m³)			
		Days >National Standard (35 $\mu$ g/m <sup>3</sup> )			
	Annual	Annual Average (µg/m³)			
Lake Elsinore		Exceeded State Standard (12 $\mu$ g/m <sup>3</sup> )			
		Exceeded National Standard (15 $\mu$ g/m <sup>3</sup> )			

Table 7 Local Air Quality

Source: https://www.aqmd.gov/home/air-quality/historical-air-quality-data/historical-data-by-year

 $\mu$ g/m<sup>3</sup> = micrograms per cubic meter

ARB = California Air Resource Board

EPA= Environmental Protection Agency

ppm = part per million

(- -) = Data not provided

# 3.0 Global Climate Change Setting

Global climate change is the change in the average weather of the earth that is measured by such things as alterations in temperature, wind patterns, storms, and precipitation. Current data shows that the recent period of warming is occurring more rapidly than past geological events. The average global surface temperature has increased by approximately 1.4° Fahrenheit since the early 20<sup>th</sup> Century. 1.4° Fahrenheit may seem like a small change, but it's an unusual event in Earth's recent history, and as we are seeing, even small changes in temperature can cause enormous changes in the environment.

The planet's climate record, preserved in tree rings, ice cores, and coral reefs, shows that the global average temperature has been stable over long periods of time. For example, at the end of the last ice age, when the Northeast United States was covered by more than 3,000 feet of ice, average global temperatures were only 5° to 9° Fahrenheit cooler than today. The Intergovernmental Panel on Climate Change (IPCC), which includes more than 1,300 scientists from the United States and other countries, forecasts a temperature rise of 2.5° to 10° Fahrenheit over the next century. Therefore, significant changes to the environment are expected in the near future.

The consequences of global climate change include more frequent and severe weather, worsening air pollution by increasing ground level ozone, higher rates of plant and animal extinction, more acidic and oxygen depleted oceans, strain on food and water resources, and threats to densely populated coastal and low lying areas from sea level rise.

The impacts of climate change are already visible in the Southwest United States. In California, the consequences of climate change include;

- A rise in sea levels resulting in the displacement of coastal businesses and residencies
- A reduction in the quality and supply of water from the Sierra snowpack
- Increased risk of large wildfires
- Exacerbation of air quality problems
- Reductions in the quality and quantity of agricultural products
- An increased temperature and extreme weather events
- A decrease in the health and productivity of California's forests



## 3.1 <u>Greenhouse Gases</u>

Most scientists agree the main cause of the current global warming trend is anthropogenic (human-induced) augmentation of the greenhouse effect. The greenhouse effect refers to the way gases in the earth's atmosphere trap and re-emits long wave infrared radiation, acting like a blanket insulating the earth. Activities such as fossil fuel combustion, industrial processes, agriculture, and waste decomposition have elevated the concentration of greenhouse gases in the atmosphere beyond the level of naturally occurring concentrations.

GHGs comprise less than 0.1 percent of the total atmospheric composition, yet they play an essential role in influencing climate. Greenhouse gases include naturally occurring compounds such as carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), water vapor (H<sub>2</sub>O), and nitrous oxide (N<sub>2</sub>O), while others are synthetic. Man-made GHGs include the chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs) and Perfluorocarbons (PFCs), as well as sulfur hexafluoride (SF<sub>6</sub>). Different GHGs have different effects on the Earth's warming. GHGs differ from each other in their ability to absorb energy (their "radiative efficiency") and how long they stay in the atmosphere, also known as the "lifetime".

The Global Warming Potential (GWP) was developed to allow comparisons of the global warming impacts of different gases. Specifically, it is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of CO<sub>2</sub>. The larger the GWP, the more than a given gas warms the Earth compared to CO<sub>2</sub> over that time period. The time period usually used for GWPs is 100 years. GWPs provide a common unit of measure, which allows analysts to add up emissions estimates of different gases and allows policymakers to compare emissions reduction opportunities across sectors and gases.



Table 7 lists the 100-year GWP of GHGs from the Intergovernmental Panel on Climate Change (IPCC) fifth assessment report (AR5).

Gas Name	Formula	Lifetime (years)	GWP
Carbon Dioxide	CO <sub>2</sub>		1
Methane	CH₄	12	28
Nitrous Oxide	N <sub>2</sub> O	114	265
Sulphur Hexafluoride	SF <sub>6</sub>	3200	23,500
Nitrogen Trifluoride	NF₃	740	16,100
Hexafluoroethane (PFC-116)	$C_2F_6$	10,000	11,100
Octafluoropropane (PFC-218)	C₃F <sub>8</sub>	2,600	8,900
Octafluorocyclobutane (PFC-318)	$C_4F_8$	3,200	9,540
Tetrafluoromethane (PFC-14)	CF4	50,000	6,630
Hydrofluorocarbon 125	HFC-125	29	3,170
Hydrofluorocarbon 134a	HFC-134a	14	1,300
Hydrofluorocarbon 143a	HFC-143a	52	4,800
Hydrofluorocarbon 152a	HFC-152a	1	138
Hydrofluorocarbon 227ea	HFC-227ea	34	3,350
Hydrofluorocarbon 23	HFC-23	270	12,400
Hydrofluorocarbon 236fa	HFC-236fa	240	8,060
Hydrofluorocarbon 245fa	HFC-245fa	8	858
Hydrofluorocarbon 32	HFC-32	5	677
Hydrofluorocarbon 365mfc	HFC-365mfc	9	804
Hydrofluorocarbon 43-10mee	HFC-43-10mee	16	1,650

Table 8Global Warming Potential of Greenhouse Gases1, 2

<sup>1</sup> Source: IPCC Fifth Assessment Report (AR5)

https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5\_Chapter08\_FINAL.pdf

<sup>2</sup> GWPs are used to convert GHG emission values to "carbon dioxide equivalent" (CO<sub>2</sub>e) units



## 3.2 <u>GHG Regulatory Setting - International</u>

**Intergovernmental Panel on Climate Change.** In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change to assess the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation.

**United Nations.** The United States participates in the United Nations Framework Convention on Climate Change (UNFCCC) (signed on March 21, 1994). Under the Convention, governments gather and share information on greenhouse gas emissions, national policies, and best practices; launch national strategies for addressing greenhouse gas emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change. The 2014 UN Climate Change Conference in Lima Peru provided a unique opportunity to engage all countries to assess how developed countries are implementing actions to reduce emissions.

**Kyoto Protocol.** The Kyoto Protocol is a treaty made under the UNFCCC and was the first international agreement to regulate GHG emissions. It has been estimated that if the commitments outlined in the Kyoto Protocol are met, global GHG emissions could be reduced by an estimated 5 percent from 1990 levels during the first commitment period of 2008 – 2012 (UNFCCC 1997). On December 8, 2012, the Doha Amendment to the Kyoto Protocol was adopted. The amendment includes: New commitments for Annex I Parties to the Kyoto Protocol who agreed to take on commitments in a second commitment period from 2013 – 2020, a revised list of greenhouse gases (GHG) to be reported on by Parties in the second commitment period, and Amendments to several articles of the Kyoto Protocol, which specifically referenced issues pertaining to the first commitment period and which needed to be updated for the second commitment period.

**The Paris Agreement.** The Paris agreement is the first comprehensive global climate agreement to be ratified by the United States, United Nations, China, and India; the largest producers of greenhouse gas emissions in the world. The agreement was negotiated by a total of 195 nations and entered into force on November 4, 2016. The central aim is to strengthen the global response to the threat of climate change by keeping the global temperature rise this century well below 2 degrees Celsius compared to pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius.



Additionally, the agreement aims to strengthen the ability of countries to deal with the impacts of climate change. Currently, 123 parties have ratified the agreement.

## 3.3 GHG Regulatory Setting – National

**Greenhouse Gas Endangerment.** On December 2, 2009, the EPA announced that GHGs threaten the public health and welfare of the American people. The EPA also states that GHG emissions from on-road vehicles contribute to that threat. The decision was based on *Massachusetts v. EPA* (Supreme Court Case 05-1120) which argued that GHGs are air pollutants covered by the Clean Air Act and that the EPA has authority to regulate those emissions.

**Clean Vehicles.** Congress first passed the Corporate Average Fuel Economy (CAFE) law in 1975 to increase the fuel economy of cars and light duty trucks. The law has become more stringent over time. On May 19, 2009, President Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. On April 1, 2010, the EPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) announced a joint final rule establishing a national program that would reduce greenhouse gas emissions and improve fuel economy for new cars and trucks sold in the United States.

The first phase of the national program applied to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They required these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide per mile, equivalent to 35.5 miles per gallon if the automobile industry were to meet this carbon dioxide level solely through fuel economy improvements. Together, these standards were estimated to cut carbon dioxide emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016).

The second phase of the national program for passenger cars, light-duty trucks, and medium-duty passenger vehicles covers model years 2017 through 2025. The final standards were established in 2012 and were projected to result in an average industry fleetwide level of 163 grams/mile of carbon dioxide (CO2) in model year 2025, which is equivalent to 54.5 miles per gallon (mpg) if achieved exclusively through fuel economy improvements.

The EPA and the U.S. Department of Transportation also implemented the first national standards to reduce greenhouse gas emissions and improve the fuel efficiency of medium-



and heavy-duty engines and vehicles trucks and buses in 2010. The standards applied to all on-road vehicles rated at a gross vehicle weight at or above 8,500 pounds, and the engines that power them, except those covered by the current GHG emissions and CAFE standards for light duty vehicles, for model year 2014 to 2018. In 2016, the EPA and NHTSA finalized phase 2 of the standards which applied to model years 2018 through 2027.

Under the direction of the current Trump administration, the NHTSA and EPA propose to amend the Corporate Average Fuel Economy (CAFE) and greenhouse gas emissions standards for passenger cars and light trucks and establish new standards, covering model years 2021 through 2026.

**The Safer Affordable Fuel Efficient (SAFE) Vehicles.** The National Highway Traffic Safety Administration (NHTSA) and the Environmental Protection Agency (EPA) have amended certain previous Corporate Average Fuel Economy (CAFE) and greenhouse gas emissions standards for passenger cars and light trucks and establish new standards, covering model years 2021 through 2026. The (SAFE) Vehicles Rule published on April 30, 2020 and is effective as of June 29, 2020.

**Mandatory Reporting of Greenhouse Gases.** On January 1, 2010, the EPA started requiring large emitters of heat-trapping emissions to begin collecting GHG data under a new reporting system. Under the rule, suppliers of fossil fuels or industrial greenhouse gases, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of greenhouse gas emissions are required to submit annual reports to the EPA.

**Climate Adaptation Planning.** The EPA's Climate Change Adaptation Plan identifies priority actions the EPA will take to incorporate considerations of climate change into its programs, policies, rules and operations to ensure they are effective under future climatic conditions. Under the Trump administration, the EPA has said it would continue to advance climate adaptation efforts and that the agency recognizes the challenges that communities face in adapting to a changing climate. The EPA currently runs the Climate Change Adaptation Resource Center (ARC-X) to help local governments prepare for climate change.

## 3.4 <u>GHG Regulatory Setting – State of California</u>

The State of California has been a leader in climate change legislation and has passed numerous bills to reduce greenhouse gas emissions across all sectors of the economy. Some of the key climate legislation in the State include the following:



**Assembly Bill (AB) 32, California Global Warming Solutions Act of 2006.** AB 32 set the stage for the State's transition to a sustainable, low-carbon future. AB 32 was the first program in the country to take a comprehensive, long-term approach to addressing climate change.<sup>2</sup> AB 32 was followed by Senate Bill (SB) 32, which further requires GHG emissions to be reduced to 40% below 1990 levels by 2030 and appointing CARB to develop policies (i.e. cap-and-trade) to achieve this goal.

**Senate Bill (SB) 375, Sustainable Communities & Climate Protection Act of 2008.** SB 375 requires the Air Resources Board to develop regional greenhouse gas emission reduction targets for passenger vehicles GHG reduction targets for 2020 and 2035 for each region covered by the State's 18 metropolitan planning organizations.<sup>3</sup>

**Senate Bill (SB) 100, California Renewables Portfolio Standard Program.** SB 100 established a landmark policy requiring renewable energy and zero-carbon resources supply 100 percent of electric retail sales to end-use customers by 2045.<sup>4</sup>

## 3.5 <u>GHG Emissions Inventory</u>

Table 9 shows the latest GHG emission inventories at the national, state, regional and local levels.

United States	State of California	SCAG	City of Lake Elsinore
(2018) <sup>2</sup>	(2018) <sup>3</sup>	(2020) <sup>4</sup>	(2008) <sup>5</sup>
6,678 MMTCO₂e	425 MMTCO₂e	216.4 MMTCO₂e	0.506 MMTCO <sub>2</sub> e

Table 9				
GHG	Emissions	Inventory <sup>1</sup>		

<sup>1</sup> MMTCO<sub>2</sub>e = Million Metric Tons of Carbon Dioxide Equivalent

<sup>2</sup> https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks

<sup>3</sup> https://www.arb.ca.gov/cc/inventory/data/data.htm

<sup>4</sup> http://www.scag.ca.gov/programs/Pages/GreenhouseGases.aspx

<sup>5</sup> http://www.lake-elsinore.org/home/showdocument?id=7232

<sup>&</sup>lt;sup>4</sup> California Energy Commission. SB 100 Joint Agency Report. <u>https://www.energy.ca.gov/sb100</u>



<sup>&</sup>lt;sup>2</sup> California Air Resources Board. AB 32 Global Warming Solutions Act of 2006.

https://ww2.arb.ca.gov/resources/fact-sheets/ab-32-global-warming-solutions-act-2006 <sup>3</sup> California Air Resources Board. Sustainable Communities and Climate Protection Program. https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-climate-protection-program/about

## 4.0 Modeling Parameters and Assumptions

The California Emissions Estimator Model Version 2016.3.2 (CalEEMod) was used to calculate criteria air pollutants and GHG emissions from the construction and operation of the project. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify criteria air pollutant and GHG emissions.

The model quantifies direct emissions from construction and operation activities (including vehicle use), as well as indirect emissions, such as GHG emissions from off-site energy generation, solid waste disposal, vegetation planting and/or removal, and water use. The model also identifies mitigation measures to reduce criteria pollutant and GHG emissions. The model was developed for the California Air Pollution Control Officers Association (CAPCOA) in collaboration with the California air districts.

## 4.1 <u>Construction Assumptions</u>

Construction of the project is assumed to begin in the year 2021 and last approximately 14 months. Construction phases are assumed to consist of site preparation, grading, building construction, paving and architectural coating. The site requires export of approximately 12,200 cubic yards of earthwork material during grading phase.

Construction phases are not expected to overlap.

The project's construction schedule are based on the CalEEMod defaults.

The CalEEMod default construction equipment list is based on survey data and the size of the site. The parameters used to estimate construction emissions, such as the worker and vendor trips and trip lengths, utilize the CalEEMod defaults. The construction equipment list is shown in Table 10.

The quantity of fugitive dust estimated by CalEEMod is based on the number of equipment used during site preparation and grading. CalEEMod estimates the worst-case fugitive dust impacts will occur during the grading phase. The maximum daily disturbance footprint would be 3.5 acres per 8-hour day with all equipment in use.

Based on recent discussions with SCAQMD, the Fact Sheet for Applying CalEEMod to Localized Significance Thresholds should no longer be used to determine disturbance acreage.


Phase	Equipment	Amount	Hours Per Day	Soil Disturbance Rate (Acres/ 8hr-Day)	Equipment Daily Disturbance Footprint (Acres)	Total Phase Daily Disturbance Footprint (Acres)	
Site	Rubber Tired Dozers	3	8	0.5	1.5	35	
Preparation	Tractors/Loaders/Backhoes	4	8	0.5	2.0	5.5	
	Excavators	1	8	0.0	0.0		
Grading	Graders	1	8	0.5	0.5	25	
Grading	Rubber Tired Dozers	1	8	0.5	0.5	2.5	
	Tractors/Loaders/Backhoes	3	8	0.5	1.5		
	Cranes	1	7	0.0	0.0		
5 11	Forklifts	3	8	0.0	0.0		
Building	Generator Sets	1	8	0.0	0.0	1.3	
construction	Tractors/Loaders/Backhoes	3	7	0.5	1.3		
	Welders	1	8	0.0	0.0		
Paving	Pavers	2	8	0.0	0.0		
	Paving Equipment	2	8	0.0	0.0	0.0	
	Rollers	2	8	0.0	0.0		
Architectural Coating	Air Compressors	1	6	0.0	0.0	0.0	

Table 10Construction Equipment Assumptions Phase 1

<sup>1</sup> CalEEMod Defaults

#### 4.2 Localized Construction Analysis Modeling Parameters

CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily disturbance activity possible for each piece of equipment. This report identifies the following parameters in the project design or applicable mitigation measures in order to compare CalEEMod reported emissions against the localized significance threshold lookup tables:

- 1) The off-road equipment list (including type of equipment, horsepower, and hours of operation) assumed for the day of construction activity with maximum emissions.
- 2) The maximum number of acres disturbed on the peak day.
- 3) Any emission control devices added onto off-road equipment.
- 4) Specific dust suppression techniques used on the day of construction activity with maximum emissions.



#### 4.3 **Operational Assumptions**

Operational emissions occur over the life of the project and are considered "long-term" sources of emissions. Operational emissions include both direct and indirect sources. This section briefly describes the operational sources of emissions analyzed for the project.

#### 4.3.1 Mobile Source Emissions

Mobile source emissions are the largest source of long-term air pollutants from the operation of the project. Mobile sources are direct sources of project emissions that are primarily attributed to tailpipe exhaust and road dust (tire, brake, clutch, and road surface wear) from motor vehicles traveling to and from the site.

Estimates of mobile source emissions require information on four parameters: trip generation, trip length, vehicle/fleet mix, and emission factors (quantity of emission for each mile traveled or time spent idling by each vehicle).

The trip generation rates for this project are based on the Lake Pointe Apartment Traffic Impact Study Scope of Work, March 26, 2021, RK Engineering Group and the latest version of the ITE Trip Generation Manual 10<sup>th</sup> Edition.

Trip summary information is shown in Table 11.

Lond Has		Units <sup>1</sup>	Daily Trip Rate <sup>2</sup>		
Land Use	The Code		Weekday	Saturday	Sunday
Apartments Low Rise	220	DU	7.32	8.14	6.28

Table 11 Trip Generation Rates

<sup>1</sup> DU = Dwelling Unit; TSF = Thousand Square Feet

<sup>2</sup> Source: Lake Pointe Apartment Traffic Impact Study Scope of Work, March 26, 2021, RK Engineering Group and ITE Trip Generation Manual 10<sup>th</sup> Edition

Operational vehicle trip assumptions include trip lengths, trip type, and diverted/pass-by trips. The CalEEMod default trip assumptions are shown in Table 12.



	Residential Trips <sup>2</sup>								
Land Use	Trip Length (miles)		Trip Percent (%)			Trip Type (%)			
	H-W	H-S	H-O	H-W	H-S	H-O	Prim.	Divert	Pass-By
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

Table 12Operational Vehicle Trip Assumptions1

<sup>1</sup> CalEEMod Defaults

<sup>2</sup> Residential Trips:

H-W = Home-Work; H-S = Home-Shopping; H-O = Home-Other.

The Emission Factors (EMFAC) 2014 model is used to estimate the mobile source emissions are embedded in the CalEEMod emissions model. No adjustments have been made to default emission factors.

The project's total vehicle miles traveled is shown in the table 15 for this project.

Table 13Operational Vehicle Miles Traveled

Land Use	Annual Vehicle Miles Traveled (VMT)
Apartments Low Rise	3,735,923

<sup>1</sup> CalEEMod Defaults

The operational vehicle fleet mix has been adjusted to reflect typical home-based trips only. The Southern California Association of Governments (SCAG) regional travel demand model does not include heavy-duty trucks, buses or other large vehicles that would require passenger car equivalent (PCE) adjustments for residential home-based trips. However, to be conservative, the Air Quality/GHG analysis has assumed a 2% truck mix for all vehicles over 10,000 pounds gross vehicle weight rating (GVWR), which includes LHD2, MHD, HHD, OBUS, UBUS, and SBUS vehicles. The 2% mix is also consistent with the default Highway Capacity Manual (HCM) assumptions.



YUY	Vehicle Mix (%)
Light Duty Automobile (LDA)	59.53%
Light Duty Truck (LDTI)	3.93%
Light Duty Truck (LDT2)	20.28%
Medium Duty Truck (MDV)	12.21%
Light Heavy Truck (LHD1)	1.55%
Light Heavy Truck (LHD2)	0.10%
Medium Heavy Truck (MHD)	0.36%
Heavy Heavy Truck (HHD)	1.45%
Other Bus (OBUS)	0.03%
Urban Bus (UBUS)	0.02%
Motorcycle (MCY)	0.49%
School Bus (SBUS)	0.02%
Motor Home (MH)	0.02%
Total	100.0%

Table 14 Vehicle Mix for Trips<sup>1</sup>

<sup>1</sup> Adjusted fleet mix to include 2% total trucks over 10,000 lbs GVWR. (LHD2, MHD, HHD, OBUS, UBUS, SBUS, MH)

#### 4.3.2 Energy Source Emissions

Energy usage includes both direct and indirect sources of emissions. Direct sources of emissions include on-site natural gas usage (non-hearth) for heating, while indirect emissions include electricity generated by offsite power plants. Natural gas use is measured in units of a thousand British Thermal Units (kBTU) per size metric for each land use subtype and electricity use is measured in kilowatt hours (kWh) per size metric for each land use land use subtype.

CalEEMod divides building electricity and natural gas use into uses that are subject to Title 24 standards and those that are not. Lighting electricity usage is also calculated as a separate category in CalEEMod. For electricity, Title 24 uses include the major building envelope systems covered by Part 6 (California Energy Code) of Title 24, such as space heating, space cooling, water heating, and ventilation. Non-Title 24 uses include all other end uses, such as appliances, electronics, and other miscellaneous plug-in uses. Because some lighting is not considered as part of the building envelope energy budget, and since a



separate mitigation measure is applicable to this end use, CalEEMod makes lighting a separate category.

For natural gas, uses are likewise categorized as Title 24 or Non-Title 24. Title 24 uses include building heating and hot water end uses. Non-Title 24 natural gas uses include cooking and appliances (including pool/spa heaters).

The baseline values are based on the California Energy Commission (CEC) sponsored California Commercial End Use Survey (CEUS) and Residential Appliance Saturation Survey (RASS) studies.

Table 15 shows the total annual expected electricity and natural gas usage for the proposed project.

	Table 1	5	
Electricity ar	nd Natu	ıral Gas	Usage

Land Use	Electricity Usage <sup>1</sup> (KWhr/yr) <sup>2</sup>	Natural Gas Usage <sup>1</sup> (KBTU/yr) <sup>2</sup>
Apartments Low Rise	729,039	2,336,180

<sup>1</sup> CalEEMod default estimates.

<sup>2</sup> KWhr/yr = Kilowatt Hours per Year

KBTU/yr = Thousand British Thermal Units per Year

#### 4.3.3 Area Source Emissions

Area source emissions are direct sources of emissions that fall under four categories; hearths, consumer products, architectural coatings, and landscaping equipment. Per SCAQMD rule 445, no wood burning devices are allowed in new developments; therefore, no wood hearths are included in this project.

Consumer products are various solvents used in non-industrial applications which emit ROGs during their product use. These typically include cleaning supplies, kitchen aerosols, cosmetics and toiletries.

#### 4.3.4 Other Sources of Operational Emissions

**Water.** Greenhouse gas emissions are generated from the upstream energy required to supply and treat the water used on the project site. Indirect emissions from water usage are counted as part of the project's overall impact. The estimated water usage for the



project is reported in Table 16 and recommendations to reduce water usage are discussed in Section 6.0.

**Waste.** CalEEMod calculates the indirect GHG emissions associated with waste that is disposed of at a landfill. The program uses annual waste disposal rates from the California Department of Resources Recycling and Recovery (CalRecycle) data for individual land uses. The program quantifies the GHG emissions associated with the decomposition of the waste which generates methane based on the total amount of degradable organic carbon.

The estimated waste generation by the project is reported in Table 16 and recommendations to reduce waste generation in landfills are discussed in Section 6.0

Land Use		Waste Generation		
	Indoor	Outdoor	Total	(tons/year) <sup>1</sup>
Apartments Low Rise	9,773,104	6,161,305	15,934,408	69.00

Table 16Operational Water Usage and Waste Generation

<sup>1</sup> CalEEMod default estimates.



# 5.0 Significance Thresholds

#### 5.1 <u>Air Quality Regional Significance Thresholds</u>

The SCAQMD has established air quality emissions thresholds for criteria air pollutants for the purposes of determining whether a project may have a significant effect on the environment per Section 15002(g) of the Guidelines for implementing CEQA. By complying with the thresholds of significance, the project would be in compliance with the SCAQMD Air Quality Management Plan (AQMP) and the federal and state air quality standards.

Table 17 lists the air quality significance thresholds for the six air pollutants analyzed in this report. Lead is not included as part of this analysis as the project is not expected to emit lead in any significant measurable quantity.

Pollutant	Construction (lbs/day)	Operation (lbs/day)				
NO <sub>x</sub>	100	55				
voc	75	55				
<b>PM</b> <sub>10</sub>	150	150				
PM <sub>2.5</sub>	55	55				
SO <sub>x</sub>	150	150				
со	550	550				

Table 17 SCAQMD Regional Significance Thresholds

<sup>1</sup> Source: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf

#### 5.2 <u>Air Quality Localized Significance Thresholds</u>

Air quality emissions were analyzed using the SCAQMD's Mass Rate Localized Significant Threshold (LST) Look-up Tables.

Table 18 lists the Localized Significance Thresholds (LST) used to determine whether a project may generate significant adverse localized air quality impacts. LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard.



LSTs are developed based on the ambient concentrations of four applicable air pollutants for source receptor area (SRA) 25 – Lake Elsinore.

The nearest existing sensitive receptors are located along the northern and southern property line of the site, less than 25 meters from potential areas of on-site construction and operational activity. Although receptors are located closer than 25 meters to the site, SCAQMD LST methodology states that projects with boundaries located closer than 25 meters to the nearest receptor should use the LSTs for receptors located at 25 meters.

The daily disturbance area is calculated to be 3.5 acres, however LST thresholds are only based on 1, 2 and 5-acre sites. In order to be conservative, a linear progression model was used to estimate the threshold for 3.5-acre site based on the established LST thresholds.

Pollutant	Construction (lbs/day)	Operational (lbs/day)			
ΝΟχ	297.9	297.9			
CO	1,521.8	1,521.8			
<b>PM</b> <sub>10</sub>	9.8	2.9			
PM <sub>2.5</sub>	6.1	1.6			

Table 18SCAQMD Localized Significance Thresholds1 (LST)

<sup>1</sup> Source: SCAQMD Mass Rate Localized Significance Thresholds for 3.5-acre site in SRA-25 at 25 meters

#### 5.3 <u>Microscale CO Concentration Standards</u>

The significance of localized CO impacts depends on whether ambient CO levels in the vicinity of the project are above or below federal or state standards. If ambient levels are below the standards, a project is considered to have a significant impact if project emissions result in an exceedance of the AAQS. If ambient levels already exceed State or federal standards, project emissions are considered significant if they increase 1-hour CO concentrations by 1.0 ppm or more or 8-hour CO concentrations by 0.45 ppm or more.

Current CO levels in the SCAB are in attainment of both federal and state standards, and local air quality monitoring data indicates there have not been any localized exceedances of CO over the past three years. Therefore, the project must not contribute to an exceedance of a federal or state ambient air quality standard.



#### 5.4 <u>GHG Significance Thresholds</u>

#### 5.4.1 SCAQMD Recommended GHG Thresholds

For quantifiable analysis purposes, the project GHG emissions are also compared to the SCAQMD Interim CEQA Greenhouse Gas (GHG) Significance Thresholds, December 2008. The purpose of the SCAQMD thresholds of significance is to assist local agencies with determining the impact of a project for CEQA. SCAQMD's objective in providing the GHG guidelines is to establish a performance standard that will ultimately contribute to reducing GHG emissions below 1990 levels, and thus achieve the requirements of the California Global Warming Solutions Act (AB 32). The SCAQMD has held several GHG Significance Thresholds Stakeholder Working Group meetings where staff has presented updated recommendations that serve in addendum to the interim document.

The SCAQMD describes a five-tiered approach for determining GHG Significance Thresholds.

- **Tier 1** If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.
- **Tier 2** If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (i.e., city or county), project-level and cumulative GHG emissions are less than significant.

For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, SCAQMD requires an assessment based on the following tiers.

• **Tier 3** - Consists of screening values that are intended to capture 90 percent of the GHG emissions from projects. If a project's emissions are under the screening thresholds, then the project is less than significant. SCAQMD has presented two options that lead agencies could choose for screening values. Option #1 sets the thresholds for residential projects to 3,500 MTCO<sub>2</sub>e/year, commercial projects to 1,400 MTCO<sub>2</sub>e/year), and the mixed use to 3,000 MTCO<sub>2</sub>e/year. Option #2 sets a single numerical threshold for all non-industrial projects of 3,000 MTCO<sub>2</sub>e/year. The current staff recommendation is to use option #2, but allows lead agencies to choose option #1 if they prefer. Regardless of which option a lead agency chooses to follow, it is recommended that the same option is consistently used for all projects.



Table 19 shows the screening levels described in option #2, which has been used previously in the City of Lake Elsinore.

SCAQIND Her S and Screening values					
Land Use	Screening Value				
Industrial Projects	10,000 MTCO <sub>2</sub> e/Yr				
Residential/Commercial Projects	3,000 MTCO <sub>2</sub> e/Yr				

Table 19 SCAQMD Tier 3 GHG Screening Values

• **Tier 4** - includes three performance standard compliance options to demonstrate that a project is not significant for GHG emissions.

**Compliance Option 1** consists of achieving a target percentage reduction in emission compared to the business as usual (BAU) methodology. The project proponent would need to incorporate design features into the project and/or implement GHG mitigation measures to demonstrate a 30 percent reduction in GHG emissions below BAU that is consistent with the current applicable goals of AB 32 in the State of the California.

**Compliance Option 2** consists of early compliance with AB 32 through early implementation of CARB's Scoping Plan Measures. This option is intended for projects in sectors subject to the Scoping Plan Measures.

**Compliance Option 3** consists of establishing efficiency-based performance standards at the plan level (program-level projects such as general plans) and project level. Efficiency standards are based on the amount of GHG emissions (MTCO<sub>2</sub>e/year) per Service Population (SP). SP is defined as the sum of the residential and employment populations provided by a project.

Droject Turce	Efficiency Thresholds <sup>1</sup>			
Project Type	Target Year 2020	Target Year 2035		
Plan (Program) Level	6.6 MTCO <sub>2</sub> e/yr/SP	4.1 MTCO <sub>2</sub> e/yr/SP		
Project Level	4.8 MTCO <sub>2</sub> e/yr/SP	3.0 MTCO <sub>2</sub> e/yr/SP		

Table 20 SCAQMD Tier 4 Efficiency Thresholds



• **Tier 5** – involves implementing off-site mitigation or the purchasing of offsets to reduce GHG emissions to less than the proposed screening level. The project proponent would be required to provide offsets for the life of the project, which is defined as 30 years.

By complying with the SCAQMD GHG thresholds of significance, the project is considered to be in compliance with the applicable State GHG legislation.

#### 5.5 Lake Elsinore General Plan Air Quality Element

This City of Lake Elsinore General Plan Air Quality Element establishes goals, policies and programs that are meant to balance the City's actions regarding land use, circulation and other issues with their potential effects on air quality and global climate change.

In order for the project's air quality impact to be considered less than significant, the project should not conflict with, or obstruct implementation of, the Lake Elsinore City General Plan Air Quality Element.

#### 5.6 Lake Elsinore Climate Action Plan

The Lake Elsinore CAP has been adopted to ensure the City meets the State-wide policies for reducing GHG emissions, as required by the California Global Warming Solutions Act (AB 32) and Executive Order S-3-05.

The City of Lake Elsinore selected efficiency-based targets for the years governed by the General Plan to reduce community-wide emissions to 6.6 MT CO2e per service population per year by 2020 (a 22.3% reduction from the 2008 rate of 8.5 MT CO2e/SP) and to 4.4 MT CO2e per service population per year by 2030 (a 48.2% reduction from the 2008 rate of 8.5 MT CO2e/SP). These efficiency-based targets represent the AB 32 and Executive Order S-3-05 targeted emissions levels for 2020 and 2030 on a per service population basis.

While the efficiency targets do not directly correlate to thresholds of significance for CEQA purposes, comparing the project's GHG efficiency rate to the City targets is a good indicator of compatibility with the CAP.

## 6.0 Air Quality Impact Analysis

Consistent with CEQA and the State CEQA Guidelines, a significant impact related to air quality would occur if the proposed project is determined to:

- a) Conflict with or obstruct implementation of the applicable air quality plan.
- b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable Federal or State ambient air quality standard.
- c) Expose sensitive receptors to substantial pollutant concentrations.
- d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

#### 6.1 Short Term Air Quality Impacts - Construction

#### 6.1.1 Regional Emissions - Construction

Regional air quality emissions include both on-site and off-site emissions associated with construction of the project. Regional daily emissions of criteria pollutants are compared to the SCAQMD regional thresholds of significance.

As shown in Table 21, regional daily emissions of criteria pollutants are expected to be below the allowable thresholds of significance.

CalEEMod daily emissions outputs are provided in Appendix A.



Maximum Daily Emissions (lbs/day) <sup>1</sup>											
Activity VOC NO <sub>x</sub> CO SO <sub>2</sub> PM <sub>10</sub> PM <sub>2.5</sub>											
Site Preparation	3.97	40.55	21.82	0.04	9.16	5.73					
Grading	2.36	24.78	16.41	0.03	3.86	2.41					
Building Construction	2.22	17.28	20.29	0.04	2.13	1.12					
Paving	2.21	22.25	29.16	0.05	1.14	1.05					
Architectural Coating	47.23	1.46	2.56	0.01	0.33	0.15					
Maximum <sup>1</sup>	47.23	40.55	29.16	0.05	9.16	5.73					
SCAQMD Threshold	75	100	550	150	150	55					
Exceeds Threshold (?)	No	No	No	No	No	No					

Table 21Regional Construction Emissions

<sup>1</sup> Maximum daily emission during summer or winter; includes both on-site and off-site project emissions.

The project must follow all standard SCAQMD rules and requirements with regards to fugitive dust control, as described in Section 6.1.3. Compliance with the dust control is considered a standard requirement and included as part of the project's design features, not mitigation.

Table 23 shows that, the project's daily construction emissions will be below the applicable SCAQMD regional air quality standards and thresholds of significance. As a result, the project would not contribute substantially to an existing or projected air quality violation.

Furthermore, by complying with the SCAQMD standards, the project would not contribute to a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

The project's short-term construction impact on regional air resources is less than significant with mitigation.

#### 6.1.2 Localized Emissions - Construction

Table 22 illustrates the construction related localized emissions and compares the results to SCAQMD LST thresholds.

Maximum Daily Emissions (lbs/day) <sup>1</sup>											
Activity NOx CO PM <sub>10</sub> PM											
On-site Emissions	40.50	21.15	8.95	5.68							
SCAQMD Construction Threshold <sup>2</sup>	279.9	1,521.8	9.8	6.1							
Exceeds Threshold (?)	No	No	No	No							

Table 22Localized Construction Emissions

<sup>1</sup> Maximum daily emission during summer or winter; includes on-site project emissions only.

<sup>2</sup> Reference 2006-2008 SCAQMD Mass Rate Localized Significant Thresholds for construction and operation. SRA-25, Lake Elsinore, 3.5-acre site, receptor distance 25 meters.

As shown in Table 22, localized daily emissions of criteria pollutants are expected to be below the allowable thresholds of significance. By following the above mitigation measures, **the project's short-term construction impact to localized air resources is less than significant.** 

#### 6.1.3 Fugitive Dust - Construction

The Project is required to comply with regional rules that assist in reducing short-term air pollutant emissions associated with suspended particulate matter, also known as fugitive dust. Fugitive dust emissions are commonly associated with land clearing activities, cut-and-fill grading operations, and exposure of soils to the air and wind. SCAQMD Rule 403 requires that fugitive dust is controlled with best-available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, SCAQMD Rules 402 and 403 require implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off site.

Applicable suppression techniques are as follows:

- 1. All active construction areas shall be watered two (2) times daily.
- 2. Speed on unpaved roads shall be reduced to less than 15 mph.



- 3. Any visible dirt deposition on any public roadway shall be swept or washed at the site access points within 30 minutes.
- 4. Any on-site stockpiles of debris, dirt or other dusty material shall be covered or watered twice daily.
- 5. All operations on any unpaved surface shall be suspended if winds exceed 15 mph.
- 6. Access points shall be washed or swept daily.
- 7. Construction sites shall be sandbagged for erosion control.
- 8. Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).
- 9. Cover all trucks hauling dirt, sand, soil, or other loose materials, and maintain at least 2 feet of freeboard space in accordance with the requirements of California Vehicle Code (CVC) section 23114.
- 10. Pave or gravel construction access roads at least 100 feet onto the site from the main road and use gravel aprons at truck exits.
- 11. Replace the ground cover of disturbed areas as quickly possible.
- 12. A fugitive dust control plan should be prepared and submitted to SCAQMD prior to the start of construction.

Localized construction emissions, shown in Section 6.1.2, indicate daily construction emissions, with standard control measures, would be below the applicable thresholds established by the SCAQMD. **The proposed project's short-term construction activities would cause less than significant Fugitive Dust impacts**.

#### 6.1.4 Odors - Construction

Heavy-duty equipment in the project area during construction will emit odors; however, the construction activity would cease to occur after individual construction is completed. The project is required to comply with Rule 402 during construction, which states that a person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. No other sources of objectionable odors have been identified for the proposed Project. **Therefore, the project impact from odor emissions is less than significant.** 



#### 6.1.5 Asbestos – Construction

Asbestos is a carcinogen and is categorized as a hazardous air pollutant by the Environmental Protection Agency (EPA) and regulated through the National Emissions Standards for Hazardous Air Pollutants (NESHAP). Asbestos fibers imbedded within construction materials become a health hazard once they are disturbed and rendered airborne, such as through physical contact like building renovation and demolition activities.

SCAQMD is the local enforcement authority for asbestos. SCAQMD Rule 1403 establishes the survey requirements, notification, and work practices to prevent asbestos emissions from emanating during building renovation and demolition activities. Since the project does not require the demolition of any existing structures, the impact from asbestos contained in building products is considered less than significant.

Asbestos also occurs naturally in serpentine and ultramafic rock. Based on the California Division of Mines and Geology General Location Guide for Ultramafic Rocks in California - Areas More Likely to Contain Naturally Occurring Asbestos, naturally occurring asbestos has not been shown to occur within in the vicinity of the project site. Therefore, the potential risk for naturally occurring asbestos (NOA) during project construction is small. However, in the event NOA is found on the site, the project will be required to comply with SCAQMD and NESHAP standards.

By following the required asbestos abatement protocols, the project impact is less than significant.

#### 6.1.6 Diesel Particulate Matter - Construction

The greatest potential for toxic air contaminant emissions from the project would be related to diesel particulate matter (DPM) emissions associated with heavy diesel equipment used during construction. According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of "individual cancer risk". "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of toxic air contaminants over a 30-year lifetime will contract cancer, based on the use of standard risk-assessment methodology.

As shown in Tables 21 and 22, construction-based particulate matter (PM) emissions (including diesel exhaust emissions) do not exceed regional or local thresholds with the recommended mitigation measures. Given the short-term construction schedule, the

proposed project's construction activity is not expected to be a long-term (i.e., 30 years) substantial source of toxic air contaminant emissions and corresponding individual cancer risk.

However, it should be noted that a quantified diesel health risk assessment (HRA) was not included within the scope of this analysis. In September 2000, the CARB adopted the Diesel Risk Reduction Plan, which recommends several control measures to reduce the risks associated with diesel particulate matter (DPM). The key elements of the Plan are to clean up existing engines through engine retrofit emission control devices, to adopt stringent standards for new diesel engines, to lower the sulfur content of diesel fuel, and implement advanced technology emission control devices on diesel engines.

It is presumed that with the recommended mitigation measures in place, which include a requirement for Tier 4 engines for all off-road diesel equipment, that the potential short term construction health risks will be adequately reduced to be less than significant. Tier 4 engines, along with the latest national fuel standards, will yield PM reductions of over 95% from the typical Tier 2 and Tier 3 engines<sup>5</sup>.

The following mitigation measures are recommended during construction::

- MM-2 Require all construction equipment to have Tier 4 low emission "clean diesel" engines (OEM or retrofit) that include diesel oxidation catalysts and diesel particulate filters that meet the latest CARB best available control technology.
- MM-3 Construction equipment shall be maintained in proper tune.
- MM-4 All construction vehicles shall be prohibited from excessive idling. Excessive idling is defined as five (5) minutes or longer.
- MM-5 Minimize the simultaneous operation of multiple construction equipment units.
- MM-6 The use of heavy construction equipment and earthmoving activity should be suspended during Air Alerts when the Air Quality Index reaches the "Unhealthy" level.
- **MM-7** Establish an electricity supply to the construction site and use electric powered equipment instead of diesel-powered equipment or generators, where feasible.

<sup>&</sup>lt;sup>5</sup> EPA. Control of Emissions of Air Pollution from Nonroad Diesel Engines and Fuel; Final Rule. (40 CFR Parts 9, 69, et al.)



- **MM-8** Establish staging areas for the construction equipment that are as distant as possible from adjacent sensitive receptors (High School).
- MM-9 Use haul trucks with on-road engines instead of off-road engines for on-site hauling.
- MM-10 Prepare and implement a Construction Management Plan which will include the required mitigation measures to be submitted to the City of Lake Elsinore and followed by construction contractors and personnel.

#### 6.2 Long Term Air Quality Impacts - Operation

#### 6.2.1 Regional Emissions - Operation

Long-term operational air pollutant impacts from the project are shown in Table 23. The project is not expected to exceed any of the allowable daily emissions thresholds for criteria pollutants at the regional level. CalEEMod daily emissions outputs are provided in Appendix A.

The project's daily operational emissions will be below the applicable SCAQMD regional air quality standards and thresholds of significance, and the project would not contribute substantially to an existing or projected air quality violation. Furthermore, by complying with the SCAQMD standards, the project would not contribute to a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

#### The project related long-term air quality impacts are less than significant.

Maximum Daily Emissions (lbs/day) <sup>1</sup>											
Activity VOC NO <sub>x</sub> CO SO <sub>2</sub> PM <sub>10</sub> P											
Mobile Sources	2.03	4.65	25.74	0.09	8.81	2.38					
Energy Sources	0.07	0.59	0.25	0.00	0.05	0.05					
Area Sources	3.86 2.38		13.33 0.02		0.25	0.25					
Total	5.96	7.62	39.32	0.11	9.11	2.67					
SCAQMD Threshold	55	55	550	150	150	55					
Exceeds Threshold (?)	No	No	No	No	No	No					

Table 23Regional Operational Emissions

<sup>1</sup> Maximum daily emission during summer or winter; includes both on-site and off-site project emissions.

#### 6.2.2 Localized Operational Emissions - Operation

Table 24 shows the localized operational emissions and compares the results to SCAQMD Localized Significance Thresholds (LST) thresholds of significance. As shown in Table 24, the emissions will be below the SCAQMD thresholds of significance for localized operational emissions. The project will result in less than significant localized operational emissions impacts.

Localized Operational Emissions										
Maximum Daily Emissions (lbs/day) <sup>1</sup>										
	NOx	CO	PM <sub>10</sub>	PM <sub>2.5</sub>						
LST Pollutants	(lbs/day)	(lbs/day)	(lbs/day)	(lbs/day)						
On-site Emissions <sup>2</sup>	3.20	14.87	0.74	0.42						
SCAQMD Operation Threshold <sup>3</sup>	279.9	1,521.8	2.9	1.6						
Exceeds Threshold (?)	No	No	No	No						

Table 24 ocalized Operational Emission

<sup>1</sup> Maximum daily emission in summer or winter.

<sup>2</sup> Mobile source emissions include on-site vehicle emissions only. It is estimated that approximately 5% of mobile emissions will occur on the project site.

<sup>3</sup> Reference: 2006-2008 SCAQMD Mass Rate Localized Significant Thresholds for construction and operation Table C-1 through C-6; SRA 25, Lake Elsinore, disturbance area of 3.5-acre and receptor distance of 25 meters.



#### 6.2.3 Odors - Operation

Land uses that commonly receive odor complaints include agricultural uses (farming and livestock), chemical plants, composting operations, dairies, fiberglass molding facilities, food processing plants, landfills, refineries, rail yards, and wastewater treatment plants. The proposed project does not contain land uses that would typically be associated with significant odor emissions.

The project will be required to comply with standard building code requirements related to exhaust ventilation, as well as comply with SCAQMD Rule 402. Rule 402 requires that a person may not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

Project related odors are not expected to meet the criteria of being a nuisance. The project's operation would result in less than significant odor impacts.

#### 6.2.4 Toxic Air Contaminants - Operations

The project would consist of residential apartment housing. This type of project does not include major sources of toxic air contaminants (TAC) emissions that would result in significant exposure of sensitive receptors to substantial pollutant concentrations. Therefore, **the project impact is considered less than significant**.

#### 6.3 <u>CO Hot Spot Emissions</u>

A CO hot spot is a localized concentration of carbon monoxide (CO) that is above the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm. At the time of the publishing of the 1993 CEQA Air Quality Handbook, the SCAB was designated nonattainment, and projects were required to perform hot spot analyses to ensure they did not exacerbate an existing problem. Since this time, the SCAB has achieved attainment status and the potential for hot spots caused by vehicular traffic congestion has been greatly reduced. In fact, the SCAQMD Air Quality Management Plan (AQMP) found that peak CO concentrations were primarily the result of unusual meteorological and topographical conditions, not traffic congestion. Additionally, the 2003 SCAQMD AQMP found that, at four of the busiest intersections in SCAB, there were no CO hot spots concentrations.



Based on the Lake Pointe Apartment Traffic Impact Study Scope of Work, March 26, 2021, RK Engineering Group and the ITE Trip Generation Manual, 10<sup>th</sup> Edition, the project is expected to generate a maximum of 84 peak hour trips. This is considered a less than significant amount of traffic which would not contribute to CO Hot Spots.

The 2003 SCAQMD AQMP found that at four of the busiest intersections in Los Angeles there were no CO hot spots concentrations. Additionally, historical data indicates that the maximum concentration of CO recorded over the last three years at the nearest air monitoring station to the site is about 92% below the State 1-hour standard and 91% below the 8-hour standard.

Therefore, if the busiest intersections in the basin do not exceed state or federal standards, and the nearest air monitoring station shows that CO levels are well below the standards in the project vicinity, it is then reasonable to conclude that the project would not significantly contribute to the formation of CO Hot Spots.

#### 6.4 SCAQMD Air Quality Management Plan Consistency

CEQA requires a discussion of any inconsistencies between a proposed project and applicable General Plans and Regional Plans (CEQA Guidelines Section 15125). The regional plan that applies to the proposed project includes the SCAQMD AQMP. Therefore, this section discusses any potential inconsistencies in the proposed project with the AQMP.

The purpose of this discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss whether the proposed project would interfere with the region's ability to comply with Federal and State air quality standards. If the decision-makers determine that the proposed project is inconsistent, the lead agency may consider project modifications or inclusion of mitigation to eliminate the inconsistency.

The SCAQMD CEQA Handbook states that "New or amended General Plan Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP." Strict consistency with all aspects of the plan is usually not required. A proposed project should be considered to be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies.



The SCAQMD CEQA Handbook identifies two key indicators of consistency:

- (1) Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.
- (2) Whether the project will exceed the assumptions in the AQMP in 2016 or increments based on the year of project buildout and phase.

#### 6.4.1 Criterion 1 - Increase in the Frequency or Severity of Violations

The results of the short-term construction emission levels and long-term operational emission levels show that the project would not result in significant impacts based on the SCAQMD regional and local thresholds of significance. Therefore, the proposed project would not contribute to the exceedance of an air pollutant concentration standard and is found to be consistent with the AQMP for the first criterion.

#### 6.4.2 Criterion 2 - Exceed Assumptions in the AQMP

Consistency with the AQMP assumptions is determined by performing an analysis of the proposed project with the assumptions in the AQMP. The emphasis of this criterion is to ensure that the analyses conducted for the proposed project are based on the same forecasts as the AQMP. The <u>2016-2040 Regional Transportation/Sustainable Communities</u> <u>Strategy</u>, prepared by the Southern California Association of Governments (SCAG), 2016, includes chapters on: the challenges in a changing region, creating a plan for our future, and the road to greater mobility and sustainable growth. These chapters currently respond directly to federal and state requirements placed on SCAG. Local governments are required to use these as the basis of their plans for purposes of consistency with applicable regional plans under CEQA.

The project is consistent with the City of Lake Elsinore General Plan Land Use Designation of Residential Mixed Use (RMU) and the project would comply with the SCAQMD thresholds of significance. **The impact is considered less than significant.** 

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## 7.0 Greenhouse Gas Impact Analysis

Consistent with CEQA Guidelines, a significant impact related to greenhouse gas would occur if the proposed project is determined to:

- 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 emissions of greenhouse gases.

#### 7.1 <u>Greenhouse Gas Emissions - Construction</u>

Greenhouse gas emissions are estimated for on-site and off-site construction activity using CalEEMod. Table 25 shows the construction greenhouse gas emissions, including equipment and worker vehicle emissions for all phases of construction. Construction emissions are averaged over 30 years and added to the long-term operational emissions, pursuant to SCAQMD recommendations.

a. 11-11	Emissions (MTC0 <sub>2</sub> e) <sup>1</sup>										
Activity	On-site	Off-site	Total								
Site Preparation	16.85	0.80	17.65								
Grading	26.26	1.32	27.58								
Building Construction	268.08	151.01	419.09								
Paving	20.19	1.29	21.48								
Architectural Coating	2.56	1.82	4.38								
Total	333.94	156.24	490.18								
Amortized over 30 years <sup>2</sup>	11.13	5.21	16.34								

CalEEMod annual GHG output calculations are provided in Appendix B.

Table 25Construction Greenhouse Gas Emissions

<sup>1</sup> MTCO<sub>2</sub>e = metric tons of carbon dioxide equivalents (includes carbon dioxide, methane, nitrous oxide, and/or hydrofluorocarbon).

<sup>2</sup> The emissions are amortized over 30 years and added to the operational emissions, pursuant to SCAQMD recommendations.

Because impacts from construction activities occur over a relatively short-term period of time, they contribute a relatively small portion of the overall lifetime project GHG



emissions. By itself, the construction activities from this project are less than significant when compared to the thresholds recommended by SCAQMD. However, SCAQMD recommends that construction emissions be amortized over a 30-year project lifetime and added to the overall project operational emissions. In doing so, construction GHG emissions are included in the overall contribution of the project, as further discussed in the following section.

#### 7.2 <u>Greenhouse Gas Emissions - Operation</u>

Greenhouse gas emissions are estimated for on-site and off-site operational activity using CalEEMod. Greenhouse gas emissions from mobile sources, area sources and energy sources are shown in Table 26. CalEEMod annual GHG output calculations are provided in Appendix B.

Operational Greenh	ouse Gas Emissions
Emission Source	GHG Emissions (MTCO₂e) <sup>1</sup>
Mobile Source	1,221.23
Energy Source	358.53
Area Source	35.20
Water	75.88
Waste	34.70
Construction (30 year average)	16.34
Total Annual Emissions	1,741.88
SCAQMD Tier 3 Screening Threshold <sup>2</sup>	3,000
Exceed Tier 3 Threshold?	No

Table 26 Operational Greenhouse Gas Emissions

 $^{1}$  MTCO<sub>2</sub>e = metric tons of carbon dioxide equivalents

<sup>2</sup> Per South Coast Air Quality Management District (SCAQMD) Draft Guidance Document - Interim CEQA Greenhouse Gas (GHG) Significance Threshold, October 2008

As shown in Table 26, the project GHG emissions are expected to be below the SCAQMD's Tier 3 approach, which limits GHG emissions to 3,000 MTCO<sub>2</sub>e for residential projects.

#### The project related long-term GHG impacts are less than significant.

#### 7.3 <u>City of Lake Elsinore Climate Action Plan Consistency</u>

The Lake Elsinore CAP has been adopted to ensure the City meets the State-wide policies for reducing GHG emissions, as required by the California Global Warming Solutions Act (AB 32) and Executive Order S-3-05.

The City of Lake Elsinore selected efficiency-based targets for the years governed by the General Plan to reduce community-wide emissions to 6.6 MT CO2e per service population per year by 2020 (a 22.3% reduction from the 2008 rate of 8.5 MT CO2e/SP) and to 4.4 MT CO2e per service population per year by 2030 (a 48.2% reduction from the 2008 rate of 8.5 MT CO2e/SP). These efficiency-based targets represent the AB 32 and Executive Order S-3-05 targeted emissions levels for 2020 and 2030 on a per service population basis.

While the efficiency targets do not directly correlate to thresholds of significance for CEQA purposes, comparing the project's GHG efficiency rate to the City targets is a good indicator of compatibility with the CAP.

Table 27 shows the project's GHG efficiency rates and compares the results to the City targets.

jj	
Category	GHG Emission
Project's Efficiency Rate	4.06 MTCO <sub>2</sub> e/SP
City-Wide Efficiency-Based Target <sup>2</sup>	4.4 MTCO <sub>2</sub> e/SP
Exceed City Wide Efficiency Threshold?	No

Table 27GHG Efficiency Rates – City of Lake Elsinore1

<sup>1</sup> Service Population (S.P) is based on statewide default of 2.86 persons per dwelling unit.

 $^2$  Lake Elsinore's city-wide efficiency-based target (2030) of 4.4 MT CO2e per service population per year in the CAP.

The statewide average of 2.86 persons per dwelling unit is used in CalEEMod to estimate the population of the project, resulting in a total population for the proposed project of 429 persons. The project would produce approximately 4.06 MT CO2e per service population per year, which is lower than Lake Elsinore's city-wide efficiency-based target of 4.4 MT CO2e per service population per year in the CAP.

The project will also be required to comply with the mandatory requirements of Title 24 part 11 of the California Building Standards Code (CALGreen) and Title 24 Part 6 Building Efficiency Standards to further reduce energy usage and GHG emissions. CALGreen and building code compliance are considered part of the project's design features.

The project will not conflict with an applicable plan, policy or regulation for the purpose of reducing the emissions of greenhouse gases and the impact is considered less than significant.



### 8.0 References

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- U.S Environmental Protection Agency 2010a, Final GHG Tailoring Rule, 40 CFR Parts 51, 52, 70, et al., May 2010.

# **Exhibits**

# Exhibit A Location Map





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2395-2021-03 LAKE POINTE APARTMENTS AIR QUALITY AND GREENHOUSE GAS IMPACT STUDY, City of Lake Elsinore, CA







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# Appendices

# Appendix A

Daily Emissions Calculations Output (CalEEMod) Lakepointe Apartments AQ & GHG Impact Study - Riverside-South Coast County, Summer

#### Lakepointe Apartments AQ & GHG Impact Study

Riverside-South Coast County, Summer

#### **1.0 Project Characteristics**

#### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population	
Apartments Low Rise	150.00	Dwelling Unit	8.26	150,000.00	429	

#### **1.2 Other Project Characteristics**

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (Ib/MWhr)	702.44	CH4 Intensity (Ib/MWhr)	0.029	N2O Intensity (Ib/MWhr)	0.006

#### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The project is proposing to construct and operate 150 apartment homes on approximately 8.26 acre site.

Construction Phase - The project site is vacant and require no demolition.

Trips and VMT -

Vehicle Trips - Trip Generation Rates are based of Lakepointe Apartment Scoping Agreement, March 26 2021 by RK Engg. Group and ITE 10th Edition Trip Generation Manual.

Woodstoves - Per SCAQMD rule 445, no wood burning devices are allowed in new developments.

Water And Wastewater -

Construction Off-road Equipment Mitigation - Project will be required to comply with SCAQMD Rule 403 regarding fugitive dust control.

Grading - The project is expected to cut approx.: 20,000 cy's - Fill approx. - 7,800 cy

#### Lakepointe Apartments AQ & GHG Impact Study - Riverside-South Coast County, Summer

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	127.50	135.00
tblFireplaces	NumberWood	7.50	0.00
tblFleetMix	HHD	0.07	0.01
tblFleetMix	LDA	0.55	0.60
tblFleetMix	LDT1	0.04	0.04
tblFleetMix	LDT2	0.19	0.20
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD2	4.8060e-003	9.9200e-004
tblFleetMix	МСҮ	4.5080e-003	4.8920e-003
tblFleetMix	MDV	0.11	0.12
tblFleetMix	МН	8.9800e-004	1.8500e-004
tblFleetMix	MHD	0.02	3.6330e-003
tblFleetMix	OBUS	1.4090e-003	2.9100e-004
tblFleetMix	SBUS	9.1800e-004	1.8900e-004
tblFleetMix	UBUS	1.1470e-003	2.3700e-004
tblGrading	MaterialExported	0.00	12,200.00
tblLandUse	LotAcreage	9.38	8.26
tblVehicleTrips	ST_TR	7.16	8.14
tblVehicleTrips	SU_TR	6.07	6.28
tblVehicleTrips	WD_TR	6.59	7.32
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

#### 2.0 Emissions Summary

Lakepointe Apartments AQ & GHG Impact Study - Riverside-South Coast County, Summer

#### 2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day								lb/day							
2021	3.9735	40.5457	21.8198	0.0399	18.2675	2.0457	20.3131	9.9840	1.8820	11.8660	0.0000	3,877.312 0	3,877.312 0	1.1966	0.0000	3,907.226 7
2022	47.2315	20.8916	20.2920	0.0422	6.7972	0.9418	7.7391	3.4237	0.8665	4.2901	0.0000	4,095.727 6	4,095.727 6	0.9323	0.0000	4,112.382 5
2023	47.2125	1.3512	2.5035	5.1500e- 003	0.2459	0.0722	0.3181	0.0652	0.0721	0.1373	0.0000	498.5575	498.5575	0.0213	0.0000	499.0911
Maximum	47.2315	40.5457	21.8198	0.0422	18.2675	2.0457	20.3131	9.9840	1.8820	11.8660	0.0000	4,095.727 6	4,095.727 6	1.1966	0.0000	4,112.382 5

#### **Mitigated Construction**

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year		lb/day										lb/d	lay			
2021	3.9735	40.5457	21.8198	0.0399	7.1115	2.0457	9.1572	3.8519	1.8820	5.7338	0.0000	3,877.312 0	3,877.312 0	1.1966	0.0000	3,907.226 7
2022	47.2315	20.8916	20.2920	0.0422	2.7035	0.9418	3.6453	1.3370	0.8665	2.2035	0.0000	4,095.727 6	4,095.727 6	0.9323	0.0000	4,112.382 5
2023	47.2125	1.3512	2.5035	5.1500e- 003	0.2459	0.0722	0.3181	0.0652	0.0721	0.1373	0.0000	498.5575	498.5575	0.0213	0.0000	499.0911
Maximum	47.2315	40.5457	21.8198	0.0422	7.1115	2.0457	9.1572	3.8519	1.8820	5.7338	0.0000	4,095.727 6	4,095.727 6	1.1966	0.0000	4,112.382 5
	ROG	NOx	со	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
----------------------	------	------	------	------	------------------	-----------------	---------------	-------------------	------------------	----------------	----------	----------	-----------	------	------	------
Percent Reduction	0.00	0.00	0.00	0.00	60.25	0.00	53.75	61.00	0.00	50.44	0.00	0.00	0.00	0.00	0.00	0.00

## 2.2 Overall Operational

# Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	day		
Area	3.8621	2.3821	13.3309	0.0150		0.2496	0.2496		0.2496	0.2496	0.0000	2,881.106 4	2,881.106 4	0.0762	0.0524	2,898.630 6
Energy	0.0690	0.5899	0.2510	3.7600e- 003		0.0477	0.0477		0.0477	0.0477		752.9976	752.9976	0.0144	0.0138	757.4723
Mobile	2.0289	4.5690	25.7378	0.0886	8.7576	0.0536	8.8112	2.3276	0.0497	2.3773		8,888.523 8	8,888.523 8	0.2618		8,895.068 9
Total	5.9600	7.5409	39.3196	0.1073	8.7576	0.3509	9.1084	2.3276	0.3469	2.6746	0.0000	12,522.62 78	12,522.62 78	0.3525	0.0662	12,551.17 18

### Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/	day							lb/d	day		
Area	3.8621	2.3821	13.3309	0.0150		0.2496	0.2496		0.2496	0.2496	0.0000	2,881.106 4	2,881.106 4	0.0762	0.0524	2,898.630 6
Energy	0.0690	0.5899	0.2510	3.7600e- 003		0.0477	0.0477		0.0477	0.0477		752.9976	752.9976	0.0144	0.0138	757.4723
Mobile	2.0289	4.5690	25.7378	0.0886	8.7576	0.0536	8.8112	2.3276	0.0497	2.3773		8,888.523 8	8,888.523 8	0.2618	1	8,895.068 9
Total	5.9600	7.5409	39.3196	0.1073	8.7576	0.3509	9.1084	2.3276	0.3469	2.6746	0.0000	12,522.62 78	12,522.62 78	0.3525	0.0662	12,551.17 18

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

# **3.0 Construction Detail**

#### **Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	12/1/2021	12/14/2021	5	10	
2	Grading	Grading	12/15/2021	1/11/2022	5	20	
3	Building Construction	Building Construction	1/12/2022	11/29/2022	5	230	
4	Paving	Paving	11/30/2022	12/27/2022	5	20	
5	Architectural Coating	Architectural Coating	12/28/2022	1/24/2023	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 303,750; Residential Outdoor: 101,250; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

# Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	108.00	16.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	22.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction** 

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

## 3.2 Site Preparation - 2021

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	day		
Fugitive Dust	1				18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.656 9	3,685.656 9	1.1920		3,715.457 3
Total	3.8882	40.4971	21.1543	0.0380	18.0663	2.0445	20.1107	9.9307	1.8809	11.8116		3,685.656 9	3,685.656 9	1.1920		3,715.457 3

## 3.2 Site Preparation - 2021

# Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0853	0.0486	0.6655	1.9200e- 003	0.2012	1.1900e- 003	0.2024	0.0534	1.0900e- 003	0.0545		191.6552	191.6552	4.5700e- 003		191.7694
Total	0.0853	0.0486	0.6655	1.9200e- 003	0.2012	1.1900e- 003	0.2024	0.0534	1.0900e- 003	0.0545		191.6552	191.6552	4.5700e- 003		191.7694

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/c	lay		
Fugitive Dust					6.9103	0.0000	6.9103	3.7985	0.0000	3.7985		1 1 1	0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445	, , ,	1.8809	1.8809	0.0000	3,685.656 9	3,685.656 9	1.1920		3,715.457 3
Total	3.8882	40.4971	21.1543	0.0380	6.9103	2.0445	8.9548	3.7985	1.8809	5.6794	0.0000	3,685.656 9	3,685.656 9	1.1920		3,715.457 3

## 3.2 Site Preparation - 2021

### **Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0853	0.0486	0.6655	1.9200e- 003	0.2012	1.1900e- 003	0.2024	0.0534	1.0900e- 003	0.0545		191.6552	191.6552	4.5700e- 003		191.7694
Total	0.0853	0.0486	0.6655	1.9200e- 003	0.2012	1.1900e- 003	0.2024	0.0534	1.0900e- 003	0.0545		191.6552	191.6552	4.5700e- 003		191.7694

3.3 Grading - 2021

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/c	lay		
Fugitive Dust					6.6296	0.0000	6.6296	3.3792	0.0000	3.3792			0.0000			0.0000
Off-Road	2.2903	24.7367	15.8575	0.0296		1.1599	1.1599		1.0671	1.0671		2,871.928 5	2,871.928 5	0.9288		2,895.149 5
Total	2.2903	24.7367	15.8575	0.0296	6.6296	1.1599	7.7895	3.3792	1.0671	4.4463		2,871.928 5	2,871.928 5	0.9288		2,895.149 5

# 3.3 Grading - 2021

# Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0711	0.0405	0.5546	1.6000e- 003	0.1677	9.9000e- 004	0.1687	0.0445	9.1000e- 004	0.0454		159.7126	159.7126	3.8100e- 003		159.8078
Total	0.0711	0.0405	0.5546	1.6000e- 003	0.1677	9.9000e- 004	0.1687	0.0445	9.1000e- 004	0.0454		159.7126	159.7126	3.8100e- 003		159.8078

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/c	lay		
Fugitive Dust					2.5358	0.0000	2.5358	1.2925	0.0000	1.2925		1 1 1	0.0000			0.0000
Off-Road	2.2903	24.7367	15.8575	0.0296		1.1599	1.1599		1.0671	1.0671	0.0000	2,871.928 5	2,871.928 5	0.9288		2,895.149 5
Total	2.2903	24.7367	15.8575	0.0296	2.5358	1.1599	3.6957	1.2925	1.0671	2.3597	0.0000	2,871.928 5	2,871.928 5	0.9288		2,895.149 5

# 3.3 Grading - 2021

### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0711	0.0405	0.5546	1.6000e- 003	0.1677	9.9000e- 004	0.1687	0.0445	9.1000e- 004	0.0454		159.7126	159.7126	3.8100e- 003		159.8078
Total	0.0711	0.0405	0.5546	1.6000e- 003	0.1677	9.9000e- 004	0.1687	0.0445	9.1000e- 004	0.0454		159.7126	159.7126	3.8100e- 003		159.8078

3.3 Grading - 2022

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/c	lay		
Fugitive Dust			1 1 1		6.6296	0.0000	6.6296	3.3792	0.0000	3.3792			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656		2,872.046 4	2,872.046 4	0.9289		2,895.268 4
Total	1.9486	20.8551	15.2727	0.0297	6.6296	0.9409	7.5704	3.3792	0.8656	4.2448		2,872.046 4	2,872.046 4	0.9289		2,895.268 4

# 3.3 Grading - 2022

# Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0665	0.0365	0.5115	1.5400e- 003	0.1677	9.6000e- 004	0.1686	0.0445	8.9000e- 004	0.0454		153.8769	153.8769	3.4200e- 003		153.9624
Total	0.0665	0.0365	0.5115	1.5400e- 003	0.1677	9.6000e- 004	0.1686	0.0445	8.9000e- 004	0.0454		153.8769	153.8769	3.4200e- 003		153.9624

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/c	lay		
Fugitive Dust					2.5358	0.0000	2.5358	1.2925	0.0000	1.2925		1 1 1	0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656	0.0000	2,872.046 4	2,872.046 4	0.9289		2,895.268 4
Total	1.9486	20.8551	15.2727	0.0297	2.5358	0.9409	3.4767	1.2925	0.8656	2.1581	0.0000	2,872.046 4	2,872.046 4	0.9289		2,895.268 4

## 3.3 Grading - 2022

### Mitigated Construction Off-Site

	ROG	NOx	со	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/c	Jay							lb/c	lay		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0665	0.0365	0.5115	1.5400e- 003	0.1677	9.6000e- 004	0.1686	0.0445	8.9000e- 004	0.0454		153.8769	153.8769	3.4200e- 003		153.9624
Total	0.0665	0.0365	0.5115	1.5400e- 003	0.1677	9.6000e- 004	0.1686	0.0445	8.9000e- 004	0.0454		153.8769	153.8769	3.4200e- 003		153.9624

3.4 Building Construction - 2022

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/c	lay							lb/c	lay		
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.333 6	2,554.333 6	0.6120		2,569.632 2
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.333 6	2,554.333 6	0.6120		2,569.632 2

## 3.4 Building Construction - 2022

# Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/c	lay		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0348	1.3969	0.2457	4.1100e- 003	0.1025	2.3700e- 003	0.1048	0.0295	2.2600e- 003	0.0318		433.4803	433.4803	0.0296		434.2208
Worker	0.4789	0.2625	3.6829	0.0111	1.2072	6.9300e- 003	1.2141	0.3202	6.3800e- 003	0.3265		1,107.913 7	1,107.913 7	0.0246		1,108.529 5
Total	0.5138	1.6594	3.9286	0.0152	1.3096	9.3000e- 003	1.3189	0.3497	8.6400e- 003	0.3583		1,541.394 0	1,541.394 0	0.0543		1,542.750 3

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/c	lay							lb/c	lay		
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.333 6	2,554.333 6	0.6120		2,569.632 2
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.333 6	2,554.333 6	0.6120		2,569.632 2

## 3.4 Building Construction - 2022

# Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0348	1.3969	0.2457	4.1100e- 003	0.1025	2.3700e- 003	0.1048	0.0295	2.2600e- 003	0.0318		433.4803	433.4803	0.0296		434.2208
Worker	0.4789	0.2625	3.6829	0.0111	1.2072	6.9300e- 003	1.2141	0.3202	6.3800e- 003	0.3265		1,107.913 7	1,107.913 7	0.0246		1,108.529 5
Total	0.5138	1.6594	3.9286	0.0152	1.3096	9.3000e- 003	1.3189	0.3497	8.6400e- 003	0.3583		1,541.394 0	1,541.394 0	0.0543		1,542.750 3

3.5 Paving - 2022

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.660 3	2,207.660 3	0.7140		2,225.510 4
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.660 3	2,207.660 3	0.7140		2,225.510 4

## 3.5 Paving - 2022

# Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0665	0.0365	0.5115	1.5400e- 003	0.1677	9.6000e- 004	0.1686	0.0445	8.9000e- 004	0.0454		153.8769	153.8769	3.4200e- 003		153.9624
Total	0.0665	0.0365	0.5115	1.5400e- 003	0.1677	9.6000e- 004	0.1686	0.0445	8.9000e- 004	0.0454		153.8769	153.8769	3.4200e- 003		153.9624

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/d	day		
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.660 3	2,207.660 3	0.7140		2,225.510 4
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.660 3	2,207.660 3	0.7140		2,225.510 4

## 3.5 Paving - 2022

### Mitigated Construction Off-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/c	lay							lb/c	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0665	0.0365	0.5115	1.5400e- 003	0.1677	9.6000e- 004	0.1686	0.0445	8.9000e- 004	0.0454		153.8769	153.8769	3.4200e- 003		153.9624
Total	0.0665	0.0365	0.5115	1.5400e- 003	0.1677	9.6000e- 004	0.1686	0.0445	8.9000e- 004	0.0454		153.8769	153.8769	3.4200e- 003		153.9624

3.6 Architectural Coating - 2022

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Archit. Coating	46.9294					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e- 003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	47.1339	1.4085	1.8136	2.9700e- 003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

## 3.6 Architectural Coating - 2022

# Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0976	0.0535	0.7502	2.2600e- 003	0.2459	1.4100e- 003	0.2473	0.0652	1.3000e- 003	0.0665		225.6861	225.6861	5.0200e- 003		225.8116
Total	0.0976	0.0535	0.7502	2.2600e- 003	0.2459	1.4100e- 003	0.2473	0.0652	1.3000e- 003	0.0665		225.6861	225.6861	5.0200e- 003		225.8116

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/c	lay		
Archit. Coating	46.9294					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e- 003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	47.1339	1.4085	1.8136	2.9700e- 003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062

## 3.6 Architectural Coating - 2022

## Mitigated Construction Off-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/c	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0976	0.0535	0.7502	2.2600e- 003	0.2459	1.4100e- 003	0.2473	0.0652	1.3000e- 003	0.0665		225.6861	225.6861	5.0200e- 003		225.8116
Total	0.0976	0.0535	0.7502	2.2600e- 003	0.2459	1.4100e- 003	0.2473	0.0652	1.3000e- 003	0.0665		225.6861	225.6861	5.0200e- 003		225.8116

3.6 Architectural Coating - 2023

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/c	lay		
Archit. Coating	46.9294					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e- 003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	47.1210	1.3030	1.8111	2.9700e- 003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690

## 3.6 Architectural Coating - 2023

# Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0915	0.0482	0.6924	2.1800e- 003	0.2459	1.3800e- 003	0.2473	0.0652	1.2700e- 003	0.0665		217.1095	217.1095	4.5000e- 003		217.2221
Total	0.0915	0.0482	0.6924	2.1800e- 003	0.2459	1.3800e- 003	0.2473	0.0652	1.2700e- 003	0.0665		217.1095	217.1095	4.5000e- 003		217.2221

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/c	lay		
Archit. Coating	46.9294					0.0000	0.0000		0.0000	0.0000		1 1 1	0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e- 003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	47.1210	1.3030	1.8111	2.9700e- 003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690

## 3.6 Architectural Coating - 2023

### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0915	0.0482	0.6924	2.1800e- 003	0.2459	1.3800e- 003	0.2473	0.0652	1.2700e- 003	0.0665		217.1095	217.1095	4.5000e- 003		217.2221
Total	0.0915	0.0482	0.6924	2.1800e- 003	0.2459	1.3800e- 003	0.2473	0.0652	1.2700e- 003	0.0665		217.1095	217.1095	4.5000e- 003		217.2221

# 4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/d	day		
Mitigated	2.0289	4.5690	25.7378	0.0886	8.7576	0.0536	8.8112	2.3276	0.0497	2.3773		8,888.523 8	8,888.523 8	0.2618		8,895.068 9
Unmitigated	2.0289	4.5690	25.7378	0.0886	8.7576	0.0536	8.8112	2.3276	0.0497	2.3773		8,888.523 8	8,888.523 8	0.2618		8,895.068 9

# 4.2 Trip Summary Information

	Aver	age Daily Trip Ra	ate	Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,098.00	1,221.00	942.00	3,735,923	3,735,923
Total	1,098.00	1,221.00	942.00	3,735,923	3,735,923

# **4.3 Trip Type Information**

		Miles			Trip %			Trip Purpos	e %
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

# 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.595324	0.039337	0.202816	0.122129	0.015501	0.000992	0.003633	0.014473	0.000291	0.000237	0.004892	0.000189	0.000185

# 5.0 Energy Detail

Historical Energy Use: N

# 5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	lay							lb/c	lay		
NaturalGas Mitigated	0.0690	0.5899	0.2510	3.7600e- 003		0.0477	0.0477		0.0477	0.0477		752.9976	752.9976	0.0144	0.0138	757.4723
NaturalGas Unmitigated	0.0690	0.5899	0.2510	3.7600e- 003		0.0477	0.0477		0.0477	0.0477		752.9976	752.9976	0.0144	0.0138	757.4723

# 5.2 Energy by Land Use - NaturalGas

# <u>Unmitigated</u>

	NaturalGa s Use	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr					lb/	day							lb/c	lay		
Apartments Low Rise	6400.48	0.0690	0.5899	0.2510	3.7600e- 003		0.0477	0.0477		0.0477	0.0477		752.9976	752.9976	0.0144	0.0138	757.4723
Total		0.0690	0.5899	0.2510	3.7600e- 003		0.0477	0.0477		0.0477	0.0477		752.9976	752.9976	0.0144	0.0138	757.4723

## 5.2 Energy by Land Use - NaturalGas

# Mitigated

	NaturalGa s Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr					lb/	day							lb/d	lay		
Apartments Low Rise	6.40048	0.0690	0.5899	0.2510	3.7600e- 003		0.0477	0.0477		0.0477	0.0477		752.9976	752.9976	0.0144	0.0138	757.4723
Total		0.0690	0.5899	0.2510	3.7600e- 003		0.0477	0.0477		0.0477	0.0477		752.9976	752.9976	0.0144	0.0138	757.4723

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/c	lay		
Mitigated	3.8621	2.3821	13.3309	0.0150		0.2496	0.2496		0.2496	0.2496	0.0000	2,881.106 4	2,881.106 4	0.0762	0.0524	2,898.630 6
Unmitigated	3.8621	2.3821	13.3309	0.0150		0.2496	0.2496	<b></b>     	0.2496	0.2496	0.0000	2,881.106 4	2,881.106 4	0.0762	0.0524	2,898.630 6

## 6.2 Area by SubCategory

# <u>Unmitigated</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory					lb/d	day							lb/d	day		
Architectural Coating	0.2572					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.9700					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.2621	2.2394	0.9529	0.0143		0.1811	0.1811		0.1811	0.1811	0.0000	2,858.823 5	2,858.823 5	0.0548	0.0524	2,875.812 1
Landscaping	0.3729	0.1427	12.3780	6.5000e- 004		0.0685	0.0685		0.0685	0.0685		22.2828	22.2828	0.0214		22.8185
Total	3.8621	2.3821	13.3309	0.0149		0.2496	0.2496		0.2496	0.2496	0.0000	2,881.106 4	2,881.106 4	0.0762	0.0524	2,898.630 6

## 6.2 Area by SubCategory

### **Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory					lb/o	day							lb/o	day		
Architectural Coating	0.2572			1 1 1		0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.9700					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.2621	2.2394	0.9529	0.0143		0.1811	0.1811		0.1811	0.1811	0.0000	2,858.823 5	2,858.823 5	0.0548	0.0524	2,875.812 1
Landscaping	0.3729	0.1427	12.3780	6.5000e- 004		0.0685	0.0685		0.0685	0.0685		22.2828	22.2828	0.0214		22.8185
Total	3.8621	2.3821	13.3309	0.0149		0.2496	0.2496		0.2496	0.2496	0.0000	2,881.106 4	2,881.106 4	0.0762	0.0524	2,898.630 6

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

# 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

# 9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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# **10.0 Stationary Equipment**

### Fire Pumps and Emergency Generators

	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Boilers						
Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type	
User Defined Equipment						
Equipment Type	Number					
14 0 Verstetion						

### Lakepointe Apartments AQ & GHG Impact Study

Riverside-South Coast County, Winter

# **1.0 Project Characteristics**

### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	150.00	Dwelling Unit	8.26	150,000.00	429

### **1.2 Other Project Characteristics**

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (Ib/MWhr)	702.44	CH4 Intensity (Ib/MWhr)	0.029	N2O Intensity (Ib/MWhr)	0.006

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The project is proposing to construct and operate 150 apartment homes on approximately 8.26 acre site.

Construction Phase - The project site is vacant and require no demolition.

Trips and VMT -

Vehicle Trips - Trip Generation Rates are based of Lakepointe Apartment Scoping Agreement, March 26 2021 by RK Engg. Group and ITE 10th Edition Trip Generation Manual.

Woodstoves - Per SCAQMD rule 445, no wood burning devices are allowed in new developments.

Water And Wastewater -

Construction Off-road Equipment Mitigation - Project will be required to comply with SCAQMD Rule 403 regarding fugitive dust control.

Grading - The project is expected to cut approx.: 20,000 cy's - Fill approx. - 7,800 cy

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	127.50	135.00
tblFireplaces	NumberWood	7.50	0.00
tblFleetMix	HHD	0.07	0.01
tblFleetMix	LDA	0.55	0.60
tblFleetMix	LDT1	0.04	0.04
tblFleetMix	LDT2	0.19	0.20
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD2	4.8060e-003	9.9200e-004
tblFleetMix	MCY	4.5080e-003	4.8920e-003
tblFleetMix	MDV	0.11	0.12
tblFleetMix	МН	8.9800e-004	1.8500e-004
tblFleetMix	MHD	0.02	3.6330e-003
tblFleetMix	OBUS	1.4090e-003	2.9100e-004
tblFleetMix	SBUS	9.1800e-004	1.8900e-004
tblFleetMix	UBUS	1.1470e-003	2.3700e-004
tblGrading	MaterialExported	0.00	12,200.00
tblLandUse	LotAcreage	9.38	8.26
tblVehicleTrips	ST_TR	7.16	8.14
tblVehicleTrips	SU_TR	6.07	6.28
tblVehicleTrips	WD_TR	6.59	7.32
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

# 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year		lb/day											lb/d	day		
2021	3.9719	40.5474	21.6914	0.0397	18.2675	2.0457	20.3131	9.9840	1.8820	11.8660	0.0000	3,857.591 7	3,857.591 7	1.1960	0.0000	3,887.491 5
2022	47.2299	20.8928	19.6234	0.0409	6.7972	0.9418	7.7391	3.4237	0.8665	4.2901	0.0000	3,965.383 0	3,965.383 0	0.9319	0.0000	3,982.043 5
2023	47.2114	1.3528	2.3683	4.9200e- 003	0.2459	0.0722	0.3181	0.0652	0.0721	0.1373	0.0000	476.2387	476.2387	0.0208	0.0000	476.7578
Maximum	47.2299	40.5474	21.6914	0.0409	18.2675	2.0457	20.3131	9.9840	1.8820	11.8660	0.0000	3,965.383 0	3,965.383 0	1.1960	0.0000	3,982.043 5

### Mitigated Construction

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year					lb/e	day					lb/c	day				
2021	3.9719	40.5474	21.6914	0.0397	7.1115	2.0457	9.1572	3.8519	1.8820	5.7338	0.0000	3,857.591 7	3,857.591 7	1.1960	0.0000	3,887.491 5
2022	47.2299	20.8928	19.6234	0.0409	2.7035	0.9418	3.6453	1.3370	0.8665	2.2035	0.0000	3,965.383 0	3,965.383 0	0.9319	0.0000	3,982.043 5
2023	47.2114	1.3528	2.3683	4.9200e- 003	0.2459	0.0722	0.3181	0.0652	0.0721	0.1373	0.0000	476.2387	476.2387	0.0208	0.0000	476.7578
Maximum	47.2299	40.5474	21.6914	0.0409	7.1115	2.0457	9.1572	3.8519	1.8820	5.7338	0.0000	3,965.383 0	3,965.383 0	1.1960	0.0000	3,982.043 5

	ROG	NOx	со	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	60.25	0.00	53.75	61.00	0.00	50.44	0.00	0.00	0.00	0.00	0.00	0.00

## 2.2 Overall Operational

# Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category		lb/day											lb/c	day		
Area	3.8621	2.3821	13.3309	0.0150		0.2496	0.2496		0.2496	0.2496	0.0000	2,881.106 4	2,881.106 4	0.0762	0.0524	2,898.630 6
Energy	0.0690	0.5899	0.2510	3.7600e- 003		0.0477	0.0477		0.0477	0.0477		752.9976	752.9976	0.0144	0.0138	757.4723
Mobile	1.6602	4.6459	21.5930	0.0803	8.7576	0.0537	8.8113	2.3276	0.0497	2.3774		8,068.621 6	8,068.621 6	0.2505		8,074.885 1
Total	5.5913	7.6178	35.1748	0.0990	8.7576	0.3510	9.1085	2.3276	0.3470	2.6746	0.0000	11,702.72 56	11,702.72 56	0.3412	0.0662	11,730.98 80

### Mitigated Operational

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/c	day				lb/d	lay					
Area	3.8621	2.3821	13.3309	0.0150		0.2496	0.2496		0.2496	0.2496	0.0000	2,881.106 4	2,881.106 4	0.0762	0.0524	2,898.630 6
Energy	0.0690	0.5899	0.2510	3.7600e- 003	,	0.0477	0.0477	     	0.0477	0.0477		752.9976	752.9976	0.0144	0.0138	757.4723
Mobile	1.6602	4.6459	21.5930	0.0803	8.7576	0.0537	8.8113	2.3276	0.0497	2.3774		8,068.621 6	8,068.621 6	0.2505		8,074.885 1
Total	5.5913	7.6178	35.1748	0.0990	8.7576	0.3510	9.1085	2.3276	0.3470	2.6746	0.0000	11,702.72 56	11,702.72 56	0.3412	0.0662	11,730.98 80

	ROG	NOx	со	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

# **3.0 Construction Detail**

#### **Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	12/1/2021	12/14/2021	5	10	
2	Grading	Grading	12/15/2021	1/11/2022	5	20	
3	Building Construction	Building Construction	1/12/2022	11/29/2022	5	230	
4	Paving	Paving	11/30/2022	12/27/2022	5	20	
5	Architectural Coating	Architectural Coating	12/28/2022	1/24/2023	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 303,750; Residential Outdoor: 101,250; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

# Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	108.00	16.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	22.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction** 

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### Lakepointe Apartments AQ & GHG Impact Study - Riverside-South Coast County, Winter

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

## 3.2 Site Preparation - 2021

	ROG	NOx	со	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/c	day							lb/c	day		
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.656 9	3,685.656 9	1.1920		3,715.457 3
Total	3.8882	40.4971	21.1543	0.0380	18.0663	2.0445	20.1107	9.9307	1.8809	11.8116		3,685.656 9	3,685.656 9	1.1920		3,715.457 3

## 3.2 Site Preparation - 2021

# Unmitigated Construction Off-Site

	ROG	NOx	со	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	lb/day										
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0838	0.0503	0.5372	1.7200e- 003	0.2012	1.1900e- 003	0.2024	0.0534	1.0900e- 003	0.0545		171.9348	171.9348	3.9700e- 003		172.0342
Total	0.0838	0.0503	0.5372	1.7200e- 003	0.2012	1.1900e- 003	0.2024	0.0534	1.0900e- 003	0.0545		171.9348	171.9348	3.9700e- 003		172.0342

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/c	day		
Fugitive Dust		1 1 1			6.9103	0.0000	6.9103	3.7985	0.0000	3.7985			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.656 9	3,685.656 9	1.1920		3,715.457 3
Total	3.8882	40.4971	21.1543	0.0380	6.9103	2.0445	8.9548	3.7985	1.8809	5.6794	0.0000	3,685.656 9	3,685.656 9	1.1920		3,715.457 3

## 3.2 Site Preparation - 2021

### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	lb/day										
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0838	0.0503	0.5372	1.7200e- 003	0.2012	1.1900e- 003	0.2024	0.0534	1.0900e- 003	0.0545		171.9348	171.9348	3.9700e- 003		172.0342
Total	0.0838	0.0503	0.5372	1.7200e- 003	0.2012	1.1900e- 003	0.2024	0.0534	1.0900e- 003	0.0545		171.9348	171.9348	3.9700e- 003		172.0342

3.3 Grading - 2021

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Fugitive Dust					6.6296	0.0000	6.6296	3.3792	0.0000	3.3792			0.0000			0.0000	
Off-Road	2.2903	24.7367	15.8575	0.0296		1.1599	1.1599		1.0671	1.0671		2,871.928 5	2,871.928 5	0.9288		2,895.149 5	
Total	2.2903	24.7367	15.8575	0.0296	6.6296	1.1599	7.7895	3.3792	1.0671	4.4463		2,871.928 5	2,871.928 5	0.9288		2,895.149 5	

# 3.3 Grading - 2021

# Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	lb/day										
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0698	0.0419	0.4476	1.4400e- 003	0.1677	9.9000e- 004	0.1687	0.0445	9.1000e- 004	0.0454		143.2790	143.2790	3.3100e- 003		143.3618
Total	0.0698	0.0419	0.4476	1.4400e- 003	0.1677	9.9000e- 004	0.1687	0.0445	9.1000e- 004	0.0454		143.2790	143.2790	3.3100e- 003		143.3618

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/c	lay		
Fugitive Dust					2.5358	0.0000	2.5358	1.2925	0.0000	1.2925		1 1 1	0.0000			0.0000
Off-Road	2.2903	24.7367	15.8575	0.0296		1.1599	1.1599		1.0671	1.0671	0.0000	2,871.928 5	2,871.928 5	0.9288		2,895.149 5
Total	2.2903	24.7367	15.8575	0.0296	2.5358	1.1599	3.6957	1.2925	1.0671	2.3597	0.0000	2,871.928 5	2,871.928 5	0.9288		2,895.149 5
## 3.3 Grading - 2021

#### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0698	0.0419	0.4476	1.4400e- 003	0.1677	9.9000e- 004	0.1687	0.0445	9.1000e- 004	0.0454		143.2790	143.2790	3.3100e- 003		143.3618
Total	0.0698	0.0419	0.4476	1.4400e- 003	0.1677	9.9000e- 004	0.1687	0.0445	9.1000e- 004	0.0454		143.2790	143.2790	3.3100e- 003		143.3618

3.3 Grading - 2022

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/c	lay		
Fugitive Dust					6.6296	0.0000	6.6296	3.3792	0.0000	3.3792		1 1 1	0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656		2,872.046 4	2,872.046 4	0.9289		2,895.268 4
Total	1.9486	20.8551	15.2727	0.0297	6.6296	0.9409	7.5704	3.3792	0.8656	4.2448		2,872.046 4	2,872.046 4	0.9289		2,895.268 4

#### 3.3 Grading - 2022

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0655	0.0377	0.4123	1.3800e- 003	0.1677	9.6000e- 004	0.1686	0.0445	8.9000e- 004	0.0454		138.0508	138.0508	2.9800e- 003		138.1253
Total	0.0655	0.0377	0.4123	1.3800e- 003	0.1677	9.6000e- 004	0.1686	0.0445	8.9000e- 004	0.0454		138.0508	138.0508	2.9800e- 003		138.1253

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/c	lay		
Fugitive Dust					2.5358	0.0000	2.5358	1.2925	0.0000	1.2925		1 1 1	0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656	0.0000	2,872.046 4	2,872.046 4	0.9289		2,895.268 4
Total	1.9486	20.8551	15.2727	0.0297	2.5358	0.9409	3.4767	1.2925	0.8656	2.1581	0.0000	2,872.046 4	2,872.046 4	0.9289		2,895.268 4

#### 3.3 Grading - 2022

#### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0655	0.0377	0.4123	1.3800e- 003	0.1677	9.6000e- 004	0.1686	0.0445	8.9000e- 004	0.0454		138.0508	138.0508	2.9800e- 003		138.1253
Total	0.0655	0.0377	0.4123	1.3800e- 003	0.1677	9.6000e- 004	0.1686	0.0445	8.9000e- 004	0.0454		138.0508	138.0508	2.9800e- 003		138.1253

3.4 Building Construction - 2022

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/c	lay							lb/c	lay		
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.333 6	2,554.333 6	0.6120		2,569.632 2
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.333 6	2,554.333 6	0.6120		2,569.632 2

#### 3.4 Building Construction - 2022

## Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0370	1.3829	0.2917	3.9500e- 003	0.1025	2.4400e- 003	0.1049	0.0295	2.3400e- 003	0.0318		417.0834	417.0834	0.0330		417.9094
Worker	0.4714	0.2714	2.9683	9.9700e- 003	1.2072	6.9300e- 003	1.2141	0.3202	6.3800e- 003	0.3265		993.9660	993.9660	0.0214		994.5019
Total	0.5084	1.6543	3.2600	0.0139	1.3096	9.3700e- 003	1.3190	0.3497	8.7200e- 003	0.3584		1,411.049 4	1,411.049 4	0.0545		1,412.411 3

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/c	day							lb/c	lay		
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.333 6	2,554.333 6	0.6120		2,569.632 2
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.333 6	2,554.333 6	0.6120		2,569.632 2

#### 3.4 Building Construction - 2022

## Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/c	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0370	1.3829	0.2917	3.9500e- 003	0.1025	2.4400e- 003	0.1049	0.0295	2.3400e- 003	0.0318		417.0834	417.0834	0.0330		417.9094
Worker	0.4714	0.2714	2.9683	9.9700e- 003	1.2072	6.9300e- 003	1.2141	0.3202	6.3800e- 003	0.3265		993.9660	993.9660	0.0214		994.5019
Total	0.5084	1.6543	3.2600	0.0139	1.3096	9.3700e- 003	1.3190	0.3497	8.7200e- 003	0.3584		1,411.049 4	1,411.049 4	0.0545		1,412.411 3

3.5 Paving - 2022

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/c	lay		
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.660 3	2,207.660 3	0.7140		2,225.510 4
Paving	0.0000	       				0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.660 3	2,207.660 3	0.7140		2,225.510 4

#### 3.5 Paving - 2022

## Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0655	0.0377	0.4123	1.3800e- 003	0.1677	9.6000e- 004	0.1686	0.0445	8.9000e- 004	0.0454		138.0508	138.0508	2.9800e- 003		138.1253
Total	0.0655	0.0377	0.4123	1.3800e- 003	0.1677	9.6000e- 004	0.1686	0.0445	8.9000e- 004	0.0454		138.0508	138.0508	2.9800e- 003		138.1253

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/d	day		
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.660 3	2,207.660 3	0.7140		2,225.510 4
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.660 3	2,207.660 3	0.7140		2,225.510 4

#### 3.5 Paving - 2022

#### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0655	0.0377	0.4123	1.3800e- 003	0.1677	9.6000e- 004	0.1686	0.0445	8.9000e- 004	0.0454		138.0508	138.0508	2.9800e- 003		138.1253
Total	0.0655	0.0377	0.4123	1.3800e- 003	0.1677	9.6000e- 004	0.1686	0.0445	8.9000e- 004	0.0454		138.0508	138.0508	2.9800e- 003		138.1253

3.6 Architectural Coating - 2022

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Archit. Coating	46.9294					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e- 003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	47.1339	1.4085	1.8136	2.9700e- 003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

#### 3.6 Architectural Coating - 2022

## Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0960	0.0553	0.6047	2.0300e- 003	0.2459	1.4100e- 003	0.2473	0.0652	1.3000e- 003	0.0665		202.4746	202.4746	4.3700e- 003		202.5837
Total	0.0960	0.0553	0.6047	2.0300e- 003	0.2459	1.4100e- 003	0.2473	0.0652	1.3000e- 003	0.0665		202.4746	202.4746	4.3700e- 003		202.5837

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/c	lay		
Archit. Coating	46.9294					0.0000	0.0000		0.0000	0.0000		1 1 1	0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e- 003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	47.1339	1.4085	1.8136	2.9700e- 003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062

#### 3.6 Architectural Coating - 2022

#### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0960	0.0553	0.6047	2.0300e- 003	0.2459	1.4100e- 003	0.2473	0.0652	1.3000e- 003	0.0665		202.4746	202.4746	4.3700e- 003		202.5837
Total	0.0960	0.0553	0.6047	2.0300e- 003	0.2459	1.4100e- 003	0.2473	0.0652	1.3000e- 003	0.0665		202.4746	202.4746	4.3700e- 003		202.5837

3.6 Architectural Coating - 2023

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/c	lay		
Archit. Coating	46.9294					0.0000	0.0000		0.0000	0.0000		1 1 1	0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e- 003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	47.1210	1.3030	1.8111	2.9700e- 003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690

#### 3.6 Architectural Coating - 2023

## Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0903	0.0498	0.5572	1.9500e- 003	0.2459	1.3800e- 003	0.2473	0.0652	1.2700e- 003	0.0665		194.7907	194.7907	3.9200e- 003		194.8888
Total	0.0903	0.0498	0.5572	1.9500e- 003	0.2459	1.3800e- 003	0.2473	0.0652	1.2700e- 003	0.0665		194.7907	194.7907	3.9200e- 003		194.8888

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/c	lay		
Archit. Coating	46.9294					0.0000	0.0000		0.0000	0.0000		1 1 1	0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e- 003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	47.1210	1.3030	1.8111	2.9700e- 003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690

#### 3.6 Architectural Coating - 2023

#### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0903	0.0498	0.5572	1.9500e- 003	0.2459	1.3800e- 003	0.2473	0.0652	1.2700e- 003	0.0665		194.7907	194.7907	3.9200e- 003		194.8888
Total	0.0903	0.0498	0.5572	1.9500e- 003	0.2459	1.3800e- 003	0.2473	0.0652	1.2700e- 003	0.0665		194.7907	194.7907	3.9200e- 003		194.8888

## 4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/c	lay		
Mitigated	1.6602	4.6459	21.5930	0.0803	8.7576	0.0537	8.8113	2.3276	0.0497	2.3774		8,068.621 6	8,068.621 6	0.2505		8,074.885 1
Unmitigated	1.6602	4.6459	21.5930	0.0803	8.7576	0.0537	8.8113	2.3276	0.0497	2.3774		8,068.621 6	8,068.621 6	0.2505		8,074.885 1

#### 4.2 Trip Summary Information

	Aver	age Daily Trip Ra	ate	Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,098.00	1,221.00	942.00	3,735,923	3,735,923
Total	1,098.00	1,221.00	942.00	3,735,923	3,735,923

## **4.3 Trip Type Information**

		Miles			Trip %			Trip Purpos	e %
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

## 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.595324	0.039337	0.202816	0.122129	0.015501	0.000992	0.003633	0.014473	0.000291	0.000237	0.004892	0.000189	0.000185

## 5.0 Energy Detail

Historical Energy Use: N

## 5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	lay							lb/c	lay		
NaturalGas Mitigated	0.0690	0.5899	0.2510	3.7600e- 003		0.0477	0.0477		0.0477	0.0477		752.9976	752.9976	0.0144	0.0138	757.4723
NaturalGas Unmitigated	0.0690	0.5899	0.2510	3.7600e- 003		0.0477	0.0477		0.0477	0.0477		752.9976	752.9976	0.0144	0.0138	757.4723

## 5.2 Energy by Land Use - NaturalGas

## <u>Unmitigated</u>

	NaturalGa s Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr					lb/	day							lb/d	lay		
Apartments Low Rise	6400.48	0.0690	0.5899	0.2510	3.7600e- 003		0.0477	0.0477		0.0477	0.0477		752.9976	752.9976	0.0144	0.0138	757.4723
Total		0.0690	0.5899	0.2510	3.7600e- 003		0.0477	0.0477		0.0477	0.0477		752.9976	752.9976	0.0144	0.0138	757.4723

#### 5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGa s Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr					lb/e	day							lb/c	lay		
Apartments Low Rise	6.40048	0.0690	0.5899	0.2510	3.7600e- 003		0.0477	0.0477		0.0477	0.0477		752.9976	752.9976	0.0144	0.0138	757.4723
Total		0.0690	0.5899	0.2510	3.7600e- 003		0.0477	0.0477		0.0477	0.0477		752.9976	752.9976	0.0144	0.0138	757.4723

## 6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/c	lay		
Mitigated	3.8621	2.3821	13.3309	0.0150		0.2496	0.2496		0.2496	0.2496	0.0000	2,881.106 4	2,881.106 4	0.0762	0.0524	2,898.630 6
Unmitigated	3.8621	2.3821	13.3309	0.0150		0.2496	0.2496		0.2496	0.2496	0.0000	2,881.106 4	2,881.106 4	0.0762	0.0524	2,898.630 6

#### 6.2 Area by SubCategory

## <u>Unmitigated</u>

	ROG	NOx	со	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory					lb/d	day							lb/d	day		
Architectural Coating	0.2572					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.9700					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.2621	2.2394	0.9529	0.0143		0.1811	0.1811		0.1811	0.1811	0.0000	2,858.823 5	2,858.823 5	0.0548	0.0524	2,875.812 1
Landscaping	0.3729	0.1427	12.3780	6.5000e- 004		0.0685	0.0685		0.0685	0.0685		22.2828	22.2828	0.0214		22.8185
Total	3.8621	2.3821	13.3309	0.0149		0.2496	0.2496		0.2496	0.2496	0.0000	2,881.106 4	2,881.106 4	0.0762	0.0524	2,898.630 6

#### 6.2 Area by SubCategory

#### **Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory					lb/o	day							lb/o	day		
Architectural Coating	0.2572			1 1 1		0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.9700					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.2621	2.2394	0.9529	0.0143		0.1811	0.1811		0.1811	0.1811	0.0000	2,858.823 5	2,858.823 5	0.0548	0.0524	2,875.812 1
Landscaping	0.3729	0.1427	12.3780	6.5000e- 004		0.0685	0.0685		0.0685	0.0685		22.2828	22.2828	0.0214		22.8185
Total	3.8621	2.3821	13.3309	0.0149		0.2496	0.2496		0.2496	0.2496	0.0000	2,881.106 4	2,881.106 4	0.0762	0.0524	2,898.630 6

## 7.0 Water Detail

#### 7.1 Mitigation Measures Water

## 8.0 Waste Detail

#### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

Equipment Type Number Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
---------------------------------	-----------	-------------	-------------	-----------

# **10.0 Stationary Equipment**

#### Fire Pumps and Emergency Generators

	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Boilers						
Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type	
User Defined Equipment						
Equipment Type	Number					
14 0 Verstetion						

# Appendix B

Annual Emission Calculations Output (CalEEMod)

## Lakepointe Apartments AQ & GHG Impact Study

Riverside-South Coast County, Annual

## **1.0 Project Characteristics**

#### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	150.00	Dwelling Unit	8.26	150,000.00	429

#### **1.2 Other Project Characteristics**

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (Ib/MWhr)	702.44	CH4 Intensity (Ib/MWhr)	0.029	N2O Intensity (Ib/MWhr)	0.006

#### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The project is proposing to construct and operate 150 apartment homes on approximately 8.26 acre site.

Construction Phase - The project site is vacant and require no demolition.

Trips and VMT -

Vehicle Trips - Trip Generation Rates are based of Lakepointe Apartment Scoping Agreement, March 26 2021 by RK Engg. Group and ITE 10th Edition Trip Generation Manual.

Woodstoves - Per SCAQMD rule 445, no wood burning devices are allowed in new developments.

Water And Wastewater -

Construction Off-road Equipment Mitigation - Project will be required to comply with SCAQMD Rule 403 regarding fugitive dust control.

Grading - The project is expected to cut approx.: 20,000 cy's - Fill approx. - 7,800 cy

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	127.50	135.00
tblFireplaces	NumberWood	7.50	0.00
tblFleetMix	HHD	0.07	0.01
tblFleetMix	LDA	0.55	0.60
tblFleetMix	LDT1	0.04	0.04
tblFleetMix	LDT2	0.19	0.20
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD2	4.8060e-003	9.9200e-004
tblFleetMix	MCY	4.5080e-003	4.8920e-003
tblFleetMix	MDV	0.11	0.12
tblFleetMix	МН	8.9800e-004	1.8500e-004
tblFleetMix	MHD	0.02	3.6330e-003
tblFleetMix	OBUS	1.4090e-003	2.9100e-004
tblFleetMix	SBUS	9.1800e-004	1.8900e-004
tblFleetMix	UBUS	1.1470e-003	2.3700e-004
tblGrading	MaterialExported	0.00	12,200.00
tblLandUse	LotAcreage	9.38	8.26
tblVehicleTrips	ST_TR	7.16	8.14
tblVehicleTrips	SU_TR	6.07	6.28
tblVehicleTrips	WD_TR	6.59	7.32
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

# 2.0 Emissions Summary

## 2.1 Overall Construction

## Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year					ton	s/yr							MT	/yr		
2021	0.0351	0.3638	0.2148	4.0000e- 004	0.1376	0.0178	0.1554	0.0724	0.0164	0.0888	0.0000	35.3194	35.3194	0.0109	0.0000	35.5924
2022	0.3397	2.1767	2.4815	5.1000e- 003	0.1779	0.1032	0.2811	0.0526	0.0969	0.1495	0.0000	448.9018	448.9018	0.0789	0.0000	450.8741
2023	0.4012	0.0115	0.0204	4.0000e- 005	2.0600e- 003	6.1000e- 004	2.6700e- 003	5.5000e- 004	6.1000e- 004	1.1600e- 003	0.0000	3.7110	3.7110	1.6000e- 004	0.0000	3.7150
Maximum	0.4012	2.1767	2.4815	5.1000e- 003	0.1779	0.1032	0.2811	0.0724	0.0969	0.1495	0.0000	448.9018	448.9018	0.0789	0.0000	450.8741

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year					tor	ıs/yr							ΜT	ī/yr		
2021	0.0351	0.3638	0.2148	4.0000e- 004	0.0539	0.0178	0.0717	0.0280	0.0164	0.0444	0.0000	35.3193	35.3193	0.0109	0.0000	35.5924
2022	0.3397	2.1767	2.4815	5.1000e- 003	0.1611	0.1032	0.2643	0.0450	0.0969	0.1419	0.0000	448.9014	448.9014	0.0789	0.0000	450.8737
2023	0.4012	0.0115	0.0204	4.0000e- 005	2.0600e- 003	6.1000e- 004	2.6700e- 003	5.5000e- 004	6.1000e- 004	1.1600e- 003	0.0000	3.7110	3.7110	1.6000e- 004	0.0000	3.7150
Maximum	0.4012	2.1767	2.4815	5.1000e- 003	0.1611	0.1032	0.2643	0.0450	0.0969	0.1419	0.0000	448.9014	448.9014	0.0789	0.0000	450.8737

	ROG	NOx	со	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	31.64	0.00	22.88	41.40	0.00	21.70	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	12-1-2021	2-28-2022	0.8114	0.8114
2	3-1-2022	5-31-2022	0.6404	0.6404
3	6-1-2022	8-31-2022	0.6406	0.6406
4	9-1-2022	11-30-2022	0.6308	0.6308
5	12-1-2022	2-28-2023	0.6047	0.6047
		Highest	0.8114	0.8114

#### 2.2 Overall Operational

#### Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							МТ	7/yr		
Area	0.6388	0.0458	1.5592	2.6000e- 004		0.0108	0.0108		0.0108	0.0108	0.0000	34.9454	34.9454	3.0500e- 003	5.9000e- 004	35.1987
Energy	0.0126	0.1077	0.0458	6.9000e- 004		8.7000e- 003	8.7000e- 003		8.7000e- 003	8.7000e- 003	0.0000	356.9546	356.9546	0.0120	4.2700e- 003	358.5265
Mobile	0.2730	0.7722	3.6703	0.0134	1.4035	8.7400e- 003	1.4122	0.3735	8.0900e- 003	0.3816	0.0000	1,220.300 9	1,220.300 9	0.0371	0.0000	1,221.228 9
Waste						0.0000	0.0000		0.0000	0.0000	14.0064	0.0000	14.0064	0.8278	0.0000	34.7002
Water						0.0000	0.0000		0.0000	0.0000	3.1006	62.3567	65.4572	0.3210	8.0500e- 003	75.8825
Total	0.9244	0.9257	5.2753	0.0143	1.4035	0.0283	1.4317	0.3735	0.0276	0.4011	17.1069	1,674.557 5	1,691.664 5	1.2009	0.0129	1,725.536 9

#### 2.2 Overall Operational

## Mitigated Operational

	ROG	NC	X	СО	SO2	Fug PN	itive 110	Exhaust PM10	PM10 Tota	) Fug PN	itive 1 12.5	Exhaust PM2.5	PM2. Tota	5   I	Bio- CO2	NBio	- CO2	Total CO	2 C	H4	N2O	CO	2e
Category							ton	s/yr										Ν	1T/yr				
Area	0.6388	0.04	58 1	1.5592	2.6000e 004			0.0108	0.010	8		0.0108	0.010	)8	0.0000	34.9	9454	34.9454	3.05 0	00e- 03	5.9000e- 004	35.1	987
Energy	0.0126	0.10	77 (	0.0458	6.9000e 004			8.7000e- 003	8.7000 003	e-	}	8.7000e- 003	8.700 003	De-	0.0000	356.	.9546	356.9546	0.0	120	4.2700e- 003	358.5	5265
Mobile	0.2730	0.77	22 3	3.6703	0.0134	1.4	035	8.7400e- 003	1.412	2 0.3	735 8	8.0900e- 003	0.381	16	0.0000	1,22	0.300 9	1,220.300 9	) 0.0	371	0.0000	1,221 g	.228 )
Waste	7,				1 1 1 1			0.0000	0.000	0		0.0000	0.000	00	14.0064	0.0	0000	14.0064	0.8	278	0.0000	34.7	002
Water	7,				1 1 1 1			0.0000	0.000	0		0.0000	0.000	00	3.1006	62.3	3567	65.4572	0.3	210	8.0500e- 003	75.8	825
Total	0.9244	0.92	57 5	5.2753	0.0143	1.4	035	0.0283	1.431	7 0.3	5735	0.0276	0.401	1	17.1069	1,67	4.557 5	1,691.664 5	1.2	009	0.0129	1,725 9	j.536 )
	ROG		NOx	C	0	SO2	Fugi PN	itive Ex /10 F	haust M10	PM10 Total	Fugitiv PM2.	ve Ex .5 P	haust M2.5	PM2.5 Total	5 Bio	- CO2	NBio-C	O2 Tota	I CO2	CH4	1	120	CO2e
Percent Reduction	0.00		0.00	0.	.00	0.00	0.	00	0.00	0.00	0.00	)	0.00	0.00	C	.00	0.00	) 0	.00	0.00	) (	.00	0.00

# 3.0 Construction Detail

**Construction Phase** 

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	12/1/2021	12/14/2021	5	10	
2	Grading	Grading	12/15/2021	1/11/2022	5	20	
3	Building Construction	Building Construction	1/12/2022	11/29/2022	5	230	
4	Paving	Paving	11/30/2022	12/27/2022	5	20	
5	Architectural Coating	Architectural Coating	12/28/2022	1/24/2023	5	20	

#### Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

#### Acres of Paving: 0

Residential Indoor: 303,750; Residential Outdoor: 101,250; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

#### Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	108.00	16.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	22.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction** 

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

#### 3.2 Site Preparation - 2021

	ROG	NOx	со	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					tons	s/yr							MT	/yr		
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0194	0.2025	0.1058	1.9000e- 004		0.0102	0.0102		9.4000e- 003	9.4000e- 003	0.0000	16.7179	16.7179	5.4100e- 003	0.0000	16.8530
Total	0.0194	0.2025	0.1058	1.9000e- 004	0.0903	0.0102	0.1006	0.0497	9.4000e- 003	0.0591	0.0000	16.7179	16.7179	5.4100e- 003	0.0000	16.8530

#### 3.2 Site Preparation - 2021

## Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9000e- 004	2.6000e- 004	2.8300e- 003	1.0000e- 005	9.9000e- 004	1.0000e- 005	1.0000e- 003	2.6000e- 004	1.0000e- 005	2.7000e- 004	0.0000	0.8000	0.8000	2.0000e- 005	0.0000	0.8004
Total	3.9000e- 004	2.6000e- 004	2.8300e- 003	1.0000e- 005	9.9000e- 004	1.0000e- 005	1.0000e- 003	2.6000e- 004	1.0000e- 005	2.7000e- 004	0.0000	0.8000	0.8000	2.0000e- 005	0.0000	0.8004

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Fugitive Dust					0.0346	0.0000	0.0346	0.0190	0.0000	0.0190	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0194	0.2025	0.1058	1.9000e- 004		0.0102	0.0102		9.4000e- 003	9.4000e- 003	0.0000	16.7178	16.7178	5.4100e- 003	0.0000	16.8530
Total	0.0194	0.2025	0.1058	1.9000e- 004	0.0346	0.0102	0.0448	0.0190	9.4000e- 003	0.0284	0.0000	16.7178	16.7178	5.4100e- 003	0.0000	16.8530

#### 3.2 Site Preparation - 2021

#### **Mitigated Construction Off-Site**

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							МТ	/yr		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9000e- 004	2.6000e- 004	2.8300e- 003	1.0000e- 005	9.9000e- 004	1.0000e- 005	1.0000e- 003	2.6000e- 004	1.0000e- 005	2.7000e- 004	0.0000	0.8000	0.8000	2.0000e- 005	0.0000	0.8004
Total	3.9000e- 004	2.6000e- 004	2.8300e- 003	1.0000e- 005	9.9000e- 004	1.0000e- 005	1.0000e- 003	2.6000e- 004	1.0000e- 005	2.7000e- 004	0.0000	0.8000	0.8000	2.0000e- 005	0.0000	0.8004

3.3 Grading - 2021

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Fugitive Dust					0.0452	0.0000	0.0452	0.0222	0.0000	0.0222	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0149	0.1608	0.1031	1.9000e- 004		7.5400e- 003	7.5400e- 003		6.9400e- 003	6.9400e- 003	0.0000	16.9349	16.9349	5.4800e- 003	0.0000	17.0718
Total	0.0149	0.1608	0.1031	1.9000e- 004	0.0452	7.5400e- 003	0.0528	0.0222	6.9400e- 003	0.0292	0.0000	16.9349	16.9349	5.4800e- 003	0.0000	17.0718

#### 3.3 Grading - 2021

## Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2000e- 004	2.8000e- 004	3.0700e- 003	1.0000e- 005	1.0700e- 003	1.0000e- 005	1.0800e- 003	2.8000e- 004	1.0000e- 005	2.9000e- 004	0.0000	0.8666	0.8666	2.0000e- 005	0.0000	0.8671
Total	4.2000e- 004	2.8000e- 004	3.0700e- 003	1.0000e- 005	1.0700e- 003	1.0000e- 005	1.0800e- 003	2.8000e- 004	1.0000e- 005	2.9000e- 004	0.0000	0.8666	0.8666	2.0000e- 005	0.0000	0.8671

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Fugitive Dust			1 1 1		0.0173	0.0000	0.0173	8.4900e- 003	0.0000	8.4900e- 003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0149	0.1608	0.1031	1.9000e- 004		7.5400e- 003	7.5400e- 003		6.9400e- 003	6.9400e- 003	0.0000	16.9349	16.9349	5.4800e- 003	0.0000	17.0718
Total	0.0149	0.1608	0.1031	1.9000e- 004	0.0173	7.5400e- 003	0.0248	8.4900e- 003	6.9400e- 003	0.0154	0.0000	16.9349	16.9349	5.4800e- 003	0.0000	17.0718

## 3.3 Grading - 2021

#### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2000e- 004	2.8000e- 004	3.0700e- 003	1.0000e- 005	1.0700e- 003	1.0000e- 005	1.0800e- 003	2.8000e- 004	1.0000e- 005	2.9000e- 004	0.0000	0.8666	0.8666	2.0000e- 005	0.0000	0.8671
Total	4.2000e- 004	2.8000e- 004	3.0700e- 003	1.0000e- 005	1.0700e- 003	1.0000e- 005	1.0800e- 003	2.8000e- 004	1.0000e- 005	2.9000e- 004	0.0000	0.8666	0.8666	2.0000e- 005	0.0000	0.8671

3.3 Grading - 2022

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Fugitive Dust					0.0272	0.0000	0.0272	0.0123	0.0000	0.0123	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.8200e- 003	0.0730	0.0535	1.0000e- 004		3.2900e- 003	3.2900e- 003		3.0300e- 003	3.0300e- 003	0.0000	9.1192	9.1192	2.9500e- 003	0.0000	9.1929
Total	6.8200e- 003	0.0730	0.0535	1.0000e- 004	0.0272	3.2900e- 003	0.0304	0.0123	3.0300e- 003	0.0153	0.0000	9.1192	9.1192	2.9500e- 003	0.0000	9.1929

#### 3.3 Grading - 2022

## Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e- 004	1.4000e- 004	1.5200e- 003	0.0000	5.8000e- 004	0.0000	5.8000e- 004	1.5000e- 004	0.0000	1.6000e- 004	0.0000	0.4496	0.4496	1.0000e- 005	0.0000	0.4499
Total	2.1000e- 004	1.4000e- 004	1.5200e- 003	0.0000	5.8000e- 004	0.0000	5.8000e- 004	1.5000e- 004	0.0000	1.6000e- 004	0.0000	0.4496	0.4496	1.0000e- 005	0.0000	0.4499

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Fugitive Dust			1 1 1		0.0104	0.0000	0.0104	4.7000e- 003	0.0000	4.7000e- 003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.8200e- 003	0.0730	0.0535	1.0000e- 004		3.2900e- 003	3.2900e- 003		3.0300e- 003	3.0300e- 003	0.0000	9.1192	9.1192	2.9500e- 003	0.0000	9.1929
Total	6.8200e- 003	0.0730	0.0535	1.0000e- 004	0.0104	3.2900e- 003	0.0137	4.7000e- 003	3.0300e- 003	7.7300e- 003	0.0000	9.1192	9.1192	2.9500e- 003	0.0000	9.1929

#### 3.3 Grading - 2022

#### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e- 004	1.4000e- 004	1.5200e- 003	0.0000	5.8000e- 004	0.0000	5.8000e- 004	1.5000e- 004	0.0000	1.6000e- 004	0.0000	0.4496	0.4496	1.0000e- 005	0.0000	0.4499
Total	2.1000e- 004	1.4000e- 004	1.5200e- 003	0.0000	5.8000e- 004	0.0000	5.8000e- 004	1.5000e- 004	0.0000	1.6000e- 004	0.0000	0.4496	0.4496	1.0000e- 005	0.0000	0.4499

3.4 Building Construction - 2022

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					tons	s/yr							MT	/yr		
Off-Road	0.1962	1.7958	1.8818	3.1000e- 003		0.0930	0.0930		0.0875	0.0875	0.0000	266.4840	266.4840	0.0638	0.0000	268.0801
Total	0.1962	1.7958	1.8818	3.1000e- 003		0.0930	0.0930		0.0875	0.0875	0.0000	266.4840	266.4840	0.0638	0.0000	268.0801

#### 3.4 Building Construction - 2022

## Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.1000e- 003	0.1616	0.0308	4.7000e- 004	0.0116	2.8000e- 004	0.0119	3.3500e- 003	2.6000e- 004	3.6200e- 003	0.0000	44.5049	44.5049	3.2400e- 003	0.0000	44.5860
Worker	0.0499	0.0323	0.3602	1.1800e- 003	0.1365	8.0000e- 004	0.1373	0.0363	7.3000e- 004	0.0370	0.0000	106.3663	106.3663	2.3100e- 003	0.0000	106.4240
Total	0.0540	0.1939	0.3909	1.6500e- 003	0.1481	1.0800e- 003	0.1492	0.0396	9.9000e- 004	0.0406	0.0000	150.8712	150.8712	5.5500e- 003	0.0000	151.0101

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					tons	s/yr							MT	/yr		
Off-Road	0.1962	1.7958	1.8818	3.1000e- 003		0.0930	0.0930		0.0875	0.0875	0.0000	266.4837	266.4837	0.0638	0.0000	268.0798
Total	0.1962	1.7958	1.8818	3.1000e- 003		0.0930	0.0930		0.0875	0.0875	0.0000	266.4837	266.4837	0.0638	0.0000	268.0798

#### 3.4 Building Construction - 2022

## Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	MT/yr										
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.1000e- 003	0.1616	0.0308	4.7000e- 004	0.0116	2.8000e- 004	0.0119	3.3500e- 003	2.6000e- 004	3.6200e- 003	0.0000	44.5049	44.5049	3.2400e- 003	0.0000	44.5860
Worker	0.0499	0.0323	0.3602	1.1800e- 003	0.1365	8.0000e- 004	0.1373	0.0363	7.3000e- 004	0.0370	0.0000	106.3663	106.3663	2.3100e- 003	0.0000	106.4240
Total	0.0540	0.1939	0.3909	1.6500e- 003	0.1481	1.0800e- 003	0.1492	0.0396	9.9000e- 004	0.0406	0.0000	150.8712	150.8712	5.5500e- 003	0.0000	151.0101

3.5 Paving - 2022

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	tons/yr										MT/yr						
Off-Road	0.0110	0.1113	0.1458	2.3000e- 004		5.6800e- 003	5.6800e- 003		5.2200e- 003	5.2200e- 003	0.0000	20.0276	20.0276	6.4800e- 003	0.0000	20.1895	
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Total	0.0110	0.1113	0.1458	2.3000e- 004		5.6800e- 003	5.6800e- 003		5.2200e- 003	5.2200e- 003	0.0000	20.0276	20.0276	6.4800e- 003	0.0000	20.1895	

#### 3.5 Paving - 2022

## Unmitigated Construction Off-Site

	ROG	NOx	со	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e		
Category	tons/yr											MT/yr						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Worker	6.0000e- 004	3.9000e- 004	4.3500e- 003	1.0000e- 005	1.6500e- 003	1.0000e- 005	1.6600e- 003	4.4000e- 004	1.0000e- 005	4.5000e- 004	0.0000	1.2846	1.2846	3.0000e- 005	0.0000	1.2853		
Total	6.0000e- 004	3.9000e- 004	4.3500e- 003	1.0000e- 005	1.6500e- 003	1.0000e- 005	1.6600e- 003	4.4000e- 004	1.0000e- 005	4.5000e- 004	0.0000	1.2846	1.2846	3.0000e- 005	0.0000	1.2853		

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e		
Category	tons/yr											MT/yr						
Off-Road	0.0110	0.1113	0.1458	2.3000e- 004		5.6800e- 003	5.6800e- 003		5.2200e- 003	5.2200e- 003	0.0000	20.0275	20.0275	6.4800e- 003	0.0000	20.1895		
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Total	0.0110	0.1113	0.1458	2.3000e- 004		5.6800e- 003	5.6800e- 003		5.2200e- 003	5.2200e- 003	0.0000	20.0275	20.0275	6.4800e- 003	0.0000	20.1895		

#### 3.5 Paving - 2022

#### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e			
Category	tons/yr											MT/yr							
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			
Worker	6.0000e- 004	3.9000e- 004	4.3500e- 003	1.0000e- 005	1.6500e- 003	1.0000e- 005	1.6600e- 003	4.4000e- 004	1.0000e- 005	4.5000e- 004	0.0000	1.2846	1.2846	3.0000e- 005	0.0000	1.2853			
Total	6.0000e- 004	3.9000e- 004	4.3500e- 003	1.0000e- 005	1.6500e- 003	1.0000e- 005	1.6600e- 003	4.4000e- 004	1.0000e- 005	4.5000e- 004	0.0000	1.2846	1.2846	3.0000e- 005	0.0000	1.2853			

3.6 Architectural Coating - 2022

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e		
Category	tons/yr										MT/yr							
Archit. Coating	0.0704					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Off-Road	3.1000e- 004	2.1100e- 003	2.7200e- 003	0.0000		1.2000e- 004	1.2000e- 004		1.2000e- 004	1.2000e- 004	0.0000	0.3830	0.3830	2.0000e- 005	0.0000	0.3836		
Total	0.0707	2.1100e- 003	2.7200e- 003	0.0000		1.2000e- 004	1.2000e- 004		1.2000e- 004	1.2000e- 004	0.0000	0.3830	0.3830	2.0000e- 005	0.0000	0.3836		
#### 3.6 Architectural Coating - 2022

#### Unmitigated Construction Off-Site

	ROG	NOx	со	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							МТ	/yr		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e- 004	9.0000e- 005	9.6000e- 004	0.0000	3.6000e- 004	0.0000	3.6000e- 004	1.0000e- 004	0.0000	1.0000e- 004	0.0000	0.2826	0.2826	1.0000e- 005	0.0000	0.2828
Total	1.3000e- 004	9.0000e- 005	9.6000e- 004	0.0000	3.6000e- 004	0.0000	3.6000e- 004	1.0000e- 004	0.0000	1.0000e- 004	0.0000	0.2826	0.2826	1.0000e- 005	0.0000	0.2828

#### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	7/yr		
Archit. Coating	0.0704					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.1000e- 004	2.1100e- 003	2.7200e- 003	0.0000		1.2000e- 004	1.2000e- 004		1.2000e- 004	1.2000e- 004	0.0000	0.3830	0.3830	2.0000e- 005	0.0000	0.3836
Total	0.0707	2.1100e- 003	2.7200e- 003	0.0000		1.2000e- 004	1.2000e- 004		1.2000e- 004	1.2000e- 004	0.0000	0.3830	0.3830	2.0000e- 005	0.0000	0.3836

#### 3.6 Architectural Coating - 2022

#### Mitigated Construction Off-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e- 004	9.0000e- 005	9.6000e- 004	0.0000	3.6000e- 004	0.0000	3.6000e- 004	1.0000e- 004	0.0000	1.0000e- 004	0.0000	0.2826	0.2826	1.0000e- 005	0.0000	0.2828
Total	1.3000e- 004	9.0000e- 005	9.6000e- 004	0.0000	3.6000e- 004	0.0000	3.6000e- 004	1.0000e- 004	0.0000	1.0000e- 004	0.0000	0.2826	0.2826	1.0000e- 005	0.0000	0.2828

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Archit. Coating	0.3989					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6300e- 003	0.0111	0.0154	3.0000e- 005		6.0000e- 004	6.0000e- 004		6.0000e- 004	6.0000e- 004	0.0000	2.1703	2.1703	1.3000e- 004	0.0000	2.1735
Total	0.4005	0.0111	0.0154	3.0000e- 005		6.0000e- 004	6.0000e- 004		6.0000e- 004	6.0000e- 004	0.0000	2.1703	2.1703	1.3000e- 004	0.0000	2.1735

#### 3.6 Architectural Coating - 2023

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.1000e- 004	4.4000e- 004	5.0000e- 003	2.0000e- 005	2.0600e- 003	1.0000e- 005	2.0700e- 003	5.5000e- 004	1.0000e- 005	5.6000e- 004	0.0000	1.5407	1.5407	3.0000e- 005	0.0000	1.5415
Total	7.1000e- 004	4.4000e- 004	5.0000e- 003	2.0000e- 005	2.0600e- 003	1.0000e- 005	2.0700e- 003	5.5000e- 004	1.0000e- 005	5.6000e- 004	0.0000	1.5407	1.5407	3.0000e- 005	0.0000	1.5415

#### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	7/yr		
Archit. Coating	0.3989					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6300e- 003	0.0111	0.0154	3.0000e- 005		6.0000e- 004	6.0000e- 004		6.0000e- 004	6.0000e- 004	0.0000	2.1703	2.1703	1.3000e- 004	0.0000	2.1735
Total	0.4005	0.0111	0.0154	3.0000e- 005		6.0000e- 004	6.0000e- 004		6.0000e- 004	6.0000e- 004	0.0000	2.1703	2.1703	1.3000e- 004	0.0000	2.1735

#### 3.6 Architectural Coating - 2023

#### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.1000e- 004	4.4000e- 004	5.0000e- 003	2.0000e- 005	2.0600e- 003	1.0000e- 005	2.0700e- 003	5.5000e- 004	1.0000e- 005	5.6000e- 004	0.0000	1.5407	1.5407	3.0000e- 005	0.0000	1.5415
Total	7.1000e- 004	4.4000e- 004	5.0000e- 003	2.0000e- 005	2.0600e- 003	1.0000e- 005	2.0700e- 003	5.5000e- 004	1.0000e- 005	5.6000e- 004	0.0000	1.5407	1.5407	3.0000e- 005	0.0000	1.5415

### 4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Mitigated	0.2730	0.7722	3.6703	0.0134	1.4035	8.7400e- 003	1.4122	0.3735	8.0900e- 003	0.3816	0.0000	1,220.300 9	1,220.300 9	0.0371	0.0000	1,221.228 9
Unmitigated	0.2730	0.7722	3.6703	0.0134	1.4035	8.7400e- 003	1.4122	0.3735	8.0900e- 003	0.3816	0.0000	1,220.300 9	1,220.300 9	0.0371	0.0000	1,221.228 9

#### 4.2 Trip Summary Information

	Aver	age Daily Trip Ra	ate	Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,098.00	1,221.00	942.00	3,735,923	3,735,923
Total	1,098.00	1,221.00	942.00	3,735,923	3,735,923

#### **4.3 Trip Type Information**

		Miles			Trip %			Trip Purpos	e %
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

### 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.595324	0.039337	0.202816	0.122129	0.015501	0.000992	0.003633	0.014473	0.000291	0.000237	0.004892	0.000189	0.000185

### 5.0 Energy Detail

Historical Energy Use: N

#### 5.1 Mitigation Measures Energy

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	232.2874	232.2874	9.5900e- 003	1.9800e- 003	233.1185
Electricity Unmitigated	,,	,	,			0.0000	0.0000	1 r	0.0000	0.0000	0.0000	232.2874	232.2874	9.5900e- 003	1.9800e- 003	233.1185
NaturalGas Mitigated	0.0126	0.1077	0.0458	6.9000e- 004		8.7000e- 003	8.7000e- 003	J 7	8.7000e- 003	8.7000e- 003	0.0000	124.6672	124.6672	2.3900e- 003	2.2900e- 003	125.4080
NaturalGas Unmitigated	0.0126	0.1077	0.0458	6.9000e- 004		8.7000e- 003	8.7000e- 003	······································	8.7000e- 003	8.7000e- 003	0.0000	124.6672	124.6672	2.3900e- 003	2.2900e- 003	125.4080

#### 5.2 Energy by Land Use - NaturalGas

#### <u>Unmitigated</u>

	NaturalGa s Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr					ton	s/yr							MT	/yr		
Apartments Low Rise	2.33618e +006	0.0126	0.1077	0.0458	6.9000e- 004		8.7000e- 003	8.7000e- 003		8.7000e- 003	8.7000e- 003	0.0000	124.6672	124.6672	2.3900e- 003	2.2900e- 003	125.4080
Total		0.0126	0.1077	0.0458	6.9000e- 004		8.7000e- 003	8.7000e- 003		8.7000e- 003	8.7000e- 003	0.0000	124.6672	124.6672	2.3900e- 003	2.2900e- 003	125.4080

#### 5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGa s Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr					ton	s/yr							MT	/yr		
Apartments Low Rise	2.33618e +006	0.0126	0.1077	0.0458	6.9000e- 004		8.7000e- 003	8.7000e- 003		8.7000e- 003	8.7000e- 003	0.0000	124.6672	124.6672	2.3900e- 003	2.2900e- 003	125.4080
Total		0.0126	0.1077	0.0458	6.9000e- 004		8.7000e- 003	8.7000e- 003		8.7000e- 003	8.7000e- 003	0.0000	124.6672	124.6672	2.3900e- 003	2.2900e- 003	125.4080

#### 5.3 Energy by Land Use - Electricity

**Unmitigated** 

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr		MT	/yr	
Apartments Low Rise	729039	232.2874	9.5900e- 003	1.9800e- 003	233.1185
Total		232.2874	9.5900e- 003	1.9800e- 003	233.1185

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## 5.3 Energy by Land Use - Electricity

### Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr		MT	/yr	
Apartments Low Rise	729039	232.2874	9.5900e- 003	1.9800e- 003	233.1185
Total		232.2874	9.5900e- 003	1.9800e- 003	233.1185

#### 6.0 Area Detail

### 6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Mitigated	0.6388	0.0458	1.5592	2.6000e- 004		0.0108	0.0108		0.0108	0.0108	0.0000	34.9454	34.9454	3.0500e- 003	5.9000e- 004	35.1987
Unmitigated	0.6388	0.0458	1.5592	2.6000e- 004		0.0108	0.0108		0.0108	0.0108	0.0000	34.9454	34.9454	3.0500e- 003	5.9000e- 004	35.1987

#### 6.2 Area by SubCategory

#### <u>Unmitigated</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory					ton	s/yr							Π	ī/yr		
Architectural Coating	0.0469					0.0000	0.0000	1 1 1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5420					0.0000	0.0000	, , ,	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.2800e- 003	0.0280	0.0119	1.8000e- 004		2.2600e- 003	2.2600e- 003	, , ,	2.2600e- 003	2.2600e- 003	0.0000	32.4185	32.4185	6.2000e- 004	5.9000e- 004	32.6112
Landscaping	0.0466	0.0178	1.5472	8.0000e- 005		8.5600e- 003	8.5600e- 003		8.5600e- 003	8.5600e- 003	0.0000	2.5268	2.5268	2.4300e- 003	0.0000	2.5876
Total	0.6389	0.0458	1.5592	2.6000e- 004		0.0108	0.0108		0.0108	0.0108	0.0000	34.9453	34.9453	3.0500e- 003	5.9000e- 004	35.1987

#### 6.2 Area by SubCategory

#### **Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory					ton	s/yr							MT	ī/yr		
Architectural Coating	0.0469					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5420					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.2800e- 003	0.0280	0.0119	1.8000e- 004		2.2600e- 003	2.2600e- 003		2.2600e- 003	2.2600e- 003	0.0000	32.4185	32.4185	6.2000e- 004	5.9000e- 004	32.6112
Landscaping	0.0466	0.0178	1.5472	8.0000e- 005		8.5600e- 003	8.5600e- 003		8.5600e- 003	8.5600e- 003	0.0000	2.5268	2.5268	2.4300e- 003	0.0000	2.5876
Total	0.6389	0.0458	1.5592	2.6000e- 004		0.0108	0.0108		0.0108	0.0108	0.0000	34.9453	34.9453	3.0500e- 003	5.9000e- 004	35.1987

## 7.0 Water Detail

7.1 Mitigation Measures Water

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	Total CO2	CH4	N2O	CO2e
Category		MT	/yr	
Mitigated	65.4572	0.3210	8.0500e- 003	75.8825
Unmitigated	65.4572	0.3210	8.0500e- 003	75.8825

### 7.2 Water by Land Use

**Unmitigated** 

	Indoor/Out door Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal		MT	ī/yr	
Apartments Low Rise	9.7731 / 6.1613	65.4572	0.3210	8.0500e- 003	75.8825
Total		65.4572	0.3210	8.0500e- 003	75.8825

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#### 7.2 Water by Land Use

#### **Mitigated**

	Indoor/Out door Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal		Π	/yr	
Apartments Low Rise	9.7731 / 6.1613	65.4572	0.3210	8.0500e- 003	75.8825
Total		65.4572	0.3210	8.0500e- 003	75.8825

#### 8.0 Waste Detail

#### 8.1 Mitigation Measures Waste

#### Category/Year

	Total CO2	CH4	N2O	CO2e
		MT	/yr	
Mitigated	14.0064	0.8278	0.0000	34.7002
Unmitigated	14.0064	0.8278	0.0000	34.7002

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#### 8.2 Waste by Land Use

#### <u>Unmitigated</u>

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons		МТ	/yr	
Apartments Low Rise	69	14.0064	0.8278	0.0000	34.7002
Total		14.0064	0.8278	0.0000	34.7002

#### **Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons		МТ	/yr	
Apartments Low Rise	69	14.0064	0.8278	0.0000	34.7002
Total		14.0064	0.8278	0.0000	34.7002

## 9.0 Operational Offroad

Equipment Type	
----------------	--

### **10.0 Stationary Equipment**

#### Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Boilers						
Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type	
User Defined Equipment						

Equipment Type	Number

### 11.0 Vegetation

# **APPENDIX 3**

Riverside County Transporation and Land Management Agency - TLMA

# Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP)

APN	Cell	Cell Group	Acres	Area Plan	Sub Unit
379090022	Not A Part	Independent	8.25	Elsinore	Not a Part

### Background

The final MSHCP was approved by the County Board of Supervisors on June 17, 2003. The federal and state permits were issued on June 22, 2004 and implementation of the MSHCP began on June 23, 2004.

For more information concerning the MSHCP, contact your local city or the County of Riverside for the unincorporated areas. Additionally, the Western Riverside County Regional Conservation Authority (RCA), which oversees all the cities and County implementation of the MSHCP, can be reached at:

Western Riverside County Regional Conservation Authority 3403 10th Street, Suite 320 Riverside, CA 92501

Phone: 951-955-9700 Fax: 951-955-8873

www.wrc-rca.org

### Introduction

As urbanization has increased within western Riverside County, state and federal regulations have required that public and private developers obtain "Take permits" from Wildlife Agencies for impacts to endangered, threatened, and rare species and their Habitats. This process, however, has resulted in costly delays in public and private Development projects and an assemblage of unconnected Habitat areas designated on a project-by-project basis. This piecemeal and uncoordinated effort to mitigate the effects of Development does not sustain wildlife mobility, genetic flow, or ecosystem health, which require large, interconnected natural areas.

A variety of capitalized terms are used in this report. Definitions for those terms are provided at the end of this report.

The MSHCP is a criteria-based plan, focused on preserving individual species through Habitat conservation. The MSHCP is one element of the Riverside County Integrated Project (RCIP), a comprehensive regional planning effort begun in 1999. The purpose of the RCIP is to integrate all aspects of land use, transportation, and conservation planning and implementation in order to develop a comprehensive vision for the future of the County. The overall

Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP)

goal of the MSHCP is rooted in the RCIP Vision Statement and supporting policy directives. The MSHCP will enhance maintenance of biological diversity and ecosystem processes while allowing future economic growth. Preserving a quality of life characterized by well-managed and well-planned growth integrated with an open-space system is a component of the RCIP vision. The MSHCP proposes to conserve approximately 500,000 acres and 146 different species. Approximately 347,000 acres are anticipated to be conserved on existing Public/Quasi-Public Lands, with additional contributions on approximately 153,000 acres from willing sellers. The overall goal of the MSHCP can be supported by the following:

Biological Goal: In the MSHCP Plan Area, conserve Covered Species and their Habitats.

Economic Goal: Improve the future economic development in the County by providing an efficient, streamlined regulatory process through which Development can proceed in an efficient way. The MSHCP and the General Plan will provide the County with a clearly articulated blueprint describing where future Development should and should not occur.

Social Goal: Provide for permanent open space, community edges, and recreational opportunities, which contribute to maintaining the community character of Western Riverside County.

This report has been generated to summarize the guidance in the MSHCP Plan that pertains to this property. Guidelines have been incorporated in the MSHCP Plan to allow applicants to evaluate the application of the MSHCP Criteria within specific locations in the MSHCP Plan Area. Guidance is provided through Area Plan Subunits, Cell Criteria, Cores and Linkages and identification of survey requirements. The guidance and Criteria incorporate flexibility at a variety of levels. The information within this report is composed of three parts: a summary table, Reserve Assembly guidance and survey requirements within the MSHCP Plan Area. The summary table provides specific information on this property to help determine whether it is located within the MSHCP Criteria Area or any survey areas. The Reserve Assembly guidance provides direction on assembly of the MSHCP Conservation Area if the property is within the Criteria Area. The survey requirements section describes the surveys that must be conducted on the property if Habitat is present for certain identified species within the Criteria Area or mapped survey areas.

#### Reserve Assembly Guidance within the Criteria Area

The Reserve Assembly guidance only pertains to properties that are within the Criteria Area. Please check the summary table to determine whether this property is within the Criteria Area. If it is located inside of the Criteria Area, please read both this section and the section about survey requirements within the MSHCP Plan Area. If the property is located outside the Criteria Area, only read the survey requirements within the MSHCP Plan Area section.

The Area Plan Subunits, Cell Criteria and Cores and Linkages provide guidance on assembly of the MSHCP Conservation Area. The Area Plan Subunits section lists Planning Species and Biological Issues and Considerations that are important to Reserve Assembly within a specific Area Plan Subunit. The Cell Criteria identify applicable Cores or Linkages and describe the focus of desired conservation within a particular Cell or Cell Group. Cores and Linkages guidance includes dimensional data and biological considerations within each identified Core or Linkage.

The following is the Area Plan text and Cell Criteria that pertains specifically to this property. The Area Plan text includes the target acreage for conservation within the entire Area Plan, identification of Cores and Linkages within the entire Area Plan and Area Plan Subunit Planning Species and Biological Issues and Considerations. It is important to keep in mind that the Area Plan Subunits, Cell Criteria and Cores and Linkages are drafted to provide guidance for a geographic area that is much larger than an individual property. The guidance is intended to provide context for an individual property and, therefore, all of the guidance and Criteria do not apply to each individual property.

### **Elsinore Area Plan**

This section identifies target acreages, applicable Cores and Linkages, Area Plan Subunits and Criteria for the Elsinore Area Plan. For a summary of the methodology and map resources used to develop the target acreages and Criteria for the MSHCP Conservation Area, including this Area Plan, see Section 3.3.1.

#### Target Acreages

The target conservation acreage range for the Elsinore Area Plan is 66,500 - 73,315 acres; it is composed of approximately 54,800 acres of existing Public/Quasi-Public Lands and 11,700 - 18,515 acres of Additional Reserve Lands. The City of Canyon Lake and the City of Lake Elsinore sit entirely within the Elsinore Area Plan. The target acreage range within the City of Canyon Lake is 30 - 50 acres. The target acreage range within the City of Lake Elsinore is 4,830 - 7,870 acres. The target acreages of both Cities are included within the 11,700 - 18,515 acre target conservation range on Additional Reserve Lands for the entire Elsinore Area Plan.

#### Applicable Cores and Linkages

The MSHCP Conservation Area comprises a variety of existing and proposed Cores, Linkages, Constrained Linkages and Noncontiguous Habitat Blocks (referred to here as "Cores and Linkages"). The Cores and Linkages listed below are within the Elsinore Area Plan. For descriptions of these Cores and Linkages and more information about the biologically meaningful elements of the MSHCP Conservation Area within the Elsinore Area Plan, see Section 3.2.3 and MSHCP Volume II, Section A.

#### Cores and Linkages within the Elsinore Area Plan

- Contains all of Proposed Constrained Linkage 5
- Contains all of Proposed Constrained Linkage 6
- Contains most of Proposed Core 1
- Contains a portion of Proposed Extension of Existing Core 2
- Contains all of Proposed Extension of Existing Core 3
- Contains all of Proposed Linkage 1
- Contains all of Proposed Linkage 2
- Contains a portion of Proposed Linkage 3
- Contains a portion of Proposed Linkage 7
- Contains a large portion of Proposed Linkage 8

Descriptions of Planning Species, Biological Issues and Considerations and Criteria for each Area Plan Subunit within the Elsinore Area Plan are presented later in this section. These descriptions, combined with the descriptions of the Cores and Linkages referred to above, provide information about biological issues to be considered in conjunction with Reserve Assembly within the Elsinore Area Plan. As noted in Section 3.1, the Area Plan boundaries established as part of the Riverside County General Plan were selected to provide an organizational framework for the Area Plan Subunits and Criteria. While these boundaries are not biologically based, unlike the Cores and Linkages, they relate specifically to General Plan boundaries and the jurisdictional boundaries of incorporated Cities and were selected to facilitate implementation of the MSHCP in the context of existing institutional and planning boundaries.

#### Area Plan Subunits

The Elsinore Area Plan is divided into six Subunits. For each Subunit, target conservation acreages are established along with a description of the Planning Species, Biological Issues and Considerations, and Criteria for each Subunit. For more information regarding specific conservation objectives for the Planning Species, see Section 9.0. Subunit boundaries are depicted on the Cells and Cell Groupings map displays (Figures 3-6 and 3-7). Table 3-4 presents the Criteria for the Elsinore Area Plan.

## **Cell Criteria**

A preliminary check indicates that this parcel is not subject to cell criteria under the draft MSHCP. Other requirements, including species surveys, may apply under the plan. It is recommended that you review the full text of the draft document for additional details. See www.rcip.org to read the document on-line or to find a location to view the hard copy document.

# Surveys Within the MSHCP Plan Area

Of the 146 species covered by the MSHCP, no surveys will be required by applicants for public and private projects for 106 of these Covered Species. Covered Species for which surveys may be required by applicants for public and private Development projects include 4 birds, 3 mammals, 3 amphibians, 3 crustaceans, 14 Narrow Endemic Plants, and 13 other sensitive plants within the Criteria Area. Of these 40 species, survey area maps are provided for 34 species, and surveys will be undertaken within suitable Habitat areas in locations identified on these maps in the MSHCP Plan. The remaining six species are associated with riparian/riverine areas and vernal pools and include least Bell's vireo, southwestern willow flycatcher, western yellow-billed cuckoo, Riverside fairy shrimp, Santa Rosa Plateau fairy shrimp, and vernal pool fairy shrimp. Although there are no survey area maps for these six species, surveys for these species, if necessary, will be undertaken as described below. It is the goal of the MSHCP to provide for conservation of Covered Species within the approximately 500,000 acres of new conservation on private lands). Conservation that may be identified to be desirable as a result of survey findings is not intended to increase the overall 500,000 acres of conservation anticipated under the MSHCP. Please refer to Section 6.0 of the MSHCP Plan, Volume I for more specific information regarding species survey requirements.

As projects are proposed within the MSHCP Plan Area, an assessment of the potentially significant effects of those projects on riparian/riverine areas and vernal pools will be performed as currently required by the California Environmental Quality Act (CEQA) using available information augmented by project-specific mapping. If the mapping identifies suitable habitat for any of the six species associated with riparian/riverine areas and vernal pools listed above and the proposed project design does not incorporate avoidance of the identified habitat, focused surveys for these six species will be conducted, and avoidance and minimization measures will be implemented in accordance with the species-specific objectives for these species. For more specific information regarding survey requirements for species associated with riparian/riverine areas and vernal pools, please refer to Section 6.1.2 of the MSHCP Plan, Volume I.

Habitat conservation is based on the particular Habitat requirements of each species as well as the known distribution data for each species. The existing MSHCP database does not, however, provide the level of detail sufficient to determine the extent of the presence or distribution of Narrow Endemic Plant Species within the MSHCP Plan Area. Since conservation planning decisions for these plant species will have a substantial effect on their status, additional information regarding the presence of these plant species must be gathered during the long-term implementation of the MSHCP to ensure that appropriate conservation of the Narrow Endemic Plants occurs. For more specific information regarding survey requirements for Narrow Endemic Plants, please refer to Section 6.1.3 of the MSHCP Plan, Volume I.

In addition to the Narrow Endemic Plant Species, additional surveys may be needed for certain species in conjunction with Plan implementation in order to achieve coverage for these species. The MSHCP must meet the Federal Endangered Species Act issuance criteria for Habitat Conservation Plans (HCP) which require, among other things, that the HCP disclose the impacts likely to result from the proposed Taking, and measures the applicant will undertake to avoid, minimize and mitigate such impacts. For these species in which coverage is sought under the MSHCP, existing available information is not sufficient to make findings necessary to satisfy these issuance criteria for Take authorization. Survey requirements are incorporated in the MSHCP to provide the level of information necessary to receive coverage for these species in the MSHCP.

Efforts have been made prior to approval of the MSHCP and will be made during the early baseline studies to be conducted as part of the MSHCP management and monitoring efforts to collect as much information as possible regarding the species requiring additional surveys. As data are collected and conclusions can be made regarding the presence of occupied Habitat within the MSHCP Conservation Area for these species, it is anticipated that survey requirements may be modified or waived. Please refer to Sections 6.1.3 and 6.3.2 of the MSHCP Plan, Volume I for more specific information regarding survey requirements.

Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP)

# **MSHCP DEFINITIONS**

Adaptive Management	To use the results of new information gathered through the Monitoring Program of the Plan and from other sources to adjust management strategies and practices to assist in providing for the Conservation of Covered Species.
Adaptive Management Program	The MSHCP's program of Adaptive Management described in Section 5.0 of the MSHCP, Volume I.
Additional Reserve Lands	Conserved Habitat totaling approximately 153, 000 acres that are needed to meet the goals and objectives of the MSHCP and comprised of approximately 56, 000 acres of State and federal acquisition and mitigation for State Permittees, and approximately 97, 000 acres contributed by Local Permittees (Lands acquired since February 3, 2000 are included in the Local Permittees' Additional Reserve Lands contribution pursuant to correspondence discussed in Section 4.0 of the MSHCP, Volume I and on file with the County of Riverside)
Agriculture	For the species analyses, references to agriculture refer to the Vegetation Community, Agriculture, as depicted on the MSHCP Vegetation Map, Figure 2-1 of the MSHCP, Volume I.
Agricultural Operations	The production of all plants (horticulture), fish farms, animals and related production activities, including the planting, cultivation and tillage of the soil, dairying, and apiculture; and the production, plowing, seeding, cultivation, growing, harvesting, pasturing and fallowing for the purpose of crop rotation of any agricultural commodity, including viticulture, apiculture, horticulture, and the breeding, feeding and raising of livestock, horses, fur-bearing animals, fish, or poultry, the operation, management, conservation, improvement or maintenance of a farm or ranch and its buildings, tools and equipment; the construction, operation and maintenance of ditches, canals, reservoirs, wells and/or waterways used for farming or ranching purposes and all uses conducted as a normal part of such Agricultural Operations; provided such actions are in compliance with all applicable laws and regulations. The definition of Agricultural Operations shall not include any activities on state and federal property or in the MSHCP Conservation Area.
Allowable Uses	Uses allowed within the MSHCP Conservation Area as defined in Section 7.0 of the MSHCP, Volume I.
Annual Report	The reports prepared pursuant to the requirements of Section 6.11 of the MSHCP, Volume I.
Area Plan	A community planning area defined in the County of Riverside General Plan. Sixteen County of Riverside Area Plans are located within the MSHCP Plan Area.
Area Plan Subunit	A portion of an Area Plan for which Biological Issues and Considerations and target acreages have been specified in Section 3.3 of the MSHCP, Volume I.
Biological Issues and Considerations	A list of biological factors to be used by the Plan Participants in assembly of the MSHCP Conservation Area. Biological Issues and Considerations are identified for each Area Plan Subunit in Section 3.3 of the MSHCP, Volume I.
Biologically Equivalent or Superior Determination	Documentation that a particular project alternative will be biologically equivalent or superior to a project consistent with the guidelines and thresholds established in the policies for the Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools set forth in Section 6.1.2 of the MSHCP, policies for the Protection of Narrow Endemic Plant Species set forth in Section 6.1.3 of the MSHCP, Additional Survey Needs and Procedures policies set forth in Section 6.3.2 of the MSHCP, and the Criteria Refinement Process set forth in Section 6.5 of the MSHCP.
Biological Monitoring Program	The program detailing the requirements for monitoring of the MSHCP Conservation Area as set forth in Section 5.3 of the MSHCP, Volume I.
Biological Monitoring Report	Reports prepared pursuant to the requirements of Section 5.3.7 of the MSHCP, Volume I.
Bioregion	A generalized area with similar elevation, topography, soils and floristic characteristics within the MSHCP Plan Area. Seven Bioregions are identified in the MSHCP Plan Area and are depicted in Figure 2-6 of the MSHCP, Volume I.

California Department of Fish and Game	CDFG, a department of the California Resources Agency.
California Department of Transportation	Caltrans, a department of the California Business, Transportation and Housing Agency.
Cell	A unit within the Criteria Area generally 160 acres in size, approximating one quarter section.
Cell Group	An identified grouping of Cells within the Criteria Area.
California Environmental Quality Act	CEQA (California Public Resources Code, Section 21000 et seq.) and all guidelines promulgated thereunder, as amended. For the MSHCP, the County shall be the lead agency under CEQA as defined under State CEQA Guidelines section 15367.
California Endangered Species Act	CESA (California Fish and Game code, Section 2050 et seq.) and all rules, regulations and guidelines promulgated thereunder, as amended.
Changed Circumstances	Changes in circumstances affecting a Covered Species or the geographic area covered by the MSHCP that can reasonably be anticipated by the Parties and that can reasonably be planned for in the MSHCP. Changed Circumstances and the planned responses to those circumstances are more particularly described in Section 11.4 of the IA, and Section 6.8 of the MSHCP, Volume I. Changed Circumstances do not include Unforeseen Circumstances.
Cities	The cities of Banning, Beaumont, Calimesa, Canyon Lake, Corona, Hemet, Lake Elsinore, Moreno Valley, Murrieta, Norco, Perris, Riverside, San Jacinto, and Temecula, collectively.
Community and Environmental Transportation Acceptability Process	CETAP, a process overseen by RCTC to identify Acceptability Process future transportation and communication corridors designed to relieve current traffic congestion and provide for the County's and the Cities' future transportation and communication needs.
Conceptual Reserve Design	A reserve concept developed for purposes of providing quantitative parameters for MSHCP species analyses, MSHCP Conservation Area description and target acreages within Area Plan Subunits. The Conceptual Reserve Design is intended to describe one way in which the Additional Reserve Lands could be assembled consistent with MSHCP Criteria.
Conservation	To use, and the use of, methods and procedures within the MSHCP Conservation Area and within the Plan Area as set forth in the MSHCP Plan, that are necessary to bring any listed species to the point at which the measures provided pursuant to FESA and the California Fish and Game Code are no longer necessary. However, Permittees will have no duty to enhance, restore or revegetate MSHCP Conservation Area lands unless required by the MSHCP Plan or agreed to through implementation of the Plan.
Conservation Strategy	The overall approach to assure conservation of individual species within the MSHCP Plan Area; for each individual species, the Conservation Strategy is comprised of four elements: (1) a global conservation goal; (2) global conservation objectives; (3) species-specific conservation objectives that are measurable; and (4) management and monitoring activities.
Conserved Habitat	Land that is permanently protected and managed in its natural state for the benefit of the Covered Species under legal arrangements that prevent its conversion to other land uses, and the institutional arrangements that provide for its ongoing management.
Constrained Linkage	A constricted connection expected to provide for movement of identified Planning Species between Core Areas, where options for assembly of the connection are limited due to existing patterns of use.
Cooperative Organizational Structure	The local administrative structure for Implementation and management of the MSHCP, as set forth in Section 6.6 of the MSHCP, Volume I.

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Core Area	A block of Habitat of appropriate size, configuration, and vegetation characteristics to generally support the life history requirements of one or more Covered Species.
Corridor	Refers to the alignment area or footprint for manmade linear projects such as transportation facilities, pipelines and utility lines. Corridor does not have a biological meaning in the MSHCP lexicon.
County	County of Riverside
County Flood Control	Riverside County Flood Control and Water Conservation District
County Parks	Riverside County Regional Parks and Open Space District
County Waste	Riverside County Waste Management District
Covered Activities	Certain activities carried out or conducted by Permittees, Participating Special Entities, Third Parties Granted Take Authorization and others within the MSHCP Plan Area, and described in Section 7 of the MSHCP, Volume I, that will receive Take Authorization under the Section 10(a) Permit and the NCCP Permit, provided these activities are otherwise lawful.
Covered Species	The current 146 species within the MSHCP Plan Area that will be conserved by the MSHCP when the MSHCP is implemented. These species are discussed in Section 2.1.4 of the MSHCP, Volume I, and listed in Exhibit C to the IA and Section 9.2 of the MSHCP, Volume I.
Covered Species Adequately Conserved	The initial 118 Covered Species and any of the remaining 28 Covered Species where the species objectives, set forth in Section 9.2 of the MSHCP, Volume I and Table 9-3, are met and which are provided Take Authorization through the NCCP Permit and for animals through the Section 10(a) Permit issued in conjunction with the IA. These species are discussed in Section 2.1.4 of the MSHCP, Volume I, and listed in Exhibit "D" to the IA and Section 9.2 of the MSHCP, Volume I.
Criteria	Descriptions provided for individual Cells or Cell Groups within the Criteria Area to guide assembly of the Additional Reserve Lands.
Criteria Area	The area comprised of Cells depicted on Figure 3-1 of the MSHCP, Volume I.
Criteria Refinement Process	The process through which changes to the Criteria may be made, where the refined Criteria result in the same or greater Conservation value and acreage to the MSHCP Conservation Area as determined through an equivalency analysis provided in support of the refinement.
Critical Habitat	Habitat for species listed under FESA that has been designated pursuant to Section 4 of FESA and identified in 50 C.F.R. §§ 17.95 and 17.96.
Development	The uses to which land shall be put, including construction of buildings, structures, infrastructure and all alterations of the land.
Discretionary Project	A proposed project requiring discretionary action or approval by a Permittee, as that term is used in CEQA and defined in State CEQA Guidelines section 15357, including issuance of a grading permit for County projects.
Edge Effects	Adverse direct and indirect effects to species, Habitats and Vegetation Communities along the natural urban/wildslands interface. May include predation by mesopredators (including native and non-native predators), invasion by exotic species, noise, lighting, urban runoff and other anthropogenic impacts (trampling of vegetation, trash and toxic materials dumping, etc.).
Effective Date	Date on which the IA takes effect, as set forth in Section 19.1 of the IA.
Endangered Species	Those species listed as endangered under FESA and CESA.

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Environmental Laws	Includes state and federal laws governing or regulating the impact of development activities on land, water or biological resources as they relate to Covered Species, including but not limited to CESA, FESA, the NCCP Act, CEQA, the National Environmental Policy Act ("NEPA"), the federal Migratory Bird Treaty Act ("MBTA"), the Fish and Wildlife Coordination Act, the Fish and Wildlife Act of 1956, the Federal Water Pollution Control Act (33 U.S.C., Section 1251 et seq.), the Native Plant Protection Act (California Fish and Game Code, Section 1900 et seq. and Sections 1801, 1802, 3511, 4700, 5050 and 5515) and includes any regulations promulgated pursuant to such laws.
Executive Director	Director of the Regional Conservation Authority
Existing Agricultural Operations	Those lands within the MSHCP Plan Area that are actively used for ongoing Agricultural Operations, as further defined in Section 11.3 of the IA and Section 6.2 of the MSHCP, Volume I.
Existing Agricultural Operations Database	The database created by the County to identify Existing Agricultural Operations, as further defined in Section 11.3 of the IA.
Federal Endangered Species Act	FESA (16 U.S.C., Section 1531 et seq.) And all rules and regulations promulgated thereunder, as amended.
Feasible	Capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.
Funding Coordination Committee	A committee formed by the Regional Conservation Authority Board of Directors to provide input on local funding priorities and Additional Reserve Land acquisitions.
Habitat	The combination of environmental conditions of a specific place providing for the needs of a species or a population of such species.
HabiTrak	A GIS application to provide data on Habitat loss and Conservation which occurs under the Permits.
Implementing Agreement	The executed agreement that implements the terms and conditions of the MSHCP.
Incidental Take (also see Take)	Take of Covered Species Adequately Conserved incidental to and not the purpose of, an otherwise lawful activity, including, but not limited to, Take resulting from modification of Habitat as defined in FESA and its implementing regulations.
Independent Science Advisors	The qualified biologists, conservation experts and others that may be appointed by the Regional Conservation Authority Executive Director to provide scientific input to assist in the implementation of the MSHCP for the benefit of the Covered Species, as set forth in Section 6.6.7 of the MSHCP, Volume I.
Linkage	A connection between Core Areas with adequate size, configuration and vegetation characteristics to generally provide for "Live-In" Habitat and/or provide for genetic flow for identified Planning Species.
Live-In Habitat	Habitat that contains the necessary components to support key life history requirements of a species; e.g., year-round Habitat for permanent residents or breeding Habitat for migrant species.
Local Development Mitigation Fee	The fee imposed by applicable Local Permittees on new development pursuant to Government Code Section 66000 et seq.
Local Permittees	The Regional Conservation Authority, the County, County Flood Control, County Parks, County Waste, RCTC and the Cities.
Locality(ies)	An area with multiple occurrences of a species based on the MSHCP species occurrence data base or literature citations as noted in individual species accounts.

6/13/2016	Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP)
Long-Term Stephens' Kangaroo Rat	The Long-Term SKR HCP in Western Riverside County dated Habitat Conservation Plan. March 1996, more particularly described in Section 16.2 of the IA.
Maintenance Activities	Those Covered Activities that include the on going maintenance of public facilities as described in Section 7.0 of the MSHCP, Volume I.
Major Amendments	Those proposed amendments to the MSHCP and the IA as described in Section 20.5 of the IA and Section 6.10 of the MSHCP, Volume I.
Management Unit	Broad areas planned to be consolidated for overall unified management of the MSHCP Conservation Area. Five management units have been defined and are depicted in Figure 5-1 of the MSHCP, Volume I.
Migratory Bird Treaty Act	Federal MBTA (16 U.S.C., Section 702 et seq.) and all rules and regulations promulgated thereunder, as amended.
Migratory Bird Treaty Special Purpose Permit	Act A permit issued by the USFWS under 50 Code of Federal Regulations, section 21.27, authorizing Take under the MBTA of the Covered Species Adequately Conserved listed as endangered or threatened under FESA in connection with the Covered Activities.
Ministerial Approvals	Certain City approvals involving little or no judgement by the City prior to issuance but that could have adverse impacts to Covered Species and their habitat.
Minor Amendments	Minor changes to the MSHCP and the IA as defined in Section 20.4 of the IA and Section 6.10 of the MSHCP, Volume I.
Mitigation Lands	Subset of Additional Reserve Lands totaling approximately 103, 000 acres, comprised of approximately 97, 000 acres contributed by Local Permittees, and approximately 6, 000 acres contributed by State Permittees.
Monitoring Program	The monitoring programs and activities set forth in Section 5.3 of the MSHCP, Volume I.
Monitoring Program Administrator	The individual or entity responsible for administering the Monitoring Program, as described in Section 5.0 of the MSHCP, Volume I.
MSHCP Conservation Area	Approximately 500, 000 acres comprised of approximately 347, 000 acres of Public/Quasi-Public Lands and approximately 153, 000 acres of Additional Reserve Lands within Western Riverside County. The MSHCP Conservation Area provides for the conservation of the Covered Species.
MSHCP Plan Area	The boundaries of the MSHCP, consisting of an approximate 1, 966 square-mile area in Western Riverside County, as depicted in Figure 1-2 of the MSHCP Plan, Volume I, and Exhibit B of the IA.
Multiple Species Habitat	Western Riverside County Multiple Species Habitat Conservation
Conservation Plan (MSHCP)	Plan, a comprehensive habitat conservation planning program that addresses multiple species' needs, including Habitat, and the preservation of native vegetation in Western Riverside County, as depicted in Figure 3-1 of the MSHCP Plan, Volume I, and Exhibit A of the IA.
NCCP Act	California Natural Community Conservation Planning Act (California Fish and Game Code, Section 2800 et seq.) including all regulation promulgated thereunder, as amended.
NCCP Permit	The Permit issued in accordance with the IA by CDFG under the NCCP Act to permit the Take of identified species, including rare species, species listed under CESA as threatened or endangered, a species that is a candidate for listing, and unlisted species.
National Environmental Policy Act	NEPA (42 U.S.C., Section 4321-4335) and all rules, regulations promulgated thereunder, as amended. For the purposes of the MSHCP, USFWS is the lead agency under NEPA as defined in 40 Code of Federal Regulations section 1508.16.

Narrow Endemic Plant Species	Plant species that are highly restricted by their Habitat affinities, edaphic requirements or other ecological factors, and for which specific conservation measures have been identified in Section 6.1.3 of the MSHCP, Volume I.
New Agricultural Lands	The acreage converted to Agricultural Operations after the Effective Date of the IA, as described in Section 11.3 of the IA and Section 6.2 of the MSHCP, Volume I.
New Agricultural Lands Cap	A designated maximum number of acres of New Agricultural Land within the Criteria Area, as described in Section 11.3 of the IA and Section 6.2 of the MSHCP, Volume I.
No Surprises Assurance	Provided Permittees are implementing the terms and conditions of MSHCP, the IA, and the Permit(s), the USFWS can only require additional mitigation for Covered Species Adequately Conserved beyond that provided for in the MSHCP as a result of Unforeseen Circumstances in accordance with the "No Surprises" regulations at 50 Code of Federal Regulations sections 17.22(b)(5) and 17.32(b)(5) and as discussed in Section 6.8 of the MSHCP, Volume I.
Non-contiguous Habitat Block	A block of Habitat not connected to other Habitat areas via a Linkage or Constrained Linkage.
Other Species	Species that are not identified as Covered Species under the MSHCP.
Participating Special Entity	Any regional public facility provider, such as a utility company or a public district or agency, that operates and/or owns land within the MSHCP Plan Area and that applies for Take Authorization pursuant to Section 11.8 of the IA.
Party and Parties	The signatories to the IA, namely the Regional Conservation Authority, the County, County Flood Control, County Parks, County Waste, RCTC, the Cities, Caltrans, State Parks, USFWS and CDFG and any other city within the Plan Area that incorporates after the Effective Date and complies with Section 11.6 of the IA.
Permit(s)	Collectively, the Section 10(a) Permit and NCCP Permit issued by the Wildlife Agencies to Permittees for Take of Covered Species Adequately Conserved pursuant to FESA, CESA and the NCCP Act and in conformance with the MSHCP and the IA.
Permittees	The Regional Conservation Authority, the County, County Flood Control, County Parks, County Waste, RCTC, the Cities, Caltrans and State Parks.
Plan Area	See "MSHCP Plan Area."
Plan Participants	The Regional Conservation Authority, the County, County Flood Control, County Parks, County Waste, RCTC, the Cities, Caltrans and State Parks and others receiving Take Authorization under the Permits.
Planning Agreement	The document prepared pursuant to the NCCP Act to guide development of the MSHCP, that is contained in Appendix A of the MSHCP, Volume I.
Planning Species	Subsets of Covered Species that are identified to provide guidance for Reserve Assembly in Cores and Linkages and/or Area Plans.
Public/Quasi- Public Lands	Subset of MSHCP Conservation Area lands totaling approximately 347, 000 acres of lands known to be in public/private ownership and expected to be managed for open space value and/or in a manner that contributes to the Conservation of Covered Species (including lands contained in existing reserves), as generally depicted in Figure 3-1 of the MSHCP, Volume I.
Riverside County Transportation Commission	RCTC, created pursuant to California Public Utilities Code section 130050.

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Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP)

Regional Conservation Authority	The Western Riverside County Regional Conservation Authority, a joint regional authority formed by the County and the Cities to provide primary policy direction for implementation of the MSHCP, as set forth in Section 6.6 of the MSHCP, Volume I, and Section 11.2 of the IA.
Reserve Assembly	Acquisition and Conservation of Additional Reserve Lands.
Reserve Management Oversight	The committee established by the Executive Director to provide Committee biological, technical and operational expertise for implementation of the MSHCP, including oversight of the MSHCP Conservation Area as described in Section 11.2 of the IA and Section 6.6 of the MSHCP, Volume I.
Reserve Management Plan(s)	The plan(s) setting forth management practices for identified portions of the MSHCP Conservation Area prepared and adopted as described in Section 5 of the MSHCP, Volume I.
Reserve Managers	The entities managing identified portions of the MSHCP Conservation Area for the benefit of the Covered Species as described in Section 6.6.5 of the MSHCP, Volume I.
Rough Step	A Reserve Assembly accounting process to monitor Conservation and loss of specified Habitats within the Criteria Area.
Rough Step Analysis Unit	A geographic unit within which Rough Step is tracked. Rough Step Analysis Units are depicted in Figure 6-6 of the MSHCP, Volume I.
Rural Mountainous	A County of Riverside General Plan land use designation currently permitting single-family residential uses with a minimum lot size of 10 acres with limited animal keeping and agricultural uses allowed; characterizes areas of at least 10 acres where a minimum of 70% of the area has slopes of 25% or greater
Section 10(a) Permit	The permit issued by the USFWS to Permittees, in conformance with the IA and pursuant to 16 U.S.C. section 1539(a), authorizing Take of Covered Species Adequately Conserved.
State Assurances	Except for provisions in Section 15.5 of the IA, provided Permittees are implementing the terms and conditions of the MSHCP, the IA, and the Permits, if there are Unforeseen Circumstances, CDFG shall not require additional land, water or financial compensation or additional restrictions on the use of land, water or other natural resources for the life of the NCCP Permit without the consent of the Permittees, unless CDFG determines that continued implementation of the IA, the MSHCP, and/or the Permits would jeopardize the continued existence of a Covered Species, or as required by law and would therefore lead to NCCP Permit revocation or suspension.
State Parks	California Department of Parks and Recreation, a department of the California Resources Agency.
State Permittees	Caltrans and State Department of Parks and Recreation.
Take	The definition of such term in FESA with regard to species listed under FESA, and the definition of such term in the California Fish and Game Code with regard to species listed under CESA.
Take Authorization	The ability to Take species pursuant to the Section 10(a) Permit and/or the NCCP Permit.
Third Party Granted Authorization	Take Any Third Party that receives Third Party Take Authorization in compliance with Section 17 of the IA.
Third Party Take Authorization	Take Authorization received by a landowner, developer, farming interest or other public or private entity from the Permittees pursuant to Section 17 of the IA, thereby receiving Take Authorization for Covered Species Adequately Conserved pursuant to the Permits and in conformance with the MSHCP and IA.
Threatened Species	Those species listed as threatened under FESA and CESA.
Unforeseen	Changes in circumstances affecting a Covered Species Adequately Conserved or geographic area covered by

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Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP)

3/2010	Western Riverside County Multiple Species Habitat Conservation Flan (MSHCF)
Circumstances	the MSHCP that could not reasonably have been anticipated by the Parties at the time of the MSHCP's negotiation and development, and that result in a substantial and adverse change in the status of the Covered Species Adequately Conserved. The term "Unforseen Circumstances" as defined in the IA is intended to have the same meaning as it is used: 1) to define the limit of the Permittees' obligation on the "No Surprises" regulations set forth in 50 Code of Federal Regulations, sections 17.22 (b)(5) and 17.32 (b)(5); and 2) in California Fish and Game Code section 2805(k).
Unlisted Species	A species that is not listed as rare, endangered or threatened under FESA, CESA or other applicable state or federal law.
United States Fish and Wildlife Service	USFWS, an agency of the United States Department of the Interior.
Urban/Wildlands Interface	The area where structures and other human development occurs in proximity to the MSHCP Conservation Area.
Vegetation Community(ies)	A group of plants that tend to occur together in consistent, definable groups based on typical constituents as depicted on the MSHCP Vegetation Map, Figure 2-1 of the MSHCP, Volume I.
Wildlife Agencies	The USFWS and CDFG, collectively.

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# **APPENDIX 4**

# LAKE POINTE APARTMENTS NOISE IMPACT STUDY City of Lake Elsinore, California







traffic engineering & design transportation planning parking acoustical engineering air quality & ghg

# LAKE POINTE APARTMENTS NOISE IMPACT STUDY City of Lake Elsinore, California

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Bryan Estrada, AICP

November 8, 2022

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# 1.0 Introduction

This report has been updated to reflect the minor modifications to the project description, based on the modified site plan, dated 9/12/22. The project now includes a total of 152 dwelling units (an increase of two units from what was previously studied). However, overall, the site plan has not significantly changed, and the project would not add any new or more intense uses that would generate additional noise levels beyond what was previously estimated. Hence, the findings of the previous April 5, 2021, analysis are still accurate and adequately address all project impacts. No additional changes have been made to this updated report beyond reference to the latest site plan.

# 1.1 <u>Purpose of Analysis and Study Objectives</u>

The purpose of this report is to evaluate the potential noise impacts from the proposed Lake Pointe Apartments (project) and provide recommendations, if necessary, to minimize any project noise impacts. The assessment was conducted within the context of the California Environmental Quality Act (CEQA) and utilizes the noise standards set forth by the City of Lake Elsinore and State of California.

The following is provided in this report:

- A description of the study area and the proposed project
- Information regarding the fundamentals of noise
- Identification of the regulatory setting and applicable noise standards
- Analysis of the existing noise environment
- Analysis of the project's operational noise impact to adjacent receptors
- Analysis of the project's construction noise and vibration impact to adjacent sensitive receptors
- Summary of recommended mitigation measures and project design features to reduce noise level impacts

# 1.2 <u>Site Location</u>

The project site is located at the northerly corner of Riverside Drive (SR-74) and Lakeside High School/Le Harve Avenue, in the City of Lake Elsinore, California. The project site is currently vacant. The project site is located approximately 1,275 feet above sea level and the topography slopes gently (approximately 1%) to the southeast.

engineering

The project site is bounded by commercial uses to the northeast, Lakeside High School to the southwest, Riverside Drive to the southeast and vacant land use to the northwest.

The project site is zoned for Residential Mixed Use (RMU) in the City of Lake Elsinore Zoning Map and Lake Elsinore City Plan General Plan Land Use Designation Map.

The nearest noise sensitive land uses surrounding the project site are:

- 1. Residential homes located at approximately 275 feet to the northeast of the project site.
- 2. Lakeside High School located adjacent to the project site to the southwest.
- 3. Residential homes located at approximately 340 feet to the northwest of the site.

The project site location map is provided in Exhibit A.

# 1.3 <u>Project Description</u>

The project proposes to construct and operate 152 residential apartment dwelling units on an approximately 8.26 acre vacant site. The primary sources of noise generated by the project would include vehicular noise from cars traveling to and from the site on public roadways, on-site vehicular circulation (including delivery trucks and trash collection), and noise from HVAC equipment.

The project will include a new six (6) foot high property line wall along the boundary of Lakeside High School.

Construction of the project is estimated to begin in the year 2021 and last approximately 14 months. Construction activities are expected to consist of site preparation, grading, building construction, paving, and architectural coating. The project is expected to be complete in the year 2023.

The site plan used for this analysis is illustrated in Exhibit B.


# 1.4 <u>Summary of Analysis Results</u>

Table 1 provides a summary of the noise analysis results, per the CEQA impact criteria checklist.

With the implementation of the recommended mitigation measures, the project is not expected to result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

	Noise Impact Criteria	Potentially Significant	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
Wo	uld the project result in?				
a)	Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		х		
b)	Generation of excessive groundborne vibration or groundborne noise levels?			х	
c)	For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				Х

Table 1 CEQA Noise Impact Criteria

# 1.5 <u>Recommended Mitigations Measures</u>

The following recommended mitigation measures are provided to help ensure the project's construction noise levels do not adversely impact the adjacent noise sensitive land uses:

Construction Mitigation Measures

**MM-1** Obtain a construction work permit from the City of Lake Elsinore prior to starting construction.



- **MM-2** Provide notice to Lakeside High School of the proposed construction schedule/start date and post a construction notification sign along the perimeter of the project site in a location readily visible to the public. All notices and signs shall indicate the dates and duration of construction activities, as well as provide a telephone number where persons may enquire about the construction process and register complaints to a designated construction noise disturbance coordinator.
- MM-3 Construct the perimeter noise wall along the Lakeside High School property line at the first phase of construction, prior to any major earthwork or construction activity. The designed noise screening will only be accomplished if the barrier's weight is at least 3.5 pounds per square foot of face area without decorative cutouts or line-of-site openings between the shielded areas and the project site. All gaps (except for weep holes) should be filled with grout or caulking to avoid flanking.

Noise control barrier may be constructed using one, or any combination of the following materials:

- Masonry block;
- Stucco veneer over wood framing (or foam core), or 1-inch thick tongue and groove wood of sufficient weight per square foot;
- **MM-4** The project shall ensure all contractors implement construction best management practices to reduce construction noise levels. Best management practices would include the following:
  - All construction equipment shall be equipped with muffles and other suitable noise attenuation devices (e.g., engine shields).
  - Grading and construction contractors shall use quieter equipment as opposed to noisier equipment (such as rubber-tired equipment rather than track equipment), to the maximum extent feasible.
  - If feasible, electric hook-ups shall be provided to avoid the use of generators. If electric service is determined to be infeasible for the site,

only whisper-quiet generators shall be used (i.e., inverter generators capable of providing variable load.

- Use electric air compressors and similar power tools rather than diesel equipment, where feasible.
- Locate staging area, generators and stationary construction equipment as far from the adjacent school as feasible.
- Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 5 minutes.
- **MM-5** No impact pile driving activities shall be permitted on the project site during construction. If impact pile driving is required, a follow-up noise and vibration impact assessment shall be conducted prior to start of any pile driving activity.

# 1.6 <u>Recommended Project Design Features</u>

The following recommended project design features include standard rules and requirements, best practices and recognized design guidelines for reducing noise levels. Design features are assumed to be part of the conditions of the project and integrated into its design.

- **DF-1** All HVAC equipment will be fully shielded from the line of sight of adjacent residential and school property lines.
- **DF-2** Per Chapter 17.176.080(E) of the Lake Elsinore Municipal Code, loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects between the hours of 10:00 p.m. and 7:00 a.m. in such a manner as to cause a noise disturbance across a residential real property line is prohibited.
- **DF-3** The project will be required to incorporate building construction techniques that achieve the minimum interior noise standard of 45 dBA CNEL for all residential units.



- **DF-4** The project will comply with California Title 24 building insulation requirements for exterior walls, roofs and common separating assemblies (e.g. floor/ceiling assemblies and demising walls), which shall be reviewed by the City prior to issuance of a building permit. A final acoustical study will be required to demonstrate compliance with building code standards.
  - a. Party wall and floor-ceiling assembly designs must provide a minimum STC/IIC rating of 50, based on lab tests. Field tested assemblies must provide a minimum STC/IIC rating of 45.
  - b. Entry doors from interior corridors must provide an STC of 26.
  - c. Penetrations or openings in sound rated assemblies must be treated to maintain required ratings.
  - d. Interior noise levels due to exterior sources must not exceed a community noise equivalent level (CNEL) or a day-night level (LDN) of 45 dBA, in any habitable room.
- **DF-5** For proper acoustical performance, all exterior windows, doors, and sliding glass doors will have a positive seal and leaks/cracks must be kept to a minimum.



# 2.0 Fundamentals of Noise and Vibration

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

# 2.1 <u>Sound, Noise and Acoustics</u>

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 out at 20 Hz all the way to the high pitch of 20,000 Hz.

# 2.3 <u>Sound Pressure Levels and Decibels</u>

The *amplitude* of a sound determines it loudness. The loudness of sound increases or decreases, as the amplitude increases or decreases. Sound pressure amplitude is measured in units of micro-Newton per square inch meter (N/m2), also called micro-Pascal ( $\mu$ Pa). One  $\mu$ Pa is approximately one hundred billionths (0.0000000001) of normal atmospheric pressure. Sound pressure level (SPL or L<sub>p</sub>) is used to describe in logarithmic units the ratio of actual sound pressures to a reference pressure squared. These units are called decibels and abbreviated dB.

# 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 (2) sounds of 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 (2) sounds differ by approximately 10 dB the higher sound level is the predominant sound.

# 2.5 <u>Human Response to Changes in Noise Levels</u>

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 the 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<sup>1</sup>. 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.

# 2.6 <u>Noise Descriptors</u>

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. Following are the most commonly used noise descriptors along with brief definitions.

# 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.

<sup>&</sup>lt;sup>1</sup> Source: U.S. DOT Federal Highway Administration. Dec. 2011. Highway Traffic Noise: Analysis and Abatement Guidance.



# Community Noise Equivalent Level (CNEL)

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

# Decibel (dB)

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

#### dB(A)

A-weighted sound level (see definition above).

# Equivalent Sound Level (LEQ)

The sound level corresponding to a steady noise level over a given sample period with the same amount of acoustic energy as the actual time varying noise level. The energy average noise level during the sample period.

#### Habitable Room

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

#### L(n)

The A-weighted sound level exceeded during a certain percentage of the sample time. For example, L10 is the sound level exceeded 10 percent of the sample time. Similarly L50, L90 and L99, etc.

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# Noise

Any 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 dBA level which, if it lasted for one (1) second, would produce the same A-weighted sound energy as the actual event.

# 2.7 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 an additional 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 3 dB per doubling of distance for a line source and 6.0 dB per doubling of distance for a point source.



COMMON OUTDOOR NOISE LEVELS	NOISE LEVEL (dBA)	COMMON INDOOR NOISE LEVELS
Jet Flyover at 1000 ft.	110	Rock Band
Can Jawa Mawar at 7 th		Inside Subway Train (New York)
Gas Lawn mower at 5 ft.		
Diesel Truck at 50 ft.	90	Food Blender at 3 ft.
Noise Urban Daytime		Garbage Disposal at 3 ft.
	00	Shouting at 3 ft.
Gas Lawn Mower at 100 ft.		Vacuum Cleaner at 10 ft.
Commercial Area		Normal Speech at 3 ft.
Heavy Traffic at 300 ft.	60	
		Large Business Office
Quiet Urban Daytime		Dishwasher Next Room
Outed Habors Machines		Small Theatre, Large Conference Room (Background)
Quiet Orban Nighttime		
Quiet Suburban Nightume		Library
	50	Bedroom at Night
Quiet Rural Nighttime		Concert Hall (Background)
	20	Paparding Studia
		Recording Studia
		The straight of the second
		inreshold of Hearing
	0	

Figure 1 Typical Sound Levels from Indoor and Outdoor Noise Sources<sup>2</sup>

<sup>2</sup> Source: AASHSTO. 1993. Guide on Evaluation and Abatement of Traffic Noise



# 2.8 <u>Vibration Descriptors</u>

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 the 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.

# 2.9 <u>Vibration Perception</u>

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.



# 2.10 Vibration Propagation

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

As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. As stated above, this drop-off rate can vary greatly depending on the soil but has been shown to be effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests.

# 2.11 Construction Related Vibration Level Prediction

Operational activities are separated into two different categories. The vibration can be transient or continuous in nature. Each category can result in varying degrees of ground vibration, depending on the equipment used on the site. Operation of equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings in the vicinity of the project area site respond to these vibrations with varying results ranging from no perceptible effects at the low levels to slight damage at the highest levels. The thresholds from Caltrans Transportation and Construction Induced Vibration Guidance Manual in the table below provide general guidelines as to the maximum vibration limits for when vibration becomes potentially annoying.



	PPV (in/sec)			
Human Response	Transient Sources	Continuous/Frequent Intermittent Sources		
Barely perceptible	0.04	0.01		
Distinctly perceptible	0.25	0.04		
Strongly perceptible	0.90	0.10		
Severe	2.00	0.40		

Table 2Vibration Annoyance Potential Criteria

Note:

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

The Caltrans Transportation and Construction Induced Vibration Guidance Manual provides general thresholds and guidelines as to the vibration damage potential from vibratory impacts. The table below provides general vibration damage potential thresholds:

	PPV (in/sec)		
Structure and Condition	Transient Sources	Continuous/Frequent Intermittent Sources	
Extremely fragile historic buildings ruin ancient monuments	0.12	0.08	
Fragile buildings	0.20	0.10	
Historic and some old buildings	0.50	0.25	
Older residential structures	0.50	0.30	
New residential structures	1.00	0.50	
Modern industrial/commercial buildings	2.00	0.50	

Table 3Vibration Damage Potential Threshold Criteria

Soil conditions have an impact on how vibration propagates through the ground. The Caltrans Transportation and Construction Induced Vibration Guidance Manual provides suggested "n" values based on soil class. The table below outlines the manual's suggested values and description.

Soil Class	Description of Soil Material	Suggested Value of "n"
I	Weak or soft soils: loose soils, dry or partially saturated peat and muck, mud, loose beach sand, and dune sand.	1.4
Ш	Most sands, sandy clays, silty clays, gravel, silts, weathered rock.	1.3
111	Hard soils: densely compacted sand, dry consolidated clay, consolidated glacial till, some exposed rock.	1.1
IV	Hard, component rock: bedrock, freshly exposed hard rock.	1.0

Table 4Suggested "n" Values Based on Soil Classes

# 3.0 Regulatory Setting

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

# 3.1 <u>Federal Regulations</u>

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three (3) 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) was originally 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 to regulate noise from aircraft and airports. The Federal Highway Administration (FHWA) is responsible to regulate 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 Federal government and the State advocate that local jurisdiction use their land use regulatory authority to arrange new development in such a way that "noise sensitive" uses are either prohibited from being constructed adjacent to a highway or, or alternatively that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

Since the Federal government and the State have 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.



# 3.2 <u>State Regulations</u>

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

# 3.3 <u>City of Lake Elsinore Noise Regulations</u>

The City of Lake Elsinore outlines their noise regulations and standards within the General Plan, Chapter 3, Public Safety Welfare and the Municipal Code, Chapter 17.176, Noise Control.

For purposes of this analysis, the City of Lake Elsinore's General Plan is used to evaluate the project's noise/land use compatibility and ensure the project is consistent with the established plans, policies and programs for noise control within the City. The noise standards established in the Lake Elsinore Municipal Code are considered the thresholds of significance for establishing impact.

The noise standards from the Lake Elsinore General Plan and Municipal Code are provided in Appendix A.

# 3.3.1 Noise/Land Use Compatibility

The City of Lake Elsinore Public Safety Welfare establishes planning criteria for determining a development's noise/land use compatibility based on the community noise equivalent level (CNEL).



Table 5 summarizes the City's Noise/Land Use Compatibility guidelines for land uses applicable to this project:

Land Line		Noise Limit (dBA CNEL)			
Land Use	Clearly Compatible	Normally Compatible	Normally Incompatible	Clearly Incompatible	
Residential – Single Family, Duplex, Multiple Family	Less than 60	60-70	70-75	75 or greater	

Table 5	
Noise/Land Use Compatibility Guidelines	1

<sup>1.</sup> Lake Elsinore General Plan Public Safety & Welfare.

The City of Lake Elsinore defines the noise compatibility categories as follows:

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

# 3.3.2 Municipal Code Noise Standards

Table 6 shows the City of Lake Elsinore's Noise Standards for the adjacent properties, as established in the Municipal Code, Chapter 17.176, Noise Control.

Land Use Category	Time Period	Noise Standard
Single-Family Residential	Daytime (7am - 10pm)	50 dBA
(Exterior)	Nighttime (10pm – 7am)	40 dBA
Limited Commercial and	Daytime (7am - 10pm)	60 dBA
(Exterior)	Nighttime (10pm – 7am)	55 dBA

Table 6City of Lake Elsinore Exterior Noise Standards1

<sup>1.</sup> Lake Elsinore Municipal Code, Chapter 17.176 - Noise Control.

<sup>2.</sup> The LEMC does not specify noise standards for schools. For purposes of this study, the public space standard for limited commercial and office is applicable for assessing impacts to Lakeside High School.

### 3.3.3 Construction Noise Regulation:

The City of Lake Elsinore Municipal Code Chapter 17.176 - Noise Control, establishes the following construction and demolition noise standards:

- 1. Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work between weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on weekends or holidays, such that the sound therefrom creates a noise disturbance across a residential or commercial real property line, except for emergency work of public service utilities or by variance issued by the City.
- 2. Noise Restrictions at Affected Properties. Where technically and economically feasible, construction activities shall be conducted in such a manner that the maximum noise levels at affected properties will not exceed those listed in the following schedule:



City of Lake Elsinore Construction Noise Standards					
Land Use Category	Construction Activity	Maximum Noise Level <sup>3</sup>			
Single Family Desidential	Mobile Equipment <sup>1</sup>	75 dBA			
Single-Family Residential	Stationary Equipment <sup>2</sup>	60 dBA			
Semi-	Mobile Equipment <sup>1</sup>	85 dBA			
Residential/Commercial	Stationary Equipment <sup>2</sup>	70 dBA			

# Table 7City of Lake Elsinore Construction Noise Standards

<sup>1</sup> Maximum noise levels for nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment. "Mobile noise source" means any noise source other than a fixed source.

<sup>2</sup> Maximum noise levels for repetitively scheduled and relatively long-term operation (more than 10 days) of stationary equipment:

<sup>3</sup> Daily, including Sundays and Legal Holidays, all hours.



# 4.0 Study Method and Procedures

The following section describes the measurement procedures, measurement locations, and noise modeling procedures and assumptions used in the noise analysis.

# 4.1 <u>Measurement Procedures and Criteria</u>

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

RK conducted the sound level measurements in accordance with Caltrans technical noise specifications. All measurement equipment meets American National Standards Institute (ANSI) specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA).

A Piccolo-II Type 2 integrating-averaging level meter was used to conduct long-term (24-hour) noise measurements at the project site and property boundaries.

The Leq, Lmin, Lmax, L2, L8, L25, and L50 statistical data were recorded over the measurement time period intervals and the information was utilized to define the noise characteristics for the project. The following gives a brief description of the Caltrans Technical Noise Supplement procedures for sound level measurements:

- Microphones for sound level meters were placed approximately five (5) feet above ground for long-term noise measurements
- Sound level meters were calibrated before and after each measurement
- Following the calibration of equipment, a windscreen was placed over the microphone
- Frequency weighting was set on "A" and slow response
- Results of the short-term noise measurements were recorded on field data sheets



- During any short-term noise measurements, any noise contaminations such as barking dogs, local traffic, lawn mowers, or aircraft fly-overs were noted
- Temperature and sky conditions were observed and documented

Appendix B includes photos, field sheets, and measured noise data.

# 4.2 Traffic Noise Modeling

Traffic noise from vehicular traffic was projected using a version of the FHWA Traffic Noise Prediction Model (FHWA-RD-77-108). The FHWA model arrives at the predicted noise level through a series of adjustments to the key input parameters. The following outlines the key adjustments made to the computer model for the roadway inputs:

- Roadway classification (e.g. freeway, major arterial, arterial, secondary, collector, etc),
- Roadway Active Width (distance between the center of the outer most travel lanes on each side of the roadway)
- Average Daily Traffic (ADT) Volumes, Travel Speeds, Percentages of automobiles, medium trucks, 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

The following outlines key adjustments to the computer model for the project site parameter inputs:

- Vertical and horizontal distances (Sensitive receptor distance from noise source)
- Noise barrier vertical and horizontal distances (Noise barrier distance from sound source and receptor).
- Traffic noise source spectra
- Topography

Table 8 indicates the roadway parameters utilized for this study.



Roadway	Classification <sup>1</sup>	Lanes	Capacity (ADT) <sup>1</sup>	Speed (MPH)	Site Conditions
Riverside Drive	Urban Arterial	6	34,000	45	Hard

# Table 8 Roadway Parameters

<sup>1</sup> Source: City of Lake Elsinore General Plan Section 2.0, Community Form.

Table 9 indicates the vehicle distribution and truck mix utilized for all roadways in this study area.

Venicle Distribution (Track Mix) for orban Artenia Rodaways							
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow			
Automobiles	69.5	12.9	9.6	92.00			
Medium Trucks	1.44	0.06	1.5	3.00			
Heavy Trucks	2.4	0.1	2.5	5.00			

Table 9Vehicle Distribution (Truck Mix) for Urban Arterial Roadways<sup>1,2</sup>

<sup>1</sup> Roadway classification and average daily traffic (ADT) volume capacity is based on County of Riverside General Plan. <sup>2</sup> Vehicle percentages specified are indicated in a memo published by County of Riverside Department of Environmental Health.

#### 4.3 <u>Stationary Noise Modeling</u>

The stationary noise generated by the project was projected using a computer program that replicates the FHWA Noise Prediction Model (FHWA-RD-77-108). The FHWA model arrives at the predicted noise level through a series of adjustments to the reference energy noise level. For each stationary source, the referenced noise level was applied to the model. The model outputs the projected noise level based on the following key parameters:

- Measured referenced noise level (e.g. how loud a source is at a specific distance)
- Vertical and horizontal distances (sensitive receptor distance from noise source)
- Noise barrier vertical and horizontal distances (noise barrier distance from sound source and receptor).
- Typical noise source spectra
- Topography



# 4.3.1 Parking Lot Noise

Parking lot noise would occur from vehicles and trucks entering and exiting the site, idling, exhaust, loading and delivery activities, doors slamming, tires screeching, people talking, and the occasional horn honking. Parking lot noise would occur throughout the site and is assessed by using referenced noise level data collected by RK.

	Distance from	Noise Levels (dBA)
Source <sup>1</sup>	Source (feet)	L <sub>eq</sub>
Parking Lot	6.0	63.8

Table 10Referenced Noise Levels – Parking Lot1

<sup>1</sup> Referenced noise levels measured by RK over a 10-minute period.

# 4.3.2 HVAC Equipment Noise

Table 11 indicates the referenced noise levels for on-site HVAC equipment. Referenced noise levels are based on a traditional commercial grade system, similar to a LENNOX 7.5 to 12.5 ton unit. To be conservative, the referenced equipment is not considered to be a higherend "quiet" system. Quieter units can be rated at less than 70 dB. However, this analysis is conservative and examines the impact from a more traditional and louder HVAC unit. The manufacture specifications for the referenced unit is shown in Appendix C.

Table 11 HVAC Referenced Noise Levels

	Distance from	Noise Levels (dBA)		
Source <sup>1</sup>	Source (feet)	L <sub>eq</sub>		
HVAC Equipment	1	88		

<sup>1</sup> Referenced noise levels measured by RK over a 10-minute period.

The noise analysis evaluates the impact of HVAC equipment operating during both daytime and nighttime hours.



# 4.4 Interior Noise Modeling

The interior noise level is the difference between the projected exterior noise level at the structure's façade and the noise reduction provided by the structure itself. Typical building construction will provide a conservative 12 dBA noise level reduction with a "windows open" condition and a very conservative 20 dBA noise level reduction with "windows closed". RK estimated the interior noise level by subtracting the building shell design from the estimated exterior noise level.

The interior noise analysis is based on industry standards for building noise reduction established by the Federal Highway Administration (FHWA), the 2013 Caltrans Technical Noise Supplement to the Traffic Noise Analysis Protocol (TeNS), the California Office of Noise Control Catalog of STC and IIC Ratings for Wall and Floor/Ceiling Assemblies, and the California Building Standards Code, Title 24.

The TeNS manual shows that the noise reduction due to building exteriors with ordinary sash windows (windows closed) is at least 20 decibels. By providing upgraded STC rated windows, the project design is considered adequate to meet interior noise standards. The building's exterior walls will be constructed per the latest building code insulation requirements and provide occupants with the most protection from exterior noise. Insulated exterior walls, designed per the latest California Building Standards, would provide a minimum of STC 35-40. Windows, on the other hand, are one of the acoustically weakest parts of the structure. Therefore, for a conservative estimate of preliminary interior noise, the building's noise reduction potential is limited to the STC of the windows.

# 4.5 <u>Construction Noise Modeling</u>

The construction noise analysis utilizes the Federal Highway Administration (FHWA) Roadway Construction Noise Model, together with several key construction parameters. Key inputs include distance to the sensitive receiver, equipment usage, and baseline parameters for the project site. This study evaluates the potential exterior noise impacts during each phase of construction.

Noise levels were projected at an average distance of 200 feet for equipment operating over an 8-hour period from closest school building façade and at an average distance of 330 feet to the nearest adjacent residential property line. While some construction noise activity may occur closer than these distances, noise generating activities are averaged over an 8-hour period for purposes of assessing impacts.



• Construction phasing and equipment usage assumptions are referenced from the Lake Pointe Apartments Air Quality and Greenhouse Gas Impact Study, City of Lake Elsinore, RK Engineering Group, March 2021.

# 4.6 <u>Construction Vibration Modeling</u>

The construction vibration assessment is based on the methodology set-forth within the Caltrans Transportation and Construction Induced Vibration Guidance Manual. The vibration impacts from vibratory rollers and compactors, heavy truck loading and bulldozer activity is analyzed. All vibratory activity is analyzed as a continuous and/or frequent event and is required to comply with the applicable guidance thresholds criteria. It is expected that vibration levels will be highest during paving phase. No impact pile driving is expected as part of this project.

Vibratory impacts were calculated from the site area property line to the closest sensitive receptors and structures using the reference vibration levels, soil conditions and the reference equation PPV = PPV ref (25/D) ^ n (in/sec) (from Caltrans Manual) where:

PPV = reference measurement at 25 feet from vibration source

- D = distance from equipment to property line
- n = vibration attenuation rate through ground (n = 1.0 was utilized for this study)

Table 12 shows the Caltrans Vibration Damage Potential Threshold Criteria.

	Maximum PPV (in/sec)		
Structure and Condition	Transient Sources	Continuous/Frequent Intermittent Sources	
Extremely fragile historic buildings, ruins ancient monuments	0.12	0.08	
Fragile buildings	0.20	0.10	
Historic and some old buildings	0.50	0.25	
Older residential structures	0.50	0.30	
New residential structures	1.00	0.50	
Modern industrial/commercial buildings	2.00	0.50	

Table 12Guideline Vibration Damage Potential Threshold Criteria

Table 13 shows the Caltrans Vibration Annoyance Potential Threshold Criteria.



	Maximum PPV (in/sec)		
Human Response	Transient Sources	Continuous/Frequent Intermittent Sources	
Barely perceptible	0.04	0.01	
Distinctly perceptible	0.25	0.04	
Strongly perceptible	0.90	0.10	
Severe	2.00	0.40	

Table 13Guideline Vibration Annoyance Potential Criteria



# 5.0 Existing Noise Environment

The existing noise environment for the project site and surrounding areas has been established based on noise measurement data collected by RK. Existing sources of ambient noise consist of traffic noise propagating from adjacent roadways, school activities, and noise from the existing residential and commercial uses near the site.

# 5.1 <u>Sound Level Measurement (SLM) Results</u>

To determine the existing noise level environment, RK conducted two (2) 24-hour sound level measurements (SLM) at the project study area.

Noise levels were measured on March 25, 2021 using a Piccolo-II Type 2 integratingaveraging sound level meter. The information was utilized to establish the noise characteristics of the existing ambient environment.

The noise monitoring locations were selected based on the proximity and location to adjacent sensitive receptors. Exhibit C graphically illustrates the location of the sound level measurements.

- SLM-1 was taken approximately 300 feet to the northwest of the project site, adjacent to the backyards of residential homes located along Lake Vista Drive.
- SLM-2 was taken approximately 300 feet from the centerline of Riverside Drive, near the projects northerly boundary.

Noise monitoring locations represent the existing noise levels near the adjacent noise sensitive land uses. Noise measurement results are summarized in Table 14 and Table 15. Appendix B includes photographs, field sheets and measured noise data.



Time	Leq (dBA)	Time	Leq (dBA)
12:00 AM	44.2	12:00 PM	48.7
1:00 AM	42.2	1:00 PM	49.7
2:00 AM	41.1	2:00 PM	52.5
3:00 AM	47.4	3:00 PM	54.3
4:00 AM	44.6	4:00 PM	50.7
5:00 AM	50.2	5:00 PM	48.5
6:00 AM	49.9	6:00 PM	47.8
7:00 AM	54.3	7:00 PM	48.0
8:00 AM	61.0	8:00 PM	48.2
9:00 AM	52.8	9:00 PM	45.8
10:00 AM	53.7	10:00 PM	44.1
11:00 AM	49.8	11:00 PM	44.9
24-Hour CNEL			54.9

Table 14 Existing 24-Hour Noise Levels (SLM-1)<sup>1</sup>

<sup>1</sup> SLM-1 was taken along residential property line, approximately 300 feet northwest of the project site. SLM-1 was recorded on 03/25/2021.

Time	Leq (dBA)	Time	Leq (dBA)
12:00 AM	37.9	12:00 PM	52.0
1:00 AM	37.9	1:00 PM	52.8
2:00 AM	38.9	2:00 PM	56.9
3:00 AM	49.1	3:00 PM	55.5
4:00 AM	38.7	4:00 PM	47.9
5:00 AM	44.4	5:00 PM	45.8
6:00 AM	45.5	6:00 PM	44.4
7:00 AM	45.7	7:00 PM	43.8
8:00 AM	48.1	8:00 PM	45.6
9:00 AM	46.9	9:00 PM	43.0
10:00 AM	50.2	10:00 PM	43.3
11:00 AM	50.1	11:00 PM	45.4
24-Hour CNEL			52.4

Table 15Existing 24-Hour Noise Levels (SLM-2)1

<sup>1</sup> SLM-2 was taken approximately 300 feet northwest of the centerline of Riverside Drive. SLM-2 was recorded on 03/25/2021.



# 6.0 Operational Noise Impacts

This section analyzes the impact from operational noise sources generated by the project. The primary sources of noise generated by the project would include vehicular noise from cars traveling to and from the site on public roadways, on-site vehicular circulation within the parking lot (including delivery trucks and trash collection), and noise from HVAC equipment.

The project must demonstrate that noise levels generated by the project site would not be in excess of standards established in the local general plan or noise ordinance.

# 6.1 Roadway Noise Impacts

Traffic noise along Riverside Drive is considered to be one of the main sources of noise impacting the project site and the surrounding area. Typically, it would require a doubling of traffic volume along a roadway to result in a barely perceptible change in noise (+3 dBA)<sup>3</sup>. The following qualitative analysis is provided to evaluate the project's impact to roadway.

Based upon the Institute of Transportation Engineers (ITE) Trip Generation Manual, 2017, the project is expected to generate 1,098 average daily trips (ADT). Upon review of the Lake Elsinore General Plan, it is noted that traffic volume along Riverside Drive was previously measured in 2005 to be approximately 19,400 ADT and projected under future buildout conditions to reach up to 34,000 ADT. Hence, the increase of 1,098 ADT from project traffic will not result in a doubling of traffic along Riverside Drive and, as a result, would not result in a perceptible change in roadway noise. Therefore, the increase in roadway noise from the project may be presumed to be less than significant.

# 6.2 Stationary Noise Impacts

On-site stationary noise impacts are assessed at the property lines of the residential and school uses adjacent to the site.

Table 16 shows the exterior stationary noise impact analysis at the property line of Lakeside High School. The noise impact analysis is performed for daytime hours only at the school, since school operations and instruction are not expected to occur during nighttime hours.

<sup>&</sup>lt;sup>3</sup> Caltrans. Technical Noise Supplement to the Traffic Noise Analysis Protocol (TeNS). 2013.



Time	Source	Distance to P/L	Noise Level (Leq)
	HVAC Units <sup>1</sup>	50 Feet	52.0 dBA
	Parking Lot	50 Feet	45.4 dBA
Daytime (7AM - 10PM)	Combined	Noise Level	52.8 dBA
	Lake Elsinore Noise Standard <sup>2</sup>		60 dBA
	Does Noise Level E	No	

#### Table 16 Daytime Stationary Noise Impact Analysis -Lakeside High School Property Line

<sup>1</sup> Includes the combined impact of six (6) HVAC units operating simultaneously.

<sup>2</sup> LEMC Chapter 17.176 – Noise Control. Limited commercial and office exterior noise standard.

Tables 17 and 18 show the exterior stationary noise impact analysis at the property line of nearest adjacent residential property line to the northwest of the site. Noise level impacts are analyzed during both daytime and nighttime hours at the residential properties.

# Table 17Daytime Stationary Noise Impact Analysis -Residential Property Line to the Northwest

Time	Source	Distance to P/L	Noise Level (Leq)
	HVAC Units <sup>1</sup>	50 Feet	38.0 dBA
	Parking Lot	50 Feet	27.3 dBA
Daytime (7AM - 10PM)	Combined	38.4 dBA	
	Lake Elsinore Noise Standard <sup>2</sup>		50 dBA
	Does Noise Level Exceed Standard (?)		No

<sup>1</sup> Includes the combined impact of six (6) HVAC units operating simultaneously.

<sup>2</sup> LEMC Chapter 17.176 – Noise Control. Single-Family residential exterior noise standard



Time	Source	Distance to P/L	Noise Level (Leq)
	HVAC Units <sup>1</sup>	50 Feet	38.0 dBA
	Parking Lot	50 Feet	27.3 dBA
Nighttime (7AM - 10PM)	Combined	Noise Level	38.4 dBA
	Lake Elsinore Noise Standard <sup>2</sup>		40 dBA
	Does Noise Level Exceed Standard (?)		No

#### Table 18 Nighttime Stationary Noise Impact Analysis -Residential Property Line to the Northwest

<sup>1</sup> Includes the combined impact of six (6) HVAC units operating simultaneously.

<sup>2</sup> LEMC Chapter 17.176 – Noise Control. Single-Family residential exterior noise standard

Based on the results of stationary noise impact analysis shown in Tables 16 through 18, the project is not expected to exceed the City's Exterior Noise Standards at adjacent noise sensitive land uses. Therefore, the impact from stationary noise sources on the project site would be less than significant.

Appendix D includes the stationary noise calculation worksheets.

# 6.3 Future Noise/Land Use Compatibility

The future noise/land use compatibility is analyzed for general planning purposes (not necessarily under the scope of CEQA) and to help establish future outdoor noise levels on the project site. Noise/land use compatibility is based on future roadway noise levels along Riverside Drive, which is expected to be the main source of noise at the project site.

Table 19 indicates the noise level projections at the facades of the residential units nearest the subject roadways. Based on the City of Lake Elsinore General Plan Noise/Land Use Compatibility Guidelines, portions of the project site are expected to fall within the Normally Incompatible range for Residential – Single Family development. Thus, a final noise study will be required prior to receiving building permits to ensure interior noise standards can be met.

The roadway calculation sheets are provided in Appendix E.

Roadway	Exterior Façade	Noise Level at Façade	Noise/Land Use
	Study Locations	(dBA CNEL)	Compatibility
Riverside Drive	First Row Units	71.2	Normally Incompatible

Table 19Future Exterior Roadway Noise Levels (dBA CNEL)1

<sup>1</sup> Exterior noise levels calculated for first row units facing subject roadway.

# 6.4 <u>Future Interior Noise</u>

Homes located along Riverside Drive have the potential to be exposed to noise levels that exceed 70 dBA CNEL under future buildout conditions. As a result, a detailed noise analysis should be provided prior to building permits to demonstrate the building shell construction provides adequate insulation to achieve the required 45 dBA CNEL interior noise standard.

A preliminary interior noise analysis has been performed for the first row of habitable dwellings facing adjacent roadways using a typical "windows open" and "windows closed" condition. A "windows open" condition assumes 12 dBA of noise attenuation from the exterior noise level. A "windows closed" condition" assumes 20 dBA of noise attenuation from the exterior noise level.

Table 20 indicates the future interior noise levels along the adjacent roadways.

Roadway	Exterior Façade Study	Exterior Noise Level at Façade	Exterior Noise	Exterior Noise	Exterior Noise	Exterior Required Noise Interior	or Required Interior Noise Level w/Standard Windows (STC ~ 25)		STC
	Location		e Reduction	"Windows Open" <sup>1</sup>	"Windows Closed" <sup>2</sup>	Rating			
Riverside Drive	First Row Units	71.2	26.2	59.2	51.2	31			

Table 20Future Interior Noise Levels (dBA CNEL)1

<sup>1</sup> A minimum of 12 dBA noise reduction is assumed with the "windows open" condition.

<sup>2</sup> A minimum of 20 dBA noise reduction is assumed with the "windows closed" condition.

The project is expected to be able to meet the interior noise standards for all residential dwellings. In order to meet the 45 dBA CNEL interior noise level requirements, upgraded STC rated windows will be required for first row units.

# 6.5 <u>Recommended Project Design Features</u>

The following recommended project design features include standard rules and requirements, best practices and recognized design guidelines for reducing noise levels. Design features are assumed to be part of the conditions of the project and integrated into its design.

- **DF-1** All HVAC equipment will be fully shielded from the line of sight of adjacent residential and school property lines.
- **DF-2** Per Chapter 17.176.080(E) of the Lake Elsinore Municipal Code, loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects between the hours of 10:00 p.m. and 7:00 a.m. in such a manner as to cause a noise disturbance across a residential real property line is prohibited.
- **DF-3** The project will be required to incorporate building construction techniques that achieve the minimum interior noise standard of 45 dBA CNEL for all residential units.
- **DF-4** The project will comply with California Title 24 building insulation requirements for exterior walls, roofs and common separating assemblies (e.g. floor/ceiling assemblies and demising walls), which shall be reviewed by the City prior to issuance of a building permit. A final acoustical study will be required to demonstrate compliance with building code standards.
  - e. Party wall and floor-ceiling assembly designs must provide a minimum STC/IIC rating of 50, based on lab tests. Field tested assemblies must provide a minimum STC/IIC rating of 45.
  - f. Entry doors from interior corridors must provide an STC of 26 or more.
  - g. Penetrations or openings in sound rated assemblies must be treated to maintain required ratings.
  - h. Interior noise levels due to exterior sources must not exceed a community noise equivalent level (CNEL) or a day-night level (LDN) of 45 dBA, in any habitable room.



**DF-5** For proper acoustical performance, all exterior windows, doors, and sliding glass doors will have a positive seal and leaks/cracks must be kept to a minimum.



# 7.0 Construction Noise and Vibration Impacts

Temporary construction noise and vibration impacts have been assessed from the project site to the surrounding adjacent land uses. The degree of construction noise will vary depending on the type of construction activity taking place and the location of the activity relative to the surrounding properties.

Chapter 17.176 of the City's municipal code states the following:

Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work between weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on weekends or holidays, such that the sound therefrom creates a noise disturbance across a residential or commercial real property line, except for emergency work of public service utilities or by variance issued by the City.

Where technically and economically feasible, construction activities shall be conducted in such a manner that the maximum noise levels at affected properties will not exceed the following:

- The maximum noise levels for nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment is 85 dBA.
- The maximum noise levels for repetitively scheduled and relatively long-term operation (more than 10 days) of stationary equipment is 75 dBA.

Construction phasing and equipment usage assumptions are referenced from Lake Pointe Apartments Air Quality and Greenhouse Gas Impact Study, City of Lake Elsinore, RK Engineering Group, March 2021.

# 7.1 <u>Typical Construction Noise Levels</u>

Table 21 shows typical construction noise levels compiled by the Environmental Protection Agency (EPA) for common type construction equipment. Typical construction noise levels are used to estimate potential project construction noise levels at the adjacent sensitive receptors.



Туре	Noise Levels (dBA) at 50 Feet		
Earth Moving			
Compactors (Rollers)	73 - 76		
Front Loaders	73 - 84		
Backhoes	73 - 92		
Tractors	75 - 95		
Scrapers, Graders	78 - 92		
Pavers	85 - 87		
Trucks	81 - 94		
Materials H	Handling		
Concrete Mixers	72 - 87		
Concrete Pumps	81 - 83		
Cranes (Movable)	72 - 86		
Cranes (Derrick)	85 - 87		
Statio	nary		
Pumps	68 - 71		
Generators	71 - 83		
Compressors	75 - 86		
Impact Eq	uipment		
Pneumatic Wrenches	82 - 87		
Jack Hammers, Rock Drills	80 - 99		
Pile Drivers (Peak)	95-105		
Oth	er		
Vibrators	68 - 82		
Saws	71 - 82		

Table 21Typical Construction Noise Levels1

<sup>1</sup> Referenced Noise Levels from the Environmental Protection Agency (EPA)

# 7.2 <u>Construction Noise Impact Analysis</u>

This assessment analyzes potential noise impacts during all expected phases of construction, including; site preparation, grading, building construction, paving, and architectural coating. Noise levels are calculated based on an average distance of mobile equipment over an 8-hour period to the nearest adjacent property. The project's estimated construction noise levels have been calculated using the Federal Highway Administration Roadway Construction Noise Model Version 1.1.
Tables 22 show the noise level impacts at the Lakeside High School property lines. Construction noise calculation worksheets are provided in Appendix F.

Phase	Equipment	Quantity	Calculated Noise Level at 250 ft (dBA)	Combined 8-hr Noise Level (dBA)	
			Lmax	Leq	
Site Proparation	Rubber Tired Dozers	3	63.7	75.6	
Site Preparation	Tractors/Loaders/Backhoes	4	66.0	75.0	
	Excavators	1	64.7		
Grading	Graders	1	69.0	75.2	
	Rubber Tired Dozers	1	65.6	/5.2	
	Tractors/Loaders/Backhoes	3	68.0		
	Cranes	1	60.6		
	Forklifts	3	59.0		
<b>Building Construction</b>	Generator Sets	1	65.6	74.2	
	Tractors/Loaders/Backhoes	3	68.0		
	Welders	1	58.0		
	Pavers	2	62.2		
Paving	Paving Equipment	2	61.0	69.2	
	Rollers	2	61.0		
Architectural Coating	Air Compressors	1	61.6	61.6	
Worst Case Construction Phase Noise Level from Mobile Equipment - Leq					
Lake Elsinore Construction N	loise Standard – Semi-Residential/C	ommercial (Mc	bile Equipment)	85.0	
Potentially Significant Short-	Term Noise Impact (Yes/No?)			No	

#### TABLE 22 Construction Noise Impact Analysis -Lakeside High School

Tables 23 show the noise level impacts at the Lakeside High School property lines. Construction noise calculation worksheets are provided in Appendix F.

#### TABLE 23

Phase	Equipment Quantity		Calculated Noise Level at 330 ft (dBA)	Combined 8-hr Noise Level (dBA)	
			Lmax	Leq	
Sito Proparation	Rubber Tired Dozers	3	61.3	71.2	
	Tractors/Loaders/Backhoes	4	63.6	71.2	
	Excavators	1	60.3		
Grading	Graders	1	64.6	70.0	
	Rubber Tired Dozers	1	61.3	70.9	
	Tractors/Loaders/Backhoes	3	63.6		
Building Construction	Cranes	1	56.2		
	Forklifts	3	54.6		
	Generator Sets	1	61.2	69.9	
	Tractors/Loaders/Backhoes	3	63.6		
	Welders	1	53.6		
	Pavers	2	57.8		
Paving	Paving Equipment	2	56.6	64.8	
	Rollers	2	56.6		
Architectural Coating	Air Compressors	1	61.6	57.3	
Worst Case Construction Phase Noise Level - Leq					
Lake Elsinore Construction Noise Standard – Single Family Residential (Mobile Equipment)					
Potentially Significant Short-	Term Noise Impact (Yes/No?)			No	

#### Construction Noise Impact Analysis -Residential Property line to the Northwest



As shown in Tables 23 and 24, the project construction noise levels are expected to be below the City of Lake Elsinore mobile equipment noise standards the adjacent High School and residential land uses.

The project may also include stationary equipment noise for repeatedly scheduled and long term operation (period of 10 days or more) of stationary equipment. Therefore, several mitigation measures are recommended to reduce construction noise impacts to the surrounding sensitive land uses and are shown below. With the implementation of the recommended mitigation measures, project impacts are expected to be reduced to less than significant.

- **MM-1** Obtain a construction work permit from the City of Lake Elsinore prior to starting construction.
- **MM-2** Provide notice to Lakeside High School of the proposed construction schedule/start date and post a construction notification sign along the perimeter of the project site in a location readily visible to the public. All notices and signs shall indicate the dates and duration of construction activities, as well as provide a telephone number where persons may enquire about the construction process and register complaints to a designated construction noise disturbance coordinator.
- **MM-3** Construct the perimeter noise wall along the Lakeside High School property line at the first phase of construction, prior to any major earthwork or construction activity.

The designed noise screening will only be accomplished if the barrier's weight is at least 3.5 pounds per square foot of face area without decorative cutouts or line-of-site openings between the shielded areas and the project site. All gaps (except for weep holes) should be filled with grout or caulking to avoid flanking.

Noise control barrier may be constructed using one, or any combination of the following materials:

- Masonry block;
- Stucco veneer over wood framing (or foam core), or 1-inch thick tongue and groove wood of sufficient weight per square foot;



- **MM-4** The project shall ensure all contractors implement construction best management practices to reduce construction noise levels. Best management practices would include the following:
  - All construction equipment shall be equipped with muffles and other suitable noise attenuation devices (e.g., engine shields).
  - Grading and construction contractors shall use quieter equipment as opposed to noisier equipment (such as rubber-tired equipment rather than track equipment), to the maximum extent feasible.
  - If feasible, electric hook-ups shall be provided to avoid the use of generators. If electric service is determined to be infeasible for the site, only whisper-quiet generators shall be used (i.e., inverter generators capable of providing variable load.
  - Use electric air compressors and similar power tools rather than diesel equipment, where feasible.
  - Locate staging area, generators and stationary construction equipment as far from the adjacent school as feasible.
  - Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 5 minutes.

### 7.3 <u>Construction Vibration</u>

To determine the vibratory impacts during construction, reference construction equipment vibration levels were utilized and then extrapolated to the façade of the nearest adjacent structures. All structures surrounding the project site are "new residential structures". No historical or fragile buildings are known to be located within the vicinity of the site.

The construction of the proposed project is not expected to require the use of substantial vibration inducing equipment or activities, such as pile drivers or blasting. The main sources of vibration impacts during construction of the project would be the operation of equipment such as bulldozer activity, loading trucks, and vibratory rollers.

The construction vibration assessment utilizes the referenced vibration levels and methodology set-forth within the Caltrans Transportation and Construction Induced Vibration Guidance Manual.

Table 24 shows the referenced vibration levels.

Typical Construction Vibration Levels					
Equipment	Peak Particle Velocity (PPV) (inches/second) at 25 feet	Approximate Vibration Level (LV) at 25 feet			
Diladrivar (impact)	1.518 (upper range)	112			
Pliedfiver (impact)	0.644 (typical)	104			
Diledriver (conic)	0.734 upper range	105			
Pliedriver (sonic)	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	0.210	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			

Table 24Typical Construction Vibration Levels1

<sup>1</sup> Transit Noise and Vibration Impact Assessment, Federal Transit Administration, May 2006.

Table 25 shows the project's construction-related vibration analysis at the nearest structures to the project construction area. Construction impacts are assessed from the closest area on the project site to the nearest adjacent structure.

The closes structure to the project is identified to be the commercial building located to the northeast, approximately 40 feet from the property line.

Construction Activity	Distance to Nearest Structure (ft)	Duration	Calculated Vibration Level - PPV (in/sec)	Damage Potential Level Annoyance Criteria Level
Large Bulldozer	40	Continuous/Frequent	0.053	No Impact
Vibratory Roller	40	Continuous/Frequent	0.125	Fragile buildings
Loaded Trucks	40	Continuous/Frequent	0.045	No Impact

Table 25Construction Vibration Impact Analysis

As shown in Table 15, project related construction activity is not expected to cause any potential damage to the nearest structures.

**MM-5** No impact pile driving activities shall be permitted on the project site during construction. If impact pile driving is required, a follow-up noise and vibration impact assessment shall be conducted prior to start of any pile driving activity.

Construction vibration calculation worksheets are shown in Appendix F.



# **Exhibits**

# Exhibit A Location Map







N







N

# Exhibit C Noise Monitoring Locations



Legend:

N

() = 24-Hour Sound Level Measurement (SLM) Locations



# Appendices

# Appendix A

City of Lake Elsinore Noise Standards

#### Chapter 17.176 NOISE CONTROL

Sections:

17.176.010 Purpose.

17.176.020 Definitions.

- 17.176.030 Authority and duties of the Noise Control Office(r) (NCO).
- 17.176.040 General noise regulations.
- 17.176.050 Noise measurement procedure.
- 17.176.060 Exterior noise limits.
- 17.176.070 Interior noise standards.
- 17.176.080 Prohibited acts.
- <u>17.176.090</u> Motor vehicles operating on public right-of-way.
- <u>17.176.100</u> Special provisions Exemptions.

17.176.110 Special variances.

#### 17.176.010 Purpose.

In order to control unnecessary, excessive and annoying noise and vibration in the City, it is hereby declared to be the policy of the City to prohibit such noise and vibration generated from or by all sources as specified in this chapter. It shall be the policy of the City to maintain quiet in those areas which exhibit low noise levels and to implement programs aimed at reducing noise in those areas within the City where noise levels are above acceptable values.

It is determined that certain noise levels and vibrations are detrimental to the public health, welfare and safety, and are contrary to public interest. Therefore, the City Council does ordain and declare that creating, maintaining, causing or allowing to be created, caused or maintained, any noise or vibration in a manner prohibited by or not in conformity with the provisions of this chapter, is a public nuisance and shall be punishable as such. [Ord. 772 § 17.78.010, 1986. Code 1987 § 17.78.010].

#### 17.176.020 Definitions.

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

The following words, phrases and terms as used in this chapter shall have the meaning as indicated below:

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

"Agricultural property" means a parcel of real property of not less than 10 contiguous acres in size, which is undeveloped for any use other than agricultural purposes.

"Ambient noise level" means the composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal of existing level of environmental noise at a given location.

"Commercial area" means property which is zoned for commercial purposes, including, but not limited to, retail and wholesale businesses, personal services, and professional offices.

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

"Cumulative period" means an additive period of time composed of individual time segments which may be continuous or interrupted.

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

"Demolition" means any dismantling, intentional destruction or removal of structures, utilities, public or private right-of-way surfaces, or similar property.

"Emergency work" means any work performed for the purpose of preventing or alleviating the physical trauma or property damage threatened or caused by an emergency.

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

"Gross vehicle weight rating (GVWR)" means the value specified by the manufacturer as the recommended maximum loaded weight of a single motor vehicle. In cases where trailers and tractors are separable, the gross combination weight rating, which is the value specified by the manufacturer as the recommended maximum loaded weight of the combination vehicle, shall be used.

"Impulsive sound" means sound of short duration, usually less than one second, with an abrupt onset and rapid decay. Examples of sources of impulsive sound include explosions, drop forge impacts, and the discharge of firearms.

"Industrial area" means property which is zoned for manufacturing and related uses.

"Intrusive noise" means that noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency and time of occurrence, and tonal or informational content as well as the prevailing ambient noise level.

"Licensed" means the possession of a formal license or a permit issued by the appropriate jurisdictional authority; or, where no permits or licenses are issued, the sanctioning of the activity by the jurisdiction as noted in public record.

"Mobile noise source" means any noise source other than a fixed source.

"Motor vehicle" shall include any and all self-propelled vehicles as defined in the California Motor Vehicle Code, including all on-highway type motor vehicles subject to registration under said code, and all off-highway type motor vehicles subject to identification under said code.

"Motorboat" means any vessel propelled by machinery, whether or not such machinery is the principal source of propulsion but shall not include a vessel which has a valid marine document issued by the Bureau of Customs of the United States government or any Federal agency successor thereto (Section 651(d), Harbors and Navigation Code).

"Muffler or sound dissipative device" means a device consisting of a series of chambers or baffle plates, or other mechanical design, for the purpose of receiving exhaust gas from an internal combustion engine, and effective in reducing noise.

"Noise Control Officer (NCO)" means a person or persons designated by the Community Development Director as responsible for enforcement of this chapter.

"Noise disturbance" means any sound which, as judged by the Noise Control Officer, (1) endangers or injures the safety or health of human beings or animals, or (2) annoys or disturbs reasonable persons of normal sensitivities, or (3) endangers or injures personal or real property, or (4) violates the factors set forth in LEMC <u>17.176.040</u>. Compliance with the quantitative standards as listed herein shall constitute elimination of a noise disturbance.

"Noise sensitive zone" means any area designated pursuant to LEMC <u>17.176.070</u> for the purpose of ensuring exceptional quiet.

"Noise zone" means any defined areas or regions of a generally consistent land use wherein the ambient noise levels are within a range of five dB.

"Person" means any individual, association, partnership, or corporation, and includes any officer, employee, department, agency or instrumentality of a State or any political subdivision of a State. "Powered model vehicle" means any self-propelled, airborne, waterborne, or land-borne plane, vessel, or vehicle, which is not designed to carry persons, including, but not limited to, any model airplane, boat, car, or rocket.

"Public right-of-way" means any street, avenue, boulevard, highway, sidewalk or alley or similar place which is owned or controlled by a governmental entity.

"Public space" means any real property or structures thereon which are owned or controlled by a governmental entity.

"Pure tone" means any sound which can be judged as audible as a single pitch or a set of single pitches by the Noise Control Officer. For the purposes of this chapter, a pure tone shall exist if the one-third octave band sound pressure level in the band with the tone exceeds the arithmetric average of the sound pressure levels of the two contiguous one-third octave bands by five dB for center frequencies of 500 Hz and above and by eight dB for center frequencies between 160 and 400 Hz and by 15 dB for center frequencies less than or equal to 125 Hz.

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

"Residential area" means property which is zoned for residential uses.

"Sound amplifying equipment" means any device for the amplification of the human voice, music, or any other sound, excluding standard automobile radios when used and heard only by the occupants of the vehicle in which the radio is installed, and, as used in this chapter, warning devices on authorized emergency vehicles or horns or other warning devices on any vehicle used only for traffic safety purposes.

"Sound level meter" means an instrument, including a microphone, an amplifier, an output meter, and frequency weighting networks for the measurement of sound levels, which meets or exceeds the requirements pertinent for type S2A meters in American National Standards Institute specifications for sound level meters, S1.4-1971, or the most recent revision thereof.

"Sound truck" means any motor vehicle, or any other vehicle, regardless of motive power, whether in motion or stationary, having mounted thereon, or attached thereto, any sound amplifying equipment.

"Vibration perception threshold" means the minimum ground- or structure-borne vibrational motion necessary to cause a normal person to be aware of the vibration by such direct means as, but not limited to, sensation by touch or visual observation of moving objects. The perception threshold shall be presumed to be a motion velocity of 0.01 inches per second over the range of one to 100 Hz.

"Weekday" means any day, Monday through Friday, which is not a legal holiday. [Ord. 772 § 17.78.020, 1986. Code 1987 § 17.78.020].

#### 17.176.030 Authority and duties of the Noise Control Office(r) (NCO).

A. Lead Agency. The noise control program established by this chapter shall be administered by the Community Development Director.

B. Powers. In order to implement and enforce this chapter and for the general purpose of noise abatement and control, the NCO shall have, in addition to any other authority vested in it, the power to:

1. Conduct, or cause to be conducted, studies, research, and monitoring related to noise, including joint cooperative investigation with public or private agencies, and the application for, and acceptance of, grants.

2. On all public and private projects which are likely to cause noise in violation of this chapter and which are subject to mandatory review or approval by other departments.

a. Review for compliance with the intent and provisions of this chapter.

b. Require sound analyses which identify existing and projected noise sources and associated noise levels.

c. Require usage of adequate measures to avoid violation of any provision of this chapter.

3. Upon presentation of proper credentials, enter and/or inspect any private property, place, report, or records at any time when granted permission by the owner or by some other person with apparent authority to act for the owner. When permission is refused or cannot be obtained, a search warrant may be obtained from a court of competent jurisdiction upon showing of probable cause to believe that a violation of this chapter may exist. Such inspection may include administration of any necessary tests.

4. Prepare recommendations, to be approved by the City Council, for the designation of noise sensitive zones which contain noise sensitive activities.

5. Prepare recommendations, based upon noise survey data and analytical studies, to be approved by the City Council, for the designation of zones of similar ambient environmental noise within regions of generally consistent land use. These zones shall be identified in terms of their day and nighttime ambient noise levels and their land use classifications as given in LEMC <u>17.176.060</u>, Table 1. [Ord. 772 § 17.78.030, 1986. Code 1987 § 17.78.030].

#### 17.176.040 General noise regulations.

Notwithstanding any other provision of this chapter, and in addition thereto, it shall be unlawful for

any person to willfully or negligently make or continue, or cause to be made or continued, any loud, unnecessary, or unusual noise which disturbs the peace and quiet of any neighborhood or which causes any discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area.

The factors which shall be considered in determining whether a violation of the provisions of this section exists shall include, but not be limited to, the following:

A. The sound level of the objectionable noise.

B. The sound level of the ambient noise.

C. The proximity of the noise to residential sleeping facilities.

D. The nature and zoning of the area within which the noise emanates.

E. The number of persons affected by the noise source.

F. The time of day or night the noise occurs.

G. The duration of the noise and its tonal, informational or musical content.

H. Whether the noise is continuous, recurrent, or intermittent.

I. Whether the noise is produced by a commercial or noncommercial activity. [Ord. 772 § 17.78.040, 1986. Code 1987 § 17.78.040].

#### 17.176.050 Noise measurement procedure.

A. Upon receipt of a complaint from a citizen, the Noise Control Office(r) or his agent, equipped with sound level measurement equipment satisfying the requirements specified in LEMC <u>17.176.020</u>, shall investigate the complaint. The investigation shall consist of a measurement and the gathering of data to adequately define the noise problem and shall include the following:

- 1. Nonacoustic Data.
  - a. Type of noise source.
  - b. Location of noise source relative to complainant's property.
  - c. Time period during which noise source is considered by complainant to be intrusive.
  - d. Total duration of noise produced by noise source.
  - e. Date and time of noise measurement survey.
- B. Noise Measurement Procedure. Utilizing the A-weighting scale of the sound level meter and the

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

In general, the microphone shall be located four to five feet above the ground; 10 feet or more from the nearest reflective surface where possible. However, in those cases where another elevation is deemed appropriate, the latter shall be utilized. If the noise complaint is related to interior noise levels, interior noise measurements shall be made within the affected residential unit. The measurements shall be made at a point at least four feet from the wall, ceiling, or floor nearest the noise source, with windows in the normal seasonal configuration. Calibration of the measurement equipment, utilizing an acoustic calibration, shall be performed immediately prior to recording any noise data. [Ord. 772 § 17.78.050, 1986. Code 1987 § 17.78.050].

#### 17.176.060 Exterior noise limits.

A. Maximum Permissible Sound Levels by Receiving Land Use.

1. The noise standards for the various categories of land use identified by the Noise Control Office(r) as presented in Table 1 shall, unless otherwise specifically indicated, apply to all such property within a designated zone.

2. No person shall operate, or cause to be operated, any source of sound at any location within the incorporated City or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which causes the noise level when measured on any other property, either incorporated or unincorporated, to exceed:

a. The noise standard for that land use as specified in Table 1 for a cumulative period of more than 30 minutes in any hour; or

b. The noise standard plus five dB for a cumulative period of more than 15 minutes in any hour; or

c. The noise standard plus 10 dB for a cumulative period of more than five minutes in any hour; or

d. The noise standard plus 15 dB for a cumulative period of more than one minute in any hour; or

e. The noise standard plus 20 dB or the maximum measured ambient level, for any period of time.

3. If the measured ambient level differs from that permissible within any of the fast four noise limit categories above, the allowable noise exposure standard shall be adjusted in five dB increments in each category as appropriate to encompass or reflect said ambient noise level.

In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable

noise level under this category shall be increased to reflect the maximum ambient noise level

4. If the measurement location is on a boundary between two different zones, the noise level limit applicable to the lower noise zone plus six dB shall apply.

5. If possible, the ambient noise shall be measured at the same location along the property line utilized in subsection (A)(2) of this section with the alleged offending noise source inoperative. If, for any reason, the alleged offending noise source cannot be shut down, the ambient noise must be estimated by performing a measurement in the same general area of the source but at a sufficient distance such that the noise from the source is at least 10 dB below the ambient in order that only the ambient level be measured. If the difference between the ambient and the noise source is five to 10 dB, then the level of the ambient itself can be reasonably determined by subtracting a one-decibel correction to account for the contribution of the source.

B. Correction for Character of Sound. In the event the alleged offensive noise, as judged by the Noise Control Officer, contains a steady, audible tone such as a whine, screech, or hum, or is a repetitive noise such as hammering or riveting, or contains music or speech conveying informational content, the standard limits set forth in Table 1 shall be reduced by five dB.

# TABLE 1EXTERIOR NOISE LIMITS

#### (Levels Not to Be Exceeded More Than 30 Minutes in Any Hour)

Receiving Land Use Category	Time Period	Noise Level (dBA)
Single-Family Residential	10:00 p.m. – 7:00 a.m.	40
	7:00 a.m. – 10:00 p.m.	50
Multiple Dwelling Residential	10:00 p.m. – 7:00 a.m.	45
	7:00 a.m. – 10:00 p.m.	50
Public Space		
Limited Commercial and	10:00 p.m. – 7:00 a.m.	55
Office	7:00 a.m. – 10:00 p.m.	60
General Commercial	10:00 p.m. – 7:00 a.m.	60
	7:00 a.m. – 10:00 p.m.	65
Light Industrial	Anytime	70
Heavy Industrial	Anytime	75

[Ord. 772 § 17.78.060, 1986. Code 1987 § 17.78.060].

#### 17.176.070 Interior noise standards.

A. Maximum Permissible Dwelling Interior Sound Levels.

1. The interior noise standards for multifamily residential dwellings as presented in Table 2 shall apply, unless otherwise specifically indicated, within all such dwellings with windows in their normal seasonal configuration.

#### TABLE 2

Noise Zone	Type of Land Use	Time Internal	Allowable Interior Noise Level (dBA)
All	Multifamily Residential	10:00 p.m. – 7:00	35
		a.m.	45
		7:00 a.m. – 10:00	
		p.m.	

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

a. The noise standard as specified in Table 2 for a cumulative period of more than five minutes in any hour; or

b. The noise standard plus five dB for a cumulative period of more than one minute in any hour; or

c. The noise standard plus 10 dB or the maximum measured ambient, for any period of time.

3. If the measured ambient level differs from that permissible within any of the noise limit categories above, the allowable noise exposure standard shall be adjusted in five dB increments in each category as appropriate to reflect said ambient noise level.

B. Correction for Character of Sound. In the event the alleged offensive noise, as judged by the Noise Control Officer, contains a steady, audible tone such as a whine, screech, or hum, or is a repetitive noise such as hammering or riveting, or contains music or speech conveying informational content, the standard limits set forth in Table 2 shall be reduced by five dB. [Ord. 772 § 17.78.070, 1986. Code 1987 § 17.78.070].

#### 17.176.080 Prohibited acts.

No person shall unnecessarily make, continue, or cause to be made or continued, any noise disturbance. The following acts, and the causing or permitting thereof, are declared to be in

violation of this chapter:

A. Operating, playing or permitting the operation or playing of any radio, television set, phonograph, drum, musical instrument, or similar device which produces or reproduces sound:

1. Between the hours of 10:00 p.m. and 7:00 a.m. in such a manner as to create a noise disturbance across a residential or commercial real property line or at any time to violate the provisions of LEMC <u>17.176.060</u>(A), except for which a variance has been issued by the City.

2. In such a manner as to exceed the levels set forth for public space in Table 1, measured at a distance of at least 50 feet (15 meters) from such device operating on a public right-of-way or public space.

B. Using or operating for any purpose any loudspeaker, loudspeaker system, or similar device between the hours of 10:00 p.m. and 7:00 a.m., such that the sound therefrom creates a noise disturbance across a residential real property line, or at any time violates the provisions of LEMC <u>17.176.060(A)</u>, except for any noncommercial public speaking, public assembly or other activity for which a variance has been issued by the City.

C. Offering for sale, selling anything, or advertising by shouting or outcry within any residential or commercial area or noise sensitive zone of the City except by variance issued by the City. The provisions of this section shall not be construed to prohibit the selling by outcry of merchandise, food, and beverages at licensed sporting events, parades, fairs, circuses, or other similar licensed public entertainment events.

D. Owning, possessing or harboring any animal or bird which frequently or for long duration, howls, barks, meows, squawks, or makes other sounds which create a noise disturbance across a residential or commercial real property line or within a noise sensitive zone. This provision shall not apply to public zoos.

E. Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects between the hours of 10:00 p.m. and 7:00 a.m. in such a manner as to cause a noise disturbance across a residential real property line or at any time to violate the provisions of LEMC <u>17.176.060(A)</u>.

F. Construction/Demolition.

1. Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work between weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on weekends or holidays, such that the sound therefrom creates a noise disturbance across a residential or commercial real property line, except for emergency work of public service utilities or by variance issued by the City.

2. Noise Restrictions at Affected Properties. Where technically and economically feasible, construction activities shall be conducted in such a manner that the maximum noise levels at affected properties will not exceed those listed in the following schedule:

#### AT RESIDENTIAL PROPERTIES:

#### **Mobile Equipment**

Maximum noise levels for nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment:

	Type I Areas	Type II Areas	Type III Areas Semi-
	Single-Family Residential	Multifamily Residential	Residential/Commercial
Daily, except Sundays and Legal Holidays 7:00 a.m. to 7:00 p.m.	75 dBA	80 dBA	85 dBA
Daily, 7:00 p.m. to 7:00 a.m. and all day Sunday and Legal Holidays	60 dBA	65 dBA	70 dBA

#### Stationary Equipment

Maximum noise levels for repetitively scheduled and relatively long-term operation (period of 10 days or more) of stationary equipment:

	Type I Areas Single-Family Residential	Type II Areas Multifamily Residential	Type III Areas Semi- Residential/Commercial
Daily, except Sundays and Legal Holidays 7:00 a.m. to 7:00 p.m.	60 dBA	65 dBA	70 dBA
Daily, 7:00 p.m. to 7:00 a.m. and all day Sunday and Legal Holidays	50 dBA	55 dBA	60 dBA

#### AT BUSINESS PROPERTIES:

#### **Mobile Equipment**

Maximum noise levels for nonscheduled, intermittent, short-term operation of mobile equipment:

Daily, including Sundays and Legal Holidays, all hours: maximum of 85 dBA.

#### **Stationary Equipment**

Maximum noise levels for repetitively scheduled and relatively long-term operation of stationary

equipment:

Daily, including Sundays and Legal Holidays, all hours: maximum of 75 dBA.

3. All mobile or stationary internal combustion engine powered equipment or machinery shall be equipped with suitable exhaust and air intake silencers in proper working order.

G. Operating or permitting the operation of any device that creates a vibration which is above the vibration perception threshold of any individual at or beyond the property boundary of the source if on private property or at 150 feet (46 meters) from the source if on a public space or public right-of-way.

H. Powered Model Vehicles. Operating or permitting the operation of powered model vehicles:

1. Between the hours of 7:00 p.m. and 7:00 a.m. so as to create a noise disturbance across a residential or commercial real property line or at any time to violate the provisions of LEMC <u>17.176.060(A)</u>.

2. In such a manner as to exceed the levels set forth for public space land use in Table 1, measured at a distance not less than 100 feet (30 meters) from any point on the path of a vehicle operating on public space or public right-of-way.

I. Stationary Nonemergency Signaling Devices.

1. Sounding or permitting the sounding of any electronically amplified signal from any stationary bell, chime, siren, whistle, or similar device, intended primarily for nonemergency purposes, from any place, for more than 10 seconds in any hourly period.

2. Houses of religious worship shall be exempt from the operation of this provision.

3. Sound sources covered by this provision and not exempted under subsection (I)(2) of this section shall be exempted by a variance issued by the City.

J. Emergency Signaling Devices.

1. The intentional sounding or permitting the sounding outdoors of any fire, burglar, or civil defense alarm, siren, whistle, or similar stationary emergency signaling device, except for emergency purposes or for testing, as provided in subsection (J)(2) of this section.

2. a. Testing of a stationary emergency signaling system shall not occur before 7:00 a.m. or after 7:00 p.m. Any such testing shall use only the minimum cycle test time. In no case shall such test time exceed 60 seconds.

b. Testing of the complete emergency signaling system, including the functioning of the signaling device and the personnel response to the signaling device, shall not occur more

than once in each calendar month. Such testing shall not occur before 7:00 a.m., or after 10:00 p.m. The time limit specified in subsection (J)(2)(a) of this section shall not apply to such complete system testing.

3. Sounding or permitting the sounding of any exterior burglar or fire alarm or any motor vehicle burglar alarm unless such alarm is terminated within 15 minutes of activation.

K. Noise Sensitive Zones.

1. Creating or causing the creation of any sound within any noise sensitive zone, so as to exceed the specified land use noise standards set forth in LEMC <u>17.176.060(A)</u>; provided, that conspicuous signs are displayed indicating the zone; or

2. Creating or causing the creation of any sound within or adjacent to any noise sensitive zone, containing a hospital, nursing home, school, court or other designated area, so as to interfere with the functions of such activity or annoy the occupants in the activity; provided, that conspicuous signs are displayed indicating the presence of the zone.

L. Domestic Power Tools and Machinery.

1. Operating or permitting the operation of any mechanically powered saw, sander, drill, grinder, lawn or garden tool, or similar tool between 10:00 p.m. and 7:00 a.m., so as to create a noise disturbance across a residential or commercial real property line.

2. Any motor, machinery, pump, such as swimming pool equipment, etc., shall be sufficiently enclosed or muffled and maintained so as not to create a noise disturbance in accordance with LEMC <u>17.176.060</u>.

M. Residential Air-Conditioning or Air-Handling Equipment. Operating or permitting the operation of any air-conditioning or air-handling equipment in such a manner as to exceed any of the following sound levels:

Measurement Location	Units Installed before 1-1-80 dB(A)	Units Installed on or after 1- 1-80 dB(A)
Any point on neighboring property line, 5 feet above grade level, no closer than 3 feet from any wall.	60	55
Center of neighboring patio, 5 feet above grade level, no closer than 3 feet from any wall.	55	50
Outside the neighboring living area window nearest the equipment location, not more than 3 feet from the window opening, but at		

least 3 feet from any other surface.

55 50

N. Places of Public Entertainment. Operating or permitting the operation or playing of any loudspeaker, musical instrument, motorized racing vehicle, or other source of sound in any place of public entertainment that exceeds 95 dBA as read on the slow response of a sound level meter at any point normally occupied by a customer, without a conspicuous and legible sign stating:

WARNING! SOUND LEVELS WITHIN MAY CAUSE HEARING IMPAIRMENT.

[Ord. 772 § 17.78.080, 1986. Code 1987 § 17.78.080].

#### 17.176.090 Motor vehicles operating on public right-of-way.

Motor vehicles noise limits on a public right-of-way are regulated as set forth in the California Motor Vehicle Code, Sections 23130 and 23130.5. Equipment violations which create noise problems are covered under Sections 27150 and 27151. Any peace officer of any jurisdiction in California may enforce these provisions. Therefore, it shall be the policy of the City to enforce these sections of the California Motor Vehicle Code.

A. Refuse Collection Vehicles.

1. No person shall collect refuse with a refuse collection vehicle between the hours of 7:00 p.m. and 7:00 a.m. within or adjacent to a residential area or noise sensitive zone.

2. No person authorized to engage in waste disposal service or garbage collection shall operate any truck-mounted waste or garbage loading and/or compacting equipment or similar device in any manner so as to create any noise exceeding the following levels, measured at a distance of 50 feet from the equipment in an open area:

a. New equipment purchased or leased on or after a date six months from the effective date of the ordinance codified in this chapter: 80 dBA.

b. New equipment purchased or leased on or after 36 months from the effective date of the ordinance codified in this chapter: 75 dBA.

c. Existing equipment, on or after five years from the effective date of the ordinance codified in this chapter: 80 dBA.

B. Motor Vehicle Horns. It is unlawful for any person to sound a vehicular horn except as a warning signal (Motor Vehicle Code, Section 27001).

C. Motorized Recreational Vehicles Operating off Public Right-of-Way. No person shall operate or cause to be operated any motorized recreational vehicle off a public right-of-way in such a manner that the sound levels emitted therefrom violate the provisions of LEMC <u>17.176.060</u>(A). This section shall apply to all motorized recreational vehicles whether or not duly licensed and registered,

including, but not limited to, commercial or noncommercial racing vehicles, motorcycles, go carts, amphibious craft, campers, snowmobiles and dune buggies, but not including motorboats.

#### D. Reserved.

E. Vehicle, Motorboat, or Aircraft Repair and Testing.

1. Repairing, rebuilding, modifying, or testing any motor vehicle, motorboat, or aircraft in such a manner as to create a noise disturbance across a residential real property line, or at any time to violate the provisions of LEMC <u>17.176.060</u>(A).

2. Nothing in this section shall be construed to prohibit, restrict, penalize, enjoin, or in any manner regulate the movement of aircraft which are in all respects conducted in accordance with, or pursuant to, applicable Federal laws or regulations.

F. Standing Motor Vehicles. No person shall operate or permit the operation of any motor vehicle with a gross vehicle weight rating (GVWR) in excess of 10,000 pounds, or any auxiliary equipment attached to such a vehicle, for a period longer than 15 minutes in any hour while the vehicle is stationary, for reasons other than traffic congestion, on a public right-of-way or public space within 150 feet (46 meters) of a residential area or designated noise sensitive zone, between the hours of 10:00 p.m. and 7:00 a.m. [Ord. 984, 1994; Ord. 772 § 17.78.090, 1986. Code 1987 § 17.78.090].

#### 17.176.100 Special provisions – Exemptions.

The following activities shall be exempted from the provisions of this chapter:

A. The emission of sound for the purpose of alerting persons to the existence of an emergency.

B. The emission of sound in the performance of emergency work.

C. Warning devices necessary for the protection of public safety, as for example, police, fire and ambulance sirens, and train horns.

D. Regularly scheduled school bands, school athletic and school entertainment events between the hours of 8:45 a.m. and 10:00 p.m., provided a special events permit is also required for band activities on City streets.

E. Regularly scheduled activities conducted on public parks, public playgrounds, and public or private school grounds. However, the use of public address or amplified music systems is not permitted to exceed the exterior noise standard of adjacent property at the property line.

F. All mechanical devices, apparatus or equipment which are utilized for the protection or salvage of agricultural crops during periods of potential or actual frost damage or other adverse weather conditions.

G. Mobile noise sources associated with agricultural pest control through pesticide application; provided, that the application is made in accordance with restricted material permits issued by or regulations enforced by the Agricultural Commissioner.

H. Mobile noise sources associated with agricultural operations, provided such operations take place on Monday through Friday, excepting legal holidays, between the hours of 7:00 a.m. and 6:00 p.m. All other operations shall comply with this chapter.

I. Noise sources associated with the maintenance of real property, provided such operations take place on Monday through Friday, excepting legal holidays, between the hours of 7:00 a.m. and 6:00 p.m., or on holidays and weekends between the hours of 9:00 a.m. and 6:00 p.m. All other operations shall comply with this chapter.

J. Any activity to the extent that regulation thereof has been preempted by State or Federal law. [Ord. 772 § 17.78.100, 1986. Code 1987 § 17.78.100].

#### 17.176.110 Special variances.

A. The NCO is authorized to grant variances for exemption from any provision of this chapter, subject to limitations as to area, noise levels, time limits, and other terms and conditions as the NCO determines are appropriate to protect the public health, safety, and welfare from the noise emanating therefrom. This section shall in no way affect the duty to obtain any permit or license required by law for such activities.

B. Any person seeking a variance pursuant to this section shall file an application with the NCO. The application shall contain information which demonstrates that bringing the source of sound or activity for which the variance is sought into compliance with this chapter would constitute an unreasonable hardship on the applicant, on the community, or on other persons. The application shall be accompanied by a fee. A separate application shall be filed for each noise source; provided, however, that several mobile sources under common ownership, or several fixed sources on a single property may be combined into one application. Notice of an application for a variance shall be published according to City code. Any individual who claims to be adversely affected by allowance of the variance may file a statement with the NCO containing any information to support his claim. If at any time the NCO finds that a sufficient controversy exists regarding an application, a public hearing will be held.

C. In determining whether to grant or deny the application, the NCO shall balance the hardship on the applicant, the community, and other persons of not granting the variance against the adverse impact on the health, safety, and welfare of persons affected, the adverse impact on property affected, and any other adverse impacts of granting the variance. Applicants for variances and persons contesting variances may be required to submit such information as the NCO may reasonably require. In granting or denying an application, the NCO shall keep on public file a copy of the decision and the reasons for denying or granting the variance.

D. Variances shall be granted by notice to the applicant containing all necessary conditions, including a time limit on the permitted activity. The variance shall not become effective until all conditions are agreed to by the applicant. Noncompliance with any condition of the variance shall terminate the variance and subject the person holding it to those provisions of this chapter for which the variance was granted.

E. A variance will not exceed 365 days from the date on which it was granted. Application for extension of time limits specified in variances or for modification of other substantial conditions shall be treated like applications for initial variances under subsection (B) of this section. [Ord. 772 § 17.78.110, 1986. Code 1987 § 17.78.110].



## 3.6.3 Seismic Activity Goal, Policies and Implementation Program

# Goal 6 Minimize the rise of loss of life, injury, property damage, and economic and social displacement due to seismic and geological hazards resulting from earthquakes and geological constraints.

#### <u>Policies</u>

- 6.1 Encourage the pursuit of federal and state programs that assist in the seismic upgrading of buildings to meet building and safety codes.
- 6.2 Continue to require Alquist-Priolo and other seismic analyses be conducted for new development to identify the potential for ground shaking, liquefaction, slope failure, seismically induced landslides, expansion and settlement of soils, and other related geologic hazards for areas of new development in accordance with the Fault Rupture Hazard Overlay District adopted by the City of Lake Elsinore Zoning Code. The City may require site-specific remediation measures during permit review that may be implemented to minimize impacts in these areas.
- <u>Implementation Program</u> Through project review and the CEQA processes the City shall assess new development and reuse applications for potential hazards, and shall require compliance with Alquist-Priolo and other guidelines where appropriate.

Agency/Department Public Works Department

# 3.7 Noise

### 3.7.1 Introduction

Noise is defined as unwanted sound. It is part of everyday life in an urban community, resulting from on- and off-road vehicle traffic, railroads, aircraft, construction vehicles and other heavy equipment, other commercial activities, and loud music. The existing background or "ambient" noise level in the community is the product of the cumulative effects of a variety of noise sources that accumulate over a period of time. Exposure to excessive noise has often been cited as a health hazard.



Activities at Lake Elsinore



Roadway traffic is a major source of noise within the City. Some other reported noise sources in Lake Elsinore include industrial and manufacturing facilities, Skylark Airport, schools, construction activities, and recreational activities associated with the lake, the motocross park, and Diamond Stadium.

The goals and policies in this section are designed to locate new development in areas with compatible noise levels and minimize intrusive noise from existing and new development.

#### 3.7.2 Noise Baselines

Land uses in the Lake Elsinore planning area include varying densities of both clustered and non-contiguous residential development, different densities and types of businesses and commercial developments, open space, and recreation. The locations and densities of these land uses, in conjunction with major transportation routes and other significant activities within the Lake Elsinore area, such as construction, contribute to the ambient noise conditions, or setting, of the area.

Sensitive land uses are generally defined as locations where people reside or where the presence of noise could adversely affect the use of the land. These land uses include uses such as schools, hospitals, residences, libraries, and recreation areas. The City has designated noise-sensitive zones for land uses that require exceptional quiet. Table 3-1 and Table 3-2 provide regulations to ensure noise and land use compatibility and recommend noise standards.

Land Use Categories	Day-Night Noise Level (LDN)							
Categories	Uses	<u>&lt;</u>	55 6	0 6	5 70	0 7	5 8	0 <u>&gt;</u>
Residential	Single, Family, Duplex, Multiple Family	A	А	В	В	С	D	D
Residential	Mobile Homes	Α	А	В	С	С	D	D
Commercial Regional District	Hotel, Motel, Transient Lodging	А	A	В	В	С	С	D
Commercial Regional Village, District Special	Commercial, Retail, Bank, Restaurant, Movie Theatre	А	A	A	A	В	В	С
Commercial Industrial Institutional	Office Building, Research and Development, Professional Offices, City Office Building	А	A	A	В	В	С	D
Commercial Regional Institutional Civic Center	Amphitheatre, Concert Hall Auditorium, Meeting Hall	В	В	С	С	D	D	D

#### Table 3-1. Noise and Land Use Compatibility Matrix



Land Use Categor	ries	Day-Night Noise Level (LDN)						
Categories	Uses	<u> </u>	55 (	<b>60 6</b> 3	5 7	0 7	58	0 <u>≥</u>
Commercial Recreation	Children's Amusement Park, Miniature Golf Course, Go-cart Track, Equestrian Center, Sports Club	A	A	Α	В	В	D	D
Commercial General, Special Industrial Institutio	Automobile Service Station, AutolDealership, Manufacturing,onalWarehousing, Wholesale, Utilitie	o A s	A	A	A	В	В	В
Institutional General	Hospital, Church, Library, Schools, Classroom	А	A	В	С	С	D	D
Open Space	Parks	А	Α	Α	В	С	D	D
Open Space	Golf Course, Cemeteries, Nature Centers, Wildlife Reserves, Wildlife Habitat	A	A	A	A	В	С	С
Agriculture	Agriculture	Α	Α	А	Α	А	Α	Α
Interpretation								
Zone A Clearly Compatible	Specified land use is satisfactory, based involved are of normal conventional co insulation requirements.	upon th nstructio	ie assu on witł	mption nout an	that a y spec	ny bui ial noi:	ldings se	
Zone B Normally Compatible	New construction or development should be undertaken only after detailed analysis of the noise reduction requirements are made and needed nose insulation features in the design are determined. Conventional construction, with closed windows and fresh air supply systems or air conditioning, will normally suffice.							
Zone C Normally Incompatible	New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in the design.							
Zone D Clearly Incompatible	New construction or development shou	ld gene	rally n	ot be ui	nderta	ken.		

CITY OF LAKE ELSINORE GENERAL PLAN 3-27



Land Use Categories		Energy Average LDN		
Categories	Uses	Interior	Exterior	
Residential	Single Family, Duplex, Multiple Family	45 <sup>3, 5</sup>	60	
	Mobile Homes	-	60 <sup>4</sup>	
Commercial, Institutional	Hotel, Motel, Transient Lodging	45 <sup>5</sup>	-	
	Hospital, School's classroom	45	_	
	Church, Library	45	-	

#### Table 3-2. Interior and Exterior Noise Standards

#### Interpretation

1. Indoor environment excluding: Bathrooms, toilets, closets, corridors.

2. Outdoor environment limited to: Private yard of single family, multi-family private patio or balcony which is served by a means of exit from inside, Mobile Home Park.

3. Noise level requirement with closed windows. Mechanical ventilating system or other means of natural ventilation shall be provided as of Chapter 12, Section 1205 of UBC.

4. Exterior noise level should be such that interior noise level will not exceed 45 CNEL.

5. As per California Administrative Code, Title 24, Part 6, Division T25, Chapter 1, Subchapter 1, Article 4, Section T25-28.

### **Topography and Climate**

Noise amplitude and attenuation characteristics are key factors in the establishment of noise conditions and vary considerably according to natural climate and topographical features. Meteorological factors affecting noise characteristics within the Lake Elsinore planning area include temperature changes, Santa Ana winds, and the amount and duration of rainfall. Topographical features in the planning area include the steep Santa Ana Mountains and Elsinore Mountains to the south and west; the large centrally located, low-lying Lake Elsinore and surrounding local valley; and the rolling hills throughout much of the area. Man-made features within the planning area, such as buildings and structures, agricultural fields, and roadways, also affect noise amplitude and attenuation.

### Vehicular Traffic

Because two highly utilized transportation corridors, I-15 and SR 74, traverse the City, roadway traffic is one of the more prevalent sources of noise within the area. Traffic noise varies in how it affects land uses depending upon the type of roadway, distance of the land use from that roadway, topographical setting, and other physical land features such as landscaping, walls, buildings, and other structures. Some variables that affect the amount of noise emitted from a



road are speed of traffic, flow of traffic, and type of traffic (e.g., tractor trailers versus cars). Another variable affecting the overall measure of noise is a perceived increase in sensitivity to vehicular noise at night.

# Industry

Industrial and manufacturing facilities are stationary noise producers that may affect sensitive land uses. Industrial land uses have the potential to exert a relatively high level of noise impact within their immediate operating environments. The scope and degree of noise impacts generated by industrial uses is dependent upon various critical factors, including the type of industrial activity, hours of operation, and the site's location relative to other land uses.

Noise-related complaints are often aimed at facilities such as Elsinore Ready-Mix, a concrete manufacturer located in Country Club Heights. Other noise complaints usually come from neighbors who live next to land that is under-developed.

# Airports

Skylark Airport is a privately owned airport that occupies approximately 150 acres of land located at the southern city limits on Corydon Road. In 2010, the airport housed 21 singleengine aircraft, five multi-engine aircraft, and four gliders. This airport provides glider and skydiving opportunities for the community and surrounding region. The runway surface at Skylark Airport consists of gravel and sand; as such, this surface generally does not permit optimal conditions for frequent and convenient airport operations. Skylark Airport is a private use airport with runways that are 2800 feet in length and fall under the category of Short General Aviation Runways.

# Schools

Schools can be a source of nuisance noise for neighboring residential uses. Noise-generating activities include children at play, bells, and public address systems. High schools may include stadiums used for day and evening athletic events, and the use of public address/loudspeaker systems can also generate substantial noise levels during the day and/or evening.



### **Other Noise Sources**

Other sources of noise include recreational boating and personal watercraft on Lake Elsinore, the Motocross Park, Diamond Stadium, and construction activities.

### Vibration

As with noise, vibration can be described by both its amplitude and frequency. Amplitude

may be characterized by displacement, velocity, and/or acceleration. Typically, particle velocity



Lake Elsinore Motocross Track

(measured in inches or millimeters per second) and/or acceleration (measured in gravities) are used to describe vibration. Vibration can be felt outdoors, but the perceived intensity of vibration impacts are much greater indoors due to the shaking of the structure.

The most common sources of vibration in the Lake Elsinore planning area are transit vehicles, construction equipment, and large vehicles. Several land uses are especially sensitive to vibration and therefore have a lower vibration threshold. These uses include but are not limited to concert halls, hospitals, libraries, vibration-sensitive research operations, residential areas, schools, and offices.

# 3.7.3 Noise Goal, Policies and Implementation Program

# Goal 7 Maintain an environment for all City residents and visitors free of unhealthy, obtrusive, or otherwise excessive noise.

#### **Policies**

- 7.1 Apply the noise standards set forth in the Lake Elsinore Noise and Land Use Compatibility Matrix (see Table 3-1) and Interior and Exterior Noise Standards (see Table 3-2) when considering all new development and redevelopment proposed within the City.
- 7.2 Require that mixed-use structures and areas be designed to prevent transfer of noise and vibration from commercial areas to residential areas.
- 7.3 Strive to reduce the effect of transportation noise on the I-15.
- 7.4 Consider estimated roadway noise contours based upon Figure 3.6, Noise Contours, when making land use design decisions along busy roadways throughout the City.



# FIGURE 3.6
## Appendix B

Field Data and Photos

			Field She	et			
Project:	Lakepointe Apartment: Study	s Noise Impact <b>E</b>	<b>ngineer:</b> B. Estrada			Date: JN:	3/25/2021 2395-2021-02
Measureme	ent Address:		City:			Site No.:	1
Le Harve Stre	et and Riverside Drive (S	R-74)	Lake Elsinore				I
Sound Leve	l Meter:	Calibration Reco	ord:		Notes:		
Piccolo II		Ir	nput, dB/ Reading, dB,	/ Offset, dB/ Time			
Serial # F	0218042101	1	94.0	2:02 PM	Temp:	67	
Serial # F	0218092808	2	94.0	2:05 PM	Windspeed:	8 MPH	
Calibrator:		3			Direction:	WSW	
CA114 Soun	d Calibrator	4			Skies:	Clear	
Serial #	500732	5			Camera:		
					Photo Nos.		
Meter Sett	ings:				·		
🗵 A-WT	D 🗆 LINEAR	🗵 SLOW	□ 1/1 OCT	⊠ INTERVALS	60 MIN	NUTE	
C-WT	D 🛛 IMPULSE	□ FAST	□ 1/3 OCT	⊠ L <sub>N</sub> PERCENTILE	VALUES		
Notes:						Measurem	ent Type:

Х

Long-term Short-term



Fiel	d Sheet - SLM-1 Location Photos		
Project: Lakepointe Apartments Noise Impa Study	<sup>Ct</sup> Engineer: B. Estrada	Date: JN:	3/25/2021 2395-2021-02
Measurement Address: Le Harve Street and Riverside Drive (SR-74)	<b>City:</b> Lake Elsinore	Site No.:	1



Field	d Sheet - SLM-2 Location Photos		
Project: Lakepointe Apartments Noise Impac Study	t <b>Engineer:</b> B. Estrada	Date: JN:	3/25/2021 2395-2021-02
<b>Measurement Address:</b> Le Harve Street and Riverside Drive (SR-74)	<b>City:</b> Lake Elsinore	Site No.:	2





PROJECT:	Lakepointe Apartm	nents Noise Impact		JOB #:	2395-2021-02		
NOISE METER	Piccolo II SLM, 24-I	Hour Measurement				DATE:	25-Mar-21
LOCATION:	SLM-1					BY:	B. Estrada
Time	Leq	Lmax	Lmin	L2	L8	L25	L50
12:00 AM	44.2	70.6	36.6	49.1	46.2	44.0	42.3
1:00 AM	42.2	59.9	35.9	47.8	45.0	42.7	40.8
2:00 AM	41.1	65.3	35.5	45.9	43.3	41.4	40.0
3:00 AM	47.4	85.6	34.2	46.1	43.7	41.5	39.6
4:00 AM	44.6	70.0	35.9	49.8	47.2	44.3	41.5
5:00 AM	50.2	81.6	41.6	54.4	51.6	49.4	47.6
6:00 AM	49.9	76.6	42.9	54.4	51.5	49.5	48.2
7:00 AM	54.3	64.4	43.9	59.7	58.0	56.0	53.1
8:00 AM	61.0	86.3	43.1	67.0	63.4	60.1	56.7
9:00 AM	52.8	70.2	41.9	62.6	56.5	49.8	47.6
10:00 AM	53.7	76.3	41.1	62.4	58.3	52.4	49.1
11:00 AM	49.8	62.6	42.0	56.8	53.4	49.6	47.8
12:00 PM	48.7	65.9	40.8	54.9	51.4	48.8	47.2
1:00 PM	49.7	66.3	42.9	56.0	52.1	49.6	48.1
2:00 PM	52.5	71.1	44.9	59.4	54.9	51.9	50.5
3:00 PM	54.3	76.0	44.7	61.5	57.8	54.1	51.8
4:00 PM	50.7	71.4	42.6	56.6	53.5	50.9	49.0
5:00 PM	48.5	66.3	41.2	54.2	50.8	48.6	47.1
6:00 PM	47.8	72.5	40.7	53.0	49.5	47.4	46.0
7:00 PM	48.0	73.2	41.1	53.3	49.5	47.6	46.3
8:00 PM	48.2	69.7	40.3	54.2	50.0	48.0	46.4
9:00 PM	45.8	61.8	39.3	50.5	47.9	46.1	44.8
10:00 PM	44.1	61.9	37.1	50.0	46.7	44.3	42.7
11:00 PM	44.9	66.1	37.3	50.5	47.2	45.1	43.6
	50.0			50.0			40.0
Daytime	52.9	86.3	3/.1	59.6	55.8	52.4	49.9
Nighttime	46.7	85.6	34.2	50.9	48.0	45.8	44.2



PROJECT:	Lakepointe Apartm	ents Noise Impact		JOB #:	2395-2021-02		
NOISE METER	Piccolo II SLM, 24-I	Hour Measurement				DATE:	25-Mar-21
LOCATION:	SLM-2					BY:	B. Estrada
Time	Leq	Lmax	Lmin	L2	L8	L25	L50
12:00 AM	37.9	58.3	30.6	43.6	40.6	37.6	35.4
1:00 AM	37.9	57.3	29.2	45.0	41.7	37.8	35.1
2:00 AM	38.9	58.4	28.9	47.7	43.0	38.1	34.0
3:00 AM	49.1	82.5	28.5	43.0	38.9	35.9	33.4
4:00 AM	38.7	57.6	29.6	44.9	42.0	38.8	36.2
5:00 AM	44.4	68.4	34.8	49.6	46.6	43.8	41.5
6:00 AM	45.5	65.0	37.6	50.7	47.7	45.5	43.9
7:00 AM	45.7	59.2	39.8	50.2	48.1	46.4	45.0
8:00 AM	48.1	64.1	37.9	55.3	51.2	48.5	46.0
9:00 AM	46.9	65.2	36.1	55.4	49.8	46.1	43.4
10:00 AM	50.2	72.2	36.8	58.2	52.8	48.2	45.1
11:00 AM	50.1	66.6	37.6	58.4	54.1	49.3	45.3
12:00 PM	52.0	72.6	36.8	60.6	56.2	50.3	46.0
1:00 PM	52.8	68.7	38.7	62.1	57.2	51.3	46.5
2:00 PM	56.9	74.7	40.5	65.7	61.2	56.4	51.9
3:00 PM	55.5	73.2	40.4	64.0	59.9	54.9	50.5
4:00 PM	47.9	62.6	38.3	55.7	51.4	47.4	45.1
5:00 PM	45.8	68.3	37.7	52.5	47.3	44.5	42.8
6:00 PM	44.4	62.0	36.8	50.5	47.1	44.5	42.5
7:00 PM	43.8	61.1	36.3	49.8	45.9	43.9	42.4
8:00 PM	45.6	65.2	37.1	51.6	47.9	45.0	43.0
9:00 PM	43.0	55.1	35.1	49.3	46.0	43.3	41.6
10:00 PM	43.3	63.8	33.5	50.8	46.8	43.0	40.3
11:00 PM	45.4	62.6	33.3	54.6	49.2	43.9	40.2
		<b>_</b>				(	
Daytime	50.5	74.7	33.5	58.8	54.4	49.7	46.0
Nighttime	44.1	82.5	28.5	49.2	45.1	41.5	39.1



# Appendix C

HVAC Equipment Specifications

	OLIVE / LANDWAI			Octave Band Sound Power Levels dBA, re 10 <sup>-12</sup> Watts				1				
		External				Cer	nter Fre	quency	- HZ		ano	- <sup>1</sup> Sound Rating
<sup>2</sup> Test Conditions		Pressure in. w.c.	CFM	<sup>3</sup> 63	125	250	500	1000	2000	4000	8000	Number (dBA)
Outdoor Sound Levels	LCH/LGH/092 thru 120 KCA/KGA092 thru 120 KCB/KGB092 thru 120			63	76	79	84	83	79	73	66	88
	LCH/LGH150 (KCA/KGA150 (KCB/KGB150			62	75	81	87	85	80	73	67	90
	KHA092, 102 and 120				76	79	84	83	79	73	66	88
	KHA150				77	80	85	84	79	74	66	88
	KHB092, 102				72	75	76	73	67	60	50	86
	KHB122				73	74	75	72	66	60	50	85
Supply A	ir Only	0.75	2515	51	61	68	71	71	69	67	63	
		0.75	2850	52	61	69	72	71	70	68	64	
		0.75	3000	52	61	69	72	72	70	69	64	
		0.75	3400	52	63	70	73	73	71	70	66	
		0.75	3600	53	63	71	73	74	72	71	66	
		0.75	4000	53	64	72	74	75	73	72	68	
		0.75	4125	53	64	72	74	76	74	72	69	
		0.75	4800	54	66	75	76	79	76	74	71	
Return A	ir Only	0.75	2515	47	52	54	56	56	54	51	44	
		0.75	2850	48	52	54	56	57	55	52	46	
		0.75	3000	48	51	55	56	57	55	53	47	
		0.75	3400	49	53	57	57	58	56	55	50	
		0.75	3600	49	54	57	58	59	57	56	51	
		0.75	4000	51	55	58	58	60	58	57	52	
		0.75	4125	51	56	58	59	61	59	58	53	
		0.75	4800	51	55	60	60	63	62	60	56	
Exhaust	Fan Only - Return	0.13		62	69	72	75	74	72	66	59	
Outdoor	ZCA/ZGA092 thru 120				72	74	79	80	76	70	63	84
Sound	ZCA/ZGA150				76	81	87	86	80	77	76	91
Levels	ZHA092, 102				76	79	84	83	79	73	66	88
	ZHA120				77	80	85	84	79	74	66	88
Supply A	ir Only	0.75	2510	56	63	66	73	72	70	69	63	
		0.75	2850	56	64	68	74	74	72	70	64	
		0.75	3000	56	65	68	74	74	72	71	65	
		0.75	3400	57	66	70	76	77	74	73	67	
		0.75	4000	57	68	73	78	80	76	75	70	
		0.75	4190	57	68	74	79	81	77	76	70	
		0.75	5000	59	70	77	81	84	80	79	74	
Return A	ir Only	0.75	2510	54	56	59	60	57	55	55	48	
		0.75	2850	54	58	60	61	59	57	57	50	
		0.75	3000	54	58	60	61	60	58	57	51	
		0.75	3400	54	59	61	63	61	59	59	52	
		0.75	4000	55	61	63	64	64	62	62	55	
		0.75	4190	54	61	65	65	65	63	63	56	
		0.75	5000	55	63	67	68	68	66	65	59	

ENERGENCE<sup>®</sup> / LANDMARK<sup>®</sup> / PAIDER<sup>®</sup> (7 5 TO 12 5 TONS)

Note – The octave sound power data does not include tonal corrections. <sup>1</sup> Sound Rating Number according to AHRI Standard 270 or AHRI Standard 370. <sup>2</sup> Indoor tested according to AHRI Standard 260. <sup>3</sup> 63HZ band is not certified and is usually lower than reported

Expanded Sound Data / Page 10

## Appendix D

Stationary Noise Calculation Worksheets

PROJECT:	LAKE POINTE	E APARTMENTS	JOB #:	2395-2021-02
SOURCE:	HVAC EQUIP	MENT	DATE:	02-Apr-21
LOCATION:	LAKESIDE HI	GH SCHOOL	BY:	B. ESTRADA
NOISE INPUT	DATA			
OBS DIST=	50.0			
DT WALL=	10.0			
DT W/OB=	40.0		BARRIFR+	
HTH WALL=	25.0	*****	TOPO SHIELDING =	-9.80
BARRIER =	0.0 ((	0=WALL,1=BERM)	NOISE HTH EL=	25.0
OBS HTH=	5.0	, ,		
NOISE HTH=	25.0		DROP OFF CO	EFFICENTS
OBS EL =	0.0		(10 = 3.0 dBA PER DOUB	LING OF DISTANCE)
NOISE EL =	0.0		(15 = 4.5 dBA PER DOUB	LING OF DISTANCE)
DROP-OFF=	20.0		(20 = 6.0 dBA PER DOUB	LING OF DISTANCE)
NOISE OUTPO	UT DATA (dE	3A)		
	·	/		
	DIST (FT)	Leg		
		•		
REF LEVEL	1	88.0		
PROJ LEVEL	50	54.0		
SHIELDING	50	-9.8		
ADJ PROJ LEVE	L 50	44.2		
NOISE LEVEL RE	EDUCTION DUE	E TO DISTANCE =	-33.97940009	
TOTAL NOISE	E LEVEL (dBA			
		Leq		
AMBIENT LEVE	L	0.0		
ADJ PROJ LEVEL	LS	44.2		
TOTAL NOISE L	EVEL W/			
PROJECT		44.2		

PROJECT:	LAKE POINT	E APARTMENTS		JOB #:	2395-2021-02
SOURCE:	PARKING LC	Т		DATE:	02-Apr-21
LOCATION:	RESIDENTIA	L P/L NORTHWEST OF PRO	JECT SITE	BY:	B. ESTRADA
NOISE INPUT	DATA				
	50.0				
	50.0				
	0.0		BARRIER-	F	
ΗΤΗ \\/Δ[] -	0.0	****		' IFI DING -	0.00
BARRIER -	0.0	(O-M/A) = 1 - BERM)		TH FI -	5.0
	5.0		NOISETT	11 22-	5.0
NOISE HTH-	5.0				FEEICENITS
OBS FL =	0.0		(10 = 3)		LING OF DISTANCE)
	0.0		(10 - 3.0) (15 - 4.0)	5 dBA PER DOUB	LING OF DISTANCE)
DROP-OFF=	20.0		(20 = 6 (	) dBA PER DOUB	LING OF DISTANCE)
	20.0		(20 0.0		
ΝΟΙSΕ ΟΙ ΙΤΡΙ	IT DATA (d	RA)			
		BNJ			
	DIST (FT)	Lea			
	- ( )	- 1			
REF LEVEL	6	63.8			
PROJ LEVEL	50	45.4			
SHIELDING	50	0.0			
ADJ PROJ LEVEL	. 50	45.4			
NOISE LEVEL REI	DUCTION DU	IE TO DISTANCE =	-18.416	37508	
TOTAL NOISE	LEVEL (dB/	4)			
		Leq			
AMBIENT LEVEL		0.0			
ADJ PROJ LEVEL	S	45.4			
TOTAL NOISE LE	VEL W/				
PROJECT		45.4			

PROJECT SOURCE:	LAKE POINTE APART	MENTS DURCES		JOB #: 2395-2021-02 DATE: 02-Apr-21
LOCATIO	N: LAKSIDE HIGH SCHO	OL		BY: B. ESTRADA
	Ν	OISE LEVEL N	/IEASUREMENTS (dB	BA)
	Source	LEQ	10^(LEQ/10)	
1	HVAC	44.2	26,302.7	
2	HVAC	44.2	26,302.7	
3	HVAC	44.2	26,302.7	
4	HVAC	44.2	26,302.7	
5	HVAC	44.2	26,302.7	
6	HVAC	44.2	26,302.7	
7	PARKING LOT	45.4	34,673.7	
8				
9				
10				
Total	Noise Level (dBA)	52.8	192,489.8	

PROJECT:	LAKE POINT	E APARTMENTS		JOB #:	2395-2021-02
SOURCE:	PARKING LC	T		DATE:	02-Apr-21
LOCATION:	RESIDENTIA	L P/L NORTHWEST OF PF	ROJECT SITE	BY:	B. ESTRADA
NOISE INPUT	DATA				
OBS DIST=	400.0				
DT WALLE	400.0				
DT W/OB=	0.0		BARRIE	R+	
ΗΤΗ WALLE	0.0	****		HIFLDING =	0.00
BARRIFR =	0.0	0=WALL 1=BFRM)	NOISE I	TH FI =	5.00
OBS HTH=	5.0		1101021		5.0
NOISE HTH=	5.0			DROP OFF CO	FFICENTS
OBS FL =	0.0		(10 = 3	3.0 dba PFR DOUB	ING OF DISTANCE)
NOISE EL =	0.0		(15 = 4	4.5 dBA PFR DOUB	ING OF DISTANCE)
DROP-OFF=	20.0		(20 = 6	6.0 dba per doubl	ING OF DISTANCE)
			(		
NOISE OUTPL	IT DATA (d	BA)			
	DIST (FT)	Lea			
		•			
REF LEVEL	6	63.8			
PROJ LEVEL	400	27.3			
SHIELDING	400	0.0			
ADJ PROJ LEVEL	400	27.3			
NOISE LEVEL REI	DUCTION DU	E TO DISTANCE =	-36.47	/817482	
TOTAL NOISE	LEVEL (dBA	a)			
		Leq			
AMBIENT LEVEL		0.0			
ADJ PROJ LEVEL	S	27.3			
TOTAL NOISE LE	VEL W/				
PROJECT		27.3			

PROJECT	LAKE POINTE APAR	<b>FMENTS</b>		JOB #: 2395-2021-02				
SOURCE:	COMBINED NOISE S	OURCES		DATE: 02-Apr-21				
I OCATIO	N: RESIDENTIAL P/L NO	ORTHWEST OF P	ROJECT SITE	BY: B. ESTRADA				
	NOISE LEVEL MEASUREMENTS (dDA)							
			ILASONEIVIENTS (UL					
	Source	LEO	10^(LEO/10)					
	Source		10 (110)					
1	HVAC	32.0	1 584 9					
2	нулс	32.0	1 5 8 / 0					
2	IIVAC	32.0	1,364.9					
3	HVAC	32.0	1,584.9					
4	HVAC	32.0	1,584.9					
5	Parking Lot	27.3	537.0					
6								
7								
8								
9								
10								
10								
Total	Noise Level (dBA)	38.4	6,876.6					

PROJECT: LAKE POINTE APARTMENTS JOB #: 2395-2021-02 SOURCE: HVAC EQUIPMENT DATE: 02-Apr-21 LOCATION: RESIDENTIAL P/L NORTHWEST OF PROJECT SITE BY: B. ESTRADA NOISE INPUT DATA DBS DIST: 350.0 DT WALL: 10.0 DT W/OB: 340.0 DT W/OB: 340.0 DT W/OB: 340.0 DT W/OB: 340.0 DT W/OB: 340.0 DT W/OB: 340.0 DT W/OB: 340.0 DO (0=WALL,1=BERM) NOISE HTH EL= 25.0 DROP OFF COEFFICENTS 10 = 3.0 dBA PER DOUBLING OF DISTANCE) NOISE HTH: 5.0 DROP OFF COEFFICENTS 10 = 3.0 dBA PER DOUBLING OF DISTANCE) (10 = 3.0 dBA PER DOUBLING OF DISTANCE) (10 = 3.0 dBA PER DOUBLING OF DISTANCE) DIST (FT) Leq NOISE CUTPUT DATA (dBA) DIST (FT) Leq REF LEVEL 1 88.0 PROJ LEVEL 350 37.1 SHIELDING 350 -5.1 ADJ PROJ LEVEL 350 32.0 NOISE LEVEL (dBA) VOISE LEVEL (D.0 ADJ PROJ LEVEL 32.0 TOTAL NOISE LEVEL W/ ROUTEY 32.0						
SOURCE: HVAC EQUIPMENT DATE: 02-Apr-21 LOCATION: RESIDENTIAL P/L NORTHWEST OF PROJECT SITE BY: B. ESTRADA NOISE INPUT DATA OBS DIST= 350.0 DT WALLE 10.0 DT WALLE 25.0 TWO B= 340.0 TH WALLE 25.0 SARRIER = 0.0 (0=WALL_1=BERM) NOISE HTHE L= 25.0 DROP OFF COEFFICENTS (10 = 3.0 dBA PER DOUBLING OF DISTANCE) (10 = 3.0 dBA PER DOUBLING OF DISTANCE) (10 = 4.0 dBA PER DOUBLING OF DISTANCE) (20 = 6.0 dBA PER DOUBLING OF DISTANCE) (20 = 6.0 dBA PER DOUBLING OF DISTANCE) NOISE UTPUT DATA (dBA) NOISE LEVEL 1 88.0 PROJ LEVEL 350 37.1 SHIELDING 350 -5.1 ADJ PROJ LEVEL 350 32.0 NOISE LEVEL (dBA) Leq MBIENT LEVEL 0.0 ADJ PROJ LEVEL 32.0 NOISE LEVEL (dBA) Leq MBIENT LEVEL 0.0 ADJ PROJ LEVEL 32.0	PROJECT:	LAKE POINTE	APARTMENTS		JOB #:	2395-2021-02
LOCATION: RESIDENTIAL P/L NORTHWEST OF PROJECT SITE BY: B. ESTRADA NOISE INPUT DATA DOBS DIST= 350.0 DT W/OB= 340.0 BARRIER+ TOPO SHIELDING = -5.09 3ARRIER = 0.0 (0=WALL,1=BERM) NOISE HTH EL= 25.0 DROP OFF COEFFICENTS 001SE HTH= 5.0 NOISE HTH= 25.0 (10 = 3.0 dBA PER DOUBLING OF DISTANCE) NOISE HTH= 25.0 (10 = 3.0 dBA PER DOUBLING OF DISTANCE) NOISE L = 0.0 (15 = 4.5 dBA PER DOUBLING OF DISTANCE) (20 = 6.0 dBA PER DOUBLING OF DISTANCE) (20 = 6.0 dBA PER DOUBLING OF DISTANCE) NOISE OUTPUT DATA (dBA) NOISE OUTPUT DATA (dBA) NOISE LEVEL 1 88.0 PROI LEVEL 350 32.0 NOISE LEVEL REDUCTION DUE TO DISTANCE = -50.88136089 TOTAL NOISE LEVEL (dBA) Leq NOISE LEVEL REDUCTION DUE TO DISTANCE = -50.88136089 TOTAL NOISE LEVEL (dBA) Leq NOISE LEVEL (dBA) NOISE LEVEL 0.0 NOISE LEVEL W/ ROUFCT 32.0	SOURCE:	HVAC EQUIP	MENT		DATE:	02-Apr-21
NOISE INPUT DATA           DBS DIST=         350.0           DT W/OB=         340.0           DT W/OB=         340.0           BARRIER+         10.0           DT W/OB=         340.0           BARRIER+         0.0           MOISE HTH         25.0           DBS TH=         5.0           DSS HT=         5.0           DSS EL =         0.0           NOISE HTH=         25.0           NOISE HTH=         25.0           DSS EL =         0.0           NOISE EL =         0.0           NOISE OUTPUT DATA (dBA)           DIST (FT)         Leq           REF LEVEL         1           NOISE IEVEL         1           SSO         35.1           ADJ PROJ LEVEL         350           JPROJ LEVEL         350           JPROJ LEVEL         350           Leq         1           NOISE LEVEL REDUCTION DUE TO DISTANCE =         -50.88136089           TOTAL NOISE LEVEL (dBA)         1           Leq         32.0	LOCATION:	RESIDENTIA	P/L NORTHWEST OF PROJECT	SITE	BY:	B. ESTRADA
NOISE INPUT DATA           DBS DIST=         350.0           DT WALL=         10.0           DT WALL=         10.0           DT WALL=         10.0           DT W/DB=         340.0           BARRIER=         0.0           DSB HTH=         5.0           NOISE HTH=         25.0           DSB HTH=         5.0           NOISE HTH=         25.0           DSS FIL=         0.0           DSE L=         0.0           NOISE HTH=         25.0           DROP OFF =         20.0           IDST (FT)         Leq           NOISE OUTPUT DATA (dBA)           DIST (FT)         Leq           NOISE LEVEL         1           DIST (FT)         Leq           NOISE LEVEL         350           ADJ PROJ LEVEL         350           JAR PROJ LEVEL         350           JAR PROJ LEVEL         0.0           NOISE LEVEL REDUCTION DUE TO DISTANCE =         -50.88136089           TOTAL NOISE LEVEL (dBA)         Leq           ND PROJ LEVEL         32.0           IOTAL NOISE LEVEL W/         32.0						
DBS DIST=       350.0         DT WALL=       10.0         DT W/OB=       340.0         BARRIER =       0.0         (0=WALL,1=BERM)       NOISE HTH EL=         DS ST I=       0.0         VOISE HTH=       25.0         DSS FL =       0.0         NOISE HTH =       25.0         DOP-OFF =       20.0         VOISE OUTPUT DATA (dBA)         IDIST (FT) Leq         NOISE OUTPUT DATA (dBA)         VOISE LEVEL 1         NOISE OUTPUT DATA (dBA)         VOISE LEVEL 1         SE 0         OUT LEVEL 350 37.1         SHIBLEDING 350 -5.1         ADJ PROJ LEVEL (dBA)         Leq         VOISE LEVEL (dBA)         Leq         MBIENT LEVEL 0.0         ADJ PROJ LEVEL         32.0         TOTAL NOISE LEVEL W//         32.0	NOISE INPUT	DATA				
OBS DIST=       350.0         DT WALL=       10.0         DT W/OB=       340.0         BARRIER =       10.0         DT WALL=       25.0         BARRIER =       0.0         OOSS HTH=       5.0         NOISE HTH=       25.0         DBS EL =       0.0         NOISE HTH=       25.0         DBS EL =       0.0         NOISE EL =       0.0         NOISE EL =       0.0         DORO-OFF =       20.0         NOISE OUTPUT DATA (dBA)             MOISE OUTPUT DATA (dBA)             NOISE LEVEL       1             PRO J LEVEL       350       37.1         SHIELDING       350       -5.1         ADJ PROJ LEVEL       350       32.0           NOISE LEVEL REDUCTION DUE TO DISTANCE =       -50.88136089           NOISE LEVEL (dBA)						
DOS D31-       3000         DOS VALL       100         DT WALLE       25.0         PT WALLE       25.0         SARRIER =       0.0         OOS HTH=       5.0         NOISE HTH=       5.0         NOISE HTH=       25.0         DBS HTH=       5.0         NOISE HTH=       25.0         DBS HT=       0.0         ODS POP.       0.0         DIST (FT)       Leq         NOISE LEVEL       1         B8.0       35.0         PROJ LEVEL       35.0         35.0       37.1         SHIELDING       35.0         SOB JC       35.0         SOB JC       35.0         SOB JC       35.0         JC       SOB JC         SHIELDING       35.0         SOB JC       35.0         SOB JC       35.0         SOB JC       35.0         SOB JC       JC         DIST (FT)       Leq         VOISE LEVEL REDUCTION DUE TO DISTANCE =       -50.88136089         TOTAL NOISE LEVEL (dBA)       Leq         MBIENT LEVEL       0.0         ADJ PROJ LEVELS		250.0				
District         10.0           District         10.0           BARRIER =         0.0           0.0         0=WALL_1=BERM)           NOISE HTH =         25.0           DBS HTH =         5.0           NOISE HTH =         25.0           DBS EL =         0.0           NOISE HTH =         25.0           DBS EL =         0.0           NOISE EL =         0.0           NOISE EL =         0.0           NOISE OUTPUT DATA (dBA)             NOISE OUTPUT DATA (dBA)             NOISE OUTPUT DATA (dBA)             NOISE OUTPUT DATA (dBA)             NOISE EVEL         1           NOISE IEVEL         1           SEG LEVEL         1           ADJ PROJ LEVEL         350           35.0         -5.1           ADJ PROJ LEVEL         350           J2.0         Icq             NOISE LEVEL REDUCTION DUE TO DISTANCE =           -50.88136089         -50.88136089      NOISE LEVEL (dBA)           Leq   NOISE LEVEL W/ ROJ LEVEL W/ <		10.0				
Discrete         Data of the second seco		340.0		BARRIER+		
Inition Allow 2010       25.0         Inition Allow 2010       101 0 Shittebine 2         Inition 2010       101 0 Shittebine 2	ΗΤΗ W/Δ11-	25.0	* * * * * * *		NG -	-5.09
Disk HTH       5.0       INOISE HTH       25.0         NOISE HTH       25.0       DROP OFF COEFFICENTS         OBS EL =       0.0       (10 = 3.0 dBA PER DOUBLING OF DISTANCE)         NOISE EL =       0.0       (15 = 4.5 dBA PER DOUBLING OF DISTANCE)         DROP-OFF=       20.0       (20 = 6.0 dBA PER DOUBLING OF DISTANCE)         NOISE OUTPUT DATA (dBA)       (20 = 6.0 dBA PER DOUBLING OF DISTANCE)         NOISE OUTPUT DATA (dBA)       (20 = 6.0 dBA PER DOUBLING OF DISTANCE)         NOISE OUTPUT DATA (dBA)       (20 = 6.0 dBA PER DOUBLING OF DISTANCE)         NOISE LEVEL       1       88.0         PROJ LEVEL       350       37.1         SHIELDING       350       -5.1         ADJ PROJ LEVEL       350       32.0         NOISE LEVEL REDUCTION DUE TO DISTANCE =       -50.88136089         TOTAL NOISE LEVEL (dBA)       Leq         MBIENT LEVEL       0.0         ADJ PROJ LEVELS       32.0	BARRIER =	25.0	$\gamma = M \Delta I I = BFRM$		=	25.0
DOUSTING         Dise           DOUSE HTH=         25.0           DBS EL =         0.0           NOISE ET =         0.0           NOISE EL =         0.0           DROP-OFF=         20.0           DIST (FT) Leq           NOISE EUPUT DATA (dBA)           DIST (FT) Leq           NOISE LEVEL 1           S8.0           PROJ LEVEL         350           S7.1           SHIELDING           S5.0           NOISE LEVEL REDUCTION DUE TO DISTANCE =           -50.88136089           TOTAL NOISE LEVEL (dBA)           Leq           AMBIENT LEVEL           0.0		5.0			-	25.0
NOISE LET       0.0         NOISE EL =       0.0         NOISE EL =       0.0         NOISE EL =       0.0         DROP-OFF=       20.0         NOISE OUTPUT DATA (dBA)         DIST (FT) Leq         NOISE OUTPUT DATA (dBA)         NOISE IEVEL         NOISE USE OUTPUT DATA (dBA)         NOISE LEVEL REDUCTION DUE TO DISTANCE = -50.88136089         COTAL NOISE LEVEL (dBA)         Colspan="2">Colspan="2">Colspan= 2"COLSPAN"         NOISE USE O	NOISE HTH=	25.0				FFFICENTS
Cost of the second s	OBS FL =	20.0		(10 = 3.0  dB/		ING OF DISTANCE)
NOISE LE -         0.0         (13 - 4.3 dbA TER DOUBLING OF DISTANCE)           NOISE OUTPUT DATA (dBA)         (20 = 6.0 dBA PER DOUBLING OF DISTANCE)           NOISE OUTPUT DATA (dBA)         Eq           REF LEVEL         1         88.0           PROJ LEVEL         350         37.1           SHIELDING         350         -5.1           ADJ PROJ LEVEL         350 <b>32.0</b>		0.0		(10 - 3.0  dB)		LING OF DISTANCE)
NOISE OUTPUT DATA (dBA)           DIST (FT)         Leq           REF LEVEL         1         88.0           PROJ LEVEL         350         37.1           SHIELDING         350         -5.1           ADJ PROJ LEVEL         350 <b>32.0</b>		20.0		(10 = 4.0  dB)		LING OF DISTANCE)
DIST (FT)         Leq           REF LEVEL         1         88.0           PROJ LEVEL         350         37.1           SHIELDING         350         -5.1           ADJ PROJ LEVEL         350 <b>32.0</b>		20.0		(20 - 0.0 dbr		
DIST (FT)       Leq         REF LEVEL       1       88.0         PROJ LEVEL       350       37.1         SHIELDING       350       -5.1         ADJ PROJ LEVEL       350       32.0         NOISE LEVEL REDUCTION DUE TO DISTANCE =       -50.88136089         TOTAL NOISE LEVEL (dBA)       Leq         AMBIENT LEVEL       0.0         ADJ PROJ LEVELS       32.0         TOTAL NOISE LEVEL W/       32.0         ZOTAL NOISE LEVEL W/       28.0	ΝΟΙSE ΟΙ ΙΤΡΙ	IT DATA (de	34)			
DIST (FT)       Leq         REF LEVEL       1       88.0         PROJ LEVEL       350       37.1         SHIELDING       350       -5.1         ADJ PROJ LEVEL       350 <b>32.0</b> NOISE LEVEL REDUCTION DUE TO DISTANCE = -50.88136089         TOTAL NOISE LEVEL (dBA)         Leq         AMBIENT LEVEL       0.0         ADJ PROJ LEVELS       32.0         TOTAL NOISE LEVEL W/       20.0         COTAL NOISE LEVEL W/						
Dist (iii)       Leq         REF LEVEL       1       88.0         PROJ LEVEL       350       37.1         SHIELDING       350       -5.1         ADJ PROJ LEVEL       350 <b>32.0</b> NOISE LEVEL REDUCTION DUE TO DISTANCE =       -50.88136089 <b>TOTAL NOISE LEVEL (dBA)</b> Leq         AMBIENT LEVEL       0.0         ADJ PROJ LEVELS       32.0         TOTAL NOISE LEVEL (dV)       22.0         FOTAL NOISE LEVEL W/       32.0		DIST (FT)				
REF LEVEL       1       88.0         PROJ LEVEL       350       37.1         SHIELDING       350       -5.1         ADJ PROJ LEVEL       350       32.0         NOISE LEVEL REDUCTION DUE TO DISTANCE =       -50.88136089         TOTAL NOISE LEVEL (dBA)       Leq         AMBIENT LEVEL       0.0         ADJ PROJ LEVELS       32.0         TOTAL NOISE LEVEL (dBA)       Leq         AMBIENT LEVEL       0.0         ADJ PROJ LEVELS       32.0         TOTAL NOISE LEVEL W/       20.0			Leq			
NOISE LEVEL       350       37.1         SHIELDING       350       -5.1         ADJ PROJ LEVEL       350 <b>32.0</b> NOISE LEVEL REDUCTION DUE TO DISTANCE =       -50.88136089         TOTAL NOISE LEVEL (dBA)       Leq         AMBIENT LEVEL       0.0         ADJ PROJ LEVELS       32.0         TOTAL NOISE LEVEL (dBA)       -50.88136089         VOISE LEVEL (dBA)       -50.88136089         COTAL NOISE LEVEL (dBA)       -50.88136089         Leq       -50.88136089         AMBIENT LEVEL       0.0         ADJ PROJ LEVELS       32.0         TOTAL NOISE LEVEL W/       -50.88136089	RFF I FVFI	1	88.0			
NOISE LEVEL     350     -5.1       ADJ PROJ LEVEL     350     32.0         NOISE LEVEL REDUCTION DUE TO DISTANCE =     -50.88136089         TOTAL NOISE LEVEL (dBA)         Leq         AMBIENT LEVEL     0.0         ADJ PROJ LEVELS     32.0         TOTAL NOISE LEVEL W/		350	37.1			
ADJ PROJ LEVEL 350 32.0 NOISE LEVEL REDUCTION DUE TO DISTANCE = -50.88136089 TOTAL NOISE LEVEL (dBA) Leq AMBIENT LEVEL 0.0 ADJ PROJ LEVELS 32.0 FOTAL NOISE LEVEL W/ PROJECT 32.0	SHIFI DING	350	-5.1			
NOISE LEVEL REDUCTION DUE TO DISTANCE = -50.88136089 TOTAL NOISE LEVEL (dBA) Leq AMBIENT LEVEL 0.0 ADJ PROJ LEVELS 32.0 TOTAL NOISE LEVEL W/ PROJECT 32.0	ADJ PROJ LEVEL	350	32.0			
NOISE LEVEL REDUCTION DUE TO DISTANCE = -50.88136089 TOTAL NOISE LEVEL (dBA) Leq AMBIENT LEVEL 0.0 ADJ PROJ LEVELS 32.0 TOTAL NOISE LEVEL W/ 2ROJECT 32.0						
NOISE LEVEL REDUCTION DUE TO DISTANCE = -50.88136089 TOTAL NOISE LEVEL (dBA) Leq AMBIENT LEVEL 0.0 ADJ PROJ LEVELS 32.0 FOTAL NOISE LEVEL W/ 2ROJECT 32.0						
NOISE LEVEL REDUCTION DUE TO DISTANCE = -50.88136089 TOTAL NOISE LEVEL (dBA) Leq AMBIENT LEVEL 0.0 ADJ PROJ LEVELS 32.0 FOTAL NOISE LEVEL W/ PROJECT 32.0						
NOISE LEVEL REDUCTION DUE TO DISTANCE = -50.88136089 TOTAL NOISE LEVEL (dBA) Leq AMBIENT LEVEL 0.0 ADJ PROJ LEVELS 32.0 TOTAL NOISE LEVEL W/ PROJECT 32.0						
NOISE LEVEL REDUCTION DUE TO DISTANCE = -50.88136089 TOTAL NOISE LEVEL (dBA) Leq AMBIENT LEVEL 0.0 ADJ PROJ LEVELS 32.0 TOTAL NOISE LEVEL W/ 2ROJECT 32.0						
TOTAL NOISE LEVEL (dBA)         Leq         AMBIENT LEVEL       0.0         ADJ PROJ LEVELS       32.0         TOTAL NOISE LEVEL W/       32.0	NOISE LEVEL RE	DUCTION DUE	TO DISTANCE =	-50.8813608	9	
Leq AMBIENT LEVEL 0.0 ADJ PROJ LEVELS 32.0 FOTAL NOISE LEVEL W/ 2ROJECT 32.0	TOTAL NOISE	LEVEL (dBA				
AMBIENT LEVEL 0.0 ADJ PROJ LEVELS 32.0 FOTAL NOISE LEVEL W/ 2ROJECT 32.0			leg			
AMBIENT LEVEL 0.0 ADJ PROJ LEVELS 32.0 TOTAL NOISE LEVEL W/ 2ROJECT 32.0			4			
ADJ PROJ LEVELS 32.0 TOTAL NOISE LEVEL W/ PROJECT 32.0	AMBIENT LEVEL		0.0			
TOTAL NOISE LEVEL W/	ADJ PROJ LEVEL	S	32.0			
2ROJECT 32.0	TOTAL NOISE LE	VEL W/				
	PROJECT	•	32.0			

# Appendix E

Roadway Noise Calculation Worksheets

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: LAKE ROADWAY: RIVER LOCATION: FIRST	POINTE APARTN RSIDE DRIVE ROW UNITS FA	MENTS CING ROADWAY (FIRS	T FLOOR)							JOB #: DATE: ENGINEER:	0888-2020-05 5-Apr-21 D. Shivaiah
				NOISE IN	PUT DAT	4					
							DE				
	ROADWA	Y CONDITIONS					REC	CEIVER INPU	IDAIA		
ADT = SPEED = PK HR % = NEAR LANE/FAR LANE D ROAD ELEVATION = GRADE = PK HR VOL =	34,000 45 10 DIST 72 0.0 0.0 3,400	%			RECEIVER D DIST C/L TC RECEIVER H WALL DIST/ PAD ELEVA ROADWAY	DISTANCE = 0 WALL = 1EIGHT = ANCE FROM F TION = VIEW:	RECEIVER = LF ANGLE= RT ANGLE= DF ANGLE=	75 75 5.0 0 0.0 -90 = 90 = 180			
AUTOMOBILES = MEDIUM TRUCKS = HEAVY TRUCKS =	10 10 10	(10 = HAR	D SITE, 15 = S	OFT SITE)	HTH WALL= AMBIENT= BARRIER =	= 0.0 0.0 1	(0 = WALL,	1 = BERM)			
	VEHICL	E MIX DATA					Μ	IISC. VEHICLE	INFO		
	DAY			1							
AUTOMOBILES	0.695	0.129 0.096	0.9200	1		AUTOMOBIL	- <u>ES</u>	2.0	65.86	GRADE AL	
MEDIUM TRUCKS	0.014	0.001 0.015	0.0300			MEDIUM TR	UCKS	4.0	65.80	-	
HEAVY TRUCKS	0.024	0.010 0.025	0.0500			HEAVY TRUC	CKS	8.0	65.86	0.	00
			N			-Δ					
						~					
		NOI	SE IMPACTS (	WITHOUT T	OPO OR BAI	RRIER SHIELD	DING)				
	[	VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL			
	ļ	AUTOMOBILES	71.2	68.8	67.5	61.5	69.9	70.5			
	-	MEDIUM TRUCKS	64.6	45.4	37.6	46.8	53.0	53.0			
		HEAVY TRUCKS	/1.5	54.4	50.0	55.0	02.1	02.4			
	l	NOISE LEVELS (dBA)	74.7	69.0	67.9	62.6	70.6	71.2			
		ΝΟ	DISE IMPACTS	(WITH ТОР	O AND BARI	RIER SHIELDI	NG)				
	_								-		
	ļ	VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL			
			71.2	68.8	67.5	61.5	69.9	70.5			
		HEAVY TRUCKS	71.3	45.4	56.6	40.8 55.8	<u> </u>	62.4			
						· · · · · · · · ·					
		NOISE LEVELS (dBA)	74.7	69.0	67.9	62.6	70.6	71.2			

NOISE CONTOUR (FT)								
NOISE LEVELS 70 dBA 65 dBA 60 dBA 55 dBA								
CNEL	99	314	994	3143				
LDN	87	275	870	2750				

## Appendix F

Construction Noise and Vibration Calculation Worksheets

Report date: 3/30/2021

Case Description: Lakepointe Apartments Noise Impact Study

				Rec	eptor #1
		Baselines (	dBA)		
Description	Land Use	Daytime	Evening	Night	
Site Preparation	Residential	75	45		45

		Equipment						
			Spec		Actua	I	Receptor	Estimated
	Impact		Lmax		Lmax		Distance	Shielding
Description	Device	Usage(%)	(dBA)		(dBA)		(feet)	(dBA)
Dozer	No	40				81.7	200	0
Tractor	No	40		84			200	0
Dozer	No	40				81.7	200	0
Dozer	No	40				81.7	200	0
Tractor	No	40		84			200	0
Tractor	No	40		84			200	0
Tractor	No	40		84			200	0

Results

Calculated (dBA)

Equipment	*Lmax Leq	
Dozer	69.6	65.6
Tractor	72	68
Dozer	69.6	65.6
Dozer	69.6	65.6
Tractor	72	68
Tractor	72	68
Tractor	72	68
Total	72	75.6

Report date:3/30/2021Case Description:Lakepointe Apartments Noise Impact Study

				Rec	eptor #1			
		Baselines (dBA)						
Description	Land Use	Daytime	Evening	Night				
Grading	Residential	75	45	5	45			

			Equipment					
			Spec		Actual	Receptor	Estimated	
	Impact		Lmax		Lmax	Distance	Shielding	
Description	Device	Usage(%)	(dBA)		(dBA)	(feet)	(dBA)	
Excavator	No	40			80.7	200	0	
Grader	No	40		85		200	0	
Dozer	No	40			81.7	200	0	
Tractor	No	40		84		200	0	
Tractor	No	40		84		200	0	
Tractor	No	40		84		200	0	

Results

Calcu	lated	(dBA)	
Cuico	nated	( 4 2 / 1 / 1	

Equipment		*Lmax	Leq			
Excavator		68.7	,	64.7		
Grader		73		69		
Dozer		69.6	j	65.6		
Tractor		72		68		
Tractor		72		68		
Tractor		72		68		
	Total	73		75.2		
		*Calculate	ed Lma	ax is the	Loudest	value.

Report date:3/30/2021Case Description:Lakepointe Apartments Noise Impact Study

				Rec	eptor #1
		Baselines (	(dBA)		
Description	Land Use	Daytime	Evening	Night	
<b>Building Construction</b>	Residential	75	4	5	45

	Equipment							
			Spec		Actual	Receptor	Estimated	
	Impact		Lmax		Lmax	Distance	Shielding	
Description	Device	Usage(%)	(dBA)		(dBA)	(feet)	(dBA)	
Crane	No	16			80.6	200	0	
Pickup Truck	No	40			75	200	0	
Generator	No	50			80.6	200	0	
Tractor	No	40		84		200	0	
Welder / Torch	No	40			74	200	0	
Tractor	No	40		84		200	0	
Tractor	No	40		84		200	0	
Pickup Truck	No	40			75	200	0	
Pickup Truck	No	40			75	200	0	

Calculated (dBA)

Results

Equipment		*Lmax	Leq		
Crane		68.5		60.6	
Pickup Truck		63		59	
Generator		68.6		65.6	
Tractor		72		68	
Welder / Torch		62		58	
Tractor		72		68	
Tractor		72		68	
Pickup Truck		63		59	
Pickup Truck		63		59	
	Total	72		74.2	

Report date:3/30/2021Case Description:Lakepointe Apartments Noise Impact Study

				Rec	eptor #1	
		Baselines (	dBA)			
Description	Land Use	Daytime	Evening	Night		
Paving	Residential	75	45		45	
				Equipm	ent	
				Spec	Actual	Receptor
		Impact		Lmax	Lmax	Distance
Description		Device	Usage(%)	(dBA)	(dBA)	(feet)

Paver	No	50	77.2	200	0
Roller	No	20	80	200	0
Roller	No	20	80	200	0
Paver	No	50	77.2	200	0
Roller	No	20	80	200	0
Roller	No	20	80	200	0

Results

Estimated Shielding (dBA)

Calculated (dBA)

Equipment		*Lmax	Leq	
Paver		65.2		62.2
Roller		68		61
Roller		68		61
Paver		65.2		62.2
Roller		68		61
Roller		68		61
	Total	68		69.2
		* Calaulata	al 1	

	Roadway Co	onstruction	Noise	Mode	el (RCNN	M),Version 1.1			
Report date:	3/30/2021								
Case Description:	n: Lakepointe Apartments Noise Impact Study								
					Rec	ceptor #1			
		Baselines	(dBA)						
Description	Land Use	Daytime	Even	ing	Night				
Architectural Coating	Residential	7	5	45	_	45			
		Equipment							
					Spec	Actual	Receptor	Estimated	
		Impact			Lmax	Lmax	Distance	Shielding	
Description		Device	Usag	e(%)	(dBA)	(dBA)	(feet)	(dBA)	
Compressor (air)		No	-	40		77.7	200	0	
					Results	5			
		Calculate	d (dBA)	)					
Equipment		*Lmax	Leq						
Compressor (air)		65.6	5	61.6					
	Total	65.0	6	61.6					
		*Calculat	ed Lma	ıx is tl	he Loud	est value.			

Report date: 3/30/2021

Case Description: Lakepointe Apartments Noise Impact Study

				Rec	eptor #1
		Baselines (	dBA)		
Description	Land Use	Daytime	Evening	Night	
Site Preparation	Residential	75	45		45

			Equipm	nent	I			
			Spec		Actua	l	Receptor	Estimated
	Impact		Lmax		Lmax		Distance	Shielding
Description	Device	Usage(%)	(dBA)		(dBA)		(feet)	(dBA)
Dozer	No	40				81.7	330	0
Tractor	No	40		84			330	0
Dozer	No	40				81.7	330	0
Dozer	No	40				81.7	330	0
Tractor	No	40		84			330	0
Tractor	No	40		84			330	0
Tractor	No	40		84			330	0

Results

Calculated (dBA)

Equipment	*Lm	ax Leq	
Dozer		65.3	61.3
Tractor		67.6	63.6
Dozer		65.3	61.3
Dozer		65.3	61.3
Tractor		67.6	63.6
Tractor		67.6	63.6
Tractor		67.6	63.6
Тс	otal	67.6	71.2

Report date:3/30/2021Case Description:Lakepointe Apartments Noise Impact Study

				Rec	eptor #1
		Baselines (	dBA)		
Description	Land Use	Daytime	Evening	Night	
Grading	Residential	75	45		45

			Equipm	nent				
			Spec		Actual	F	Receptor	Estimated
	Impact		Lmax		Lmax	0	Distance	Shielding
Description	Device	Usage(%)	(dBA)		(dBA)	(	feet)	(dBA)
Excavator	No	40			80	.7	330	0
Grader	No	40		85			330	0
Dozer	No	40			81	.7	330	0
Tractor	No	40		84			330	0
Tractor	No	40		84			330	0
Tractor	No	40		84			330	0

Results

Calculated	(dBA)
calculated	ubri

Equipment		*Lmax	Leq	
Excavator		64.3		60.3
Grader		68.6		64.6
Dozer		65.3		61.3
Tractor		67.6		63.6
Tractor		67.6		63.6
Tractor		67.6		63.6
	Total	68.6		70.9
		*Calculate	d Lma	x is the Loudest value.

Report date:3/30/2021Case Description:Lakepointe Apartments Noise Impact Study

				Rec	eptor #1
		Baselines (	(dBA)		
Description	Land Use	Daytime	Evening	Night	
<b>Building Construction</b>	Residential	75	45		45

	Equipment							
			Spec	A	Actual	Receptor	Estimated	
	Impact		Lmax	L	max	Distance	Shielding	
Description	Device	Usage(%)	(dBA)	(	dBA)	(feet)	(dBA)	
Crane	No	16			80.6	330	0	
Pickup Truck	No	40			75	330	0	
Generator	No	50			80.6	330	0	
Tractor	No	40		84		330	0	
Welder / Torch	No	40			74	330	0	
Tractor	No	40		84		330	0	
Tractor	No	40		84		330	0	
Pickup Truck	No	40			75	330	0	
Pickup Truck	No	40			75	330	0	

Calculated (dBA)

Results

Equipment		*Lmax	Leq	
Crane		64.2		56.2
Pickup Truck		58.6		54.6
Generator		64.2		61.2
Tractor		67.6		63.6
Welder / Torch		57.6		53.6
Tractor		67.6		63.6
Tractor		67.6		63.6
Pickup Truck		58.6		54.6
Pickup Truck		58.6		54.6
	Total	67.6	i	69.9

Report date:3/30/2021Case Description:Lakepointe Apartments Noise Impact Study

				Rec	eptor #1
		Baselines (	dBA)		
Description	Land Use	Daytime	Evening	Night	
Paving	Residential	75	4	5	45

			Equipment	t		
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Paver	No	50		77.2	330	0
Roller	No	20		80	330	0
Roller	No	20		80	330	0
Paver	No	50		77.2	330	0
Roller	No	20		80	330	0
Roller	No	20		80	330	0

Results

Calculated (dBA)

Equipment		*Lmax	Leq			
Paver		60.8		57.8		
Roller		63.6		56.6		
Roller		63.6		56.6		
Paver		60.8		57.8		
Roller		63.6		56.6		
Roller		63.6		56.6		
	Total	63.6		64.8		
		*Calculated Lmax is the Loudest value				

	Roadway Co	onstruction	Noise	Mod	el (RCNI	N),Version 1.1		
Report date:	3/30/2021							
Case Description:	Lakepointe	Apartment	ts Noise	e Imp	act Stud	ly		
					Rec	eptor #1		
		Baselines	(dBA)					
Description	Land Use	Daytime	Eveni	ng	Night			
Architectural Coating	Residential	7	5	45		45		
					Equipm	nent		
					Spec	Actual	Receptor	Estimated
		Impact			Lmax	Lmax	Distance	Shielding
Description		Device	Usage	e(%)	(dBA)	(dBA)	(feet)	(dBA)
Compressor (air)		No		40		77.7	7 330	0
					Results	;		
		Calculate	d (dBA)	)				
Equipment		*Lmax	Leq					
Compressor (air)		61.3	3	57.3				
	Total	61.3	3	57.3				
		*Calculat	ed Lma	x is tl	ne Loud	est value.		

PROJECT:	Lakepointe Apartments Vibration Effects	JOB #:	2395-2021-02
ACTIVITY:	Large Bulldozer	DATE:	30-Mar-21
LOCATION:	School Building to the South	ENGINEER:	D. Shivaiah

#### VIBRATION INPUT/OUTPUT DATA OTHER CONSTRUCTION EQUIPMENT

		$FFV - FFV_{ref}(23/D)$	(11/300)			
PPV =	0.013	in/sec				
Equipment Type =	2	Large Bulldozer				
PPV <sub>ref</sub> =	0.089	Reference PPV at 25 ft.				
D =	145.00	Distance from Equipment	to receiver in ft.			
n =	1.10	Vibration attenuation rate	e through the ground			
Γ		EQUIPMENT PPV REFERENCE LEVELS				
-	Туре	Equipment	Reference PPV at 25 ft. (in/sec)			
	1	Vibratory Roller	0.210	-		
	2	Large Bulldozer	0.089			
	3	Caisson Drilling	0.089			
	4	Loaded Trucks	0.076			
	5	Jackhammer	0.035	1		
Γ	6	Small Bulldozer	0.003	]		
	7	Crack and Seat	2 400			

PROJECT:	Lakepointe Apartments Vibration Effects	JOB #:	2395-2021-02
ACTIVITY:	Vibratory Roller	DATE:	30-Mar-21
LOCATION:	School Building to the South	ENGINEER:	D. Shivaiah

#### VIBRATION INPUT/OUTPUT DATA OTHER CONSTRUCTION EQUIPMENT

		$PPV = PPV_{ref}(25/D)^{n}$	(in/sec)			
PPV =	0.030	in/sec				
Equipment Type =	1	Vibratory Roller				
PPV <sub>ref</sub> =	0.210	Reference PPV at 25 ft.				
D =	145.00	Distance from Equipment	t to receiver in ft.			
n =	1.10	Vibration attenuation rate	e through the ground			
	EQUIPMENT PPV REFERENCE LEVELS					
	Туре	Equipment	Reference PPV at 25 ft. (in/sec)			
	1	Vibratory Roller	0.210			
	2	Large Bulldozer	0.089			
	3	Caisson Drilling	0.089			
	4	Loaded Trucks	0.076			
	5	Jackhammer	0.035			
	6	Small Bulldozer	0.003			
				1		

1

f

PROJECT:	Lakepointe A	Apartments Vibration Effe	cts JOB #:	2395-2021-02
ACTIVITY:	Loaded Truc	k	DATE:	30-Mar-21
LOCATION:	School Build	ing to the South	ENGINEER:	D. Shivaiah
	VIBR	ATION INPUT/OUT	ΡΗΤ ΠΑΤΑ	
	01	THER CONSTRUCTION EQI	UIPMENT	
		$PPV = PPV_{ref}(25/D)^n$ (in	/sec)	
- \(0	0.011	in loss	,	
PPV =	0.011	in/sec		
Equipment Type =	4	Loaded Trucks		
PPV <sub>ref</sub> =	0.076	Reference PPV at 25 ft.		
D =	145.00	Distance from Equipmen	t to receiver in ft.	
n =	1.10	Vibration attenuation rat	e through the gro	und
	EQ	UIPMENT PPV REFERENC	E LEVELS	7
	Туре	Equipment	Reference PPV at 25 ft. (in/sec)	
	1	Vibratory Roller	0.210	
	2	Large Bulldozer	0.089	
	3	Caisson Drilling	0.089	
	4	Loaded Trucks	0.076	
	5	Jackhammer	0.035	
	6	Small Bulldozer	0.003	
			2 400	

PROJECT:	Lakepointe Apartments Vibration Effects	JOB #:	2395-2021-02
ACTIVITY:	Large Bulldozer	DATE:	30-Mar-21
LOCATION:	Commercial Building to the North	ENGINEER:	D. Shivaiah

#### VIBRATION INPUT/OUTPUT DATA OTHER CONSTRUCTION EQUIPMENT

		$PPV = PPV_{ref}(25/D)''$	(in/sec)			
PPV =	0.053	in/sec				
Equipment Type =	2	Large Bulldozer				
PPV <sub>ref</sub> =	0.089	0.089 Reference PPV at 25 ft.				
D =	40.00	40.00 Distance from Equipment to receiver in ft.				
n =	1.10	Vibration attenuation rate	e through the ground			
		EQUIPMENT PPV REFERE	NCE LEVELS			
	Туре	Equipment	Reference PPV at 25 ft. (in/sec)			
	1	Vibratory Roller	0.210			
	2	Large Bulldozer	0.089			
	3	Caisson Drilling	0.089			
	4	Loaded Trucks	0.076			
	5	Jackhammer	0.035			
	6	Small Bulldozer	0.003	1		
	-	Creater and Creat	2,400			

PROJECT:	Lakepointe Apartments Vibration Effects	JOB #:	2395-2021-02
ACTIVITY:	Vibratory Roller	DATE:	30-Mar-21
LOCATION:	Commercial Building to the North	ENGINEER:	D. Shivaiah

#### VIBRATION INPUT/OUTPUT DATA OTHER CONSTRUCTION EQUIPMENT

		$PPV = PPV_{ref}(25/D)^n$	(in/sec)		
PPV =	0.125	in/sec			
Equipment Type =	1	Vibratory Roller			
PPV <sub>ref</sub> =	0.210	0.210 Reference PPV at 25 ft.			
D =	40.00	Distance from Equipment	to receiver in ft.		
n =	1.10	Vibration attenuation rate	e through the ground		
ſ		EQUIPMENT PPV REFERE	NCE LEVELS		
-	Туре	Equipment	Reference PPV at 25 ft. (in/sec)		
	1	Vibratory Roller	0.210		
	2	Large Bulldozer	0.089		
	3	Caisson Drilling	0.089		
	4	Loaded Trucks	0.076		
	5	Jackhammer	0.035		
	6	Small Bulldozer	0.003		
	7	Crack and Seat	2 400		

1

f

PROJECT:	Lakepointe A	Apartments Vibration Effect	cts JOB #:	2395-2021-02		
ACTIVITY:	Loaded Truc	k	DATE:	30-Mar-21		
LOCATION:	Commercial	Building to the North	ENGINEER:	D. Shivaiah		
	VIBR	ATION INPUT/OUT	PUT DATA			
	01	THER CONSTRUCTION EQU	JIPMENT			
		PPV = PPV <sub>ref</sub> (25/D) <sup>n</sup> (in/	/sec)			
221						
PPV =	0.045	in/sec				
Equipment Type =	4	4 Loaded Trucks				
PPV <sub>ref</sub> =	0.076	0.076 Reference PPV at 25 ft.				
D =	40.00	40.00 Distance from Equipment to receiver in ft.				
n =	1.10	Vibration attenuation rat	e through the gro	und		
	EC	UIPMENT PPV REFERENC	E LEVELS	7		
	Туре	Equipment	Reference PPV at 25 ft. (in/sec)			
	1	Vibratory Roller	0.210			
	2	Large Bulldozer	0.089			
	3	Caisson Drilling	0.089			
	4	Loaded Trucks	0.076			
	5	Jackhammer	0.035			
	6	Small Bulldozer	0.003			
		Crack and Coat	2 400	1		
# **APPENDIX 5a**

# INFRASTRUCTURE GROUP, INC.

Traffic Engineering Services 2672 N. Vista Crest Road Orange, CA 92867 (714) 749-6386



# TRAFFIC IMPACT ANALYSIS

# LAKESHORE POINTE

# LAKE ELSINORE, CALIFORNIA

Prepared by:

Denis Bilodeau, P.E., T.E., P.T.O.E. Venn Bibcean

RECEIVED

OCT 3 0 2015

CITY OF LAKE ELSINORE PLANNING DIVISION



October 22, 2015

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#### **APPENDICES**

Appendix A – Scoping Agreement

Appendix B – Existing Traffic Counts

Appendix C – Level of Service Calculation Worksheets

# 1.0 INTRODUCTION

#### Purpose and Study Objectives

This TIA has been prepared to evaluate and assess the traffic and circulation impacts of the proposed Lakeshore Pointe project (proposed project). The purpose of this report is to provide an analysis of the traffic impacts resulting from the development of 152 apartment dwelling units, and identify potential traffic mitigation measures to maintain an acceptable level of service (LOS).

#### Site Location

The project site is located just north of Lakeside High School along Riverside Drive (State Route 74) in the City of Lake Elsinore (City). The project site is currently vacant and undeveloped. Adjacent land uses include Lakeside High School to the south, residential and retail uses to the north and west, and recreational (Lake Elsinore Marina) to the east. Access to the project site is provided along Riverside Drive. **Figure 1** illustrates the location of the project site and the surrounding transportation network.

#### Project Description

The project proposes to construct 152 apartment dwelling units on a 13.21 acre lot. The project site is vacant and undeveloped. The apartment units will range from one to three bedroom units. Access to the project site would be maintained on Riverside Drive with a newly constructed street that would be shared between the proposed project and the existing retail parcel. Approximately 349 parking spaces will be provided on-site. The expected opening year for the project is 2017. Figure 2 provides a site plan of the proposed project.





Figure 2 Study Area and Project Location

# 2.0 AREA CONDITIONS

To determine the scope of work for this traffic impact analysis, Infrastructure Group Inc. consulted with City staff on the study area intersections and roadway segments. A Scoping Agreement was submitted to City staff prior to preparation of the report, and is provided in Appendix A.

#### Intersection Level of Service Analysis

The study area includes the following intersections:

- 1. Riverside Drive/Lakeshore Drive
- 2. Riverside Drive/Lincoln Street
- 3. Riverside Drive/Lakeside High School Le Harve Street
- 4. Riverside Drive/Lakeside High School Stadium Way
- 5. Riverside Drive/Grand Avenue

#### Existing Circulation System

Figure 3 provides the locations of the study area intersections, roadway segments, and the existing traffic control devices and intersection geometrics.

Existing roadway segments within the project study area include Riverside Drive and Lakeshore Drive. The following provides a description of the two roadways.

**Riverside Drive** - Riverside Drive is a north/south, two-lane divided roadway and is classified as an Urban Arterial (120-foot right-of-way) on the City of Lake Elsinore General Plan Circulation Element. The average daily traffic along Riverside Drive ranges from 18,000 to 26,000 vehicles per day.

Lakeshore Drive - Lakeshore Drive is an east/west, two-lane undivided to fivelane divided roadway, and is classified as a Secondary (90-foot right-of-way) to an Urban Arterial (120-foot right-of-way) on the City of Lake Elsinore General Plan Circulation Element. The average daily traffic along Lakeshore Drive ranges from 11,000 to 17,000 vehicles per day.

#### Existing Traffic Volumes

Existing traffic counts were collected in August 2014, September 2014, and February 2015 at various study area intersections and roadway segments. For purposes of this analysis, a two percent growth rate was applied to the existing traffic counts to reflect recent 2015 count data. This approach was verified and approved by City staff. Figure 4 provides the existing traffic volumes at the study area intersections and roadway segments. Appendix B provides the existing traffic count sheets.

#### Existing Level of Service

Existing LOS analyses were conducted consistent with the procedures and parameters used for intersection peak hour analysis discussed in the City's Traffic Impact Analysis Guidelines. The assessment of intersection conditions addresses LOS, in terms of vehicle control delay (in seconds per vehicle) for signalized and unsignalized intersections. The level of service grades (LOS A-F), as reported in *Highway Capacity* 



Figure 3 Existing Geometrics and Traffic Controls



Figure 4 Existing Traffic Volumes Manual (HCM2000), are dependent on the volume-to-capacity (V/C) ratios and vehicle control delay (in seconds) at the signalized and unsignalized intersection, respectively. Both signalized and unsignalized study area intersections have been analyzed using the HCM2000 method. The Synchro (Version 9) software was used to determine intersection LOS for all study scenarios. Synchro is consistent with the HCM2000 methodologies.

The degree of congestion at an intersection is described by the level of service, which ranges from A to F, with A representing free-flow conditions with little delay and F representing over-saturated traffic flow throughout the peak hour. A complete description of the meaning of level of service can be found in the Highway Research Board Special Report 209, *Highway Capacity Manual* (HCM2000). Brief descriptions of the six levels of service, as abstracted from the HCM, are shown in Tables A and B.

Level of Service	Unsignalized Intersection Delay per Vehicle	Signalized Intersection Delay per Vehicle		
A	≤ 10	<u>≤</u> 10		
В	> 10 - 15	> 10 - 20		
С	> 15 - 25	> 20 - 35		
D	> 25 - 35	> 35 - 55		
E	> 35 - 50	> 55 - 80		
F	> 50	> 80		

#### Table A - Level of Service Definitions

SOURCE: Highway Capacity Manual, Transportation Research Board, Special Report No. 209, Washington, D.C., 2000.

The City of Lake Elsinore General Plan states that the acceptable peak hour LOS at an intersection is LOS D or better. Any intersections operating at LOS E or F is considered deficient. A significant impact occurs at a study area intersection when the addition of project traffic causes either peak hour LOS to degrade from acceptable LOS (LOS D or better) to LOS E or F, or the peak hour delay increases as follows:

LOS A	By 10.0 seconds
LOS B	By 10.0 seconds
LOS C	By 8.0 seconds
LOS D	By 5.0 seconds
LOS E	By 2.0 seconds
LOS F	By 1.0 seconds

If the proposed project's traffic causes the LOS/delay values to exceed, the impacts are determined to be significant. The project would need to identify feasible improvements that will mitigate the intersection LOS back to acceptable LOS (LOS D or better).

#### Table B - Level of Service Descriptions

LOS	Description
A	No approach phase is fully utilized by traffic, and no vehicle waits longer than one red indication. Typically, the approach appears quite open, turns are made easily, and nearly all drivers find freedom of operation.
В	This service level represents stable operation, where an occasional approach phase is fully utilized and a substantial number are nearing full use. Many drivers begin to feel restricted within platoons of vehicles.
С	This level still represents stable operating conditions. Occasionally drivers may have to wait through more than one red signal indication, and backups may develop behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so.
D	This level encompasses a zone of increasing restriction approaching instability at the intersection. Delays to approaching vehicles may be substantial during short peaks within the peak period; however, enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive backups.
E	Capacity occurs at the upper end of this service level. It represents the most vehicles that any particular intersection approach can accommodate. Full utilization of every signal cycle is seldom attained no matter how great the demand.
F	This level describes forced flow operations at low speeds, where volumes exceed capacity. These conditions usually result from queues of vehicles backing up from a restriction downstream. Speeds are reduced substantially, and stoppages may occur for short or long periods of time due to the con- gestion. In the extreme case, both speed and volume can drop to zero.

SOURCE: Highway Capacity Manual, Transportation Research Board, Special Report No. 209, Washington, D.C., 2000.

**Table C** provides the results of the LOS analysis during the AM and PM peak hours. As shown in the table, all study area intersections currently operate at acceptable LOS (LOS D or better) with the exception of Riverside Drive/Lincoln Street (LOS E in the AM peak hour) Riverside Drive/Grand Avenue (LOS F in the AM and PM peak hours). Appendix C provides the LOS calculation worksheets.

		AM Peak Hour		PM Peak Hour	
Intersection	Control	Delay (sec)	LOS	Delay (sec)	LOS
1. Riverside Drive/Lakeshore Drive	Signalized	30.5	С	27.5	С
2. Riverside Drive/Lincoln Street	Signalized	57.8	E	28.4	С
3. Riverside Drive/Lakeside High School- Le Harve Street	Signalized	6.0	A	14.7	В
4. Riverside Drive/Lakeside High School- Stadium Way	Signalized	7.7	A	15.0	В
5. Riverside Drive/Grand Avenue	Stop Controlled (EB)	>50.0	F	>50.0	F

#### Table C - Existing Level of Service Summary

#### **General Plan Circulation Element**

**Figure 5** illustrates the City's General Plan Circulation Element. Within the vicinity of the proposed project, Riverside Drive, Lincoln Street, and Machado Street are designated on the Circulation Element.

#### Transit Service

The study area is currently served by the Riverside Transit Agency, Route 8, along Lincoln Street, Machado Street, and Lakeshore Drive.



Figure 5 General Plan Circulation Element

# 3.0 PROJECTED FUTURE TRAFFIC

The project proposes to construct 152 apartment dwelling units just north of Lakeside High School, along Riverside Drive. The project will have access from a newly constructed street that would be shared between the proposed project and the existing retail parcel off of Riverside Drive.

#### Project Trip Generation

The project trip generation represents the amount of trips entering and exiting the project site during the AM and PM peak hours. Trip generation rates used for the project are taken from the Trip Generation Manual from the Institute of Transportation Engineers (ITE), 9th Edition. **Table C** provides the trip generation for the proposed project. As the table illustrates, the proposed project would generate 1,011 daily trips, 84 AM peak hour trips (24 entering and 60 exiting), and 102 PM peak hour trips (62 entering and 40 exiting). Since the project site is vacant and undeveloped, the proposed project would generate all new traffic to the circulation network.

The trip generation does not take into account the use of public transit by the proposed project. As such, the project trip generation provides a conservative estimate of the trips accessing the project site.

	Units		AM Peak Hour			PM Peak Hour		
		ADT	In	Out	Total	In	Out	Total
Apartment								
Trip Rate	Per DU	6.65	0.16	0.39	0.55	0.41	0.26	0.67
Trip Generation	152 Units	1,011	24	60	84	62	40	102

Table	<b>D</b> -	Project	Trip	Generation
-------	------------	---------	------	------------

Trip Rates from the Institute of Transportation Engineers, 9th Edition.

DU = Dwelling Unit

#### Project Trip Distribution and Assignment

Trip distribution is the origin and destination of traffic from the project site. Trip distribution is determined based on the geographic location of the project site, the adjacent land uses in the study area, and the proximity to major arterials and freeways. The trip distribution for the proposed project was based on the existing roadway system, existing traffic patterns, and proximity to local attractions. As such, approximately 60 percent of the project traffic is distributed north on Riverside Drive, and 40 percent is distributed south on Riverside Drive.

The trip distribution was used to assign project trips to the local roadways. The trip assignment is determined by applying the trip distribution percentages to the inbound and outbound trips calculated from the project trip generation. Figure 6 illustrates the project trip distribution percentages. Figure 7 illustrates the project trip assignment.



Figure 6 Project Trip Distribution



Figure 7 Project Trip Assignment

## 4.0 CUMULATIVE TRAFFIC

A cumulative traffic scenario was developed in order to evaluate future traffic conditions in the study area. Traffic from approved and proposed projects within the study area were added to existing traffic volumes, with an ambient growth, to derive cumulative traffic conditions. The opening year for this analysis is 2017.

#### Ambient Growth Rate

To account for growth in traffic on the local roadways, a two percent (2%) per year growth rate was applied to the existing traffic volumes. For this analysis, the existing traffic volumes were adjusted four percent (4%) to account for the ambient growth in the study area.

#### Trip Distribution and Assignment

City staff provided a list of approved/pending projects near the project site that would contribute to the traffic conditions in the area. Three projects were identified and considered "cumulative" project in the study area: 1) Circle K Service Station; 2) The Village at Lakeshore; and 3) Wakerider. **Figure 8** provides the locations of the cumulative projects.

#### Cumulative Project Trip Generation

Project trips were generated for each of the cumulative projects using the ITE Trip Generation Manual, 9th Edition. **Table E** provides the cumulative project trip generation estimates.

## Cumulative Project Trip Distribution and Assignment

Trip distribution and assignment was determined for the cumulative projects consistent with the approach for the proposed project. Figure 9 provides the cumulative project trip distribution and ADT for each cumulative project. Figure 10 provides the total cumulative project trip assignment.



Figure 8 Cumulative Project Locations



Figure 9A Circle K Trip Distribution and ADT



# Figure 9B The Village at Lakeshore Trip Distribution and ADT



## Figure 9C Wakerider Trip Distribution and ADT



Figure 10 Cumulative Projects Trip Assignment

# 5.0 TRAFFIC ANALYSIS

Traffic impact analyses were conducted at the study area intersections for the Existing plus Project, Opening Year (Year 2017) plus Project, and Cumulative plus Project conditions. Intersection LOS was calculated using the HCM Methodology for signalized and unsignalized intersections. Appendix C provides the LOS calculation worksheets.

#### **Existing plus Project Traffic Conditions**

Traffic generated by the proposed project was added to the existing traffic volumes (with two growth factor) to determine the Existing plus Project condition. Figure 11 illustrates the Existing plus Project traffic volumes and daily traffic on roadway segments.

#### Existing plus Project Level of Service

Table F provides the results of the Existing plus Project LOS analysis during the AM and PM peak hours. As shown in the table, all study area intersections currently operate at acceptable LOS (LOS D or better) with the exception of Riverside Drive/Lincoln Street (LOS E in the AM peak hour) Riverside Drive/Grand Avenue (LOS F in the AM and PM peak hours).

		AM Peak Hour		PM Peak Hour	
Intersection	Control	Delay (sec)	LOS	Delay (sec)	LOS
1. Riverside Drive/Lakeshore Drive	Signalized	30.8	С	28.5	C
2. Riverside Drive/Lincoln Street	Signalized	64.8	E	30.5	С
3. Riverside Drive/Lakeside High School- Le Harve Street	Signalized	6.0	A	14.7	В
4. Riverside Drive/Lakeside High School- Stadium Way	Signalized	7.8	A	14.9	В
5. Riverside Drive/Grand Avenue	Stop Controlled (EB)	>50.0	F	>50.0	F

#### Table F - Existing plus Project Level of Service Summary

### Existing with Ambient Growth Rate (Opening Year 2017) plus Project Traffic Conditions

Traffic generated by the proposed project was added to the existing traffic volumes plus a six (6) percent growth factor to determine the Opening Year plus Project condition. **Figure 12** illustrates the Opening Year plus Project traffic volumes and daily traffic on roadway segments.



Figure 11 Existing plus Project Traffic Volumes



Annual Annual

i,

Figure 12 Opening Year (2017) plus Project Traffic Volumes

#### Opening Year 2017 plus Project Level of Service

Table G provides the results of the Existing plus Project LOS analysis during the AM and PM peak hours. As shown in the table, all study area intersections currently operate at acceptable LOS (LOS D or better) with the exception of Riverside Drive/Lincoln Street (LOS E in the AM peak hour) Riverside Drive/Grand Avenue (LOS F in the AM and PM peak hours).

		AM Peak Hour		PM Peak Hour	
Intersection	Control	Delay (sec)	LOS	Delay (sec)	LOS
1. Riverside Drive/Lakeshore Drive	Signalized	27.0	С	28.9	C
2. Riverside Drive/Lincoln Street	Signalized	74.8	E	34.9	C
3. Riverside Drive/Lakeside High School- Le Harve Street	Signalized	6.3	A	14.6	В
4. Riverside Drive/Lakeside High School- Stadium Way	Signalized	7.9	A	15.2	В
5. Riverside Drive/Grand Avenue	Stop Controlled (EB)	>50.0	F	>50.0	F

#### Table G - Opening Year plus Project Level of Service Summary

#### Cumulative Traffic Conditions

Project trips from the three cumulative projects were added to the existing traffic volumes, along with a four percent growth rate, to determine the cumulative traffic volumes. **Figure 13** illustrates the cumulative AM and PM peak hour volumes at the study area intersections, and the cumulative daily traffic on roadway segments.

#### **Cumulative Level of Service**

**Table H** provides the results of the Existing plus Project LOS analysis during the AM and PM peak hours. As shown in the table, all study area intersections currently operate at acceptable LOS (LOS D or better) with the exception of Riverside Drive/Lincoln Street (LOS F in the AM peak hour) Riverside Drive/Grand Avenue (LOS F in the AM and PM peak hours).

		AM P Hou	eak Jr	PM P Hou	eak Jr
Intersection	Control	Delay (sec)	LOS	Delay (sec)	LOS
1. Riverside Drive/Lakeshore Drive	Signalized	35.7	D	31.5	С
2. Riverside Drive/Lincoln Street	Signalized	95.0	F	44.7	D
3. Riverside Drive/Lakeside High School- Le Harve Street	Signalized	6.5	A	15.0	В
4. Riverside Drive/Lakeside High School- Stadium Way	Signalized	8.0	A	15.1	В
5. Riverside Drive/Grand Avenue	Stop Controlled (EB)	>50.0	F	>50.0	F

Table	Н -	Cumulative	Level	of	Service	Summary
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Lakeshore Pointe TIA



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Figure 13 Cumulative Traffic Volumes



Figure 14 Cumulative plus Project Traffic Volumes

A traffic signal warrant analysis was conducted at the intersection of Riverside Drive/Grand Avenue for the Cumulative condition. The Caltrans Warrant 3 (Peak Hour) Analysis shows that the minor street approach (Grand Avenue) meets and exceeds the volume required to warrant a traffic signal (354 AM peak hour vehicles and 442 PM peak hour vehicles), regardless of the through traffic on Riverside Drive.

#### Fair Share Contribution

It is recommended that the proposed project contribute towards the fair-share costs for these offsite improvements. The fair share contributions should be collected and used to construct the offsite improvements to maintain the acceptable LOS.

The project's fair share contribution is calculated by the following formula:

Project Only Trips / (Cumulative Traffic - Existing Traffic) x 100%

The following provides the calculation of the project's fair share contribution towards the recommended improvements.

Riverside Drive/Lincoln Street AM peak hour traffic (Project Only) - 51 trips Cumulative AM peak hour traffic - 2,355 trips Existing AM peak hour traffic - 2,082 trips

51 trips / (2,355 trips - 2,082 trips) x 100% = 18.68%

Estimated Cost for Restripe Eastbound Approach with Signal Modification = \$50,000Estimated Fair Share Contribution =  $$50,000 \times 18.68\% = $9,340$ 

#### Riverside Drive/Grand Avenue

AM peak hour traffic (Project Only) - 32 trips Cumulative AM peak hour traffic - 2,425 trips Existing AM peak hour traffic - 2,108 trips

32 trips / (2,425 trips - 2,108 trips) x 100% = 10.09%

PM peak hour traffic (Project Only) - 39 trips Cumulative PM peak hour traffic - 2,014 trips Existing PM peak hour traffic - 1,673 trips

39 trips / (2,014 trips - 1,673 trips) x 100% = 11.44%

Estimated Cost for New Signal (Design/Permit/Construction) = \$250,000 Estimated Fair Share Contribution (Based on PM Peak) = \$50,000 x 11.44% = \$**28,600** 

Total Fair Share Contribution (Restripe and New Signal) = \$37,940

Infrastructure Group, Inc.

#### APPENDIX A

SCOPING AGREEMENT

#### Exhibit B

#### SCOPING AGREEMENT FOR TRAFFIC IMPACT STUDY

This letter acknowledges the Clty of Lake Elsinore requirements for traffic impact analysis of the following project. The analysis must follow the City of Lake Elsinore Traffic Study Guldelines dated February 2005.

Case No. (i.e. TR.	PM, CUP, PP)	a ten a function a second s			
Related Cases -	Ne and list of other our	mued or active pro	piects within the SP		
SP No. Provide SP I	VO. and list of other app		10000 mmm sto or .	······································	
EIR No.					
GPA No					
CZ No.			هين		
Project Name: Lake	shore Pointe				······································
Project Address: No	rthwest corner of La	keside High Scl	hool and Riversid	e DING (SR-14)	
Project Description:	152 Apartments				
· · · <b>·</b> · · · ·					
	Consultan	ıt		Developer	
Name: Infras	tructure Group . Inc	-	Souther	n California Inves	stors
Address 2672	N Vista Crest Road		43414 B	usiness Park Dri	ve
Address	TA 02867		Temecu	la, CA 92590	
	10, 07 02007		951-252	-9000	
Telephone: 714-7	49-0300		951-252	-9001	
Fax:	//4-3010				
A Trin Generation Sc	surce: ITE 9 <sup>th</sup> Edit	lion			
Current GP Land Use	Provide General Pla	an Land	Proposed Land	Use Resider	tial
Current OF Earlo Oce	Use Designation (e.	.g.: MDR,	,		
	CR, etc)				
Current Zoning	R-3		Proposed Zonir	ng <u>R-3</u>	
Current Trip Generation	1		Proposed Trip	Generation	
Junent rhp constants	Out	Total	In	Out	Total
AM Trips			24	60	84
Alvi hips	and and an and a second damage of a spin to	······································			
DM Tripa		•	62	40	102
Pw thps			· · · · · · · · · · · · · · · · · · ·		
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Internal Trip Allowarto		⊠ No	}	% Trip Dis	count)
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A passby the discount	n 2076 is anowed for	all be indicated	on a report figure	а.	
area intersections and	project univervays si	all be indicated	on a report igue		
	t-é-thuiðlami N	1 60 %	S 40%	E 0%	W 0%
B. Trip Geographic D		1 00 70	0 4070		
(attach exhibit for deta	ited assignment)				
C. Background Traffi	C				
			6 annual i	mbiont Crowth I	2ate: 2.0%
Project Build-out Year	2017		Annuarz		Value: <u>4.070</u>
Phase Year(s)					
Other area projects to	be analyzed: The	e Village at Lake	eshore, Circle K S	Service, and vval	(erider
0.101 - 102 (201)					· · · · · · · · · · · · · · · · · · ·
Model/Enrecast methr	ndology				
MONEN ALCORET HOUR					
					abound: 2015
Traffic Impact Analysis		-15-		14	арговгу до го
Preparation Guide					

#### Exhibit B – Scoping Agreement – Page 2

D. Study intersections: (NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.)

6.	1. Riverside Dr. at Lakeshore Dr.	1.
 7.	2. Riverside Dr. at Lincoln St.	2.
 8	<ol> <li>Riverside Dr. at Lakeside High School</li> </ol>	3.
9.	<ol><li>Riverside Dr. at Lakeside HS Stadium Way</li></ol>	4.
10,	5 Riverside Dr. @ Grand Ave	5

E. Study Roadway Segments: (NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies,)

1. 2. 3	Riverside Dr. (Lakeview Ave. to Lakeshore Dr.) Riverside Dr. (Lakeshore Dr. to Lincoln St.) Riverside Dr. (Lincoln St. to Lakeside High	6.	Lakeshore Dr. (Riverside Dr. to Iowa St.)
0.	School)	7.	Lakeshole Dr. (Riversine Dr. to violetti or.)
4.	Riverside Dr (Lakebide to HS Stadium Way)	8.	
5.	Riverside Dr. (Lakeside HS Stadium Way to	9,	
- •	Grand Ave.)	10	

#### E. Other Jurisdictional Impacts

Is this project within one-mile radius of another jurisdiction or a State Highway? 🗌 Yes 🛛 No

If so, name of City Jurisdiction:

- F. Site Plan (please attach reduced copy) (Please see attachment.)
- G. Specific issues to be addressed in the Study (in addition to the standard analysis described in the Guideline) (To be filled out by City)

(NOTE: If the traffic study states that "5 traffic signal is warranted" (or "a traffic signal appears to be warranted," or similar statementh 3 an existing unsignalized intersection under existing conditions, 8-hour approach traffic volume information must be submitted in addition to the peak hourly turning movement counts for thet intersection.)

#### H. Existing Conditions

Traffic count data must be new or recent. Provide traffic count dates if using other than new counts. Date of counts: Use August 27, 2014 counts with 2.0% Growth Rate

\*NOTE\* Traffic Study Submittal Form and appropriate fee must be submitted with, or prior to submittal of this form. City staff will not process the Scoping Agreement prior to receipt of the fee.

Recommended by Consultant's Représentative

Approved Scoping Agreement:

7/77/19 Date City of Lake Elsinore Engineering Department

Date

Scoping Agreement Submitted on \_

Revised on \_

Traffic Impact Analysis Preparation Guide -16-

February 2015

# TABLE A Lakeshore Pointe Project Trip Generation

· ·

					AM	Peak Hour				PMI	Peak Hour		
Use	Units	Trip Rate*	ADT	Rate	#	In/Out	ŗ	Out	Rate	#	In/Out	Ē	Out
Apartment	152 Units	6.65/DU	1,011	0.055	84	29/71	24	60	0.67	102	61/39	61	40

\*Institute of Transportatin Engineers Trip Generation Manual, 9th Edition

DU= Dwelling Unit



Infrastructure Group, Inc.

#### APPENDIX B

EXISTING TRAFFIC COUNTS
#### *Trans portation Studies, Ac.* 2640 Walnut Avenue, Suite H Tustin, CA. 92780

City: LAKE ELSINORE N-S- Direction: RIVERSIDE DRIVE E-W Direction: LAKESHORE DRIVE File Name : H1409006 Site Code : 00000000 Start Date : 8/26/2014 Page No : 1

				Gro	oups Print	ed- Turnii	ng Moverne	ents					
	RIVER	RSIDE DRI	/E	LAKES	HORE DR	IVE	RIVER	SIDE DRI	IVE	LAKES	HORE DR	IVE	
	Sc	outhbound		We	estbound		No	orthbound		<u> </u>	astbound		
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00	14	105	8	3	37	38	67	101	14	17	74	48	526
07:15	36	106	6	1	62	46	74	133	26	19	73	47	629
07:30	19	102	2	3	29	42	68	122	15	25	83	67	577
07:45	37	108	5	2	28	42	68	118	33	24	52	49	566
Tota)	106	421	21	9	156	168	277	474	88	85	282	211	2298
08:00	23	118	2	6	39	47	60	119	46	28	46	48	582
08:15	28	122	2	1	30	41	59	127	49	22	31	47	559
08:30	37	91	4	3	31	28	66	129	34	16	49	39	527
08:45	36	94	8	6	30	27	51	101	28	23	51	30	485
Total	124	425	16	16	130	143	236	476	157 ]	89	177	164	2153
*** BREAK ***													
16:00	51	110	5	4	56	48	47	140	27	30	25	40	583
16:15	62	123	10	4	66	49	57	174	38	34	54	40	711
16:30	71	132	8	2	63	59	61	185	40	38	67	57	783
16:45	53	118	7	8	105	45	77	182	20	35	64	52	766
Total	237	483	30	18	290	201	242	681	125	137	210	189	2843
17:00	66	125	8	З	69	57	59	178	40	36	53	44	738
17:15	79	126	8	6	65	48	81	184	42	38	58	40	775
17:30	68	124	11	12	47	50	69	146	26	27	50	43	673
17:45	47	109	10	6	69	45	51	172	33	37	44	54	677
Total	260	484	37	27	250	200	260	680	141	138	205	181	2863
Grand Total	727	1813	104	70	826	712	1015	2311	511	449	874	745	10157
Anorch %	27.5	68.6	3.9	4.4	51.4	44.3	26.5	60.2	13.3	21.7	42.3	36	
Total %	7.2	17.8	1	0.7	8.1	7	10	22.8	5	4,4	8,6	7.3	

### *Trans portation Studies, Hc.* 2640 Walnut Avenue, Suite H Tustin, CA. 92780

City: LAKE ELSINORE N-S- Direction: RIVERSIDE DRIVE E-W Direction: LAKESHORE DRIVE

2

File Name : H1409006 Site Code : 00000000 Start Date : 8/26/2014 Page No : 2

					1 4	VEGUO			R	VERSI	DE DRI	VE	LA	KESHO	RE DR	IVE	1
	RI	VERSIL		ve j	LA	KESHU		11 1 1		North	hound			Fasth	ound		1
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07:10	10	102	2	123	3	29	42	74	68	122	15	205	25	83	0/	175	5//
07:30	13	400	5	450	5	28	42	72	68	118	33	219	24	52	49	125	566
07:45	37	108	5	100	2	20	47	02	60	110	46	225	28	46	48	122	582
08:00	23	118	2	143	6	39	41	34	000	400	400	002	90	254	211	561	2354
Total Volume	115	434	15	564	12	158	177	347	270	49Z	120	002	190	45.0	211		2001
	20.4	77	27	Í	3.5	45.5	51		30.6	55.8			17.1	45.3	37.0		
% App. Total	20.4				500	627	0/1	796	912	925	.652	.946	.857	.765	.787	.801	.936
PHE	.777	.919	025	.940	.500	,037	.841	.1301									



#### Frans portation Studies, Ac. 2640 Walnut Avenue, Suite H Tustin, CA. 92780

City: LAKE ELSINORE N-S- Direction: RIVERSIDE DRIVE E-W Direction: LAKESHORE DRIVE File Name : H1409006 Site Code : 00000000 Start Date : 8/26/2014 Page No : 3

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Start Time	Right	Thru	Left	App, Total	Right	Thru	Left	App. Total	Right	I pru j	Leit	App. Total	Right	mar	LOIL	App. Total	
Peak Hour Anal	ysis Fron	n 16:00	to 17:45	5 - Peak 1	of 1												
Peak Hour for E	ntire Inte	rsection	i Begins	at 16:30				404	61	485	40	286	38	67	57	162	783
16:30	71	132	8	211	2	63	59	124	01	105		270	25	64	62	151	766
16.15	53	118	7	178	8	105	45	158	- 77	182	20	2/9	35	04	20	100	700
10.40		100		100	3	69	57	129	59	178	40	277	36	53	44	133	/38
17:00	66	125	0	199	5	05	40	140	01	18/	42	307	38	58	40	136	775
17:15	79	126	8	213	6	65	48	119	01		4.40	4440	147	247	102	587	3062
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Lotal Aointie	203	001		00,	26	57	20.4		24.2	63.4	12.4		25.3	41.6	33.2		
% App. Total	33.6	62.5	3.9		3.0	57	53.4	000	050	200	R16	936	967	903	.846	.898	.978
PHE	851	949	.969	.940	.594	.719	.886	839	.655	.900	.045						



### Trans partatian Studies, Sc. 2640 Walnut Avenue, Suite H Tustin, CA. 92780

City: LAKE ELSINORE N-S- Direction: RIVERSIDE DRIVE E-W Direction: LINCOLN STREET

And the second

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File Name : H1409007 Site Code : 00000000 Start Date : 8/26/2014 Page No : 1

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07:30	22	142	ň	ŏ	õ	0	0	140	22	43	0	84	468
07:45	<u> </u>	<u> </u>		0	0	0	0	511	68	143	0	379	1743
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17:00	55	149	Ŭ	0	0	ŏ	õ	231	25	16	0	53	523
17:15	49	149	v l	0	0	ň	õ	202	27	18	0	60	485
17:30	39	139	U O	0	0	ň	ñ	213	27	17	0	57	494
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,			<u>_</u>	^	~	٥١	Ω	2892	397	488	0	1053	7700
Grand Total	580	2290	0	U	0		ň	87 9	12.1	31.7	0	68.3	
Approh %	20.2	79.8	0	0	0	0	ŏ	37.6	5.2	6.3	Ó	13.7	
Total %	7.5	29.7	0	0	0	01	0	57.0	0.21	0.0	-		

#### Transportation Studies, Ic. 2640 Walnut Avenue, Suite H Tustin, CA. 92780

City: LAKE ELSINORE N-S- Direction: RIVERSIDE DRIVE E-W Direction: LINCOLN STREET 
 File Name
 : H1409007

 Site Code
 : 00000000

 Start Date
 : 8/26/2014

 Page No
 : 2

							m VD		DI	VERSI		VE		NCOLN	STRE	ET	
-	RI	VERSI	de driv	/E		DEAD	ENU			ALCOL		V L.,		Fasth	ound		
		South	hound			Westb	ound			North	pouna						Lat Tatal
			JUGIN		Diabt	Thru	Laft	App. Total	Right	Thrul	Left	App. Total	Right	ihru	Len	App. Total	IIII, TOLAI
Start Time	Right	Inru		App. Total	Right		Con	App. rotar 1									
Peak Hour Anal	ysis Fron	n 07:00 i	to 08:45	- Peak 1	of 1												
Peak Hour for E	ntire Inte	rsection	Begins	at 07:30					0	444	10	124	43	0	107	150	413
07:30	22	117	0	139	0	0	0	U	0	114	00	460	42	ñ	84	127	468
07.45	27	1/2	n	179	0	0	0	0	0	140	22	102	43		00	464	568
07:45		196	0	100	n	Ω	0	0	0	165	44	209	98	0	63	101	500
08:00	19	179	U	190	0	õ	õ	ñ	Ó	193	56	249	71	0	66	137	592
08:15	31	175	0	206	U			<u>v</u>	<u>~</u>	640	122	711	255	0	320	575	2041
Total Valume	109	613	0	722	0	0	0	0	U	012	132	1	110	ň	667	1	
	45.4	010	ō		0	0	0		0	82.3	17.7		44.3		- 00.1		960
% App. Total	15.1	04.9	<u> </u>	070		000	000	000	000	793	.589	.747	.651	.000	./48	.893	.802
PHF	.736	.856	.000	.876	.000	.000	.000	.000									



#### Srans portation Studies, Ac. 2640 Walnut Avenue, Suite H Tustin, CA. 92780

City: LAKE ELSINORE N-S- Direction: RIVERSIDE DRIVE E-W Direction: LINCOLN STREET

File Name	: H1409007
Site Code	:00000000
Start Date	: 8/26/2014
Page No	: 3

										VEDCIE			11	NCOLN	STRE	FT	
[	RI	VERSI	DE DRIV	ΕÍ		DEAD	END		RI	VERSIL		VC	LI	11000.14			
		Caude	baund	- 1		\//esth	ound			North	bound_			East	ouna		
		South	Dourio				1 - 4		Dight	Thru	left	Ann Total	Rìaht	Thru	Left	App. Total	Int. Total
Start Time	Right	Thru	Left A	pp. Total	Right			App total	rayau	11101	<u></u>	1. p					
Peak Hour Anal	ysis Fron	n 16:00	to 17:45 ·	- Peak 1	of 1												
Peak Hour for E	ntire Inte	rsection	Begins a	at 16:15 <sub>j</sub>			~		0	228	18	256	16	0	49	65	528
16:15	50	157	0	207	0	0	0	0	0	230	20	266	22	Ď	54	77	549
16:30	38	168	0	206	0	0	0	0	0	230	30	200	20	ň	59	78	546
10.00	71	1.4.4	n	215	0	0	0	0.	0	234	19	253	20	0	00	70	6010
10.40		440	õ	204	ň	n	D	0	0	204	35	239	12	0	60	<u>(0</u>	521
17:00	55	149	U				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Ū.	0	912	102	1014	71	0	227	298	2144
Total Volume	214	618	0	832	0	0	0	U.	0	00.0	101		228	0	76.2	1	
% Ann Total	25.7	74.3	0		0	0	0		0	89.9	10.1	050	770		860	955	976
PHF	.754	.920	.000	.967	.000	.000	.000	.000	.000	.958	.729	.953	.172	,000	.000		



### Transportation Studies, Ac. 2640 Walnut Avenue, Suite H Tustin, CA. 92780

City: LAKE ELSINORE N-S- Direction: RIVERSIDE DRIVE E-W Direction: HIGH SCHOOL - LE HARVE ST File Name : H1409008 Site Code : 00000000 Start Date : 8/26/2014 Page No : 1

				Gro	oups Printe	d- Turnir	ng Moverne	ents					
	RIVE	RSIDE DRI	VE	LA HAI	<b>RVE STRE</b>	ET	RIVER	RSIDE DR	IVE	HIGI	- SCHOO	ե	
	S/	outhbound	-	W	estbound		No	orthbound		E	astbound		
Start Time	Right	Thrul	Left	Right	Thru	Left	Right	Thru	Left	<u>Right</u>	Thru	Left	Int. Iotal
07:00	20	129	2	4	0	0	0	148	5	5	0	7	329
07.00	2.0	140	1	2	0	1	1	104	3	2	0	14	299
07.13	27	132	1	3	Ō	1	0	98	8	1	0	21	292
07.30	40	140	ó	2	Ō	1	0	128	7	2	0	34	354
Total	127	541	4	11	0	3	1	478	23	10	0	76	1274
Total		0.11							,		_		100
00.80	91	172	1	0	0	0	0	129	11	6	0	73	483
00.00	106	170	2	1	0	0	1	166	10	23	0	98	577
00.10	18	94	2	1	0	3	0	121	5	13	0	28	285
00.00	0, R	112	2	5	0	0	0	101	3	5	0	7	240
	220	548	7	7	0	3	1	517	29	47	0	206	1585
Total	220	010											
*** BREAK ***													
			<b>n</b>		0	0	1	195	3	1	0	4	350
16:00	4	136	5	1	0	0	2	267	1	5	Ō	2	436
16:15	3	152	2	2	0	1	4	242	3	4	ō	8	458
16:30	3	190	3	3	0		۰ ۵	233	2	2	õ	6	402
16:45	4	150	2	3	<u> </u>	U		037	a	12	0	20	1646
Total	14	628	12	9	U	1	4	557	91	12	-	/	
				2	0	1	1	235	2	1	0	4	392
17:00	5	134	D O	Т	0		,	244	ō	2	0	6	416
17:15	3	157	3	1	0	0	ä	215	3	3	0	8	388
17:30	8	143	3	Z	0	0	2	232	3	ā	Ō	2	377
17:45	5	125	4			1	<u> </u>	926	8	9	0	20	1573
Total	21	559	16	1	U	14	Ų	020	01	-			
		0070	20	24	Ο	8	12	2858	69	78	0	322	6078
Grand Total	382	2270	14	04 04	ů N	10	04	97.2	2.3	19.5	0	80.5	
Apprch %	14.2	84.4	1.4	01	0	01	0.2	47	1.1	1.3	0	5.3	
Total %	6.3	37.4	0.6	0.6	U	0.11	0.2	-17					

*Trans partation Studies*, *Inc.* 2640 Walnut Avenue, Suite H Tustin, CA. 92780

> File Name : H1409008 Site Code : 00000000 Start Date : 8/26/2014 Page No : 2

City: LAKE ELSINORE N-S- Direction: RIVERSIDE DRIVE E-W Direction: HIGH SCHOOL - LE HARVE ST

				·			STDE	ET	R	VERSI		VE		HIGH S	сноо	L	
	RI	VERSIC	E DRIV	/	LH	Mooth N	ound			North	hound			East	ound_		
		South	pound			vvesic	ounu		Diabt	Theu	loft	App Total	Right	Thru	Left	App. Total	Int. Total
Start Time	Right	<u>Thru</u>	Left	App. Total	Right	Inru	Len	App. Total	right	THIQ		r.99. 10to. 1					
Peak Hour Analy	ysis Fron	n 07:00 t	o 08:45	- Peak 1	of 1												
Peak Hour for E	ntire Inte	rsection	Begins	at 07:30					•	09	Q	106	1	0	21	22	292
07:30	27	132	1	160	3	0	1	4	0	100	7	135	2	õ	34	36	354
07:45	40	140	0	180	2	0	1		0	120	44	140	ĥ	ň	73	79	483
08:00	91	172	1	264	0	0	0	0	0	129	40	477	22	ñ	98	121	577
08:15	106	170	2	278	1	0	0	1	1	100	10	550	12	0	226	258	1706
Total Volume	264	614	4	882	6	0	2	8	1	521	30	556	124	ň	876		
% Ann Total	29.9	69.6	0.5		75	0	25		0.2	93,4	0.5	700	249	000	577	533	739
PHF	.623	.892	.500	.793	.500	.000	.500	.500	.250	./85	.818	./60	.040				



Irans partatian Studies, Ac. 2640 Walnut Avenue, Suite H Tustin, CA. 92780

 File Name
 : H1409008

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 : 8/26/2014

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City: LAKE ELSINORE N-S- Direction: RIVERSIDE DRIVE E-W Direction: HIGH SCHOOL - LE HARVE ST

												. <u></u>			0000	1	
r		UTDOID	500	/=	1 4	HARVE	STRE	FET I	Ri	VERSIE	DE DRIV	'E		riiGh Si	UNUU	~	
	RI	VERSIL		/L	L/\	Month	- und			North	bound			Eastb	ound		
		Southt	ound_			vvesic	<u>iouna</u>		F21 - 1-1	Thru	Loft		Right	Thru	Left	App. Total	Int. Total
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Tolai	Right	Thru	Leit	mpp, rotar (	155617				
Peak Hour Anal	ysis From	n 16:00 t	o 17:45	- Peak 1	of 1												
Peak Hour for E	ntire Inte	rsection	Begins	at 16:15		~	0	2	2	267	1	270	5	0	2	7	436
16:15	3	152	2	157	2	0	0	4	1	242	4	246	4	0	8	12	458
16:30	3	190	З	196	3	0	1	4		274	ñ	235	2	0	6	8	402
16:45	4	150	2	156	3	0	0	3	, v	233	2	200	1	ñ	4	5	392
17:00	5	134	6	145	3	0	1	4	1	235		230		~ ~	20	32	1688
17.00	16	626	13	654	11	0	2	13	4	977	8	989		0	2.V	52	1000
Total Volume	15	020	13	007	846	Ô	15.4		0.4	98.8	0.8		37.5	0	62.5		
% App. Total	2.3	95.7	2		04.0	000	E00	913	500	915	.667	.916	.600	.000	.625	.667	.921
PHF	.750	.824	542	.834	.917	.000	.500	.013	,000								



*Trans portation Studies, Ac.* 2640 Walnut Avenue, Suite H Tustin, CA. 92780

City: LAKE ELSINORE N-S- Direction: RIVERSIDE DRIVE E-W Direction: HIGH SCHOOL STADIUM WAY

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 File Name
 : H1409009

 Site Code
 : 00000000

 Starl Date
 : 8/26/2014

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				Gro	ups Printe	ed- Turnir	ng Moverne	ents				······	
T	RIVER	SIDE DRI	VE I	STAD	DIUM WAY	(	RIVEF	RSIDE DRI	VE	STA	DIUM WAY	Y	
	So	uthbound	·-	We	stbound		No	orthbound		Ee	astbound		1 4 7
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right I	Thru	<u>Left</u>	Int. Lotal
07.00	7	123	1	2	0	1	0	130	7	2	0	7	280
07:15	, ,	124	ól	4	0	3	1	97	11	10	0	8	260
07:30	2	131	2	2	0	3	1	97	12	3	0	10	264
07:45	16	124	ōl	ō	0	0	0	112	11	12	0	13	288
Total	28	502	3	8	0	7	2	436	41	27	0	38	1092
00.00	20	100	ما	٦	1	1	0	101	40	35	1	32	376
08:00	33	129	Å	2	1	1	Ō	94	71	62	1	52	463
08:15	40	139		2	ó	1	ō	116	6	9	0	9	276
08:30	2	129	2	0	ñ	4	ō	98	0	0	0	0	214
08:45 Totai	75	512	2	7	2	4	0	409	117	106	2	93	1329
*** BREAK ***							-	100	41	0	0	al	330
16:00	2	135	3	3	0	0	0 0	189	4	5	0	6	419
16:15	6	138	2	2	0	0	0	250	10	10	õ	17	439
16:30	15	158	1	2	0	0	0	231		10	0	11	375
16:45	9	127	0	4	0	1	<u> </u>		26		<u>0</u>	37	1572
Total	32	558	6	11	0	11	U	002	201	20	U		
17.00	0	4.2.4	2	6	1	0	0	219	3	4	0	7	382
17:00	·0 40	134	2	1	, 0	õ	Ó	230	6	7	0	14	403
17:35	12	129	2	л Л	ñ	õ	Ō	203	5	6	0	19	381
17:30	9	132	2	2	ñ	ő	Ď	214	3	3	0	7	362
17:45		<u> </u>			1	0	0	866	17	20	0	47	1528
lotal	34	519	111	10	,	• 1							
Grand Total	169	2091	22	39	3	12	2	2593	200	173 44 4	2 0.5	215 55 1	5521
Apprch %	7.4	91.6	1	72.2	5.6	22.2	0.1	92,0	2.6	3 1	0.0	3.9	
Total %	3.1	37.9	0.4	0,7	0.1	0,2	0	47	3.01	0.1	U	0.01	

*Grans portation Studies, Sc.* 2640 Walnut Avenue, Suile H Tustin, CA. 92780

City: LAKE ELSINORE N-S- Direction: RIVERSIDE DRIVE E-W Direction: HIGH SCHOOL STADIUM WAY

File Name	: H1409009
Site Code	: 00000000
Start Date	: 8/26/2014
Page No	: 2

						OTADIL	NA 14/41	/	RI	VERSU		VF		STADIL	IM WA	Y I	
	RI	IVERSI	de driv	/E		STADIU	ONE AAM	r i	1.51	V L I 101				Forth	bound		
		South	bound			West	bound			North	bouna			Lasu	Jouria		
			Dound		D:-L+	Theul	Loft	Ann Total	Right	Thru	Left	App, Total	Right	Thru	Left	App. Total	Int. Total
Start Time	Right	Thru	Left	App. Total	Rigni	<u>I tiru I</u>		App. Total 1	Tright L			<u> </u>					
Peak Hour Anal	ysis Fror	n 07:00	to 08:45	- Peak 1	of 1												
Peak Hour for E	ntire Inte	ersection	Begins	at 07:45					~	440	4.4	1221	12	0	13	25	288
07.45	16	124	0	140	0	0	0	0	0	112	11	323	05	Ă	20	ee l	276
07.40		100	ō	162	3	1	1	5	0	101	40	141	35	-1	32	00	370
08:00	33	129	0	102	ž	1	4	4	0	94	71	165	62	1	52	115	463
08:15	40	139	0	1/9	2	1		4	ő	440		122	0	Ω	9	18	276
08-30	2	129	2	133	2	0	1	3	U	116	0	144			400	226	1402
00.00		504	2	614	7	2	3	12	0	423	128	551	118	~	100	220	1403
Total Volume	91	921	2	014		407	0.0		n	76.8	23.2		52.2	0.9	46.9		
% App. Total	14.8	84.9	0.3		58.3	10.7	20			040	AE 4	826	476	500	510	491	.758
PHF	.569	.937	.250	,858	.583	.500	.750	.600	.000	.912	.451	.000 ]			.010		



Jians portation Studies, Ac. 2640 Walnut Avenue, Suite H Tustin, CA. 92780

 File Name
 : H1409009

 Site Code
 : 00000000

 Start Date
 : 8/26/2014

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City: LAKE ELSINORE N-S- Direction: RIVERSIDE DRIVE E-W Direction: HIGH SCHOOL STADIUM WAY

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														CTADI	11.4 10/0	v 1	
(		VEDCI	DE DON	1=		STADIU	IM WA1	Y	RI	VERSIL	DE DRI	VE		STADIC	101 107	'	
	RI	vertoii		/		10100				North	oound			East	bound		
		South	bound			vvesu	Joana		Disht	These	Loft	Ann Total	Right	Thru	Left	App, Total	Int. Total
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Tolal	Right	Thiu	LOIL	Mpp. Total ]	( traine				
Peak Hour Anal	ysis Fron	n 16:00	to 17:45	- Peak 1	of 1												
Peak Hour for E	ntire Inte	rsectior	a Begins	at 16:15	-	~	0	2	0	250	10	260	5	0	6	11	419
16:15	6	138	2	146	2	U	0	2	Š	200	5	236	10	0	17	27	439
16:30	15	158	1	174	2	0	U	2	ů,	201	e e	218	5	Ó	11	16	375
16:45	9	127	0	136	4	0	1	5	0	212	2	222	ă	ñ	7	11	382
17:00	6	134	2	142	6	1	0	7	<u> </u>	219		026	24		41	65	1615
Tatal Valumo	36	557	5	598	14	1	1	16	0	912	24	830	24 DG (D	Ň	62.4		
Total volume	00	001	ΛŪ		87.5	62	6.2	1	0	97.4	2.6		36.9	<u>v</u>	00.1		000
% App. Total	6	93.1	0.0		500	250	250	571	000	.912	.600	.900	.600	.000	.603	.602	,920
PHF	.600	.881	.625	.859	.083	.200											



2640 Walnut Aveenue, Suite H Tustin, CA. 92780

Location	PIV	FRSID	EDRIVE				rustin, or						Site:	LAKE ELSINOR
Segmont		HARVE	TOLAK	ESIDE ST	ADIUM								Date:	08/27/14
Client	; UR/	ABN SY	STEMS											
Interval		NB				SB			 4.1.6	Combi	ned —		Day:	Wednesday
Begin	AM		PM		AM		PM	504	AM 43	120	PNI 742	960		
12:00	27	59	120	456	16	61	122	504	30	120	269	500		
12:15	10		127		20		142		24		226			
12:30	14		108		10		122		23		223			
12:45	8	07	101	100	13	<i>4</i> 1	134	505	17	78	239	988		
01:00	4	37	100	485	10	41	128	500	23		244			
01:15	13		110		6		116		20		232			
01:30	14		146		12		127		18		273			
01:45	0	27	150	673		31	128	724	17	58	278	1.397		
02:00	97	21	133	013	ő		176		13		309			
02:10	3		222		8		236		11		458			
02.30	8		168		9		184		17		352			
02.43	10	52	148	587	6	56	155	546	16	108	303	1,133		
03:15	10		155		12		126		22		281			
03-30	12		187		18		136		30		323			
03:45	20		97		20		129		40		226	1 101		
04:00	18	96	122	685	28	204	144	598	46	300	200	1.283		
04:15	23		160		36		149		59		309			
04:30	16		210		58		175		(4		300			
04:45	39		193		82		130	6 7 0	121	011	323	1 426		
05:00	61	229	208	848	126	682	146	578	102	511	258	1,420		
05:15	53		214		150		144		203		361			
05:30	54		209		173		152		204		353			
05:45	61		217	~	233	C 47	130	691	204	859	327	1.233		
06:00	60	312	198	702	144	347	149	201	249	000	310			
06:15	89		152		100		124		217		310			
06:30	89		180		115		130		189		286			
06:45	74		100	470	129	518	134	476	252	970	264	949		
07:00	124	452	130	473	120	010	129	470	225		242			
07:15	103		114		132		99		236		213			
07:30	104		116		136		114		257		230			
07:45	121	524	100	313	162	594	104	429	299	1,118	204	742		
08:00	152	J24	70	510	198		118		350		197			
08:10	135		70		118		101		253		171			
08.30	100		64		116		106		216		170			
00,45	96	377	54	202	106	446	98	320	202	823	152	522		
09:00	89	017	60		130		90		219		150			
09:30	96		52		98		78		194		130			
09:45	96		36		112		54		208	760	90 77	202		
10:00	97	395	33	114	89	365	44	178	180	700	74	690		
10:15	112		26		105		48		100		70			
10:30	94		36		95		42		169		63			
10:45	92		19		75		44	00	226	904	40	154		
11:00	118	441	16	56	108	463	24	98	220	304	42			
11:15	112		10		122		32		204		38			
11:30	95		18		134		20		215		34			
11:45	116		12		99		E 107		7 009		11.079			
Totals	3,001		5.592		4,008		0.407		1.000					
Split%	42.8		50.5		57.2		49.5							
Day Totals		8,593				9,495				18.088				
Day Splits		47.5				52.5								
n-al-the ex	07.45		በና ነው		05:30		02:15		07:45		05:00			
reak riour	07,40		01.00		710		751		1.159		1.426			
Volume	545		040		0.76		0.8.0		0.83		0.99			
Factor	0.90		0.96		0.10		0.00		-					

2640 Walnut Aveenue, Suite H Tustin, CA. 92780

: RIVERSIDE DRIVE

City:

City.	ν Ι Δ Ι	CESHOR	E DR T	O LINCOL	N ST								Date:	09/04/14
_ocation:	; LA1	DANCV	CTEMC	O LINGOL	.,									
egment:	; UKI	SAN SI	5121415			SB				- Comb	ined		Day:	Thursday
nterval		NB	<b>DN</b> 4		۸M	00	РМ		AM		PM			
Begin	AM		107	755	26	101	154	646	44	159	336	1,401		
12:00	18	28	102	100	20	101	160	••••	45		328			
12:15	16		108		19		154		33		351			
12:30	15		197		28		178		37		386			
12:45	9		208	777	10	53	172	658	26	86	359	1.435		
01:00	7	33	187	111	13	00	166	500	21		355			
01:15	9		189		10		168		18		371			
01:30	8		203		12		152		21		350			
01:45	9		198	1.005	15	43	175	759	20	83	408	1.764		
02:00	14	40	233	1.005	14	45	104	700	23		416			
02:15	9		222		14		206		19		468			
02:30	9		262		10		184		21		472			
02:45	8		288	010	13	60	169	701	21	129	409	1,640		
03:00	9	69	240	938	12	00	165		35		394			
03:15	17		229		10		100		37		422			
03:30	25		232		12		190		36		415			
03:45	18		238		18	200	100	710	55	440	436	1.870		
04:00	31	231	240	1.151	24	209	190	113	92	1.0	468			
04:15	52		310		40		100		113		460			
04:30	56		279		57		101		180		506			
04:45	92		322		88	010	104	710	230	998	479	1.898		
05:00	97	379	296	1,179	133	019	153	719	221	000	486			
05:15	85		307		136		179		260		471			
05:30	95		296		174		175		205		462			
05:45	102		280		176	0.05	182	750	327	1 250	467	1.753		
06:00	134	645	265	1,003	193	605	202	730	315	1,000	454			
06:15	183		268		132		180		292		397			
06:30	152		213		140		170		316		435			
06:45	176		257		140		1/0		202	1.602	410	1.502		
07:00	201	973	220	788	191	629	190	714	382	1.002	372	1.000		
07:15	262		184		111		188		313		392		•	
07:30	282		236		164		150		201		328			
07:45	228		148		163		180	200	391	1 220	296	1.084		
08:00	205	771	140	464	162	568	156	620	307	1,333	288	1,001		
08:15	169		128		134		160		303		248			
08:30	185		90		148		158		222		252			
08:45	212		106		124	. – .	146	475	330	1 171	232	831		
09:00	164	680	116	354	130	491	125	4/7	294	1.1.1	216	0.01		
09:15	180		92		112		124		292		212			
09:30	172		92		123		120		290		162			
09:45	164		54		126		108		290	1 160	130	449		
10:00	166	660	56	192	118	500	74	257	404 200	1,100	144	110		
10:15	160		59		1 <b>3</b> 6		85		290		144			
10:30	162		41		118		44		280		80 00			
10:45	172		36		128		54		300	1 266	90 00	200		
11:00	170	737	34	110	150	618	64	180	320	1,355	90 70	790		
11.15	183		30		154		46		337		10			
11/30	180		23		158		36		338		59			
11:45	204		23		156		34		360		16			
LI.4J	5 276		8,717		4.496		7,200		9.772		15.917			
	540		54.9		46.0		45.2							
əp111%	04.0		54.0		10,0									
						11 606				25.689	Э			
Day Totals		13,993				11.030								
Day Splits		54.5				43.0								

D1409180 Data File :

07:15

977

0.87

Peak Hour

Volume

Factor

04:45

1.942

0.96

07:00

1.602

0.90

02:00

759

0.92

05:15

679

0.88

04:45

1.221

0.95

LAKE ELSINOR

Site:

2640 Walnut Aveenue, Suite H Tustin, CA. 92780

: RIVERSIDE DRIVE

City:

City.	• 1 TN	י א זהי	TTOT A	HARVE ST									Date	:	08/27/14
Location:		ANGV	2 NO DI												
Segment:	: UKI	MAN ST.	51 EM5			NB				- Combi	ned		Day:	Weda	nesday
Interval		SB			4 3 4	no	DМ		АМ		PM				
Begin	AM		PM		AIVI 25	62	138	525	42	137	274	1,082			
12:00	17	75	136	557	23	02	142	0.20	39		300				
12:15	26		158		13		1944		25		261				
12:30	13		127		12		111		31		247				
12:45	19		136	50.1	12	42	123	545	22	92	281	1,139			
01:00	14	49	158	594	10	45	125	010	25		276				
01:15	15		140		10		125		24		279				
01:30	7		154		8 11		161		21		303				
01:45	13		142	014	10	31	163	762	22	72	329	1.576			
02:00	12	41	100	814	10	11	125	102	17		335				
02:15	8		210		5		232		15		462				
02:30	10		230		7		242		18		450				
02:45	11	~ ,	205	500	12	54	188	761	19	108	368	1,360			
03:00		54	100	399	10	51	151		25		279				
03:15	15		147		15		204		29		351				
03:30	14		147		15		218		35		362				
03:45	18		144	671	21	113	212	956	51	319	374	1.627			
04:00	30	206	162	110	28	115	240		66		403				
04:15	38		103		20		256		76		452				
04:30	54		190		42		248		126		398				
04:45	84	705	107	660	66	247	232	953	198	952	399	1,613			
05:00	132	705	107	000	62	211	254		218		424				
05:15	156		170		55		250		242		409				
05:30	187		159		64		217		294		381				
05:45	230	000	104	602	67	412	223	831	241	1.110	367	1.433			
06:00	174	698	144	002	130	440	200		362		365				
06:15	232		100		125		210		281		354				
06:30	100		1/0		90		198		226		347				
06:45	130	40.0	143	502	132	548	158	594	297	1.244	314	1.117			
07:00	165	696	130	969	136	010	150		323		285				
07:15	187		10		126		130		294		240				
07:30	108		122		154		156		330		278				
07:45	1/0	015	114	498	189	751	118	383	450	1,566	232	881			
08:00	201	015	150	450	240		94		518		244				
08:15	210		118		200		89		359		207				
08:30	109		116		122		82		239		198				
08:45	117	501	110	384	102	432	89	260	218	933	204	644			
09:00	110	501	105	004	106		65		254		170				
09:15	140		03		112		60		225		153				
09:30	115		71		112		46		236		117	0.00			
09:45	100	417	44	193	109	450	42	146	215	867	86	339			
10:00	112	111	50	100	136		36		248		86				
10:15	100		45		98		42		206		87				
10:30	100		40 54		107		26		198		80				
10:45	51	521	26	111	132	482	29	85	241	1,003	55	196			
11:00	109	561	38	***	122		17		266		55				
11:15	144		27		102		20		246		47				
11:30	194		20		126		19		250		39				·····
11:45	1770		6 206		3.625		6.801		8,403		13.007				
lotais	4.778		177		/3.1		52.3								
Split%	56.9		97.7		40.1		0010								
						10.490				21.410					
Day Totals		10.984				10.426									
Day Solits		51.3				48.7									
									07 45		04-20				
Peak Hour	07:30		02:15		07:45		04:30		07:45		04:50				
Volume	000		828		783		990		1.657		1.673				
Aomue	000		0.00		0.82		0.97		0.80		0.93				
Factor	0.79		0.90		0.00										

2640 Walnut Aveenue, Suite H

Tustin, CA. 92780

: RIVERSIDE DRIVE

City:

Oirr:					DOUGDE								Date	e: 08/27/	14
Location:	: LAK	EVIEN	AVENU	JE TO LAK	ESHORE										
Segment:	; URE	BAN SY	STEMS										Dour	Wednesday	·
Interval		- NB				SB				Combi	ned		Day	AA GUILCOUR A	
Domin	ΔM		PM		AM		PM		AM		PM				
12:00	19	51	177	595	32	93	161	623	51	144	338	1,218			
12.00	13		137		27		156		40		293				
12:10	10		149		20		150		30		299				
12:30	10 Q		132		14		156		23		288	4 000			
12:40	5	24	156	657	13	47	148	610	20	81	304	1,267			
01:00	7	01	194		12		162		19		356				
01:10	11		153		10		156		21		309				
01:50	â		154		12		144		21		298				
01.40	19	47	192	741	9	44	167	716	27	91	359	1.457			
02:00	10	-11	172		9		170		16		342				
02:10	12		192		10		204		22		396				
02:30	10		185		16		175		26		360				
02:43	10	84	195	793	10	58	159	652	22	142	354	1,445			
03.00	18	••	188		18		166		36		354				
03.15	22	,	206		12		168		34		374				
03:30	32		204		18		159		50		363				
03:45	30	200	198	906	22	194	162	707	61	394	360	1.613			
04:00	20	200	218		38		178		67		396				
04:15	54		236		52		203		106		439				
04:30	78		254		82		164		160		418	1 000			
04:40	91	386	226	890	104	534	181	713	195	920	407	1,603			
03:00	00	(100	226		122		190		210		416				
05:15	105		213		150		182		255		395				
05:30	103		225		158		160		260		385	1 500			
05:40	01	593	230	794	132	518	196	715	223	1.111	426	1,509			
00:00	154	000	204		127		172		281		376				
00:10	180		192		106		177		286		369				
00.30	168		168		153		170		321		338				
00.45	150	738	169	617	134	539	176	573	293	1.277	345	1.190			
07:00	106	100	168	017	135		134		331		302				
07:15	100		136		132		131		335		267				
07:30	180		144		138		132		318		276	1.004			
07:40	174	687	138	404	142	588	159	600	316	1,275	297	1,004			
08:00	180	001	92		141		164		321		255				
08:10	100		100		146		143		339		243				
08:30	135		74		159		134		299		208				
08:45	140	570	80	267	135	505	108	399	275	1.084	188	ხნს			
09:00	140	010	71	201	140		108		291		179				
09:15	156		73		112		99		268		172				
09:30	130		13		118		84		250		127	000			
09:40	102	584	42	142	133	547	78	241	275	1,131	120	383			
10:00	161	501	36		128		56		289		92				
10:15	101		32		160		49		292		81				
10:30	136		32		126		58		275		90	040			
10:45	149	641	26	82	146	584	45	141	300	1,225	71	223			
11:00	104	0.11	23		142		41		305		64				
11:15	100		15		152		26		310		41				
11:30	100		19		144		29		310		47				
11:45	100		6889		4.251		6,690		8.875		13.578				
lotais	4.024		0.000		47 0		49.3								
Split%	52.1		50.7		417.0										
						10.041				22.453	3				
Day Totals		11.512				10.941									
Day Splits		51.3				48.7									
- /									07.15		04-30				
Peak Hour	07:15		04:30		08:00		04:30		07:15		04.30				
X Car Liou	7=0		942		588		738		1.300		1.680				
Volume	153		346 0.00		A 92		0.91		0.97		0.96				
Factor	0.93		0.93		0.56		0101								

2640 Walnut Aveenue, Suite H Tustin, CA. 92780

: RIVERSIDE DRIVE

City:

City;		CICIDI.											Date:	80	/27/14
Location:	: LAI	CESIDE	HIGH SI	I ADIUM I	U GRAND			•							
Segment:	: URI	3AN SY	STEMS										Dae	Wednesday	······
Interval		NB				SB				Comp	inea		Day.	Wednesday	
Begin	AM		РМ		AM		PM		AM	100	PM	070			
12:00	26	60	124	449	18	63	99	430	44	123	223	8/9			
12.15	14		119		16		120		30		239				
12:10	10		109		14		112		24		221				
12:45	10		97		15		99		25		196	000			
01-00	6	35	98	462	15	44	135	466	21	79	233	928			
01:00	8		116		12		120		20		230				
01:30	14		116		6		104		20		220				
01:45	7		132		11		107		18		239	1 000			
02.00	10	27	156	652	4	35	118	641	14	62	2/4	1.293			
02:15	6		154		13		108		19		262				
02:30	4		188		8		203		12		391				
02:45	7		154		10		212		17		366	1 217			
03:00	11	50	152	702	8	53	146	515	19	103	298	1,417			
03:15	8		146		11		126		19		614				
03-30	13		198		17		125		30		323				
03:45	18		206		17		118		35		324	1 100			
04:00	18	94	202	908	30	193	118	530	48	287	320	1.438			
04.00	24	• •	240		36		129		60		369				
04:30	14		238		51		163		65		401				
04:45	38		228		76		120		114		348	1 000			
05:00	64	230	226	900	130	692	124	492	194	922	350	1,392			
05:00	52		235		146		120		198		355				
05.13	50		229		184		129		234		358				
05:45	64		210		232		119		296		329	1.001			
00.40	65	339	220	804	158	585	118	477	223	924	338	1,281			
06:15	104		199		177		128		281		347				
06:30	88		198		136		104		224		302				
06:45	82		187		114		127		196		314				
07.00	114	477	157	555	140	532	123	438	254	1.009	280	993			
07:00	128		132		130		118		258		250				
07:10	107		123		148		91		255		214				
07:45	128		143		114		106		242		249	774			
07.40	138	541	122	360	154	596	92	414	292	1,137	214	774			
08.00	173	•	81		189		118		362		139				
08:30	130		84		154		94		284		1/8				
00.30	100		73		99		110		199		183	r 00			
00.40	95	380	81	243	118	433	98	319	213	813	179	362			
00.00	86	0.00	59		110		82		196		141				
00.10	<b>6</b> 0		54		103		79		202		133				
09:35	100		49		102		60		202		109	214			
10:00	96	390	39	134	90	354	42	180	186	744	81	314			
10.00	120	000	32		94		52		214		84				
10.15	84		42		92		34		176		76				
10.30	90		21		78		52		168		73	174			
10.40	117	416	28	75	82	424	26	99	199	840	54	174			
11.00	98		13		120		34		218		4/				
11.15	82		20		116		18		198		38				
11:45	119		14		106		21		225		35				
Totals	2 030		6 244		4.004		5.001		7.043		11.245				
10033	42 1		55.5		56.9		44,5								
Sphi%	43.1		00.0												
		0.000				9.005				18.288	;				
Day Totals		9.283				40.0									
Day Splits		50.8				49.2									
							00.00		07.45		04.15				
Peak Hour	07:45		04:15		05:30		02:30		07.40		1 400				
Volume	569		932		751		687		1.180		(,408				
Forter	0 82		0.97		0.81		0.81		0.81		0,92				
L 9C(0),	0.06		0.91												

2640 Walnut Aveenue, Suite H Tustin, CA. 92780

: LAKESHORE DRIVE

Location

1

Segment	RIV	ERSIDE	DR TO	IOWA ST									Date	: 08/27/14
Client	URE	AN SY	STEMS											11/ 1
Interral		- EB				WB				" Combin	red		Day:	weanesday
Begin	AM		PM		AM		PM		AM		PM	700		
12:00	3	18	72	379	4	26	96	401	17	44	100	760		
12:15	4		92		13		92		17		212			
12:30	4		119		5		93		11		216			
12:45	7		96		4	20	120	205	10	28	235	756		
01:00	3	8	105	371	1	20	78	300	.0		174			
01:15	4		96		5		91		5		185			
01:30	0		94 76		5		86		6		162			
01:45	1	14	01 801	123	3	12	87	352	4	26	193	775		
02:00	1	14	115	160	2		94		6		209			
02;15	4		86		2		88		5		174			
02:50	6		116		5		83		11	~ ~	199	777		
02:40	1	12	97	369	1	12	108	408	2	24	200			
03:15	4		92		2		104		6		194			
03:30	2		80		4		104		10		192			
03:45	5		100		5		92	430	13	84	180	869		
04:00	4	43	74	431	9	41	106	438	15	04	211	0.1-		
04:15	9		107		12		104		26		224			
04:30	14		116		14		120		30		254			
04:45	10	01	139	496	13	90	122	432	28	181	248	928		
05:00	10	91	144	100	19		98		37		242			
05:15	10		118		32		106		54		224			
05:30	36		108		26		106		62	220	214	00G		
06:00	31	192	123	435	25	138	109	374	50	330	232	003		
06:15	36		113		45		100		01 76		179			
06:30	48		95		28		84		117		185			
06:45	77		104		40	201	10	250	190	821	180	632		
07:00	116	520	86	282	/4	301	94 77	300	244	()[]	139			
07:15	144		62		001		92		209		164			
07:30	140		12		58		. 87		178		149			
07:45	120	206	62	195	82	246	74	318	180	642	136	513		
08:00	90	230	48	100	62		98		148		146			
08:15	104		44		46		80		150		124			
00.30	108		41		56		66		164	r • 0	107	100		
00.40	74	303	41	147	67	245	42	162	141	548	109	209		
09:15	69		48		64		60		133		62			
09:30	82		28		64		34		140		56			
09:45	78		30		50	074	20	05	158	597	55	158		
10:00	86	323	25	63	14	274	29	30	154		41			
10:15	88		12		00 60		18		136		34			
10:30	76		16		76		18		149		28			
10:45	73	220	10	41	83	379	16	52	167	708	29	93		
11:00	04 76	329	12	-11	100		13		176		25			
11:15	70		10		86		12		160		22			
11:30	95		6		110		11		205		7 200			
Totals	2,249		3,632		1.784		3.767		4.033		1.599			
Solit%	55.8		49.1		44.2		50.9							
301100	0010		-											
Day Totals		5,881				5,551				11.432				
Day Iolais		514				48.6								
Day opins		01.1									64.00			
Puak Hour	07-00		04:45		11:00		04:15		07:00		04:30			
reak filou	520		522		379		454		821		968			
vonitie	J2U 0.00		0.01		0.86		0.93		0.84		0.95			
Factor	0.90		0.91		0.00									

2640 Walnut Aveenue, Suite H Tustin, CA. 92780

: LAKESHORE DRIVE

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Location

Segment	: RIV	ERSIDE	TO VIS	CAYAST	REEI										
Client	: URE	BAN SY:	STEMS							- Combi	ned		Day;	Wednesday	
Interval		— ЕВ				w WB	514		6 M.	Control	PM				
Begin	AM		PM		AM	15	PM	600	18	76	256	1.075			
12:00	6	31	130	485	12	45	150	190	30		272				
12:15	12		116		18		130		16		285				
12:30	7		131		9		154		12		262				
12:45	6		108		U G	36	159	578	10	53	313	1,128			
01:00	4	17	154	550	12	50	144	510	19		290				
01:15	7		140		14		139		17		271				
01:30	3		134		4		136		7		254				
01:45	3	50	110	667	2	15	154	617	10	37	301	1.184			
02:00	8	22	147	207	3	10	149		6		311				
02:15	37		102		3		166		10		286				
02:30	1		138		7		148		11		286				
02:45	4	31	150	520	5	32	165	638	9	63	317	1,158			
03:00	91 	<b>J</b> 1	146	010	7		156		18		302				
03.13	7		110		5		155		12		265				
03:30	ģ		112		15		162		24	_	274				
03:40	16	114	125	592	6	61	138	672	22	175	263	1.264			
04:00	17		147		17		177		34		324				
04.15	35		154		24		188		59		342				
04.35	46		166		14		169		60	200	330	1 200			
05:00	50	202	144	590	26	107	202	719	76	308	340	1,309			
05:15	40		142		21		181		61		323				
05:30	61		142		32		174		93		324				
05:45	51		162		28		162		79	576	324	1.270			
06:00	61	336	146	576	34	190	180	694	90	520	348	1,270			
06:15	84		164		56		184		140		295				
06:30	86		118		48		1//		157		301				
06:45	105		148		52	0.77	103	c00	201	968	298	1.088			
07:00	127	601	130	479	74	367	100	009	268	300	290	• • • • •			
07:15	148		136		120		145		245		258				
07:30	168		113		11		145		254		242				
07:45	158		100	415	90	414	162	596	237	887	272	1.011			
08:00	146	473	100	415	109	113	144		213		250				
08:15	104		100		100		147		207		254				
08:30	107		107		114		143		230		235				
08:45	115	422	92	259	94	388	93	329	198	811	178	588			
09:00	104	420	70	200	120	•	92		226		162				
09:15	100		63		86		84		196		147				
09:30	103		41		88		60		191		101	0.05			
10:00	104	454	40	136	104	447	71	199	208	901	111	335			
10:00	130		31		111		34		241		00				
10:20	109		38		116		40		225		70 P1				
10:85	111		27		116		54		267	1.022	01 54	148			
11:00	122	510	20	57	118	513	34	91	240	1,025	34	110			
11:15	134		15		125		19		209		28				
11:30	126		12		140		16		200 25R		32				
11:45	128		10		130		6 8 2 2		5 820		11 558		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Totals	3.214		5.226		2,615		6.332		5.625						
Split%	55.1		45.2		44.9		54.8								
						0.017				17 387					
Day Totals		8.440				5.947				1					
Day Splits		48.5				51.5									
					11.00		ሰሎባቦ		11:00		04:15				
Peak Hour	07:15		05:30		11:00		04,50		1.023		1,347				
Volume	620		614		513		790		AP N		0.97				
Factor	0.92		0.94		0.92		0.92		0,00		•				



#### INTERSECTION TURNING MOVEMENT COUNTS





Infrastructure Group, Inc.

### APPENDIX C

### LEVEL OF SERVICE CALCULATION WORKSHEETS

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Infrastructure Group, Inc.

EXISTING CONDITIONS

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ኘ	<b>≜</b> †	ř	٦	†î⊧		ሻ	<u>††</u>	<b>۲</b>	٦	<b>†</b>	1
Traffic Volume (vph)	197	247	150	213	308	19	145	744	284	32	511	302
Future Volume (vph)	197	247	150	213	308	19	145	744	284	32	511	302
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	1,00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3509		1770	3539	1583	1770	1863	1583
Fit Permitted	0.95	1.00	1,00	0.95	1:00	문서 음식	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3509		1770	3539	1583	1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	219	274	167	237	342	21	161	827	316	36	568	336
RTOR Reduction (vph)	0	0	142	0		0	0	0	170	0	0	156
Lane Group Flow (vph)	219	274	25	237	358	0	161	827	146	36	568	180
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	12.7	13.0	13.0	13.6	13.9		9.8	39.5	39.5	3.6	33.3	33.3
Effective Green, g (s)	12.7	13.0	13.0	13.6	13.9		9.8	39.5	39.5	3.6	33.3	33.3
Actuated g/C Ratio	0.15	0.15	0.15	0.16	0.16		0.11	0.46	0.46	0.04	0.39	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	262	536	240	280	569		202	1631	729	74	723	615
v/s Ratio Prot	0.12	0.08		c0.13	c0.10		c0.09	0.23		0.02	c0.30	
v/s Ratio Perm			0.02						0.09			0.11
v/c Ratio	0.84	0.51	0.11	0.85	0.63		0.80	0.51	0.20	0.49	0.79	0.29
Uniform Delay, d1	35.5	33.4	31.3	35.0	33.5		37.0	16.3	13.7	40.1	23.1	18.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.0	0.8	0.2	20.4	2.2		19.2	1.1	0.6	5.0	8.4	1.2
Delav (s)	55.5	34.3	31.5	55.4	35.7		56.2	17.4	14.3	45.1	31.5	19.3
Level of Service	in i S <b>E</b> l	С	С	Е	D		E	В	В	D	С	В
Approach Delay (s)	ta a digin di gan na timba in	40.6			43.5			21.4			27.6	
Approach LOS		D			D			C			C	
Intersection Summary												
HCM 2000 Control Delay			30.5	H	ICM 2000	Level of	Service		С			
HCM 2000 Volume to Cana	citv ratio	romene de louider	0.78	e u sue concernités	en et niet is te Mitheliten	a gana ay nga marakan n						
Actuated Cycle Length (s)			85.7	S	um of los	t time (s)			16.0			
Intersection Capacity Utiliza	aved an area	na shekarar na sa	68.3%	)  	CU Level (	of Service	;		С			
Analysis Period (min)			15									

	≯	$\mathbf{i}$	*	1	Ŧ	4
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥		۴	Ł	₽	
Traffic Volume (vph)	326	260	135	624	625	111
Future Volume (vph)	326	260	135	624	625	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.94		1.00	1.00	0.98	
Fit Protected	0.97		0.95	1.00	1.00	
Satd. Flow (prot)	1704		1770	1863	1825	a an an an ann an an an an an an an an a
Flt Permitted	0,97		0,95	1.00	1.00	
Satd. Flow (perm)	1704		1770	1863	1825	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	362	289	150	693	694	123
RTOR Reduction (vph)	32	0	0	0	7	<b>0</b>
Lane Group Flow (vph)	619	0	150	693	810	
Turn Type	Prot		Prot	NA	NA	
Protected Phases	4		5	2	6	en en son anven en e
Permitted Phases						
Actuated Green, G (s)	30.2	the second second	8.4	51.8	39.4	
Effective Green, g (s)	30.2		8.4	51.8	39.4	
Actuated g/C Ratio	0.34	a batta katawa na	0.09	0.58	0.44	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	571		165	1072	798	
v/s Ratio Prot	c0.36		c0.08	0.37	c0.44	
v/s Ratio Perm						
v/c Ratio	1.08		0.91	0.65	1.01	Na katalogi na katalogi katalogi na kat
Uniform Delay, d1	29.9		40.4	12.9	25.3	
Progression Factor	1.00	si en destre i	1.00	1.00	1.00	
Incremental Delay, d2	62.5		44.1	3.0	35.6	
Delay (s)	92,4		84.5	15.9	60.9	A na kazara na katalara na katalara na katalara na katalara na katalara. Baika 18 Matatra na katalara katalara
Level of Service			8. C. S. S. B. S.	В	E C	
Approach Delay (s)	92.4	u bur beit beit der	ess Sector to p	28.1	60.9	
Approach LOS				C	분만양특별	
Intersection Summary						
HCM 2000 Control Delay			57.8	Ĥ	CM 2000	0 Level of Service E
HCM 2000 Volume to Cap	acity ratio	and a constrained by the De-	1.03			
Actuated Cycle Length (s)			90.0	S	um of los	st time (s) 12.0
Intersection Capacity Utiliz	zation	e in seek name	91.1%	IC	U Level	l of Service F
Analysis Period (min)			15			

	_ الح	•	•	r	←	۰.	1	t	1	\$	ŧ	-
Marganapt	EBI	NT E	R W	B	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement		<u>.</u>			£1.		ኻ	<b>ት</b> ኈ		٣	<u></u>	
Lane Configurations	20	ትፖ በ	12	2	·بر 0	- <b>11</b>	8	997	4	13	639	15
Future Volume (vph)	20	0	12	2	0 0	11	8	997	4	13	639	15
Ideal Flow (vph)	1900 19	กกั 19	00 19	າດດົ	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	1000	99000 00019 1 ()	ar a ser a se	949-25 G 199	4.0	- Transmusi - Cha	4.0	4.0		4.0	4.0	
Lone Itil Factor		00			1.00		1.00	0.95		1.00	0.95	
Ent	0	95	1999 and a second	**********	0.88		1.00	1.00		1.00	1.00	
Elt Protected	0	97			0.99		0.95	1.00		0,95	1.00	
Satd Flow (prot)	17	15	and the month most in the	1997), 18 D. S.	1636		1770	3537		1770	3527	
Elt Permitted	0	97			0.99		0,95	1.00		0.95	1.00	
Satd. Flow (perm)	17	15		V	1636		1770	3537		1770	3527	
Peak-bour factor BHE	0.90 0	90 0	.90 0	.90	0.90	0.90	0.90	0,90	0.90	0.90	0,90	0.90
Adi Flow (vnh)	22	0	13	2	0	12	9	1108	4	14	710	17
RTOR Reduction (vph)	0	34	0	0	14	0	0	0	0	0		0
I ane Group Flow (voh)	0	1	0	0	0	0	9	1112	0	14	726	0
	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	2	ann an an taitean	1	6	ale a constante de la constante
Permitted Phases												
Actuated Green, G (s)	and an an again and a share	2.0			0.9		0.9	43,2	ta a ta ta ta ta	0.9	43.2	
Effective Green, q (s)		2.0			0.9		0.9	43.2		0.9	43.2	
Actuated g/C Ratio	0	03			0.01		0.01	0.69	. Anna a'	0.01	0.69	
Clearance Time (s)		4.0			4.0		4,0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
ane Grp Cap (vph)		54			23		25	2425		25	2418	
v/s Ratio Prot	cO	.00			c0.00		0.01	c0.31	e a la Mitta de la	c0.01	0.21	et a
v/s Ratio Perm											lebe break anne an seac	
v/c Ratio	0	.02			0.01		0.36	0.46		0.56	0.30	esta da
Uniform Delay, d1	2	9.6			30.6		30.8	4.5		30.9	3.9	
Progression Factor	1	.00			1.00		1.00	1.00	e serieta davia	1.00	1.00	MRASSITE.
Incremental Delay, d2		0.2			0.2		8.7	0.6	<u>NGCSCO</u>	25.6	0.3	
Delay (s)	2	9.7			30.8	ene esterningano a	39.4	5.2	en verstetel er s	55.5	4.Z	en e
Level of Service		С			C		D	A		한 관람 광 <b>별</b> 중	A Fo	
Approach Delay (s)	2	9.7			30.8			5.4	ese faire faire	en e en e	5.Z	edusta te
Approach LOS		С			C			A			A	
Intersection Summary			50 e 51			44						
HCM 2000 Control Delay			6.0	HC	M 2000	Level of S	Service		Α			
HCM 2000 Volume to Capacity	/ ratio	C	).43			an en standarte		Nel de Caro		e unital de	ratum tee	74 E
Actuated Cycle Length (s)		6	63.0	Su	m of lost	time (s)			16.0			
Intersection Capacity Utilization	n	39	.9%	IC	J Level o	of Service	l Antique acces		A		ta kati ka ka	
Analysis Period (min)			15									

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Movement	FRI	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	<u>ل</u>		ኘ	f.		ሻ	<b>†</b> 1>		۲	<b>↑</b> 1→	
Traffic Volume (vph)	42	0	24		<u></u> 1	- 14	24	930	0	5	568	37
Future Volume (vph)	42	0	24	1	1	14	24	930	0	5	568	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85		1.00	0.86		1.00	1.00		1.00	0.99	enver t
Fit Protected	0.95	1.00		0.95	1.00		0,95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1583		1770	1600		1770	3539	at sala a	1770	3507	
Fit Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1583		1770	1600		1770	3539	a an	1770	3507	- Tornio Mandara
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adi, Flow (vph)	47	0	27	1	1	16	27	1033	0	6	631	41
RTOR Reduction (vph)	0	25	0	0	16	0	0	0	0	0	3	0
Lane Group Flow (vph)	47	2	0	1	1	0	27	1033	0	6	669	0
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	4.5	4.5		1.1	1.1		2.0	42.4	ante esta servicitada	0.9	41.3	hana da ha hadi
Effective Green, g (s)	4.5	4.5		1.1	1,1		2.0	42.4		0:9	41.3	
Actuated g/C Ratio	0.07	0.07		0.02	0.02		0.03	0.65	ien textores estat	0.01	0.64	uter alle a
Clearance Time (s)	4.0	4,0		4.0	4.0		4.0	4.0		4,0	4,0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (voh)	122	109		30	27		54	2312		24	2231	
v/s Ratio Prot	c0.03	0.00		0.00	c0.00		c0.02	c0.29		0.00	0.19	
v/s Ratio Perm												
v/c Ratio	0.39	0.02		0.03	0.05		0.50	0.45	at a substrate	0.25	0.30	
Uniform Delay, d1	28.9	28.1		31.4	31.4		31.0	5.5		31.7	5,3	976 î.,
Progression Factor	1.00	1.00		1.00	1.00		1.00	1,00		1.00	1.00	· · · · · ·
Incremental Delay, d2	2.0	0.1		0,5	0.7		7.1	0.6		5.4	0.3	
Delay (s)	30.9	28.2		31.8	32.1		38.1	6.1	e a substation	37.1	5.6	
Level of Service	C	C		С	С		D	A		D	A	an that the
Approach Delay (s)		29.9			32.1			6.9			5.9	
Approach LOS		С			С			A			Α	
Intersection Summary												
HCM 2000 Control Delay			7.7		ICM 2000	Level of	Service		Α	1998년 1983년 1973년 1983년 1987년 1973년 1983년 1987년		
HCM 2000 Volume to Capaci	ty ratio		0.44		1. 1						و الاستان و مراجع مرد ا	utu, ttura - ra
Actuated Cycle Length (s)			64.9	S	um of lost	time (s)			16.0			
Intersection Capacity Utilization	on	an an e Anedri en	41.4%		CU Level o	of Service	)		A			
											and the fact of the second	A. 1999 A. 1999

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Movement	EBL	EBR	NBL	NBT	SBT	SBR			
Lane Configurations Traffic Volume (veh/h) Future Volume (Veh/h) Sign Control	67 67 Stop 0%	191 191	<b>*</b> 1 291 291	<b>↑</b> 911 911 Free 0%	<b>1</b> ≱ 530 530 Free 0%	118 118			
Peak Hour Factor Hourly flow rate (vph) Redestrians Lane Width (ft)	0,92 73	0.92 208	0.92 316	0.92 990	0.92 576	0.92 128			
Waiking Speed (IVS) Percent Blockage Right turn flare (veh) Median type Median storage veh) Upstream signal (ft)				None	None				
vC, conflicting volume vC1, stage 1 conf vol vC2, stage 2 conf vol	2262 2262	640 640	704 704						
tC, single (s) tC, 2≤stage (s) tF (s) p0 queue free % cM capacity (veh/h)	6.4 3.5 0 29	6.2 3.3 56 475	4.1 2.2 65 894						
Direction, Lane #. Volume Total Volume Left Volume Right cSH	EB 1 281 73 208 95	NB 1 316 316 0 894	NB 2 990 0 0 1700	SB 1 704 0 128 1700					
Volume to Capacity Queue Length 95th (ft) Control Delay (s) Lane LOS Approach Delay (s)	2.95 677 973.3 F 973.3	0.35 40 11.2 B 2.7	0.58 0 0.0	0.41 0 0.0 0.0					
Approach LUS Intersection/Summary Average Delay Intersection Capacity Utilizatio Analysis Period (min)	r		120.9 76.7% 15		CU Level (	of Service	Ē	) )	

	٦		$\mathbf{F}$	¥	-	*	*	1	1	1	ŧ	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	۲	**	7	۲	<b>↑</b> Ъ		٣	<b>††</b>	7	ሻ	<b>. †</b>	1
Traffic Volume (vph)	215	259	98	181	161	12	122	502	275	15	443	117
Future Volume (vph)	215	259	98	181	161	12	122	502	275	15	443	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	1,00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Fit Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3503	en anti en estado en estado en	1770	3539	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1,00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3503		1770	3539	1583	1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	239	288	109	201	179	13	136	558	306	17	492	130
RTOR Reduction (vph)	0	0	93	0	6	0	0	0	154	0	0	79
Lane Group Flow (vph)	239	288	16	201	186	0	136	558	152	17	492	51
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	14.5	12.1	12.1	12.7	10.3		9.5	41.3	41.3	1.0	32.8	32.8
Effective Green, g (s)	14.5	12.1	12.1	12.7	10.3		9.5	41.3	41.3	1.0	32.8	32.8
Actuated g/C Ratio	0.17	0.15	0.15	0.15	0.12		0.11	0.50	0.50	0.01	0.39	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	308	515	230	270	434		202	1758	786	21	735	624
v/s Ratio Prot	c0.14	c0.08		0.11	0.05		c0.08	0.16		0.01	c0.26	
v/s Ratio Perm			0.01						0.10			0.03
v/c Ratio	0.78	0.56	0.07	0.74	0.43		0.67	0.32	0.19	0.81	0.67	0.08
Uniform Delay, d1	32,7	33.0	30.6	33.6	33.7		35.3	12.5	11.6	41.0	20.7	15.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1,00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.6	1.3	0.1	10.6	0.7		8.5	0.5	0.5	109.0	4.8	0.3
Delav (s)	44.3	34.3	30.8	44.2	34.4		43.8	13.0	12.2	150.0	25,5	16.0
Level of Service	D	С	С	D	C .		D	В	В	F	С	В
Approach Delay (s)	ang bar sa mananan kawana	37.5			39.4			16.9			26.9	
Approach LOS		D			D			В			C	
Intersection Summary					94 94							
HCM 2000 Control Delay			27.5	H	CM 2000	Level of S	Service		С			
HCM 2000 Volume to Capa	acity ratio		0.69									
Actuated Cycle Length (s)	83.1	S	um of losi	t time (s)			16.0					
Intersection Capacity Utiliz	ation	a anta di ser das a	60.6%	IC	CU Level (	of Service			В			1 N
Analysis Period (min)			15								Naisse a	

#### ⋞ ۶ Ť NBT SBT SBR NBL EBL EBR Movement ¥ Ŧ ĥ ሻ Lane Configurations 930 630 104 218 Traffic Volume (vph) 232 72 218 232 72 104 930 630 Future Volume (vph) 1900 1900 1900 1900 1900 Ideal Flow (vphpl) 1900 4.0 4.0 4.0 4.0 Total Lost time (s) 1.00 1.00 1.00 1.00 Lane Util. Factor 1.00 0.97 1.00 0.97 Frt 1.00 1,00 0.95 0.96 Fit Protected 1770 1863 1798 1737 Satd, Flow (prot) 1.00 1.00 0.95 FIt Permitted 0.96 1798 1770 1863 1737 Satd. Flow (perm) 0.90 0.90 0.90 0.90 0.90 0.90 Peak-hour factor, PHF 242 1033 700 80 116 Adi, Flow (vph) 258 14 0 13 0 0 0 RTOR Reduction (vph) Lane Group Flow (vph) 0 116 1033 928 0 325 NA Prot NA Prot Turn Type 5 2 6 **Protected Phases** 4 Permitted Phases 7.4 63.0 51.6 18.4 Actuated Green, G (s) 51.6 7.4 63.0 Effective Green, g (s) 18.4 0.70 0.58 Actuated g/C Ratio 0.21 0.08 4.0 4.0 4.0 4.0 Clearance Time (s) 3.0 3.0 3.0 3.0 Vehicle Extension (s) 1312 1037 146 357 Lane Grp Cap (vph) c0.55 c0.52 0.07 v/s Ratio Prot c0.19 v/s Ratio Perm 0.79 0.79 0.90 0.91 v/c Ratio 8.8 16.5 40.3 34.7 Uniform Delay, d1 1.00 1.00 1.00 Progression Factor 1.00 11.9 25.0 4.8 Incremental Delay, d2 26.6 28.4 61.3 65.2 13.6 Delay (s) E В С : E Level of Service 18.8 28.4 61.3 Approach Delay (s) В ୍ତି ंट Approach LOS Intersection Summary С HCM 2000 Level of Service HCM 2000 Control Delay 28.4

 HCM 2000 Volume to Capacity ratio
 0.90

 Actuated Cycle Length (s)
 89.4

 Intersection Capacity Utilization
 79.4%

 ICU Level of Service
 D

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL.	NBT	NBR	SBL	SBT	SBR
Lane Configurations		÷.			÷		۲	<b>≜</b> †}		ኘ	<b>≜</b> t≽	
Traffic Volume (vph)	231	0	33	2	0	6	37	531	1	4	626	269
Future Volume (vph)	231	0	33	2	0	6	37	531	1	4	626	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	1	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	n an	1.00			1.00		1.00	0.95	ara na sa Na sa sa ta	1.00	0.95	1
Frt		0.98	5 <sup>1</sup>		0.90		1.00	1.00		1.00	0.95	
Fit Protected		0.96			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1754			1649		1770	3538		1770	3380	
Flt Permitted	i Viela	0.96			0.99		0:95	1.00		0.95	1.00	
Satd. Flow (perm)		1754			1649		1770	3538		1770	3380	
Peak-hour factor. PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adi, Flow (vph)	257	0	37	2	0	7	41	590	1	4	696	299
RTOR Reduction (vph)	0	89	0	0	9	0	0	0	0	0	39	0
Lane Group Flow (vph)	0	205	0	0	0	0	41	591	0	4	956	0
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		11.8			0.8		1.9	34.4		0.8	33.3	
Effective Green, g (s)	e egine e in	11.8			0.8		1.9	34.4		0.8	33.3	N. 1
Actuated g/C Ratio		0.18			0.01		0.03	0.54		0.01	0.52	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	<sup>1</sup> .
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	and May	324			20		52	1907		22	1764	÷ .
v/s Ratio Prot		c0.12			c0.00		c0.02	0.17		0.00	c0.28	
v/s Ratio Perm		heres and										
v/c Ratio		0.63			0.01		0.79	0.31		0.18	0.54	
Uniform Delay, d1		24.0			31.1		30.8	8.1		31.2	10.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.0	ava a		0.1		53.8	0.4		4.0	1.2	
Delay (s)		28.0			31.2		84.5	8.6		35.1	11.4	
Level of Service		C			С		F	A		. ••• . <b>D</b> e	B	
Approach Delay (s)		28.0			31.2			13.5			11.5	
Approach LOS		С			C			В			, ta statist ₿	ng taon Protest
Internetion Cummonu									t da Antos	6.00.000		
			1/ 7	<u></u>		Level of	Service		B			
HOM 2000 Control Delay	hu ratio	a en Angola.	ገዛት ( በ ନନ	- A 1121-14			00121000	a na san na Sa	<b></b>		an ng Thuy T	
HUM 2000 VOIUME TO Capacit	iy ralio	an a	0.00		Sum of los	t time (e)	ne. De tre		16.0	e te st		• •
Actuated Cycle Length (S)			00,0		Suici Vinius	e antio (á);			, U, U,		1. T.	

ICU Level of Service

58.9%

Analysis Period (min) c Critical Lane Group

Intersection Capacity Utilization

Synchro 9 Report Page 3

В

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Maxament	ERI	EBT	EBR	WRI	WBT	WBR	NBI	NBT	NBR	SBL	SBT	SBR
Lone Configurations	<u></u>	<u>۲</u> ۰		<u>کې دي.</u> ۲	1 <u>.</u>		ኻ	<b>ት</b> ጌ		٦	<b>ተ</b> ኩ	
Traffic Volume (vph)	108		120	់់់	2	7	131	431	0	ż	531	93
Future Volume (vph)	108	0 0	120	3	2	7	131	431	0	2	531	93
Ideal Flow (vnhnl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	n an	4.0	4.0	10 1000 000 000 000 000 000 000 000 000	4.0	4.0		4.0	4.0	
Lane Util Factor	1,00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85		1.00	0.88		1.00	1.00		1.00	0.98	
Fit Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1583		1770	1639		1770	3539		1770	3460	
Flt Permitted	0,95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1583		1770	1639		1770	3539		1770	3460	2
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0,90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	120	0	133	3	2	8	146	479	0	2	590	103
RTOR Reduction (vph)	0	114	0	0	8	0	0	0	0	0		0
Lane Group Flow (vph)	120	19	0	3	2	0	146	479	0	2	682	<u> </u>
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	4	4		8	8	5	5	2		<b>1</b> Active 1946 (194	6	est tradition
Permitted Phases						Q. SV				983 (SA)		
Actuated Green, G (s)	9.4	9.4	an an an an an an an	1.1	1.1	a server a server server	8.5	38.2	a na sanaya na sana sa sa	0.9	30.6	States -
Effective Green, g (s)	9.4	9.4		ାଣ୍ଡ	1,1		8.5	38.2		0.9	30:6	
Actuated g/C Ratio	0.14	0.14	n ta basa aya 18 basa y	0.02	0.02	e Natio Destandiga	0.13	0.58	a de la calca da la calca d	0.01	0.47	la subserva
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4,0	4.U 2 0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	253	226		29	27		229	2060	in de la com	24	1013	
v/s Ratio Prot	c0.07	0.01		c0.00	0.00	ant a start of the	c0.08	0.14	gar tarr	0.00	CU.2U	
v/s Ratio Perm						한문문문				A AA	0.40	
v/c Ratio	0.47	0.08		0.10	0.08		0.64	0.23	e i stati y	0.08	0.42	
Uniform Delay, d1	25.8	24.4		31.8	31.8		27.1	0.0		31.9	1.0	· · · · ·
Progression Factor	1.00	1.00	· •••	1.00	1.00	en se	1.00	1.00	e interfectio	1.00	1.00	5
Incremental Delay, d2	1.4	0.2	신한 신소	1.6	ി.ാ	것같아? 문서	5./	0.0		22.4	10.0	tu et lit
Delay (s)	27.2	24.5	valititetete	33.3	33.0	u na servi sa	32.8	0.9 A	en e	აა.4 C	12.4	s synalis
Level of Service	C	C	S. 1999 (1999)	C			6	40 A	Neteria de la composición de	્રાંડ્સ્ટ્રિસ્ટ્ર	12 E	9468 Nor
Approach Delay (s)	e tactos de subolto de	25.8	Sector to the second	alar vetikilisisi	33.1	an a	sina sinanini si	12.9	an a		12.J R	Hatala
Approach LOS		С			C			D			Ð	98089084 
Intersection Summary										19-00-1-1		
HCM 2000 Control Delay			15.0	H	CM 2000	Level of	Service		В			
HCM 2000 Volume to Can	acity ratio	1999, NA 1998, SUB	0.46	2.1415 (1997) (1997) 2.1419 (1997)	alan dan katalan din katalan din katalan din	ana ngana na karata k						
Actuated Cycle Length (s)			65.6	S	um of lost	time (s)			16.0	영양관관		
Intersection Capacity Utiliz	ation	an fa bere en artiker.	47.6%	IC	CU Level o	f Service	;		A			194
Analysis Period (min)			15									

	٠	$\mathbf{r}$	•	1	Ļ	-					
NA	EDI		- NIRIL	NBT	SRT	SBR					16.5
Inovement	<u>کوند</u> ۲	- LEDIN	<u>کی اور اور اور اور اور اور اور اور اور اور</u>	<b>≜</b>	 ₽						a presidente prosidente estas
Traffic Volume (veh/h)	77	293	156	531	549	67					
Future Volume (Veh/h)	77	293	156	531	549	67					
Sign Control	Stop			Free	Free						
Grade	0%			0%	0%	and hereby provide a state	national and a second	an an tha tha an tha she	u daga sa ka ka ka ka ka		di su si
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		in de la comercia. Este en serie de la comercia de la c	ana di Kasara Ang mang di Kasara		
Hourly flow rate (vph)	84	318	170	577	597	73 Chelingergensere	an a	aga tekna	erete tette	ana an	
Pedestrians			8. C.			81636665	9.08034348			1993-1993-1993-1993 	
Lane Width (ft)	aragharagha	- Serviter	SUSSERVES AT								
Walking Speed (IT/S)								ingen en herende som	galisti teher	N 사람이 가장 관람이 보니 	
Percent Blockage											
Median type	nga Kalend	i - Selverada (	en en en en e	None	None	and and the first second second	red very ( jord jorn sta	a dalah dika di dalam karaka	alte de la terre alt.	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	
Median storage veh)											
Upstream signal (ft)	an a	an a		6 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6 -				- 	· 	an ana na martika	
pX, platoon unblocked											
vC, conflicting volume	1550	634	670			, and the second state of the state	Address of the states	guran sebuah gar	a na sana sana sa	en en sen en el Cherrer	tettin t
vC1; stage 1 conf vol										en de la compañía de La compañía de la comp	
vC2, stage 2 conf vol	in waters	A SALANCE		ala tikkime	o Newson (P	an a	a inter the literature	rada teladar		and a line of the	da by s
vCu, unblocked vol	1550	634	670			이 안전한 음악한 것		Nation Particular Alternation Particular	985 V 1993 1993		
tC, single (s)	6.4	6.2	<b>4.1</b> Sveladerov	an a	a Danata P				Santa C	Harle Viel.	
tC, 2 stage (s)	35	3.0	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	A STATES				NARAN ADA	te il finite de	na se se se se	*. *
tF (S) ⊭0 auouo froc %	0.0 18	3.5 24	2.2 82					영국의 가격		a da	
oM canacity (veh/h)	102	479	920	ali se	a Mariana e e e e e e e e e e e e e e e e e e	f en el type el el t	i kalendez er i mili			n ten andro	
				OD 4							
Direction Lane #	<u></u>			<u>. 58  </u> 070							1997/0000002
Volume Total	402 04	170 170	577	ບາວ ດ	8-9-9-9-9-9-				9.9333903		
Volume Lett	24Q		0 0	73 73	a awasan	re elle processione	il an seasan an seas In the seasan an seas	988888999729 1	internet and the set of	an an gan din ng Shining Shinin Shining Shining	en en conse
volume Right	270	920	1700	1700							
Volume to Canacity	1 49	0.18	0.34	0.39	nyaét di Daléa ka k	ne provinski politik slovete ne voči Na politik slovete ne voči	na ang kanang sa	(			
Ollelie ength 95th (ft)	575	17	0	0							
Control Delay (s)	272.4	9.8	0.0	0.0							
Lane LOS	ંદ	A									
Approach Delay (s)	272.4	2.2		0.0		a ta sa ang sa	and and an and	ana an ta	. Are a re	e da temperativa	
Approach LOS	F							관문을 물을			
Intersection Summary						a daga da tati		all space		de la composition de	
Average Delay			61.1								
Intersection Capacity Utilization	n		73.9%	ļ	CU Level	of Service	ta ata ang sa ka		D	tille statut.	

Analysis Period (min)

Infrastructure Group, Inc.

## EXISTING PLUS PROJECT CONDITIONS

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ኻ	<u></u>	7	٦	<b>†</b> ‡		٦	<b>††</b>	7	٦	<b>↑</b>	ሻ
Traffic Volume (vph)	197	247	152	214	308	19	151	759	287	32	517	302
Future Volume (vph)	197	247	152	214	308	19	151	759	287	32	517	302
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util, Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1,00	1.00	0,95	1,00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3509	an a	1770	3539	1583	1//0	1863	1583
Fit Permitted	0:95	1.00	1.00	0.95	1.00		0,95	1.00	1,00	0.95	1,00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3509		1770	3539	1583	1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0,90	0.90
Adj. Flow (vph)	219	274	169	238	342	21	168	843	319	36	574	336
RTOR Reduction (vph)	0	0	143	0	5	0	0	0	172	0	0	154
Lane Group Flow (vph)	219	274	26	238	358	0	168	843	147	36	574	182
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	a se e j
Permitted Phases			4						2			6
Actuated Green, G (s)	12.7	13.0	13.0	13.6	13.9	<ul> <li>Constraints of the</li> </ul>	10.0	39.6	39.6	3.6	33.2	33.2
Effective Green, g (s)	12.7	13.0	13.0	13.6	13.9		10.0	39.6	39.6	3.6	33.2	33.2
Actuated g/C Ratio	0.15	0.15	0.15	0.16	0.16	erre realizado	0.12	0.46	0.46	0.04	0.39	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4,0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	261	536	239	280	568		206	1633	730	74	720	612
v/s Ratio Prot	0.12	0.08		c0.13	c0.10		c0.09	0.24	- These states	0.02	c0.31	
v/s Ratio Perm			0.02						0.09			0.11
v/c Ratio	0.84	0.51	0.11	0.85	0.63		0.82	0.52	0.20	0.49	0.80	0.30
Uniform Delay, d1	35.6	33.5	31.4	35.1	33.6		37,0	16.3	13.7	40.2	23.3	18.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20,4	0.8	0.2	20.7	2.3		21.4	1.2	0.6	5.0	9.0	1.2
Delay (s)	56.0	34.3	31.6	55.8	35.8		58.4	17.5	14.3	45.2	32.3	19.4
Level of Service	÷. É	С	C	E	D		E	B	В	D	С	B
Approach Delay (s)		40.8			43.8		a cara a ana	21.9	tu tu dua per Vi	Alan Susa	28.2	8, 1100 - S.J.
Approach LOS		D			D			C			С	
Intersection Summary												
HCM 2000 Control Delay			30.8	H	CM 2000	Level of S	Service		С			
HCM 2000 Volume to Capac	city ratio	·	0.79									
Actuated Cycle Length (s)			85.8	S	um of los	t time (s)			16.0			
Intersection Capacity Utilizat	ion	a 1. 11 a. 7. 24	68.9%	IC	CU Level (	of Service	}		C			
Analysis Period (min)		Re N	15									
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Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥		۴	t	<b>ĵ</b> .	
Traffic Volume (vph)	326	272	143	640	650	<b>111</b>
Future Volume (vph)	326	272	143	640	650	<b>111</b>
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	e a suga a graga da a sua esta esta de a constructor de la constructor de la constructor de la constructor de s
Lane Util, Factor	1.00		1.00	1.00	1.00	
Frt	0.94		1.00	1.00	0.98	a estas da esta da esta esta a esta a esta a esta da esta da esta da esta de esta de la decembra da esta de est
Flt Protected	0.97		0.95	1.00	1.00	
Satd, Flow (prot)	1702	- N.C. T. CONTRACTOR	1770	1863	1826	ana ana amin'ny tanàna mandritra dia kaominina dia kaominina dia kaominina dia kaominina dia kaominina dia kaom
Flt Permitted	0.97		0.95	1.00	1.00	
Satd. Flow (perm)	1702		1770	1863	1826	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0:90
Adj. Flow (vph)	362	302	159	711	722	123 
RTOR Reduction (vph)	34	0	0	0		Ď
Lane Group Flow (vph)	630	0	159	711	838	
Turn Type	Prot		Prot	NA	NA	
Protected Phases	4	a tota se	5	2	6	
Permitted Phases						
Actuated Green, G (s)	30.6	et a bartana an ta	8.8	51.4	38.6	
Effective Green, g (s)	30.6		8,8	51.4	38.6	
Actuated g/C Ratio	0.34		0.10	0.57	0.43	
Clearance Time (s)	4.0		4.0	4.0	4.0	철철은 영향 전쟁을 통한 것은 것은 것은 것은 것이라. 이 것이라는 것이다. 이 이 가지 않는 것이다. 이 이 가지 않는 것이다. 이 이 가지 않는 것이 가지 않는 것이다. 이 이 가지 않는 것이 가지 않는 것이다. 이 이 가지 않는 것이 있는 것이 없는 것이 없다. 것이 없는 것이 없다. 것이 없는 것이 없는 것이 없는 것이 없는 것 않는 것이 없는 것이 않이 않이 않이 않이 않이 않이 않는 것이 않이
Vehicle Extension (s)	3.0		3.0	3.0	3,0	
Lane Grp Cap (vph)	578		173	1063	783	
v/s Ratio Prot	c0.37		c0.09	0.38	c0.46	na tau ya shekara ku
v/s Ratio Perm						
v/c Ratio	1.09		0.92	0.67	1.07	a na anti-anti-anti-anti-anti-anti-anti-anti-
Uniform Delay, d1	29.7		40.2	13.4	25.7	
Progression Factor	1.00	erredekter av sere	1.00	1.00	1.00	
Incremental Delay, d2	64.5		45.2	3.3	- 32.7 70.4	
Delay (s)	94.2	U. Constants	85.4	10./ 10./	/8.4	
Level of Service			e e e Fr	о о 00 о	70 A	
Approach Delay (s)	94.2	es blenn bels	ent fistations	29.3	/ 6.4	
Approach LOS				U		
Intersection Summary						
HCM 2000 Control Delay			64.8	H	CM 2000	0 Level of Service E
HCM 2000 Volume to Car	pacity ratio		1.06			
Actuated Cycle Length (s			90.0	S	um of los	st time (s)
Intersection Capacity Utili	zation		93.6%	Í	CU Level	l of Service F
Analysis Period (min)			15			

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			÷		ሻ	<u>†</u> †		ሻ	<b>†</b> 1≽	
Traffic Volume (vph)	20	0	12	2	Ő	11	8	1007	4	13	663	15
Future Volume (vph)	20	0	12	2	0	11	8	1007	4	13	663	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0	e en traja astrono	4.0	4.0	uters see a
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.95			0.88		1.00	1.00	na na serie da serie	1.00	1.00	ang sa ng sa ta
Fit Protected		0.97		ê eştiştek	0.99		0.95	1.00		0.95	1.00	elet N
Satd. Flow (prot)		1715		atta o como reactore	1636	e successive the Ar	1770	3537	auros citéres de entri	1770	3527	en an tea an
Flt Permitted		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1715			1636		1770	3537		1770	3527	
Peak-hour factor, PHF	0.90	0.90	0:90	0.90	0,90	0.90	0;90	0.90	0;90	0.90	0.90	0.90
Adj. Flow (vph)	22	0	13	2	0	12	9	1119	4	14	737	1/
RTOR Reduction (vph)	0	34	0	0	- 14	0.	0	0	0	0		0
Lane Group Flow (vph)	0	1	0	0	0	0	9	1123	0	14	/53	<u> </u>
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	2	ana ang kalangangan	1 4 1 1 1 1 1 1 1	6	
Permitted Phases												
Actuated Green, G (s)		2.0			0.9	A. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	0.9	43.2		0,9	43.2	
Effective Green, g (s)		2.0			0.9		0,9	43.2		0.9	43.2	
Actuated g/C Ratio		0.03	an a		0.01	e da este estas de la	0.01	0.69	tu internet samela	0.01	0.69	
Clearance Time (s)		4.0			4,0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	-
Lane Grp Cap (vph)		54			-23		25	2425		25	2418	
v/s Ratio Prot		c0.00			c0.00		0,01	c0.32	et han also den b	c0.01	0.21	ang wasan s
v/s Ratio Perm										것이 같은		999 (SA
v/c Ratio		0.02			0.01	- Anna ann an Anna	0.36	0.46	lan sa tanitan s	0.56	0.31	e dag tigan da L
Uniform Delay, d1		29.6			30.6		30.8	4.6		30.9	4.U	ng binana. Tanàna amin'ny faritr'ora
Progression Factor		1.00			1.00		1.00	1.00	ala san tat	1.00	1.00	··
Incremental Delay, d2		0.2			0.2		8.7	0.6		25.0	0.3	
Delay (s)		29.7			30.8		39.4	5.2	e transfer a	56.5	4.3	
Level of Service		C			С		D	Ą		en (E)	A	e bebe
Approach Delay (s)		29.7			30.8			5.5	a statut	ريد د د در	5.2	
Approach LOS		С			C			A			A	승규는.
Intersection Summary												
HCM 2000 Control Delay	a provinsi mana ana ana ana ana ana ana ana ana an	an manager de alternet.	6.0	H	CM 2000	Level of S	Service		A			
HCM 2000 Volume to Cana	scity ratio	n an tao NGASAN. N	0.44	an in 1999 - 2022 (199	ager weiter auf die Besternen die Besternen die Besternen die Besternen die Besternen die Besternen die Bestern Besternen die Besternen die Besternen die Besternen die	an an an Anna an Anna Anna An Anna Anna	en ne en en en en el el el		a a su sur sur sur sur			
Actuated Cycle   ength (s)			63.0	Si	um of lost	time (s)			16.0			
Intersection Capacity Utiliza	ation	a kristoto kristo (v	40.2%	IC	U Level o	of Service			Α			

Analysis Period (min) 15

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	٣	î,		ሻ	ŧÎ		ሻ	<b>↑</b> 1→		٦	<b>†</b> î>	
Traffic Volume (vph)	42	Ó	24	1		14	24	939	0	5	591	38
Future Volume (vph)	42	Ó	24	1	1	14	24	939	0	5	591	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util, Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85		1.00	0.86		1.00	1.00	<ul> <li>Restauration of the second s</li> </ul>	1.00	0.99	on state
Fit Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1583		1770	1600		1770	3539	weene to wine in	1770	3507	
Flt Permitted	0.95	1.00		0,95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1583		1770	1600		1770	3539		1770	3507	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0,90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	47	0	27	1	1	16	27	1043	0	6	657	42
RTOR Reduction (vph)	0	25	0	0	16	0	0	0	0	0	3	0
Lane Group Flow (vph)	47	2	0	1	1	0	27	1043	0	6	696	0
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	4	4		8	8	and the box of the	5	2	onton a straation de	<b>1</b> Standard I.S.	6	na gazera da
Permitted Phases												
Actuated Green, G (s)	4.5	4.5		1.1	1.1	and a subscription of the	2.0	42.4	<ul> <li>Sectors of the sector</li> </ul>	0.9	41.3	diverta e v
Effective Green, g (s)	4.5	4.5		1.1	1.1		2.0	42.4		0.9	41.3	
Actuated g/C Ratio	0.07	0.07		0.02	0.02	u a sea consta as	0.03	0.65	na buas a suna	0.01	0.64	anta per
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	or the state of the second	3.0	3.0	
Lane Grp Cap (vph)	122	109		-30	27		54	2312		24	2231	
v/s Ratio Prot	c0.03	0.00		0.00	c0.00		c0.02	c0.29	a ann a ann a	0.00	0.20	
v/s Ratio Perm												
v/c Ratio	0.39	0.02		0.03	0.05		0.50	0.45		0.25	0.31	
Uniform Delay, d1	28.9	28.1		31.4	31.4		31.0	5.5		31.7	5.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	n an an a	1.00	1.00	··
Incremental Delay, d2	2.0	0.1		0.5	0.7		ાટીટી	0.6		5.4	0,4	1.5
Delay (s)	30.9	28.2		31.8	32.1	an a shin na sa sa sa	38.1	6.2	ana di kata kasa	37.1	5.7	eneral de la composition de la composit
Level of Service	С	С		С	С		D	Â		U	A	
Approach Delay (s)		29.9		e ensere estatus	32.1	ana an taon a	noonuos neessa (ne	7.0	a an airtean	ana ana a	6.U	Weekster.
Approach LOS		С			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			7.8	H	CM 2000	Level of S	Service		Α	84494093 8468030		
HCM 2000 Volume to Capacit	ty ratio	and a sub-sub-sub-sub-sub-sub-sub-sub-sub-sub-	0.45		and a second							
Actuated Cycle Length (s)			64.9	S	um of lost	time (s)			16.0	영상관		
Intersection Capacity Utilization	วก		41.6%	IC	CU Level o	of Service			A			
Analysis Period (min)	and Ber		15									

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Movement	EBL	EBR	NBL	NBT	SBT	SBR				
Lane Configurations Traffic Volume (veh/h) Future Volume (Veh/h) Sign Control	68 68 Stop	191 191	<b>*</b> 291 291	<b>↑</b> 919 919 Free	<b>1</b> 551 551 Free 0%	120 120				
Peak Hour Factor Hourly flow rate (vph) Pedestrians Lane Width (ft)	0.92 74	0.92 208	0.92 316	0.92 999	0.92 599	0:92 130				
Vaking Speed (its) Percent Blockage Right turn flare (veh) Median type Median storage veh)				None	None					
pX, platoon unblocked vC, conflicting volume vC1, stage 1 conf vol vC2, stage 2 conf vol	2295	664 664	729							
tC, single (s) tC, 2 stage (s) tF (s) p0 queue free % cM capacity (veh/h)	6.4 3.5 0 27	6.2 3.3 55 461	4.1 2.2 64 875							
Direction & Lane # Volume Total Volume Left Volume Right cSH Volume to Capacity Queue Length 95th (ft) Control Delay (s) Lane LOS Approach Delay (s)	EB1 282 74 208 89 3.15 Err Err F Err F Err	NB11 316 316 0 875 0.36 41 11.4 B 2.7	NB-2 999 0 0 1700 0.59 0 0.0	XSB 41; 729 0 130 1700 0.43 0 0.0 0.0						
Intersection Summary Average Delay Intersection Capacity Utilization Analysis Period (min)	ı		1213.8 77.9% 15	IC	CU Level c	f Service		D		

Baseline

	٠	$\mathbf{r}$	•	Ť	Ļ	*					
Movement	EBI	FBR	NBL	NBT	SBT	SBR				alan dalam	
Lane Configurations	<del>بر</del>		۲	1	<b>₽</b>						
Traffic Volume (veh/h)	68	191	291	919	551	120				고 있는 것은	
Future Volume (Veh/h)	68	191	291	919	551	120					
Sign Control	Stop			Free	Free						
Grade	0%			0%	0%			an an a chuir an a' a'		the test is a	
Peak Hour Factor	0.92	0.92	0:92	0.92	0.92	0.92					
Hourly flow rate (vph)	74	208	316	999	599	130	ent ver troch fahren.	n, yaya waxa ya katij	A CONTRACTOR	estraat som	NR SHOLL
Pedestrians										한 문화관 관	
Lane Width (ft)	and the second	· SS SUBSUIS	a nava sa mining s	a stores dest	an an an Anna an Anna an Anna Anna Anna	assen an taile she an	enderfande sitte	sectie die	Nestada	e stated	Katalaga sa sa
Walking Speed (ft/s)					관광관하고				jada gʻalga	kinek ber	
Percent Blockage	e en la tranja	an un range	A Statisticae	el provincio de la composición de la co		na sebre es		ere e com	a da base da	a e se e e e e e e e e e e e e e e e e e	
Right turn flare (veh)				Nene	Steeley None	Networks wa	anteres estes	380389700	or the step of	lija utertante ere	a frei Alder F
Median type	Secolation		a an	INONE	NOTIE ACCERCIAN	oenstenderdog	n an the state of the		oreach.	Secondari	Neger (
Median storage ven)		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	NG-1903-0-8-19	040164384) 	()))가 감상 (). 	Section Sector	88893 (B-96) 	e Britishe en 1943 A	ene normanie	na latin di su	5 N. M. 1979
Upstream signal (It)	NENGRAS		in an	N KANS				ana an			
pX; platoon unblocked	2205	664	720		districture 	al Angelere	general activa	99.0042.002.0	1998-1964	fore of the Addin	al a carta a car
vc, conflicting volume	2293	+00 	641 6								
vC2 stage 2 conf vol	~ 같은 말 것 같	eren el companya de la companya de l La companya de la comp	and the second secon Second second	ary at a cycles	al de la stradige de la section de la se La section de la section de	r Rederlinge og filler var skor	addioradd onlong ys	annaine air anns	pro menos de la c	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	n in the state
VCZ, Stage Z Com Vol	2295	664	729					h de la de			
tC cincle (s)	6.4	6.2	4.1	u fa a sea fa a	eense produktie	a di basi di Meraji si ser	ana je bole na se	· · · · ·			
tC, single (s)	- Contraction of the Contraction	<b></b>									
tF (s)	3.5	3.3	2.2	u si kabuti	lo di Selektori (Sele)	nan na Arriga (1999)	er ek er bere bit utt				
n0 queue free %	0	55	64								
cM capacity (veh/h)	27	461	875	al the extension	Mantal and a	a da ser a ser a composition de la comp					
Desetter lleno.#	ED 4	NIB-4	NAØ	SB 1							
Volume Total	282	316	000	729				and the state of Laboratory	*********		
Volume Total Volume off	202	316	000	, _0	en e		edesternis (* Contractorio a				na taga sa
Volume Pight	208	0	0	130	01134034-040941 1	i gun ann an anna	an a	an in the second second			
		875	1700	1700				X in the			
Volume to Canacity	3.15	0.36	0.59	0.43	, a ai sa bii a	an a					
One le engle 95th (ft)	Fri	41		Ö	84.038						
Control Delay (s)	Err	11.4	0.0	0.0	, ta like e transfordit ta lite						
ane OS	Ē	B									
Approach Delav (s)	Err	2.7	v - 1112.1.3 v.	0.0	12 A. 14 A. 14 M.						
Approach LOS	Ē										
											(Sectorial Sector)
Intersection Summary			4040.0	CAL STREET							
Average Delay	gariata. 		ା <b>21 3.</b> ୪ 77 ୦୦/	line of the second s	CLU avel	of Service			enicenties N	eso orchista)	uter produktioner en u
Intersection Capacity Utilizatio	[]		11.3%	E E					-		

Analysis Period (min) 15

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	<u>†</u> †	7	ኘ	†₽		٦	<b>††</b>	7	ሻ	<b>↑</b>	7
Traffic Volume (vph)	215	259	104	184	161	12	126	512	277	15	459	117
Future Volume (vph)	215	259	104	184	161	12	126	512	277	15	459	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0,95	1.00	1.00
Satd, Flow (prot)	1770	3539	1583	1770	3503		1770	3539	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3503		1770	3539	1583	1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0,90	0,90	0.90	0.90	0.90
Adi, Flow (vph)	239	288	116	204	179	13	140	569	308	17	510	130
RTOR Reduction (vph)	0	0	99	0	6	0	0	0	153	0	0	78
Lane Group Flow (vph)	239	288	17	204	186	0	140	569	155	17	510	52
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	Na stara		4						2			6
Actuated Green, G (s)	14.1	12.2	12.2	12.9	11.0		9.5	42.4	42.4	1.0	33.9	33.9
Effective Green, q (s)	14.1	12.2	12.2	12.9	11.0		9.5	42,4	42.4	1.0	33.9	33.9
Actuated g/C Ratio	0.17	0.14	0.14	0.15	0.13	·	0.11	0.50	0.50	0.01	0.40	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	40		4.0	4.0	4.0	4,0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3,0	3.0	3.0	3.0	3.0	3.0
Lane Gro Cap (vph)	295	510	228	270	456	1 (2 Constant)	198	1775	794	20	747	635
v/s Ratio Prot	c0.14	c0.08		0.12	0.05		c0.08	0.16		0.01	c0.27	
v/s Ratio Perm			0.01			a tabét		a da sera a sera da Sera da sera	0.10			0.03
v/c Ratio	0.81	0.56	0.07	0.76	0.41		0.71	0.32	0.19	0.85	0.68	0.08
Uniform Delay, d1	33.9	33.7	31.3	34.3	33.8		36.2	12.5	11.6	41.7	20.9	15.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15,4	1.4	0,1	11.4	0.6		10.9	0.5	0.5	129.8	5.0	0.3
Delay (s)	49,3	35.1	31.4	45.7	34.4		47.1	13.0	12.2	171.5	25.9	15.9
Level of Service	Ð	D	С	D	С		D	В	В		C	В
Approach Delay (s)		39.7			40.2			17.4			27.7	
Approach LOS	an a	<b>D</b>			D	an an an an a Tha an	Selferadores de la compañía de	В			C	
Intersection Summary										dere statute		
HCM 2000 Control Delay			28.5		ICM 2000	Level of	Service		С	Start de la		
HCM 2000 Volume to Cap	acity ratio		0.70				anta		مو لیز این			
Actuated Cycle Length (s)			84.5	S	Sum of los	t time (s)			16.0		na stanova Na stanova	· · · · ·
Intersection Capacity Utiliz	ation		61.8%	te i la companya de la	CU Level	of Service	) 	ta tutan	B		·	·
Analysis Period (min)			15						NH P			
a Critical Lana Group												

	۶	$\mathbf{r}$	*	1	¥	1
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥.		٣	<b>≜</b>	<b>Ъ</b>	
Traffic Volume (vph)	232	77	116	954	640	218
Future Volume (vph)	232	77	116	954	640	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	and the second second	4.0	4.0	4.0	
Lane Util, Factor	1.00	geneigen.	1.00	1.00	1.00	
Frt	0.97		1.00	1.00	0.97	
Fit Protected	0.96		0.95	1.00	1.00	승규는 승규는 것을 알았는 것 같아. 승규는 것이 옷을 맞는다.
Satd, Flow (prot)	1735		1770	1863	1799	
Fit Permitted	0.96		0.95	1.00	1.00	
Satd. Flow (perm)	1735		1770	1863	1799	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0:90
Adi, Flow (vph)	258	86	129	1060	711	242
RTOR Reduction (vph)	13	0	0	0	13	0
Lane Group Flow (vph)	331	0	129	1060	940	0
Turn Type	Prot		Prot	NA	ŇĂ	
Protected Phases	4		5	2	6	
Permitted Phases						
Actuated Green, G (s)	18.6		8.0	63.0	51.0	and the second
Effective Green, g (s)	18.6		8.0	63.0	51.0	
Actuated g/C Ratio	0.21		0.09	0.70	0.57	
Clearance Time (s)	4.0		4.0	4.0	4.0	, 동안은 전에는 것을 통해 같은 것을 것을 수 있다. 가지 않는 것은 것은 것은 것은 것은 것은 것을 가지 않는 것 같은 것은
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	360	e i terre	158	1309	1023	
v/s Ratio Prot	c0.19		0.07	c0.57	c0.52	
v/s Ratio Perm		ha sayara	e Marian Berli			
v/c Ratio	0.92		0.82	0.81	0.92	
Uniform Delay, d1	34.8		40.1	9.2	17.4	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	27.5		26.7	5.5	14.3	영양 방송 동안 이 같은 것을 하는 것이 없는 것이 없다. 것이 있는 것이 없는 것이 없 않이
Delay (s)	62.2		66.7	14.7	31,7	
Level of Service	Е		E,	В	C	월월22일 월월22일 - 일종 - 2019일 - 2019일 - 2019 - 2019 19
Approach Delay (s)	62.2			20.3	31.7	and the second secon
Approach LOS	E			C	C	
Information Common						
			30 F	L	CM 2000	Level of Service

**3**U.C HUM 2000 Control Delay HCM 2000 Volume to Capacity ratio 0.92 12.0 Sum of lost time (s) ICU Level of Service 89.6 Actuated Cycle Length (s) Ð Intersection Capacity Utilization 80.9% Analysis Period (min) 15

	٠		$\mathbf{i}$	≮	-	*	1	1	1	1	Ŧ	-
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	2010-005-0040	4			4		٣	<u></u> ↑î∌		٣	<b>†</b> Þ	
Traffic Volume (vph)	231	0	33	2	0	6	37	556	. <b>1</b> .	4	642	269
Future Volume (vph)	231	0	33	2	0	6	37	556	1	4	642	269
Ideal Flow (vphp))	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util, Factor		1.00			1.00		1.00	0.95		1.00	0.95	н. 1919 - Алт
Frt		0.98			0.90		1.00	1.00		1.00	0.96	
Fit Protected		0.96	한 사람이		0.99		0.95	1.00		0,95	1.00	
Satd. Flow (prot)		1754			1649		1770	3538	at a ta seco	1770	3382	141 L
Flt Permitted		0.96			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1754			1649		1770	3538		1770	3382	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0,90	0.90
Adi, Flow (vph)	257	0	37	2	0	7	41	618	1	4	713	299
RTOR Reduction (vph)	0	89	0	0	9	0	0	0	0	0	37	0
Lane Group Flow (vph)	0	205	0	0	0	0	41	619	0	4	975	0
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	a af sa
Protected Phases	4	4		8	8		5	2		, <b>1</b> ,	. 6	
Permitted Phases									ana ang Pasistra			de la secto
Actuated Green, G (s)		11.8			0.8		1.9	34.5		0.8	33.4	
Effective Green, g (s)		11.8			0.8		1,9	34.5		0.8	33.4	l se
Actuated g/C Ratio		0.18			0.01		0.03	0.54	÷	0.01	0.52	· .
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		323		$(n, n) \in \{1, \dots, N_n\}$	20		52	1910	a ser a	22	1767	
v/s Ratio Prot		c0.12			c0,00		c0.02	0.17		0.00	c0.29	ta sa a
v/s Ratio Perm	ul un un el altra de la											
v/c Ratio		0.64			0.01		0.79	0.32		0.18	0.55	
Uniform Delay, d1		24.1			31.2		30.8	8.2		31.2	10.2	
Progression Factor		1.00			1.00	e and the second	1.00	1,00	41. 14 L	1.00	1.00	
Incremental Delay, d2		4.1			0.1		53.8	0.5		4.0	1.2	
Delay (s)		28.1			31.3		84.6	8.6		35.2	11.5	
Level of Service		C			С	din pa di s	s, esti <b>F</b> ≜	A		U	B.	
Approach Delay (s)		28.1			31.3			13.4			11.0	
Approach LOS		C		a serte a Santa an	С			В		1. 1. 1. 1. 1.	В	
Intersection Summary										an dhana e		
HCM 2000 Control Delay	<u></u>		14.7	ŀ	ICM 200	0 Level of	Service		В			
HCM 2000 Volume to Canacity	/ ratio	n en en directioned	0.57	ni in the start.		a gara wasa						
Actuated Cycle Length (s)			63.9		Sum of Ic	st time (s)	)		16.0			• •
Intersection Capacity Utilization	n	an she she s	58.9%		CU Leve	l of Servic	e		B			
Analysis Period (min)			15								di dagi	$[0,\infty)$

Movement         EBL         EBR         WBL         WBT         NBL         NBL         NBL         NBL         SEL         SE		٦		$\mathbf{i}$	≮	←	*	1	1	1	1	ŧ	4
Lane Configurations         Y         L         Y	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)       109       0       120       3       2       7       131       455       0       2       546       94         Future Volume (vph)       109       0       120       3       2       7       131       455       0       2       546       94         Ideal Flow (vphp)       1900       100       1100	Lane Configurations	۲	1,		ሻ	4		۲	<u></u> †1≽		ኘ	<b>≜</b> 1≽	
Future Volume (vph)         109         0         120         3         2         7         131         455         0         2         546         94           Ideal Flow (vphpl)         1900 <t< td=""><td>Traffic Volume (vph)</td><td>109</td><td>0</td><td>120</td><td>3</td><td>2</td><td>7</td><td>131</td><td>455</td><td>0</td><td>2</td><td>546</td><td>94</td></t<>	Traffic Volume (vph)	109	0	120	3	2	7	131	455	0	2	546	94
Ideal Flow (vphpl)       1900       1	Future Volume (vph)	109	0	120	3	2	7	131	455	0	2	546	94
Total Lost time (s)         4.0	Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util, Factor         1.00         1.00         1.00         1.00         1.00         0.95         1.00         0.95           Frt         1.00         0.85         1.00         0.90         0.90         0.90         0.90         0.90         0.90         0.90         0.90         0.90         0.90         0.90         0.90         0.90         0.90	Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Frt       1.00       0.85       1.00       0.88       1.00       1.00       1.00       0.98         Fit Protected       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00         Satd. Flow (port)       1770       1583       1770       1639       1770       3539       1770       3462         Et Permitted       0.95       1.00       0.95       1.00       0.95       1.00         Satd. Flow (perm)       1770       1583       1770       1639       1770       3533       1770       3462         Peak-hour factor, PHF       0.90       0	Lane Util, Factor	1.00	1.00	e je Mehor	1.00	1.00		1.00	0.95	위험 1월 11일 11일 - 11일 - 11일 11일 - 11일 - 11일 - 11일	1.00	0.95	$(-\infty)^{-1}$
FIt Protected       0.95       1.00       0.95       1.00       0.95       1.00         Satd. Flow (prot)       1770       1583       1770       1639       1770       3539       1770       3462         FIt Permitted       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00         Satd. Flow (perm)       1770       1583       1770       1639       1770       3539       1770       3462         Peak-hour factor, PHE       0.90 <t< td=""><td>Frt</td><td>1,00</td><td>0.85</td><td></td><td>1.00</td><td>0.88</td><td></td><td>1.00</td><td>1.00</td><td></td><td>1.00</td><td>0.98</td><td></td></t<>	Frt	1,00	0.85		1.00	0.88		1.00	1.00		1.00	0.98	
Satd. Flow (prot)         1770         1583         1770         1639         1770         3539         1770         3462           FIt Permitted         0.95         1.00         0.95         1.00         0.95         1.00         0.95         1.00           Satd. Flow (perm)         1770         1583         1770         1639         1770         3539         1770         3462           Peak-hour factor, PHF         0.90	Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	ter en
Fit Permitted       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00         Satd. Flow (perm)       1770       1583       1770       1639       1770       3539       1770       3462         Peak-hour factor, PHF       0.90 <t< td=""><td>Satd. Flow (prot)</td><td>1770</td><td>1583</td><td></td><td>1770</td><td>1639</td><td></td><td>1770</td><td>3539</td><td></td><td>1770</td><td>3462</td><td></td></t<>	Satd. Flow (prot)	1770	1583		1770	1639		1770	3539		1770	3462	
Satd. Flow (perm)         1770         1583         1770         1639         1770         3539         1770         3462           Peak-hour factor, PHF         0.90         0.94         9.4	Fit Permitted	0.95	1.00		0.95	1.00		0,95	1.00		0.95	1.00	5
Peak-hour factor, PHF         0.90	Satd. Flow (perm)	1770	1583		1770	1639		1770	3539		1770	3462	<u> </u>
Adj. Flow (vph)       121       0       133       3       2       8       146       506       0       2       607       104         RTOR Reduction (vph)       0       114       0       0       8       0       0       0       0       0       11       0         Lane Group Flow (vph)       121       19       0       3       2       0       146       506       0       2       700       0         Turn Type       Split       NA       Split       NA       Prot       NA       Prot       NA         Protected Phases       4       4       8       8       5       2       1       6         Permitted Phases	Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
RTOR Reduction (vph)         0         114         0         0         8         0         0         0         0         11         0           Lane Group Flow (vph)         121         19         0         3         2         0         146         506         0         2         700         0           Turn Type         Split         NA         Split         NA         Prot         NA         Prot         NA           Protected Phases         4         4         8         8         5         2         1         6           Actuated Green, G (s)         9.4         9.4         1.1         1.1         8.5         38.1         0.9         30.5           Effective Green, g (s)         9.4         9.4         1.1         1.1         8.5         38.1         0.9         30.5           Actuated G/C Ratio         0.14         0.14         0.02         0.02         0.13         0.58         0.01         0.47           Clearance: Time (s)         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0           Vehicle Extension (s)         3.0         3.0         3.0         3.0         3.0	Adi, Flow (vph)	121	0	133	3	2	8	146	506	0	2	607	104
Lane Group Flow (vph)         121         19         0         3         2         0         146         506         0         2         700         0           Turn Type         Split         NA         Split         NA         Prot         NA         Prot         NA           Protected Phases         4         4         8         8         5         2         1         6           Permitted Phases	RTOR Reduction (vph)	0	114	0	0	8	0	0	0	0	0	11	0
Turn Type         Split         NA         Split         NA         Prot         NA         Prot         NA           Protected Phases         4         4         8         8         5         2         1         6           Permitted Phases	Lane Group Flow (vph)	121	19	0	3	2	0	146	506	0	2	700	0
Protected Phases       4       4       8       8       5       2       1       6         Permitted Phases       Actuated Green, G (s)       9.4       9.4       1.1       1.1       8.5       38.1       0.9       30.5         Effective Green, g (s)       9.4       9.4       1.1       1.1       8.5       38.1       0.9       30.5         Effective Green, g (s)       9.4       9.4       1.1       1.1       8.5       38.1       0.9       30.5         Actuated g/C Ratio       0.14       0.14       0.02       0.02       0.13       0.58       0.01       0.47         Clearance Time (s)       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0         Vehicle Extension (s)       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0         Lane Grp Cap (vph)       254       227       29       27       229       2058       24       1612         v/s Ratio Perm	Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Permitted Phases           Actuated Green, G (s)         9.4         9.4         1.1         1.1         8.5         38.1         0.9         30.5           Effective Green, g (s)         9.4         9.4         1.1         1.1         8.5         38.1         0.9         30.5           Actuated g/C Ratio         0.14         0.14         0.02         0.02         0.13         0.58         0.01         0.47           Clearance Time (s)         4.0 <td>Protected Phases</td> <td>4</td> <td>4</td> <td>1 1. m</td> <td>8</td> <td>8</td> <td></td> <td>5</td> <td>2</td> <td></td> <td>1</td> <td>6</td> <td></td>	Protected Phases	4	4	1 1. m	8	8		5	2		1	6	
Actuated Green, G (s)       9.4       9.4       1.1       1.1       8.5       38.1       0.9       30.5         Effective Green, g (s)       9.4       9.4       1.1       1.1       8.5       38.1       0.9       30.5         Actuated g/C Ratio       0.14       0.14       0.02       0.02       0.13       0.58       0.01       0.47         Clearance Time (s)       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0         Vehicle Extension (s)       3.0 <td< td=""><td>Permitted Phases</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	Permitted Phases												
Effective Green, g (s)       9.4       9.4       1.1       1.1       8.5       38.1       0.9       30.5         Actuated g/C Ratio       0.14       0.14       0.02       0.02       0.13       0.58       0.01       0.47         Clearance Time (s)       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0         Vehicle Extension (s)       3.0	Actuated Green. G (s)	9.4	9.4		1.1	1.1		8.5	38.1		0.9	30.5	
Actuated g/C Ratio       0.14       0.14       0.02       0.02       0.13       0.58       0.01       0.47         Clearance Time (s)       4.0       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       1.00       1.00       1.00<	Effective Green, g (s)	9.4	9.4		1.1	1.1		8.5	38.1		0.9	30.5	
Clearance Time (s)         4.0         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00	Actuated g/C Ratio	0.14	0.14		0.02	0.02		0.13	0.58		0.01	0.47	
Vehicle Extension (s)         3.0	Clearance Time (s)	4.0	4.0		4.0	4.0	김김희이	4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)         254         227         29         27         229         2058         24         1612           v/s Ratio Prot         c0.07         0.01         c0.00         0.00         c0.08         0.14         0.00         c0.20           v/s Ratio Perm         v/c Ratio         0.48         0.08         0.10         0.08         0.64         0.25         0.08         0.43           Uniform Delay, d1         25.8         24.3         31.7         31.7         27.0         6.7         31.9         11.7           Progression Factor         1.00	Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
v/s Ratio Prot       c0.07       0.01       c0.00       0.00       c0.08       0.14       0.00       c0.20         v/s Ratio Perm       v/c Ratio       0.48       0.08       0.10       0.08       0.64       0.25       0.08       0.43         Uniform Delay, d1       25.8       24.3       31.7       31.7       27.0       6.7       31.9       11.7         Progression Factor       1.00       1.0	Lane Gro Cap (vph)	254	227	n de parla	29	27		229	2058	As et al.	24	1612	
v/s Ratio Perm       v/c Ratio       0.48       0.08       0.10       0.08       0.64       0.25       0.08       0.43         Uniform Delay, d1       25.8       24.3       31.7       31.7       27.0       6.7       31.9       11.7         Progression Factor       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00         Incremental Delay, d2       1.4       0.2       1.6       1.3       5.7       0.3       1.5       0.9         Delay (s)       27.2       24.5       33.3       33.0       32.8       7.0       33.4       12.6         Level of Service       C       C       C       C       A       C       B         Approach Delay (s)       25.8       33.0       12.7       12.6       B       B         Intersection Summary       C       C       C       B       B       B	v/s Ratio Prot	c0.07	0.01		c0.00	0.00		c0.08	0.14		0.00	c0.20	
v/c Ratio       0.48       0.08       0.10       0.08       0.64       0.25       0.08       0.43         Uniform Delay, d1       25.8       24.3       31.7       31.7       27.0       6.7       31.9       11.7         Progression Factor       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00         Incremental Delay, d2       1.4       0.2       1.6       1.3       5.7       0.3       1.5       0.9         Delay (s)       27.2       24.5       33.3       33.0       32.8       7.0       33.4       12.6         Level of Service       C       C       C       C       A       C       B         Approach Delay (s)       25.8       33.0       12.7       12.6       B       B         Intersection Summary       C       C       C       B       B       B       B	v/s Ratio Perm	en en entre el			e e je e s	n an an an Taoine an An	e ga di sere	an an an Ann Algerige a		i tu s tu tu st		· .	ra a la
Uniform Delay, d1       25.8       24.3       31.7       31.7       27.0       6.7       31.9       11.7         Progression Factor       1.00	v/c Ratio	0.48	0.08		0.10	0.08		0.64	0.25		0.08	0.43	
Progression Factor         1.00 <td>Uniform Delay, d1</td> <td>25,8</td> <td>24.3</td> <td>e geter til</td> <td>31.7</td> <td>31.7</td> <td></td> <td>27.0</td> <td>6.7</td> <td></td> <td>31.9</td> <td>11.7</td> <td></td>	Uniform Delay, d1	25,8	24.3	e geter til	31.7	31.7		27.0	6.7		31.9	11.7	
Incremental Delay, d2       1.4       0.2       1.6       1.3       5.7       0.3       1.5       0.9         Delay (s)       27.2       24.5       33.3       33.0       32.8       7.0       33.4       12.6         Level of Service       C       C       C       C       A       C       B         Approach Delay (s)       25.8       33.0       12.7       12.6         Approach LOS       C       C       B       B         Intersection Summary       25.8       33.0       12.7       12.6	Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Delay (s)         27.2         24.5         33.3         33.0         32.8         7.0         33.4         12.6           Level of Service         C         C         C         C         A         C         B           Approach Delay (s)         25.8         33.0         12.7         12.6           Approach LOS         C         C         B         B           Intersection Summary         25.8         33.0         12.7         12.6	Incremental Delay, d2	1.4	0.2		1.6	1.3	an an taon ta Taon ang taon ta	5.7	0.3		1.5	0.9	
Level of Service     C     C     C     C     B       Approach Delay (s)     25.8     33.0     12.7     12.6       Approach LOS     C     C     B     B       Intersection Summary     Description Summary     Description Summary     Description Summary	Delav (s)	27.2	24.5		33.3	33.0		32.8	7.0		33.4	12.6	
Approach Delay (s)     25.8     33.0     12.7     12.6       Approach LOS     C     C     B     B       Intersection Summary     D     D     D	Level of Service	C	С		С	С		С	Α		C	В	
Approach LOS C B B B	Approach Delay (s)	· · · · · · · · · · · · · · · · · · ·	25.8			33.0			12.7			12.6	
Intersection Summary	Approach LOS		С			C			В			В	
Intersection Summary									Sale Saraha				
				14.0	L			Service		R		seen and the second	energiene andere date

2000 Control Delay HCM 2000 Volume to Capacity ratio 0.47 65.5 Sum of lost time (s) 48.1% ICU Level of Service 16.0 Actuated Cycle Length (s) А Intersection Capacity Utilization Analysis Period (min)

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						 Control to the section is section.	e here a de comme de diserse à	consequences and the second	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	۲f		ሻ		<b>€</b>	,
Traffic Volume (veh/h)	79	293	156	553	563	ke han b <b>68</b> here da beter verse felse ander de service de services de s
Future Volume (Veh/h)	79	293	156	553	563	8 68 · · · · · · · · · · · · · · · · · ·
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	) The sub-sub-sub-sub-sub-sub-sub-sub-sub-sub-
Peak Hour Factor	0.92	0.92	0.92	0,92	0.92	
Hourly flow rate (vph)	86	318	170	601	612	2 74
Pedestrians						같은 것은
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage					terrere e terret e	a server a server and a server a server the server of the
Right turn flare (veh)						
Median type				None	None	<b>)</b> The sub-transformed the transformed as a first state of the second state of the first state of the state of the
Median storage veh)						영제의 전철 방법은 방법은 것이 있는 것을 하지 않는 것을 하는 것이 없는 것이다.
Upstream signal (ft)					te e la att	والمتعادية والمتعادية والمتعادية والمتعادية والمتعادية والمتعادية والمتعادية والمتعادية
pX, platoon unblocked						같은 문제에 가는 것을 받았다. 것은 것은 것은 것은 것을 가지 않는 것을 가지 않는 것을 수 있다. 이 가지 않는 것은 것을 가지 않는 것을 수 있다. 가지 않는 것은 것을 가지 않는 것을 가지 않는 것을 수 있다. 가지 않는 것은 것을 가지 않는 것을 가지 않는 것을 수 있다. 가지 않는 하는 것을 수 있다. 가지 않는 것을 수 있다. 것을 것을 것을 것 같이 않다. 것을 것 같이 않
vC, conflicting volume	1590	649	686			
vC1, stage 1 conf vol						ex 승규는 방법에 가장 같은 것은 것은 것은 것은 것을 가지 않는 것을 수 있다. 것을 가지 않는 것
vC2, stage 2 conf vol	an an tata a t	e a da concere	e e te statue.			an a
vCu; unblocked vol	1590	649	686			
tC, single (s)	6.4	6.2	4.1	en fille e k	ta sa str	
tC, 2 stage (s)				en ne en el t		
tF (s)	3.5	3.3	2.2	t in the s	an an a d	
p0 queue free %	11	32	81			21월 21일 - 21일 22일 22일 22일 22일 22일 22일 22일 22일 22일
cM capacity (veh/h)	96	470	908			
Direction. Lane #	EB 1	NB 1	NB 2	SB1	Ale statisticality	
Volume Total	404	170	601	686		
Volume Left	86	170	0	0		
Volume Right	318	0	0	74		" 
cSH	257	908	1700	1700		
Volume to Capacity	1.57	0.19	0.35	0.40		
Queue Length 95th (ft)	613	17	5 - 19 - 19 <b>0</b> X	0		
Control Delay (s)	310.0	9.9	0.0	0.0		
Lane LOS	e de <b>E</b> S	A				
Approach Delay (s)	310.0	2.2		0.0		
Approach LOS	F			en e		
Intersection Summary			00.0			
Average Delay			68.Z	1990) (1990) 1		yajiyaa dii kaalada da baala yaa da ah maddii da da ah
Intersection Capacity Utiliz	ation	a data at	/4.8%			
Analysis Period (min)			15			토국방님의 States 이 아파 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100

Infrastructure Group, Inc.

## OPENING YEAR (2017) PLUS PROJECT CONDITIONS

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	۴	个个	۲	ሻ	<u>†</u> †+		ሻ	<b>*</b> †	7	ኻ	Ť	7
Traffic Volume (vph)	205	257	158	223	320	20	157	788	298	33	205	257
Future Volume (vph)	205	257	158	223	320	20	157	788	298	33	205	257
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0,95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3508		1770	353 <del>9</del>	1583	1770	1863	1583
Fit Permitted	0.95	1.00	1.00	0.95	1,00		0.95	1.00	1.00	0.95	1,00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3508		1770	3539	1583	1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0:90	0.90	0.90	0:90	0.90	0.90	0.90
Adj. Flow (vph)	228	286	176	248	356	22	174	876	331	37	228	286
RTOR Reduction (vph)	0	0	148	0	5	0	0	0	180	0	0	203
Lane Group Flow (vph)	228	286	28	248	373	0	174	876	151	37	228	83
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	n taa ka ay dahara	<b>.</b>	6	
Permitted Phases			4			6 6 6 6 8			2			6
Actuated Green, G (s)	14.4	12.7	12.7	15.5	13.8		12.1	32.2	32.2	3.0	23.1	23.1
Effective Green, g (s)	14.4	12.7	12.7	15.5	13.8		12,1	32.2	32.2	3.0	23.1	23.1
Actuated g/C Ratio	0.18	0.16	0,16	0.20	0.17		0.15	0.41	0.41	0.04	0.29	0.29
Clearance Time (s)	4.0	4,0	4.0	4.0	4.0		4,0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (Vph)	321	566	253	345	609		269	1435	641	66	542	460
v/s Ratio Prot	0.13	0.08		c0.14	c0.11		c0.10	c0.25		0.02	0.12	
v/s Ratio Perm			0.02						0.10		ek i y i i	0.05
v/c Ratio	0.71	0.51	0.11	0.72	0.61		0.65	0.61	0.24	0.56	0.42	0,18
Uniform Delay, d1	30.5	30.5	28.5	29,9	30.3		31.6	18.6	15.5	37.6	22.7	21.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.2	0.7	0.2	7.0	1.8		5.3	1.9	0.9	10.4	2.4	09
Delay (s)	37.8	31.2	28.7	36.9	32.2		36.9	20.6	16.4	48.0	25.1	21.9
Level of Service	D	С	C	D	C.		D	C	B	D	C	С
Approach Delay (s)		32.7	·		34.0			21.6	a se obtava a tr	tata estada	25.0	
Approach LOS		С			C			C			С	
Intersection Summary												
HCM 2000 Control Delay			27.0	H	CM 2000	Level of	Service		C			
HCM 2000 Volume to Capacity	/ ratio	energia y a prova	0.68	rendednu brev (* 5.783	ne alfaber efte eine stear fe Ba	a y na kanang kanan da bagan si	1.000000000000				·	
Actuated Cycle Length (s)			79,4	S	um of los	t time (s)			16.0			
Intersection Canacity Utilization	n n	us Miriu (1940) (1	60.1%	тын татаасы 	CU Level	of Service	) }		В			
Analysis Period (min)			15									

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Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	۲		ሻ	۴	¢Î	
Traffic Volume (vph)	339	282	148	665	675	este <b>116</b> e se presentation de la company
Future Volume (vph)	339	282	148	665	675	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	na gi <b>t 900</b> Bargara ang palamatan da ana ara palamatan s
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util, Factor	1.00		1.00	1.00	1.00	n de la companya de la contra de En la contra de la co
Frt	0.94		1.00	1.00	0.98	} nar na swaran an a
Fit Protected	0.97		0.95	1.00	1,00	· · · · · · · · · · · · · · · · · · ·
Satd. Flow (prot)	1702		1770	1863	1826	) An an an an tao an
Flt Permitted	0.97		0.95	1.00	1.00	
Satd. Flow (perm)	1702		1770	1863	1826	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	377	313	164	739	750	)
RTOR Reduction (vph)	- 33	0	0	0	7	
Lane Group Flow (vph)	657	0	164	739	872	
Turn Type	Prot		Prot	NA	NA	
Protected Phases	4		5	. 2	. 6	<b>)</b> The state of the state
Permitted Phases						<u> 같은 것은 같은 것은 것은 것이 있는 것은 것이 없는 것이 없다.</u>
Actuated Green, G (s)	30.0		8.0	52.0	40.0	) National and the state of the factor of the state of the sta
Effective Green, g (s)	30.0		8.0	52.0	40.0	AN 관계에서 한 방법 방법을 통령을 가 받는 것이라는 것이었다. 이 가지 않는 것이다
Actuated g/C Ratio	0.33		0.09	0.58	0.44	↓ New estimations of the Static Contendations of the Static Static Contendation of the static static static stati
Clearance Time (s)	4.0		4.0	4.0	4.0	2월 2월 24일 월월 2일을 한 음악에서 한 것을 하는 것을 하는 것을 하는 것이다.
Vehicle Extension (s)	3.0		3.0	3.0	3.0	<b>)</b> / 19
Lane Grp Cap (vph)	567	a da ana a'	157	1076	811	
v/s Ratio Prot	c0.39		c0.09	0.40	c0.48	<b>5</b> Here is the else deep factor for the Value of the state of the William and the state of the state of the state
v/s Ratio Perm					4.00	n Begene en en en en en general de la la la la compañía de la compañía de las de la seconda de la compañía de La compañía de la comp A seconda de la compañía de la compa
v/c Ratio	1.16	a a setta	1.04	0.69	1.08	5 Na sevent olitik i koloniski severi katologi tareko filma di Mareko kalendar da katologi († 1917)
Uniform Delay, d1	30.0	an a	41.0	13.3	25.0	
Progression Factor	1.00	e na kataka.	1.00	1.00	1.00	y Na sa na manana sa na sa na sa na sa na sa na sa sa sa sa sa na manana sa
Incremental Delay, d2	89.6		405.4	3.D 40.0	53.9 70 0	n New State of the State
Delay (s)	119.6	an e strange	125.1	16.9	10.9	y - Nanaka kataka kataka kataka na na kataka na katak
Level of Service				D	70 O	Bayed og salfege (furefeld) og sjælfer i forfælde se en from um om forfatte og en som en som en som en som en n
Approach Delay (s)	119.6		1.1.1.4	30.D	70.9	Ø ∃n teenen Autor briegen anveragen er bisker en stjere er stereter for en er er stereter er er er er er er er er
Approach LOS	, n¦n <b>⊡</b> s			en in De		Begge for the device of the probability of the transformation of
Intersection Summary						
HCM 2000 Control Delay	No esta d		74.8	H	ICM 200	00 Level of Service
HCM 2000 Volume to Capaci	ty ratio		1.10			and a state of the st
Actuated Cycle Length (s)			90.0	S	ium of lo	ost time (s)
Intersection Capacity Utilization	on		96.8%	10	CU Leve	el of Service F

Analysis Period (min) c Critical Lane Group

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		÷			<del>(</del> )		ሻ	<u></u>		۴	朴序	
Traffic Volume (vph)	21	0	13	<b>2</b>	0	12	8	1046	4	14	688	16
Future Volume (vph)	21	0	13	2	0	12	8	1046	4	14	688	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.95			0.88		1.00	1.00		1.00	1.00	
Fit Protected		0,97			0.99		0,95	1.00		0.95	1.00	
Satd. Flow (prot)		1714			1634		1770	3537		1770	3527	
Flt Permitted		0.97			0.99		0.95	1.00		0.95	1.00	· ·
Satd. Flow (perm)		1714			1634		1770	3537		1770	3527	
Peak-hour factor, PHF	0.90	0.90	0.90	0,90	0.90	0:90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	23	0	14	2	0	13	9	1162	4	16	764	18
RTOR Reduction (vph)	0	36	0	0	15	0	0	0	0	0	<u> </u>	0
Lane Group Flow (vph)	0	1	0	0	0	0	9	1166	0	16	781	0
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	4	4		8			5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		2.0			0.9		0.9	43.0		0.9	43.0	
Effective Green, g (s)		2.0			0.9		0.9	43.0		0.9	43.0	h der
Actuated g/C Ratio		0.03			0.01	unter de te	0.01	0.68		0.01	0.68	
Clearance Time (s)		4.0			4.0		4.0	4,0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	7.61.61	54			23		25	2421		25	2414	1. N. 1
v/s Ratio Prot		c0.00			c0.00		0.01	c0.33		c0.01	0.22	
v/s Ratio Perm	to de la constante Presidente de la constante		- 19. ji			n de se						
v/c Ratio		0.02			0.01		0.36	0.48	· .	0.64	0.32	
Uniform Delay, d1		29.5	te til		30.5	$(a_i, a_{i+1}) = i$	30.7	4./	n fran ar The	30.8	4.0	
Progression Factor		1.00			1.00		1.00	1.00	· · · ·	1.00	1.00	
Incremental Delay, d2		0.2	aliand 1 (ar 1) 1 ann a' Ruise		0.2	Na Na Mari	8.7	0.7		44.6	0.4	
Delay (s)		29.6		an the second	30.7	tetti tetti	39,3	5.3	and the	/5.4	4.4	
Level of Service		C			С		D	A		E	A.	*
Approach Delay (s)		29.6			30.7			5.6			5.8	
Approach LOS		С			, C		소영국	A		N. Asta	A	e se de se
Intersection Summary			nga nga anga c									60.030.0200
HCM 2000 Control Delay			6.3	<del>-</del>	ICM 200	0 Level of	Service		Α			
HCM 2000 Volume to Capacity	ratio		0.46						·			
Actuated Cycle Length (s)			62.8	S	um of lo	st time (s)	동물 같		16.0		ng sang	
Intersection Capacity Utilization	1		41.9%	10	CU Level	of Service	) 		A			
Analysis Period (min)			15									1997 - 19

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL.	SBT	SBR
Lane Configurations	<u>کر</u>	î.		٣	<b>î</b> .		ሻ	<b>≜</b> î}		۲	<b>1</b>	
Traffic Volume (vph)	43		25	ta de	sensi <b>j</b> en	15	25	976	0	. 5	613	. 39
Euture Volume (vph)	43	0	25	1	1	15	25	976	0	5	613	39
Ideal Flow (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -	4.0	4.0	1.149.11	4.0	4.0		4.0	4.0	
ane littl Factor	1:00	1.00		1.00	1.00		1.00	0.95	d an d' A	1.00	0.95	
Frt	1.00	0.85		1.00	0.86		1.00	1.00		1.00	0.99	
Fit Protected	0.95	1.00	an an an An trachtach	0.95	1.00	e sie e	0,95	1.00		0,95	1.00	i i
Satd Flow (prot)	1770	1583		1770	1599		1770	3539		1770	3508	
Flt Permitted	0.95	1,00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1583		1770	1599		1770	3539		1770	3508	
Peak-hour factor PHE	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0:90	0.90	0.90	0.90	0.90
Adi Flow (vnh)	48	0	28	1	1	17	28	1084	Ó	6	681	43
RTOR Reduction (Vnh)	0	26	0	0	17	0	0	0	0	0	3	S. S. J. 0
Lane Group Flow (vph)	48	2	0	1	1	0	28	1084	0	6	721	0
Тит Туре	Split	ŇÁ		Split	NA		Prot	NA		Prot	NA	
Protected Phases	4	4	· · · ·	8	8		5	2		1	6	
Permitted Phases	e seto		en de la com	en. Nadar							1	n:
Actuated Green, G (s)	4.5	4.5		1.1	1.1		2.1	42.3		0.9	41.1	
Effective Green, q (s)	4.5	4.5		11	11		2.1	42.3		0.9	41.1	
Actuated g/C Ratio	0.07	0.07		0.02	0.02		0.03	0.65		0.01	0.63	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4,0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	122	109		30	27		57	2310	· · · ·	24	2224	
v/s Ratio Prot	c0.03	0.00		0.00	c0.00		c0.02	c0.31		0.00	0.21	
v/s Ratio Perm			يەر مەربە بەربەرمە					Le transferation				1997 - 1997 1997 - 1997
v/c Ratio	0.39	0.02		0.03	0.05		0.49	0.47		0.25	0.32	
Uniform Delay, d1	28.8	28.1		31.3	31.3		30.8	5.6		31.6	5.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.1	0.1		0.5	0.7		6.5	0.7		5.4	0.4	n de la composition de la comp
Delay (s)	30.9	28.2		31.8	32.1		37.3	6.3		37.0	5.8	
Level of Service	С	C		С	С		D	Α		D	A	No. A
Approach Delay (s)		29.9			32.1			7.1			6.1	
Approach LOS		C			C			A			A A	
Intersection Summary			6 4 600		enderse der		18 N N 10			lan syn it de	an Greekeer	<u>State opticit</u>
HCM 2000 Control Delay			7.9	ŀ	ICM 2000	Level of	Service		A	ter de la composition de la co		5. <sup>1</sup>
HCM 2000 Volume to Capacity	, ratio		0.46							5. A A.		
Actuated Cycle Length (s)	•		64.8	1997 (198 <b>8</b>	Sum of los	time (s)			16.0			
Intersection Capacity Utilizatio	n		42.7%	10	CU Level (	of Service			A	·		
Analysis Period (min)			15						er for de l			
c Critical Lane Group												

Baseline

	-	•	١	1	Ŧ	-					Anna a sana mana kasara kasara 1670 m. katak	
Movement	EBL	EBR	NBL	NBT	SBT	SBR			2-0-08-08	1. Se 66 (*		
Lane Configurations	শ্ব		ኻ	<b>†</b>	1.							
Traffic Volume (veh/h)	71	198	302	955	572	125					e e se la grada d	
Future Volume (Veh/h)	71	198	302	955	572	125		5 5 11				
Sign Control	Stop			Free	Free							
Grade	0%			0%	0%		uni en evere	ang an a		1.1.1.1	ta na s	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		en la Sta				
Hourly flow rate (vph)	77	215	328	1038	622	136		e an the states of	e anna 1940.	na sa sa sin		
Pedestrians												
Lane Width (ft)		÷,		a ta sha ta	NAME OF A		t rectored to	والمحرور والمحالي	i en je de de			
Walking Speed (ft/s)			and a s									•
Percent Blockage		المراجع المراجع	Geographies			La Victoria	a segue Agre	والمتحد والم		a na hina n	and the	
Right turn flare (veh)		e a cara de la cara de La cara de la	aind div	C ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (	Ale per		가는 것 같아요.		en de la	ini i Ar		
Median type	a ser a ser a	a ana ana a	e e de la	None	None	a aga d		a statu	s:	e e Sala		
Median storage veh)		- 6 M. G.						. 13 AN 200			· · · ·	·
Upstream signal (ft)	us ang tata litit.	- An e e e	an a	san san s		ela a Ma		مر <u>مانور</u>	e en per			
pX, platoon unblocked	0004	600	750			S. S. Chini	f sjekeloveret 1				996 (19 <u>7</u> 7)	
vC, conflicting volume	2384	690	100	ing an an star i s	- Secondality -		e de la					
vC1, stage 1 cont vol	Sheraraa		triky till	ane and i	a a constrainte de la constrainte de la La constrainte de la c	ing ang sang sang sang sang sang sang san	gen 9 위 위상 일정. 	Maria Maria Anglang Maria Maria Mari	briji Jeerse		an tha thair is	
VC2, stage 2 cont vol	0000	enn	750	en fest in d	water to be	48.8515)		Rogenser	New An	de televito		- 1
vcu, unplocked vol	2304 £1	ິດອດ		. (1948-1947) 		al an the second se					te estiper la su	
tC, single (s)	0.4	0.4	<b>7.1</b>	1995 (35, 1993)					d in est			
to, ∠ stage (s)	3 5	2 2	22	ni Britana (	ne ji tente	an she in Ne	e tu je substriju je L	lan Andre	in the second			
IF (S)	0.0 100	52	62	na vstal		an a		<u>ospaine</u>				
puqueue nee //	23	445	853	14. A. A. A.	a server tala terre	i a retita i tas	1060 (100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 10 	s Miles di sur	an a' l'an a		· · · ·	
Civi capacity (Venni)	LU.			ana an <u>ne s</u> ainges					remember 1913			1893 (*
Direction, Lane #	<u> </u>	NB 1	NB 2	SB 1	na wanginan	n sebolu ng s	den sy ren oord	er for de terr	anan ar san		ten en set set de la set	<u>) defend</u>
Volume Total	292	328	1038	758								
Volume Left	.77	328	0	0			$1 \leq i \leq 2N^{2}$	· .				
Volume Right	215	0	0	136		· .	en de la					
cSH	. 77	853	1700	1700					· .	. 1		
Volume to Capacity	3.81	0.38	0.61	0.45	. ta e e							
Queue Length 95th (ft)	Enr	46	0	0			e se donte def			ta se cara d	, de la se	
Control Delay (s)	Err	11.8	0.0	0.0		· · · ·	a staling		- 1 - N	at ag		
Lane LOS	EF	В				an a	n birth a'					
Approach Delay (s)	Err	2.8		0.0	d ad the		est de les re	inan na d				
Approach LOS	, File								an ta stali			naterative
Intersection Summary												
Average Delay			1210.1									

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Average Delay Intersection Capacity Utilization 80.6% ICU Level of Service D Analysis Period (min) 15

	۶	-+	$\mathbf{i}$	¥	-	*	•	Ť	1	1	ŧ	-
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	ተተ	۲	ሻ	†î⊧		٦	<b>†</b> †	۴	<u>`</u> `j	<b>†</b>	Ť
Traffic Volume (vph)	224	269	108	191	167	13	131	532	288	16	476	122
Future Volume (vph)	224	269	108	191	167	13	131	532	288	16	476	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	e generative	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1,00
Frt	1.00	1.00	0.85	1.00	0.99	وروار والمراجع والمراجع والمراجع	1.00	1.00	0.85	1.00	1.00	0.85
Fit Protected	0.95	1.00	1,00	0.95	1.00		0.95	1.00	1.00	0.95	1,00	4500
Satd. Flow (prot)	1770	3539	1583	1770	3502	n eesta augusta	1770	3539	1583	1770	1803	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	4500
Satd. Flow (perm)	1770	3539	1583	1770	3502		1770	3539	1583	1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0,90	0.90	0.90	0,90	0.90
Adj. Flow (vph)	249	299	120	212	186	14	146	591	320	18	529	130
RTOR Reduction (vph)	0	0	102	0	7	0	0	0	166	0	U 500	83
Lane Group Flow (vph)	249	299	18	212	193	0	146	591	154	18	529	53
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		, <u>1</u>	6	
Permitted Phases			4						2		00.0	6
Actuated Green, G (s)	14.3	12.8	12.8	13.2	11.7	a strategica i	9.6	40.7	40.7	2.1	33.2	33.Z
Effective Green, g (s)	14.3	12.8	12.8	13.2	11.7		9.6	40.7	40.7	2.1	33.2	33.2
Actuated g/C Ratio	0.17	0.15	0.15	0.16	0.14		0.11	0.48	0.48	0.02	0.39	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	298	534	238	275	483		200	1698	759	43	729	619
v/s Ratio Prot	c0.14	c0,08		0.12	0.06		c0.08	0.17		0.01	c0.28	
v/s Ratio Perm			0.01				ga Adaga. De la est		0.10			0.03
v/c Ratio	0.84	0.56	0.08	0.77	0.40		0.73	0.35	0.20	0.42	0.73	0.09
Uniform Delay, d1	34.1	33.4	30.9	34.3	33.3		36.3	13.8	12.7	40.7	21.9	16.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.0	1.3	0.1	12.5	0.5		12.5	0.6	0.6	6.5	6.2	0.3
Delay (s)	52.1	34.7	31.1	46.9	33.9		48.9	14.3	13.3	47.2	28.1	16.5
Level of Service	D	С	С	D	C		D	В	В	D		В
Approach Delay (s)		40.5			40.6			18.8			26.3	
Approach LOS		D			D			В			C.	eg den disk
Intersection Summary										Swange a	NAME AND	and of the
HCM 2000 Control Delay			28.9		HCM 200	0 Level of	Service		C C			
HCM 2000 Volume to Cap	acity ratio		0.73						1.1.4 a. 1	· ·		
Actuated Cycle Length (s)		og ta A	84.8		Sum of lo	st time (s)			16.0	<sup>ter</sup> te de la ve		
Intersection Capacity Utiliz	ation		63.7%	I	ICU Leve	of Service	е "		В			
Analysis Period (min)	د در		15						i de Ale		an air a	
<ul> <li>A second sec second second sec</li></ul>	and a star of the											

	۶	$\mathbf{i}$	•	1	ŧ	4
Movement	FBI	EBR	NBL	NBT	SBT	SBR
Lane Configurations	۲		ሻ	ţ	î,	
Traffic Volume (vph)	241	80	120	991	665	<b>227</b> - 1997 - 199 - 1997 - 19
Future Volume (vph)	241	80	120	991	665	227
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	ans <b>1900</b> a contra a first a secondario de la contra de la
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util, Factor	1.00	n i Alberta. Nationalista	1.00	1.00	1.00	
Frt	0.97		1.00	1.00	0.97	
Flt Protected	0,96		0.95	1.00	1.00	추억 방법 동안 화가 있는 것은 것은 것이 있는 것이 없는 것이 없다.
Satd. Flow (prot)	1735		1770	1863	1799	
Fit Permitted	0.96		0.95	1.00	1.00	화고 1998년 1998년 1999년 1998년 1998년 1998년 1999년 1998년 199 1999년 1999년 1998년 1998년 1999년 1998년 1999년 1998년 199
Satd, Flow (perm)	1735		1770	1863	1799	
Peak-hour factor, PHF	0,90	0.90	0.90	0.90	0,90	0.90
Adi, Flow (vph)	268	89	133	1101	739	252
RTOR Reduction (vph)	13	0	0	0	14	<b>0</b>
Lane Group Flow (vph)	344	0	133	1101	977	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	4 se e tos per	in des trivites in	5	2	6	)
Permitted Phases						는 것은
Actuated Green, G (s)	19.0		8.2	63.0	50.8	}
Effective Green, q (s)	19.0		8.2	63.0	50.8	
Actuated g/C Ratio	0.21		0.09	0.70	0.56	<b>;</b>
Clearance Time (s)	4.0	an da natio Alternation	4.0	4.0	4.0	ke 사항을 위한 방송 같은 것을 하는 것으로 가장하는 것이다.
Vehicle Extension (s)	3.0		3.0	3.0	3.0	)
Lane Grp Cap (vph)	366		161	1304	1015	
v/s Ratio Prot	c0.20		0.08	c0.59	c0.54	
v/s Ratio Perm				e teta	i.	
v/c Ratio	0.94		0.83	0.84	0.96	<b>)</b>
Uniform Delay, d1	34.9		40.2	9.9	18.7	
Progression Factor	1.00		1.00	1.00	1.00	)
Incremental Delay, d2	31.3		27.9	6,8	20.6	en el esta en la constante de l Regione de la constante de la co
Delay (s)	66.3		68.1	16.7	39.3	<b>}</b>
Level of Service	State (E)		E	В	D	
Approach Delay (s)	66.3			22.3	39.3	}
Approach LOS	E			C	D	
Intersection Summary						
HCM 2000 Control Delay			34.9	ł	ICM 200	00 Level of Service
HCM 2000 Volume to Capa	city ratio		0,96			
Actuated Cycle Length (s)			90.0		Sum of lo	ost time (s)
Intersection Capacity Utiliza	tion		83.7%	· · ·	CU Leve	el of Service E
Analysis Period (min)			15			
		na na siya s				

c Critical Lane Group

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		*			 		5	ተኩ		ሻ	<b>↑</b> ]>	
Traffic Volume (vph)	240	0	34	2	0	6	38	577	1	4	667	280
Future Volume (vph)	240	0	34	2	0	6	38	577	1	4	667	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	11.
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.98			0.90		1.00	1.00	atao an taonan	1.00	0.96	
Fit Protected		0.96			0.99		0.95	1.00		0.95	1,00	
Satd, Flow (prot)		1755			1649		1770	3538		1//0	3382	÷
Fit Permitted		0.96			0,99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1755			1649		1770	3538		1770	3382	0.00
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0,90
Adj. Flow (vph)	267	0	38	2	0	7	42	641	1	4	/41	311
RTOR Reduction (vph)	0	89	0	0	9	0	U	0	1990 0	. <b>U</b> .	38	· · · ·
Lane Group Flow (vph)	0	216	0	0	0	0	42	642	0	4	1014	0
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	N
Protected Phases	4	4		8	. 8		5	2		1	6	
Permitted Phases				지 않는				t fan de s			· · · · ·	÷
Actuated Green, G (s)		12.1		A	0.9		3.0	36.4		0.9	34.3	1,
Effective Green, g (s)		12.1			0.9		3.0	36.4		0.9	34.3	
Actuated g/C Ratio		0.18			0.01	a si se la litata	0.05	0.55	na ensa Mu	0.01	0.52	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		320	NR 193		22		80	1942		24	1/49	
v/s Ratio Prot		c0.12			c0.00		c0.02	0.18		0.00	CU.30	
v/s Ratio Perm				a haa daaladi Tara tara a					al subtra	0.47	0.50	n va
v/c Ratio		0.67			0.01	. tet eta la	0.53	0.33		0.17	0.50	ti shekara
Uniform Delay, d1		25.3			32.3		31.0	8.2	에 가 E MA	32.3	11.0	
Progression Factor		1.00			1.00		1.00	1.00	sut in	1.00	1.00	
Incremental Delay, d2	a the second s	5.5			0.1		0,1 07.0	0.5	ti Milita	250	104	1 A. A. 1
Delay (s)		30.8			32.4	v	37.0	8.7		35.0	12.4 	
Level of Service		С			С		Ð	A		· U	10 5	÷ .
Approach Delay (s)		30.8			32,4			10.4			12.3 D	
Approach LOS		C			Ç			В			D	· · · · · · · · · · · · · · · · · · ·
Intersection Summary												gang an
HCM 2000 Control Delay			14.6	ŀ	ICM 2000	0 Level of	Service		В			
HCM 2000 Volume to Canad	city ratio	t is sheet of	0.58	1 1 N M M M								
Actuated Cycle Length (s)	ang <b>nang</b> Ang ang ang ang		66.3		Sum of lo	st time (s)			16.0			
Intersection Canacity Utilizat	tion	1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 -	60.3%	· · · · · · · · · · · ·	CU Level	of Service	Э		В			
Analysis Period (min)			15			asabè						111

Movement         EBL         EBT         EBR         WBL         WBT         WBR         NBL         NBT         NBR         SBL         SBT         SBR           Lane Configurations         1 <t< th=""><th></th><th>≯</th><th></th><th><math>\mathbf{\hat{v}}</math></th><th>∢</th><th></th><th>*</th><th>•</th><th>1</th><th>1</th><th>1</th><th>Ŧ</th><th>-</th></t<>		≯		$\mathbf{\hat{v}}$	∢		*	•	1	1	1	Ŧ	-
Lane Configurations         1	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)         113         0         125         3         2         7         136         472         0         2         567         97           Future Volume (vph)         113         0         125         3         2         7         136         472         0         2         567         97           Ideal Flow (vphpl)         1900	Lane Configurations	ሻ	14		ሻ	4Î		٦	朴祎		ή	<b>†</b> 1>	
Future Volume (vph)         113         0         125         3         2         7         136         472         0         2         567         97           Ideal Flow (vphpl)         1900 <t< td=""><td>Traffic Volume (vph)</td><td>113</td><td>0</td><td>125</td><td>3</td><td>2</td><td>- <b>- 7</b></td><td>136</td><td>472</td><td>0</td><td>2</td><td>567</td><td>97</td></t<>	Traffic Volume (vph)	113	0	125	3	2	- <b>- 7</b>	136	472	0	2	567	97
Ideal Flow (vphpl)         1900 <td>Future Volume (vph)</td> <td>113</td> <td>0</td> <td>125</td> <td>3</td> <td>2</td> <td>7</td> <td>136</td> <td>472</td> <td>0</td> <td>2</td> <td>567</td> <td>97</td>	Future Volume (vph)	113	0	125	3	2	7	136	472	0	2	567	97
Total Lost time (s)         4.0	Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1 <b>9</b> 00	1900	1900	1900
Lane Util. Factor         1.00         1.00         1.00         1.00         1.00         0.95           Frt         1.00         0.85         1.00         0.88         1.00         1.00         0.95           Fit         1.00         0.95         1.00         0.95         1.00         0.95           Fit Protected         0.95         1.00         0.95         1.00         0.95         1.00           Satd. Flow (prot)         1770         1583         1770         1639         1770         3539         1770         3462           Flt Permitted         0.95         1.00         0.95         1.00         0.95         1.00           Satd. Flow (perm)         1770         1583         1770         1639         1770         3539         1770         3462           Peak-hour factor, PHF         0.90	Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Frt         1.00         0.85         1.00         0.88         1.00         1.00         1.00         0.98           Fit Protected         0.95         1.00         0.90         0.90         0.90         0.90         0.90         0.90         0.90	Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Fit Protected         0.95         1.00         0.90         0.90         0.90         0.90         0.90         0.90         0.90         0.90         0.90         0.90         0.90	Frt	1.00	0.85		1.00	0.88		1.00	1.00		1.00	0.98	
Satd. Flow (prot)         1770         1583         1770         1639         1770         3539         1770         3462           Flt Permitted         0.95         1.00         0.90         0.	Fit Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	i se e
Fit Permitted         0.95         1.00         0.95         1.00         0.95         1.00           Satd. Flow (perm)         1770         1583         1770         1639         1770         3539         1770         3462           Peak-hour factor, PHF         0.90	Satd, Flow (prot)	1770	1583		1770	1639		1770	3539		1770	3462	
Satd. Flow (perm)         1770         1583         1770         1639         1770         3539         1770         3462           Peak-hour factor, PHF         0.90	Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Peak-hour factor, PHF 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.9	Satd. Flow (perm)	1770	1583		1770	1639		1770	3539		1770	3462	
	Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0,90	0.90	0.90	0.90	0.90
Adi, Flow (yph) 126 0 139 3 2 8 151 524 0 2 630 108	Adi, Flow (vph)	126	0	139	3	2	8	151	524	0	2	630	108
RTOR Reduction (vph) 0 119 0 0 8 0 0 0 0 12 0	RTOR Reduction (vph)	0	119	Ő	0	8	0	0	0	0	0	12	. 0
Lane Group Flow (vph) 126 20 0 3 2 0 151 524 0 2 726 0	Lane Group Flow (vph)	126	20	0	3	2	0	151	524	0	2	726	0
Turn Type Split NA Split NA Prot NA Prot NA	Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases 4 4 8 8 5 2 1 6	Protected Phases	4	4	** * • • • • •	8	8		5	2		1	6	
Permitted Phases	Permitted Phases												
Actuated Green, G (s) 9.6 9.6 1.1 1.1 10.0 38.0 0.9 28.9	Actuated Green, G (s)	9.6	9.6		1.1	1.1		10.0	38.0		0.9	28.9	
Effective Green, g (s) 9.6 9.6 1.1 1.1 10.0 38.0 0.9 28.9	Effective Green, g (s)	9.6	9.6		1.1	11	비장물관	10.0	38.0		0.9	28.9	
Actuated g/C Ratio 0.15 0.15 0.02 0.02 0.15 0.58 0.01 0.44	Actuated g/C Ratio	0.15	0.15		0.02	0.02		0.15	0.58		0.01	0.44	
Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0	Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	Vehicle Extension (s)	3.0	3.0		3,0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph) 259 231 29 27 269 2050 24 1525	Lane Grp Cap (vph)	259	231	a ser sare	29	27		269	2050	ter en el	24	1525	
v/s Ratio Prot c0.07 0.01 c0.00 0.00 c0.09 0.15 0.00 c0.21	v/s Ratio Prot	c0.07	0.01		c0.00	0.00		c0,09	0.15		0.00	c0.21	
ws Ratio Perm. The second s	v/s Ratio Perm												
v/c Ratio 0.49 0.09 0.10 0.08 0.56 0.26 0.08 0.48	v/c Ratio	0.49	0.09		0.10	0.08		0.56	0.26		0.08	0.48	
Uniform Delay, d1 25.7 24.2 31.8 31.8 25.8 6.8 31.9 13.0	Uniform Delay, d1	25.7	24.2		31.8	31.8		25.8	6.8	n de la se	31.9	13.0	
Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2 1.4 0.2 1.6 1.3 2.7 0.3	Incremental Delay, d2	1.4	0.2		1.6	1.3		2,7	0.3	inter Second	1.5	1.1	
Delay (s) 27.2 24.4 33.3 33.0 28.4 7.1 33.4 14.1	Delay (s)	27.2	24.4		33.3	33.0		28.4	7.1		33.4	14.1	
Level of Service C C B	Level of Service	С	С		C	С		С	A		С	В	
Approach Delay (s) 25.7 33.1 11.9 14.1	Approach Delay (s)		25.7			33.1			11.9			14.1	
Approach LOS B	Approach LOS		С			С			В			В	
Intersection Summan/	Intersection Summary								and the second		()		
HCM 2000 Control Delay 15-2 HCM 2000 Level of Service B	HCM 2000 Control Delay			15.2	H	ICM 2000	Level of S	Service		В			
HCM 2000 Volume to Canacity ratio 0.49	HCM 2000 Volume to Canacity	/ ratio		0.49	en a a sur			1. COL NE E C 199	an an Ionaich Tha an Ionaich	· · · · · ·		- 1 A - 1 - 1	
Actuated Cycle Length (s) 16.0	Astusted Cuele Longth (c)	, , , , , , , , , , , , , , , , , , , ,	y data da	65.6	Service S	um of losi	time (s)	es princip		16.0			· ·

 $A_{\frac{1}{2},\frac$ 49.2% ICU Level of Service Intersection Capacity Utilization Analysis Period (min)

Movement	EBL	EBR	NBL	NBT	SBT	SBR							
Lane Configurations	<u></u> Қ/		ኙ	Å	<b>Ъ</b>				<u></u>				
Traffic Volume (veh/h)	82	304	162	574	584	71	ta Sa Kiliy	a tana iyo.	·	the second	: 4.		
Future Volume (Veh/h)	82	304	162	574	584	71							
Sign Control	Stop			Free	Free								
Grade	0%			0%	0%	and a second second se			. Antonio de la	at the second			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		an an Saint Chairtean Saint			N (2017)		
Houriy flow rate (vph)	89	330	176	624	635	77	- topoto soor -	en nature	e la companya	s. e alto	: :		
Pedestrians										Nel Me	te est og stallete en etter		h e
Lane Width (ft)	a a alƙar ta	- Anna San Ba	nen sier is	na anti-sta		a leess kiraj	na na 104	N de la dese	a ny Nga Ne. N	an an an	i de la compañía de l	algue de	
Walking Speed (fl/s)					1424144	1년 1월 1986) 	27 18-18 d	ha bi în tîn	n de Briese R	in the f		14 Å.	14 A
Percent Blockage	a na stranda da series da serie Na series da series d	a esta de la terra	1997. 1997.	an e ta e co	24422022	an a	ane page	a de la composition de la comp		yayaa	<u>An an</u>	GA PH	
Right turn flare (Ven)	e daga dag	ng shedeli		None	None	an na saka baby	el Marchel St	e e tra tra	an leiste	-11-1-1-1-1-1 	1. 14 J. 11 I		÷ .
Median type		a statute.		None	NONC	dar territa der		eter de		i de la	a e e		i. Jauna
Medial Storage ven)	tan ing ta			Alte state	1911, 1939, 1937 1	18 di secolo de 19 I	i il lene i ten	e avit die ee	· · · · ·	e instanciali.			
Dy platoon unblocked				. 4.442									
vC conflicting volume	1650	674	712		an an an ta								
vC1 stage 1 conf vol													11.
vC2. stage 2 conf vol	a de la contrevientes	1	the start of a										
vCu, unblocked vol	1650	674	712										6 <sup>19</sup> 19
tC, single (s)	6.4	6.2	4.1								5 - 1		
tC, 2 stage (s)													NG T
tF (s)	3.5	3.3	2.2			en en en Maria	the second second		e test i kervad		- Nersetz	auto estere	chara i
p0 queue free %	0	27	80							지역적		k Carta	
cM capacity (veh/h)	87	455	888										
Direction Lane #	E8 1	NB 1	NB 2	SB 1			1900 (Sec. 1997) 1900 (Sec. 1997)			6.622			
Volume Total	419	176	624	712									
Volume Left	89	176	0	0							a Marata	e e e e e e e e e e e e e e e e e e e	
Volume Right	330	0	0	77				er en e					
cSH	240	888	1700	1700									
Volume to Capacity	1.75	0.20	0.37	0,42	ana ang sa sa		antar e a	in suite	i dag e ta				
Queue Length 95th (ft)	700	18	୍ପ୍	0				Heiserii					
Control Delay (s)	387.8	10.1	0.0	0.0	ta saadiya s	a sugarah b	anna an	N. 1580	en tres	·			
Lane LOS	E.	В		•		lige de la seconda de la s La seconda de la seconda de				fi se d	•		
Approach Delay (s)	387.8	2.2		0.0	a <sup>1</sup> Nore t					÷		12	
Approach LOS	199 <b>6</b> - 1997			, sisininga				ante apparente ante estat			an managaran an		awanana aya
Intersection Summary							Galeria.	9 39 49 A	19 19 19 19 19 19 19 19 19 19 19 19 19 1				3.036.03×
Average Delay			85.1		este de la composition este de la composition		an a						i i e
Intersection Capacity Utilization	n		77.3%	j j	CU Leve	l of Service	) Anthropadiae		] 14	) 	a sum	til an an a	
Analysis Period (min)			15								N SALA		

## 

Infrastructure Group, Inc.

## CUMULATIVE CONDITIONS

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	<b>*</b> *	7	٦	<b>↑</b> î→		ሻ	ተተ	7	ሻ	<b>↑</b>	ř
Traffic Volume (vph)	205	257	170	232	320	20	171	833	313	33	576	314
Future Volume (vph)	205	257	170	232	320	20	171	833	313	33	576	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0,95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0,95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3508		1770	3539	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1,00	1.00	0.95	1.00	1,00
Satd. Flow (perm)	1770	3539	1583	1770	3508		1770	3539	1583	1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adi. Flow (vph)	228	286	189	258	356	22	190	926	348	37	640	349
RTOR Reduction (vph)	0	0	160	0	5	0	0	0	179	0	0	145
Lane Group Flow (vph)	228	286	29	258	373	0	190	926	169	37	640	204
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	12.6	13.4	13.4	13.5	14.3		10.2	40.1	40.1	3.6	33.5	33.5
Effective Green, g (s)	12.6	13.4	13.4	13.5	14.3		10.2	40.1	40.1	3.6	33.5	33.5
Actuated g/C Ratio	0.15	0.15	0.15	0.16	0.17		0.12	0.46	0.46	0.04	0.39	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	257	547	244	275	579		208	1638	733	73	720	612
v/s Ratio Prot	0.13	0.08		c0.15	c0.11		c0.11	0,26		0.02	c0.34	
v/s Ratio Perm	: .		0.02						0.11	en de la	÷.,	0.13
v/c Ratio	0.89	0.52	0.12	0.94	0.64		0.91	0.57	0.23	0.51	0.89	0.33
Uniform Delay, d1	36.3	33.7	31.5	36.1	33.8		37.8	16.9	14.0	40.6	24.8	18.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	28.5	0.9	0.2	37.5	2.5		39.0	1.4	0.7	5.4	15.3	1.5
Delay (s)	64.8	34.6	31.7	73.7	36.2		76.8	18.3	14.7	46.1	40.1	20.2
Level of Service	E	C	С	E	D		E	В	В	D.	D	C
Approach Delay (s)		43.6			51,4			25.1		1. · ·	33.5	÷.,
Approach LOS	e produ	D			D			C			с С	
Intersection Summary												
HCM 2000 Control Delay			35.1		ICM 2000	) Level of	Service	anna an Charleach	D			
HCM 2000 Volume to Capacit	ty ratio		0,86					A. 44				
Actuated Cycle Length (s)	An shar	er je hane	86.6	sterne de S	Sum of los	it time (s)	la de la compañía de		16.0			•
Intersection Capacity Utilization	on		74.0%	ļ	CU Level	of Service	е.		D			
Analysis Period (min)			15							h hata		

	٦	$\rightarrow$ $\checkmark$	1	Ļ	1		
Movement	FRI	EBR NBI	NBT	SBT	SBR		trano al canada ha Gineda ya kwa kwa
Lane Configurations	<u>کر</u>	<u> </u>	*	1			
Traffic Volume (voli)	342	294 158	741	760	119	en en la sectada en la francia da	
Future Volume (vph)	342	294 158	741	760	119		
Ideal Flow (vnhnl)	1900	1900 1900	1900	1900	1900		
Total Lost time (s)	4.0	4.0	4.0	4.0	•••••		
Lane Util. Factor	1.00	1.00	1.00	1.00		gang ang kanalan sa	- 
Frt	0.94	1.00	1.00	0.98	·		
FIt Protected	0.97	0.95	1.00	1.00		승규는 물건을 다 가지 않는 것이 같아요.	• • • • • • • • •
Satd. Flow (prot)	1701	1770	1863	1829			
Flt Permitted	0.97	0.95	1.00	1.00		방법 관람이 있는 것은 것은 것은 것을 하는 것을 수 있다.	
Satd. Flow (perm)	1701	1770	1863	1829			
Peak-hour factor, PHF	0,90	0.90 0.90	0.90	0,90	0.90		1 - E
Adj. Flow (vph)	380	327 176	823	844	132		
RTOR Reduction (vph)		0 0	0	6	0	동생물 동안물 관리는 것은 것 같아.	
Lane Group Flow (vph)	672	0 176	823	970	0		
Turn Type	Prot	Prot	NA	ŇA			
Protected Phases	4	5	2	6		and the second	
Permitted Phases				아이에 관내		영상 이 영상 이 있는 것 같아. 아이는 것 같아.	
Actuated Green, G (s)	29.0	8.0	53.0	41.0	, and the second		5
Effective Green, g (s)	29.0	8.0	53.0	41.0		상황동속 방송 방송 가는 가슴 가는 것이 있었다.	
Actuated g/C Ratio	0.32	0.09	0.59	0.46		ana na ana ing sina na sang tang ang sang sa	
Clearance Time (s)	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	548	157	1097	833			
v/s Ratio Prot	c0.40	c0.10	0.44	c0.53			
v/s Ratio Perm		et fan de stêder					
v/c Ratio	1.23	1.12	0.75	1.16		, a construction of the state of the	N. L.
Uniform Delay, d1	30.5	41.0	13.6	24.5		는 것 정확 같은 것 같은 것 같은 것 것 같은 것 것 같이다. 	
Progression Factor	1.00	1.00	1.00	1.00	ante esta	e tale e gligel altride stillige i ser i dia angle a ser i dia s	
Incremental Delay, d2	117.6	108.0	4./	8/.0		kradi klasi déng a si suker si si si si si s	
Delay (s)	148.1	149.0	18.4	111.5		a an	
Level of Service	F	an basa badante	В.	444 E			
Approach Delay (s)	148.1		41,4	6.111 E			
Approach LOS	t. ►		U.	All Mail Ru	a de la composición d		
Intersection Summary			3 N N N	an di Kirai			
HCM 2000 Control Delay		95.0		HCM 2000	) Level of	Service and the set of the second	e de la ferra
HCM 2000 Volume to Cap	oacity ratio	1.18		ور و الم	مالغان مالغان م		
Actuated Cycle Length (s)		90.0		Sum of los	st time (s)	aund Table Analysis ( <b>12:0</b> Shaku a Shakara)	
Intersection Capacity Utili	zation	102.9%		ICU Level	of Servic	e G Baran and a statistic statistic stratistic stratistic stratistic stratistic stratistic stratistic stratistic st	
Analysis Period (min)		15					1. 1

	≯	-	$\mathbf{F}$	¥	4	*	4	1	1	\$	¥	-
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		<del>(</del> ‡)			÷.		ሻ	<b>ት</b> ኩ		ሻ	<b>≜</b> t}	
Traffic Volume (vph)	21	0	13	2	0	12	8	1158	4	14	748	15
Future Volume (vph)	21	0	13	2	0	12	8	1158	4	14	748	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util, Factor		1.00			1.00	an an Ara An Araba an Araba	1.00	0.95		1.00	0.95	
Frt		0.95			0.88		1.00	1.00		1.00	1.00	
Fit Protected		0.97			0.99		0.95	1.00		0.95	1.00	· · ·,
Satd, Flow (prot)		1714			1634		1770	3538		1770	3529	
Flt Permitted		0.97			0.99		0.95	1.00		0.95	1.00	• •
Satd, Flow (perm)		1714			1634		1770	3538		1770	3529	
Peak-hour factor PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0,90	0.90	0.90
Adi, Flow (vph)	23	0	14	2	0	13	9	1287	4	16	831	17
RTOR Reduction (vph)	0	36	0	0	15	0	0	0	0	1999 - 199 <b>0</b> - 1997	1	. 0
Lane Group Flow (vph)	0	1	0	0	0	0	9	1291	0	16	847	0
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		2.0			0.9		0.9	43.0		0.9	43.0	
Effective Green, q (s)		2.0			0.9		0.9	43.0		0.9	43.0	4 1. 
Actuated g/C Ratio		0.03			0.01		0.01	0.68		0.01	0.68	
Clearance Time (s)		4.0			4.0		4.0	4.0	in te Ne N	4.0	4.0	· .
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
l ane Gro Cap (vph)		54	da ya (ba		23		25	2422		25	2416	
v/s Ratio Prot		c0.00			c0.00		0.01	c0.36		c0.01	0.24	
v/s Ratio Perm	1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	· · · · · · ·					an a			1. T
v/c Ratio		0.02			0.01		0.36	0.53		0.64	0.35	
Uniform Delay, d1	19 - A.	29.5			30.5		30.7	4,9		30.8	4.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			0.2		8.7	0.8		44.6	0.4	
Delay (s)		29.6			30.7		39.3	5.8		75.4	4.5	
level of Service	e <sup>te</sup> rre e	С			С		D	A		E.	A	
Approach Delay (s)		29.6			30.7			6.0			5.8	
Approach LOS		C			C			A			Α.	in e
Intersection Summary			No publi						e e e			
HCM 2000 Control Delay			6.5		HCM 2000	) Level of	Service		A			
HCM 2000 Volume to Canacit	v ratio	· · · · ·	0.50									
Actuated Cycle Length (s)		a de la com	62.8		Sum of los	st time (s)			16.0			1. 
Intersection Canacity I Itilizatio	n sin she fi n		45.0%		CU Level	of Service	Э		Α			

Intersection Capacity Utilization Intersection Capacity Utilization 45.0% ICO Level of Service 6 Analysis Period (min) and the second service 6 Analysis Period (min) and the second se

	۶	>	7	∢	-	Ł	1	1	1	\$	Ļ	-
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ኻ	î.		ኘ	4		ኻ	<b>↑</b> 1→		ሻ	<b>≜</b> †	
Traffic Volume (vph)	43	0	25	1	1	15	25	1089	0	5	674	37
Future Volume (vph)	43	0	25	1	1	15	25	1089	0	5	674	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	1 114 J 1 1 1 1 1 1 1 1 1	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	·
Frt	1.00	0.85	·	1.00	0.86		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	edi, 1
Satd. Flow (prot)	1770	1583		1770	1599		1770	3539		1770	3512	
Fit Permitted	0.95	1.00		0.95	1.00		0,95	1.00		0.95	1.00	n hara
Satd. Flow (perm)	1770	1583		1770	1599		1770	3539		1770	3512	
Peak-bour factor, PHE	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adi, Flow (vph)	48	0	28	1	1	17	28	1210	0	6	749	41
RTOR Reduction (vph)	0	26	0	0	17	0	0	0	0	0	3	0
Lane Group Flow (vph)	48	2	0	1	1	0	28	1210	0	6	787	0
	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases		i galike			en al calent						i sa sa si	n Na harana
Actuated Green, G (s)	4.5	4.5		1.1	1,1		2.1	42.3		0.9	41.1	
Effective Green, q (s)	4.5	4.5		11	11		2.1	42.3		0.9	41.1	
Actuated d/C Ratio	0.07	0.07		0.02	0.02		0.03	0.65		0.01	0.63	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3,0		3.0	3.0		3.0	3.0	
Lane Grn Cap (vph)	122	109	elegene (fran	30	27		57	2310		24	2227	·
v/s Ratio Prot	c0.03	0.00	·	0.00	c0.00		c0.02	c0.34		0.00	0.22	
v/s Ratio Perm	New Sector											n An thair
v/c Ratio	0.39	0.02	er e de la composition de la compositio	0.03	0.05		0.49	0.52		0.25	0.35	
Iniform Delay d	28.8	28.1		31.3	31.3		30.8	5.9		31.6	5.6	
Progression Eactor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay d2	2.1	0.1		0.5	0.7		6.5	0.9		5,4	0.4	en se en el
Delay (s)	30.9	28.2		31.8	32.1		37.3	6.8		37.0	6.0	
Level of Service	С	C		C C	С	e di serie Ny INSEE	D	Α		D	A	•
Approach Delay (s)		29.9			32.1			7.5			6.3	
Approach LOS					C			A	e a sul	N 1 - N	A.	. *
Intersection Summary				e de apr	yr 105 521 44	0.0000			a na sa sa s			20020-000-00 20020-000-00
HCM 2000 Control Delay			8.0	ľ	ICM 2000	) Level of	Service		A		n Alexandre	÷
HCM 2000 Volume to Capacit	ty ratio		0.51							· .	··	
Actuated Cycle Length (s)			64.8	5	Sum of los	st time (s)			16.0	ve 12		1
Intersection Capacity Utilization	on		45.8%	ŀ	CU Level	of Service	Э		А			
Analysis Period (min)			15	e statu	gan di				et al anti-	i na i en	: 	1
c Critical Lane Group												

Baseline

	۶	$\mathbf{F}$	*	1	Ļ	1						
Movement	EBL	EBR	NBL	NBT	SBT	SBR						angeneratie Meterologie
Lane Configurations	¥		ሻ	1	<b>∲</b>							
Traffic Volume (veh/h)	136	218	310	1003	613	145		han h	s, quês			
Future Volume (Veh/h)	136	218	310	1003	613	145						
Sign Control	Stop			Free	Free					Mar Lan		
Grade	0%			0%	0%							
Peak Hour Factor	0.92	0.92	0.92	0,92	0.92	0.92			ur de la		l de la	
Hourly flow rate (vph)	148	237	337	1090	666	158			and the second	a, at tap .	· · · · ·	÷
Pedestrians						n an Perus P Tanàna Mandrid						
Lane Width (ft)					Istes	nereta en su	an a	An Araba	in te el pr		. in the	
Walking Speed (ft/s)				말한 말한	an sea				i v Bullin			a ta
Percent Blockage	· · · · · · · ·				14 N L L	a second a star	n a sa sa shar	te de la com	Nerra		Patata a	
Right turn flare (veh)		e and e b		i palita				dahajat d		· · · · · ·		·
Median type		er an san a	, as at N	None	None	an an tao an	a na ser Sin	generalit.		an taire.		1
Median storage veh)			an tanan ar Ang ang ang ang ang ang ang ang ang ang a		an a			4843. st		ng tanàn Ng	· `	
Upstream signal (ft)	en an Albana d	l sastratula.	antere de la compañía	1949-1944 - S	an a	e estate		Antonia de la composición de la composi Antonia de la composición de la composición Antonia de la composición de la				
pX, platoon unblocked	0500	746	5) (24 (24 (24 (24 (24 (24 (24 (24 (24 (24	a vedera		~ 이상자 한 아님	Yephilines.	ener a des	1999	ta tarti dela	3 a a (	
vC, conflicting volume	2509	/45	824	an an an	n el ser el s	aangiyeise	analanga ka	Geografia		ana (91)	t politica d	Neger I.
vC1, stage 1 conf vol				요가하는지	HACE HE	en en besk		91991991099 1	s ( das estas	ali seja i stal	na ha tirra ra	. ·
vC2, stage 2 cont voi		746	0.04	Maria da serie	Aistrict		elesaria)			AP (2004)	a da anta a sa anta a sa a sa a sa a sa a s	: .
VCU, UNDIOCKED VOI	2509	(40 60	02 <del>4</del> 1 1			(1943) 1944) 1944)	Ref. (1999) (1997) Aliantes (1997)	et es a compa	ing a finite		na in the	
tC, single (s)	0.4	0.2	<b>4, 1</b> Sanata Sata	an Adda							a state a	
tu, 2 stage (s)	3 5	33	22	0.417.64		na strikky klist	N STREET	11.14 × 11.11	in a st			
IF (S)	5.5	J.J //3	58	ang ang sa tao	alach ta				and the		$(x,y) \in \mathcal{L}$	
p⊌ queue iiee ∞	18	414	806	d a 1614-1.	an an an Arang	i se ta cui l	i en ser	n la sugo trajecto. A		- 19 - E		
um capacity (venim)												KSDASSE.
Direction, Lane #	EB 1	NB 1	NB 2	SB 1							<u> </u>	
Volume Total	385	337	1090	824								
Volume Left	148	337	0	0		eg di Marada	an a					
Volume Right	237	0	0	158	tau auto							
cSH	44	806	1700	1700								
Volume to Capacity	8.70	0.42	0.64	0.48			the last					
Queue Length 95th (ft)	Err	52	0	0				9-9-12-12-1 1			e e se de	
Control Delay (s)	Err	12.6	0.0	0.0	en de la compañía de	and the second	.1818-6	haan boo			· · · · · · ·	
Lane LOS	F	В				ner dine elle Versionen in						
Approach Delay (s)	Err	3.0	u, mar miljera i	0.0	testeres.	Nexasil en el	in casallin		Nave kale	ang ng <sup>an</sup> anananan Ng Kangan Nabaranan	Alteration	i 11. j. j. j. j.
Approach LOS	er er Fri	ester:	er an				ecterio(S)	1949-39 fe			and a second	ana sanasana ar
Intersection Summary			68-612	Res de		197 (Å. 198-195						ANICES.
Average Delay			1462.0								11. 夏季11. 19 11. 11. 19 19 19	1
	a en a sur l'arte (lese Le le	even avan and	00 20/		CULAVA	of Service			F			

Intersection Capacity Utilization 89.2% ICU Level of Service Analysis Period (min) 15 

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	۲	<u>†</u> †	ř	ሻ	<b>†</b> î≽		۳	**	ř	ሻ	<u>↑</u>	۲
Traffic Volume (vph)	224	269	124	206	167	13	145	578	300	16	528	122
Future Volume (vph)	224	269	124	206	167	13	145	578	300	16	528	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0,85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1,00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3502		1770	3539	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0,95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3502		1770	3539	1583	1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0:90	0.90	0.90	0.90	0.90	0.90	0.90
Adi, Flow (vph)	249	299	138	229	186	14	161	642	333	18	587	136
RTOR Reduction (vph)	0	0	117	0	7	0	0	0	170	0	0	65
Lane Group Flow (vph)	249	299	21	229	193	0	161	642	163	18	587	71
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	13.9	12.8	12.8	12.9	11.8		9.2	41.9	41.9	2.1	34.8	34.8
Effective Green, g (s)	13.9	12.8	12.8	12.9	11.8	ninelsine ola 1995. Alteria Alteria	9.2	41.9	41.9	2.1	34.8	34.8
Actuated g/C Ratio	0.16	0.15	0.15	0.15	0.14		0.11	0.49	0.49	0.02	0.41	0.41
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	a da ana	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	287	528	236	266	482	p v na sa j	190	1730	773:	43	756	642
v/s Ratio Prot	c0.14	c0.08		0.13	0.06		c0.09	0.18		0.01	c0.32	
v/s Ratio Perm	e La Sultan		0.01			ana ang ang ang ang ang ang ang ang ang			0.10			0.05
v/c Ratio	0.87	0.57	0.09	0.86	0.40		0.85	0.37	0.21	0.42	0.78	0.11
Uniform Delay, d1	35.0	33.9	31.4	35.5	33.7		37.6	13.7	12.5	41.2	22.1	.15.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.0	1.4	0.2	23.6	0.5		27.8	0.6	0.6	6.5	1.6	0.3
Delay (s)	58.0	35.3	31.6	59.1	34.3		65.4	14.3	13.1	47.7	29.8	16.2
Level of Service	E	D	С	ja se Es	C		a de <b>E</b> rr	В	В	U.	. U	В
Approach Delay (s)		42.8	·		47.5	ana a ta ta an		21.2			21.7	
Approach LOS		D		alar bahadar Geografia	D			C			C	
Intersection Summary												
HCM 2000 Control Delay			31.5		HCM 200	0 Level of	Service		С			
HCM 2000 Volume to Capacit	y ratio		0.78				a it it.			. •		
Actuated Cycle Length (s)			85.7	은 물건 (S	Sum of lo	st time (s)			16.0			
intersection Capacity Utilization	n		68.0%		CU Leve	l of Servic	ж <u>а</u>		С	1994		
Analysis Period (min)			15	a second				te stad	1. 194			<i>N</i>

	٠	$\mathbf{\hat{v}}$	*	Ť	Ļ	4
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	<mark>አ</mark> ኛ		ኻ	ţ	<del>(</del> Î	
Traffic Volume (voh)	244	89	129	1068	725	ear - <b>229</b> - California California - Califo
Future Volume (vph)	244	89	129	1068	725	229
Ideal Flow (vohpl)	1900	1900	1900	1900	1900	<b>1900</b>
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util Factor	1,00		1.00	1.00	1.00	en la characteria de la construcción de la construcción de la construcción de la construcción de la construcción Para de la construcción de la const
Frt	0.96		1.00	1.00	0.97	
Flt Protected	0.96		0.95	1.00	1.00	
Satd, Flow (prot)	1732		1770	1863	1802	
FILPermitted	0.96		0.95	1.00	1.00	
Satd. Flow (perm)	1732		1770	1863	1802	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0:90	0.90
Adi, Flow (vph)	271	99	143	1187	806	254
RTOR Reduction (vph)	14	0	0	0	13	
Lane Group Flow (vph)	356	Ó	143	1187	1047	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases						
Actuated Green, G (s)	18.5		8.4	63.5	51.1	
Effective Green, g (s)	18.5		8.4	63.5	51.1	
Actuated g/C Ratio	0.21		0.09	0.71	0.57	and the second
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	356		165	1314	1023	
v/s Ratio Prot	c0.21		0.08	c0.64	c0.58	an a
v/s Ratio Perm						
v/c Ratio	1.00		0.87	0.90	1.02	na na sana ang kaong
Uniform Delay, d1	35.7		40.2	10.8	19.4	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	47.1		34.8	10.3	34.4	
Delay (s)	82.8		75.1	21,1	53.8	
Level of Service	F		Е	C	D	
Approach Delay (s)	82.8			26.9	53.8	
Approach LOS	F			С	Ď	
Intersection Summary						
HCM 2000 Control Delay			44.7		ICM 200	U Level of Service
HCM 2000 Volume to Capaci	ty ratio	ta an an ta ta	1.02			and a state of the second state
Actuated Cycle Length (s)			90.0	100 - S 7 <b>5</b>	sum of lo	ostume (s) as a second of 12:00 of the second of the
Intersection Capacity Utilization	on .		88.2%	<b>I</b>	CU Level	)) of Service E an environment of the device of the first service of the service of the service of the service of the service of
Analysis Period (min)			15			

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Movement	EBL	EBT	EBR	WBL	ŴBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		£.,			<del>(</del>		ኻ	<u></u> ↑1≽		5	<b>↑</b> î→	
Traffic Volume (vph)	240	0	34	2	0	6	38	663	. <b> 1</b>	4	785	280
Future Volume (vph)	240	0	34	2	0	6	38	663	1	4	785	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util: Factor	e de la composición d	1.00		d try av	1.00		1.00	0.95		1.00	0.95	
Frt		0.98			0.90		1.00	1.00		1.00	0.96	
Flt Protected		0.96			0.99		0.95	1,00		0.95	1.00	
Satd, Flow (prot)		1755			1649		1770	3538		1770	3400	
Fit Permitted		0.96			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1755			1649		1770	3538		1770	3400	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0,90
Adi, Flow (vph)	267	0	38	2	0	7	42	737	1	4	872	311
RTOR Reduction (vph)	0	89	0	0	9	0	0	0	0	0	29	
Lane Group Flow (vph)	0	216	0	0	0	0	42	738	0	4	1154	0
Turn Type	Split	ŇA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases									걸 같아요.			
Actuated Green, G (s)	***' .	12.1			0.9		3.0	36.4		0.9	34.3	
Effective Green, g (s)		12.1			0.9		3.0	36.4		0.9	34.3	
Actuated g/C Ratio		0.18			0.01		0.05	0.55		0.01	0.52	
Clearance Time (s)		4.0			4.0		4.0	4.0	s a dhu	4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	:	320			22		80	1942	ener Sentin se	24	1758	
v/s Ratio Prot	·	c0.12			c0.00		c0.02	0.21		0.00	c0.34	
v/s Ratio Perm	e kon 1 Norden en service			ter a des	e e e e e e e e e e e e e e			tet grand Grand States				
v/c Ratio		0.67			0.01		0.53	0.38		0.17	0.66	
Uniform Delay, d1		25.3			32.3		31.0	8.5		32.3	11.7	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	i di kata	5.5			0.1		6.1	0.6		3.3	1.9	2.1
Delay (s)		30.8			32.4	÷ .	37.0	9.1		35.6	13.6	
Level of Service		С			С		D	A	일을 받을	e p	В	
Approach Delay (s)		30.8			32.4		alle state alle	10.6	ut alter solter	a sa tita a sa	13.7	
Approach LOS		C			C			В			je i gere <b>b</b> ≺	1999 - 1999 -
Intercontion Summany	ana ana an									NA STORAG		
HIGH 2000 Control Dolay			15.0		1CM 200	In Level of	Service		В		data y	<u>_</u>
HCM 2000 Volume to Conse	ity ratio	aren (19	0.63	94 S. 200 B. 8	1911.200	0.20101.01		ang ang panganan. Tagang panganan	: <del></del>			• •
Actuated Ovela Longth (2)		upo de l	663		Sum of lo	st time (s	h i shekara	a. An tao am	16.0	Ne di	e e Notes	
Intersection Capacity Litilizati	ion		60.3%	 I	CU Leve	l of Servic	:e		В			
Analysis Period (min)			15			en en La Marela		n de la composition Anna anna anna anna anna anna anna ann				

	_ الحر		$\mathbf{r}$	∢	<b>∢</b>	*	*	1	1	\$	↓	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL.	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	<b>Þ</b>		ሻ	ર્લ		ሻ	<u></u> †₽		۲,	<b>≜</b> †	
Traffic Volume (vph)	112	0	125	3	2	7	136	559	0	2	686	96
Future Volume (vph)	112	0	125	3	2	7	136	559	0	2	686	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	. 1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1,00	0.95	st i
Frt	1.00	0.85		1.00	0.88		1.00	1.00		1.00	0.98	
Fit Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	ti i si North
Satd. Flow (prot)	1770	1583		1770	1639		1770	3539		1770	3474	
Fit Permitted	0.95	1.00		0.95	1.00		0.95	1.00	이는 것은	0.95	1.00	- 18
Satd. Flow (perm)	1770	1583		1770	1639		1770	3539		1770	3474	
Peak-hour factor, PHF	0,90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0,90	0.90	0.90
Adj. Flow (vph)	124	Ó	139	3	2	8	151	621	0	2	762	107
RTOR Reduction (vph)	0	119	0	0	8	0	0	0	0	0	9	;
Lane Group Flow (vph)	124	20	0	3	2	0	151	621	0	2	860	0
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	di se
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	9.5	9,5		1.1	1.1		9.6	39.3		0.9	30.6	
Effective Green, q (s)	9.5	9.5		<u>ः</u> 11	1.1		9.6	39.3	김정보장	0.9	30.6	i Sentina
Actuated g/C Ratio	0.14	0.14		0.02	0.02		0.14	0.59		0.01	0.46	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	elli eta di tu
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
ane Gro Cap (Vph)	251	225		29	26		254	2082		23	1591	
v/s Ratio Prot	c0.07	0.01	· · · · · ·	c0.00	0.00		c0.09	0.18		0.00	c0.25	
v/s Ratio Perm	la di seri			an a								
v/c Ratio	0.49	0.09	1.111.1	0.10	0.08		0.59	0.30		0.09	0.54	
Uniform Delay, d1	26.4	24.9		32.4	32.4		26.8	6.9		32.5	13.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.5	0.2		1.6	1.4		3.7	0.4		1.6	1,3	N. 1
Delay (s)	28.0	25.1		33.9	33.7		30.5	7.2		34.2	14,4	
Level of Service	С	C		C	С		С	A		C	В	
Approach Delay (s)		26.4			33.8			11.8			14.4	
Approach LOS					C.			В			В	а. 1
Intersection Summary							a sa s		e de construir	Antenia		
HCM 2000 Control Delay			15.1		ICM 2000	Level of	Service		В	n an th	n e Me	
HCM 2000 Volume to Canaci	tv ratio	5 - 1 <sup>-</sup> 5 - 1	0.53									
Actuated Cycle Length (s)	.,	aga da.	66.8		Sum of los	t time (s)			16.0			
Intersection Canacity Utilizatio	on		52.4%		CU Level	of Service	Э		А			
Analysis Period (min)			15	Na fasi								nn 12 an Anna 23 an Anna Anna Anna
Anatyaian enou (minit)		2 - 2 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -			112 C 127 C 126	a particular de la contra de	1997 - 1997 I.S.	an a chi fean a	an an star a sec		an and the second	

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	٠	$\mathbf{k}$	1	1	Ļ	4					
Movement	EBI	EBR	NBL	NBT	SBT	SBR					
Lane Configurations	<u>کہ</u>		ሻ	Ł	ĥ						
Traffic Volume (veh/h)	123	319	180	619	645	128					
Future Volume (Veh/h)	123	319	180	619	645	128					
Sign Control	Stop	an an thair An thair an thair	la de	Free	Free				1122.00		
Grade	0%			0%	0%						
Peak Hour Factor	0.92	0.92	0.92	0,92	0.92	0.92					
Hourly flow rate (vph)	134	347	196	673	701	139			· .	a secondaria	
Pedestrians				in a statistica de la composición de la Composición de la composición de la comp						al transformer de	:
Lane Width (ft)							e central cher	ann an tra-	ele train	and the second second	
Walking Speed (ft/s)							i di pi pi pi				5
Percent Blockage				1	Sector Contractor	The second second	Ali ta National Anna Anna Anna Anna Anna Anna Anna A	an e an th	d ta secolo 3	sustaine de la	
Right turn flare (veh)								말하는 것			
Median type				None	None			with the			
Median storage veh)	1000										
Upstream signal (ft)				ana antina		na statu a da	an este à compa	ale bole a.	den er	a, jejski filekcij	
pX, platoon unblocked			영양한					SANGER (	la transferia	이는 것, 같은 것이다.	1.15
vC, conflicting volume	1836	770	840	and the state of the		teren finner k	Na sana ang katalang katalang Na sana sana sana sana sana sana sana sa	an an an an an	a Paul III e	- that the state	
vC1, stage 1 conf vol								Weine der		학생 위수원 등 가격	1 t
vC2, stage 2 conf vol	n in the second	a ta <u>nan</u> asia	Service de la companya de la company La companya de la comp	Nersee an State	an a	a avectoração de	사회 문화 문화		graat de s		Ч. н.
vCu, unblocked vol	1836	770	840				그린왕의 소리한		jaras rejo	a podarko a Kapadoju.	N 19.
tC, single (s)	6.4	6.2	4.1	undere churd		en de la composition de la composition Composition de la composition de la comp	(kylas ski)	dag sy tro	anna (mg.	a per a de	
tC, 2 stage (s)	~ <b>-</b>	• • •	0.0		en ing Mar			vere le e	·	e da servición de la composición de la Composición de la composición de la comp	-11 - 1 -
tF (s)	3.5	3.3	2.2	e the star	Na tagan	an an tha an	Na statu na	en de la compositione de la composition		a de la servición de la servic	÷.,
p0 queue free %	U	13	705		n an shaka Marin	t el estas, en i	이 같은 것 같은 것 같은 것 같이 없다.				• •
cM capacity (veh/h)	63	400	190			e a se a	en e		1994-1994 (1995-1997) 1994-1994 (1995-1997)		anter anter a
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	e. North Le						
Volume Total	481	196	673	840							
Volume Left	134	196		0	N - DA			en e	· ·		
Volume Right	347	0	0	139			all sa sti			1	
cSH	160	795	1700	1700							
Volume to Capacity	3.00	0.25	0.40	0.49						1 N	
Queue Length 95th (ft)	1104	24	0	0							
Control Delay (s)	959.6	11.0	0.0	0.0	a cara ta	a water a stati			t i dag e de tit		
Lane LOS	state E.	В							ys. Stark		
Approach Delay (s)	959.6	2.5		0.0	and the second of the	ung ding serengi diri	ar asseg 44. Main	مەربەر بەرمىرىنىغ	unave de la Vie	an an an Anna A	ν.
Approach LOS	F						tan kara ta			usper sellars.	
Intersection Summary						912 65 70			19 19 19 19 19		
Average Delay			211.7				a ya sa				
Internection Conneity Utilizati	on		88.1%		CU Level	of Service			E		

Intersection Capacity Utilization 88.1% ICU Level of Service E Analysis Period (min)

Infrastructure Group, Inc.

## CUMULATIVE PLUS PROJECT CONDITIONS

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ኻ	ተተ	7	ኘ	<b>†</b> 1>		۲	<b>††</b>	7	ሻ	<b>†</b>	7
Traffic Volume (vph)	205	257	172	233	320	. 20	177	848	316	- 33	582	314
Future Volume (vph)	205	257	172	233	320	20	177	848	316	33	582	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util, Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Fit Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3508		1770	3539	1583	1770	1863	1583
Fit Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0,95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3508		1770	3539	1583	1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	228	286	191	259	356	22	197	942	351	37	647	349
RTOR Reduction (vph)	0	0	161	0	5	0	0	0	177	0	0	143
Lane Group Flow (vph)	228	286	30	259	373	0	197	942	174	37	647	206
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	. 8		5	2		1	. 6	
Permitted Phases			4			tsaan ta ay fiy ah ta ay ta ah ta	RAN -		2			6
Actuated Green, G (s)	12.6	13.4	13.4	13.5	14.3		10.5	40.1	40.1	3.6	33.2	33.2
Effective Green, g (s)	12.6	13.4	13.4	13.5	14.3		10.5	40.1	40.1	3.6	33.2	33,2
Actuated g/C Ratio	0.15	0.15	0.15	0.16	0.17		0.12	0.46	0.46	0.04	0.38	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3,0	3.0	3.0	3.0
Lane Grp Cap (vph)	257	547	244	275	579	nata da la comencia. Terrete de la comencia de la	214	1638	733	73	/14	606
v/s Ratio Prot	0.13	0.08		c0.15	c0.11		c0.11	0.27		0.02	c0.35	0.40
v/s Ratio Perm			0.02						0.11			0.13
v/c Ratio	0.89	0.52	0.12	0.94	0.64		0.92	0.58	0.24	0.51	0.91	0.34
Uniform Delay, d1	36.3	33.7	31.5	36.2	33.8		37.6	17.0	14.0	40.6	25.2	18.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1,00	1.00	1.00	1.00
Incremental Delay, d2	28.5	0.9	0.2	38,7	2.5		40.1	1.5	0.8	5.4	17.3	1.5
Delay (s)	64.8	34.6	31.8	74.8	36.2	e en ataten.	77.7	18.5	14.8	46.1	42.5	20.5
Level of Service	e en e Ella	C	С	Е	D		E	В	B)	ler i di <b>D</b> a	0E 0	
Approach Delay (s)		43.6			51.9			25.4			35.2	
Approach LOS		D			D			C.			U.	Nama kananana a
Intersection Summary												
HCM 2000 Control Delay			35.7		ICM 200	0 Level of	Service		D.	e Never I.	·	
HCM 2000 Volume to Capa	city ratio		0.87						· · · ·			
Actuated Cycle Length (s)			86.6	5	Sum of lo	st time (s)			16.0	s i si si si	a an an	
Intersection Capacity Utiliza	ntion		74.6%		CU Level	of Servic	e	ta a stea	D		e se se se se se	
Analysis Period (min)			15									et de la
<ul> <li>Critical Lane Group</li> </ul>												

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Movement	ERI	FBR	NBL	NBT	SBT	SBR
Lane Configurations	۲X		٢	¥	\$	
Traffic Volume (vph)	342	306	166	757	785	eren <b>119</b> er er en stelle helse er
Future Volume (vph)	342	306	166	757	785	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util, Factor	1.00		1.00	1.00	1.00	같은 것은 것을 가지 않는 것을 하는 것을
Frt	0.94		1.00	1.00	0,98	
Flt Protected	0.97		0.95	1.00	1,00	방법 사람은 전문 것은 것을 가지 않는 것 같아. 것 같아. 것 같아. 것 같아. 것 같아.
Satd. Flow (prot)	1699		1770	1863	1830	
Fit Permitted	0.97		0.95	1.00	1.00	출전 성동·김숙 전자 2014년 2014년 1월 17일 - 1 17일 - 17일 - 172 - 172 - 172 17일 - 172 - 172 - 172 - 172 - 172 - 172 - 172 - 172 - 172 - 172 - 172 - 172 - 172 - 172 - 172 - 172 - 172 - 172
Satd. Flow (perm)	1699		1770	<u>1863</u>	1830	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	
Adj. Flow (vph)	380	340	184	841	872	132
RTOR Reduction (vph)	36	0	0	0	6	and $[0]$ as the Gaussian space of the state of the stat
Lane Group Flow (vph)	684	0	184	841	998	0
Turn Type	Prot		Prot	NA	NA	동생 방법을 알려도 하는 것은 것을 가지 않는 것이 있는 것이 있다.
Protected Phases	4		5	2	6	
Permitted Phases						
Actuated Green, G (s)	29.0		8.0	53.0	41.0	
Effective Green, g (s)	29.0		8.0	53.0	41.0	철로 가난 철학 방송 문입을 위한 것을 위한 것을 수 있는 것이다.
Actuated g/C Ratio	0.32	·	0.09	0.59	0.46	n da su constante e se canada de tradeció de la calencia de la comercia de la comercia de la comercia de la com
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	547		157	1097	833	
v/s Ratio Prot	c0.40		c0.10	0.45	c0.55	
v/s Ratio Perm						방원은 전철 영문 동안 방안 입안 것 가지만 이렇는 것이 가지 않는 것 같다.
v/c Ratio	1.25		1.17	0.77	1.20	
Uniform Delay, d1	30:5		41.0	13.9	24.5	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	127.3		125.5	5.1	100.7	
Delay (s)	157.8		166.5	19,0	125.2	and the second
Level of Service	: :		<b>F</b> -	B.	105.0	ang nahaga bini bilang Kabagi na mang bina na mang mang sa mang Mang
Approach Delay (s)	157.8	ta a ta c	1.5	45.5	120.2	
Approach LOS	۲			U	diada ayin <b>y</b> i	and provide the state of the second state of the second state of the second state of the second second state of
Intersection Summary				a sharahariga	6.25.4976	
HCM 2000 Control Delay			104.0		ICM 200	0 Level of Service
HCM 2000 Volume to Capaci	ity ratio		1.21			an an an an an an an an a <u>n an a</u>
Actuated Cycle Length (s)	n de la de La composition		90.0	e 5 k 6	Sum of lo	st lime (s) and a standard sta
Intersection Capacity Utilizati	on	1	05.4%	, I	CU Leve	el of Service G
Analysis Period (min)			15		19996	(1)。 1) · · · · · · · · · · · · · · · · · ·

	الله ا		$\mathbf{i}$	4	+	•	*	1	1	•	¥	-
Movement	EBL	ÉBT	ÉBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		<b>4</b> >			ф,		ሻ	<u></u> ተጉ		٦. الم	<b>⋪</b> î»	
Traffic Volume (vph)	21	0	13	2	0	12	8	1167	4	14	772	16
Future Volume (vph)	21	0	13	2	Ö	12	8	1167	4	14	772	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4,0	4.0		4.0	4.0	
Lane Util, Factor	, stratur Anglas	1.00			1.00		1.00	0.95		1.00	0.95	· .
Frt		0.95			0.88		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd, Flow (prot)		1714			1634		1770	3538		1770	3528	
Flt Permitted		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	· ··· ·	1714			1634		1770	3538		1770	3528	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0,90	0.90	0.90
Adi. Flow (vph)	23	0	14	2	0	13	9	1297	4	16	858	18
RTOR Reduction (vph)	Ō	36	0	0	15	0	0	0	0	0	1	1. at • 0.
Lane Group Flow (vph)	0	1	0	0	0	0	9	1301	0	16	875	0
	Split	NA		Split	NA	2 199 SQ (SQ)	Prot	NA		Prot	NA	e de la composición d
Protected Phases	4	4	a title till för	8	8	ana dia dia 4000 amin'	5	2		1	6	
Permitted Phases		di si										18 1
Actuated Green, G (s)	*****	2.0			0.9		0.9	43.0		0.9	43.0	
Effective Green a (s)		2.0			0.9	것이 문화	0.9	43.0		0.9	43.0	
Actuated g/C Ratio		0.03			0.01		0.01	0.68		0.01	0.68	
Clearance Time (s)		4.0			4.0	: 아이	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	· · · · ·	3.0			3.0		3.0	3.0		3.0	3.0	
lane Grn (an (ynh)		54			23		25	2422		25	2415	N 4 1
v/s Ratio Prot		c0.00	11 11 I	1. T.	c0.00		0.01	c0.37		c0.01	0.25	
v/s Ratio Perm												
v/c Ratio	· · · · · ·	0.02	1	1990 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	0.01		0.36	0.54		0.64	0.36	
Iniform Delay d1		29.5	de creation		30.5		30.7	4.9		30.8	4.2	
Progression Factor	a Sanna a	1.00	15. ¥	• •	1.00		1.00	1.00		1.00	1.00	
Incremental Delay: d2		0.2			0.2		8.7	0.9		44.6	0.4	
Delay (s)		29.6	New York, and the		30.7		39.3	5.8		75.4	4.6	
Level of Service		С			C		Ð	Α		E E	Α	den en la compañía de
Approach Delay (s)	- 11 A. 1474	29.6	1.4.100.014.0	1.1.1.1.1.1.1.1.	30.7			6.0			5.8	
Approach LOS	n Partiel	C			G			A		de crés	A	
Intercection Summary					ve seven							
HILEISECIION Sontrol Dolou			6.5	4		n l evel o	fService		A			
HCM 2000 Volume to Consel	tv ratio	tan, any di	0.51		10101200	0,20101,0		1. A.			·. ·	
A officiate of Children to Capaci	iy ralio	al al a	62.9		Sum of lo	st time (s	γ		16.0		ana Ang tang tang	
Actualed Sycle Length (S)	estra à on		15 20/			I of Servic	7		A			
Intersection Capacity Utilization	UII	ta salahara	+J,∠/0 4⊑	1	00 -646			÷ 5.		1.1.1		
Analysis Period (min)			19		Ni setta s	1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -		a Nora Nee		te a la tra		
	۶	-	$\mathbf{\hat{v}}$	≮	←	×.	*	t	1	4	ŧ	*
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	ţ.		۲	ef 🗧		۳	<b>†</b> 1>		۲	<u></u> ∱†≽	
Traffic Volume (vph)	43	0	25	<b>1</b>	1	15	25	1098	0	5	697	39
Future Volume (vph)	43	0	25	1	1	15	25	1098	0	5	697	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1,00	0.95	
Frt	1.00	0.85		1.00	0.86		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0,95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1583		1770	1599		1770	3539		1770	3511	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	•
Satd. Flow (perm)	1770	1583		1770	1599		1770	3539		1770	3511	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	48	0	28	1	1	17	28	1220	0	6	774	43
RTOR Reduction (vph)	0	26	0	0	17	0	0	0	0	0	3	. 0
Lane Group Flow (vph)	48	2	0	1	1	0	28	1220	0	6	814	0
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	t tea ann an teanna a Teanna an teanna an te
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases										la se ta		N. 1.
Actuated Green, G (s)	4.5	4.5		1.1	1.1		2.1	42.3		0.9	41.1	
Effective Green, g (s)	4,5	4.5		1.1	1.1		2.1	42.3		0,9	41.1	e este
Actuated g/C Ratio	0.07	0.07		0.02	0.02		0.03	0.65		0.01	0.63	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4,0		4,0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	122	109		- 30	27		57	2310		24	2226	terre -
v/s Ratio Prot	c0.03	0.00		0.00	c0.00		c0.02	c0.34		0.00	0.23	
v/s Ratio Perm										en staat		
v/c Ratio	0.39	0.02		0.03	0.05		0.49	0.53		0.25	0.37	
Uniform Delay, d1	28.8	28.1		31.3	31.3		30.8	6.0		31.6	5.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.1	0.1		0.5	0.7		6.5	0.9		5.4	0.5	1.1.1
Delay (s)	30.9	28.2		31.8	32,1		37.3	6.8		37.0	6.1	
Level of Service	C	С		С	С		D	Α		. ⊡ D	A	
Approach Delay (s)		29.9			32.1			7.5			6.3	
Approach LOS		C	ana an a		C.			A			A	
Intersection Summary							19. 30 5 5		er tonstats		9 27 JUG	
HCM 2000 Control Delay			8.1	ŀ	ICM 2000	) Level of S	Service		Α		e en la Al	
HCM 2000 Volume to Capacit	ty ratio		0.52									
Actuated Cycle Length (s)			64.8	S	Sum of los	st time (s)			16.0	A.S. 8. 8		
Intersection Capacity Utilization	on		46.1%	10	CU Level	of Service			A			
Analysis Period (min)		i de la compañía de	15								See See	

Movement EBL EBR NBL NBI SBI SBR	GENCTIONS:
Lana Configurations BR 5 A Ta	
Traffic Volume (veh/h) 136 218 310 1012 034 147	
Future Volume (Veh/h) 136 218 310 1012 634 147	
Sign Control is a subject to a Stop as a strength of the second Free and Free strength subtractions with the second subject to a s	
Grade 0% 0% 0%	
Peak Hour Factor 0.92 0.92 0.92 0.92 0.92 0.92	
Houriy flow rate (Vph) 148 237 337 1100 009 100	
Hedestilans of the second second second second second of the second second second second second second second s A second with the second sec	
Lane width (ft) Wertwer Geweite (Weite Felder in eine eine Statische Einstellte Betreicherte Felder eine Betreicherte Betreicherte Betreicherte Betreicherte Betreicherte Betreicherte Betreicherte B	
waiking speed (it v) all the the transmission at a name to be assisted and a strategy of the second	
Percent Diuckaye	21 - D
Rugnaumalaie (Ven)	
Modian dorade voh	4
Megianstologyeten), so to to set the test set to the test set of the test of the test set of the test of t	
nX nlathon inhincked	
vC conflicting volume 2543 769 849	
vCf stage1 conf vol	
vC2. stage 2 conf vol	
vCu unblocked vol 2543 769 849	eng a ser fi
tC, single (s) 6.4 6.2 4.1	
tC, 2 stage (s)	
tF (s) 3.5 3.3 2.2	
p0 queue free % 0 41 57	
cM capacity (veh/h) 17 401 789	
Direction Lane# FB/1 NB/1 NB/2 SB/1	
Volume Total 385 337 1100 849	
Volume heft. 148. 337 he for 0 and 100 and	
Volume Right 237 0 0 160	
cSH 42 789 1700 1700	
Volume to Capacity 9.27 0.43 0.65 0.50	
Queue Length 95th (ft) Err 54 0 0	
Control Delay (s) Err 12.9 0.0 0.0	
LaneLOS	
Approach Delay (s) Err 3.0 0.0	
Approach LOS	
Intersection Summary	5 (in 16)
Averane Delay	
Intersection Capacity Utilization 90.4% ICU Level of Service E	
Analysis Period (min)	

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	<del>የ</del> ተ	٣	۲	<b>†</b> 1>		ኘ	<u>ተ</u>	7	ሻ	Ť	r
Traffic Volume (vph)	224	269	131	209	167	13	149	588	302	16	543	122
Future Volume (vph)	224	269	131	209	167	13	149	588	302	16	543	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0,85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Fit Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3502		1770	3539	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3502		1770	3539	1583	1770	1863	1583
Peak-hour factor, PHF	0,90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adi. Flow (vph)	249	299	146	232	186	14	166	653	336	18	603	136
RTOR Reduction (vph)	0	0	124	0	7	0	0	0	172	0	0	65
Lane Group Flow (vph)	249	299	22	232	193	0	166	653	164	18	603	71
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	. 6	
Permitted Phases			4						2			6
Actuated Green, G (s)	13.9	12.8	12.8	13.0	11.9	a	9.4	41.9	41.9	2.1	34.6	34.6
Effective Green, g (s)	13.9	12.8	12.8	13.0	11.9		9.4	41.9	41.9	2.1	34.6	34.6
Actuated g/C Ratio	0.16	0.15	0.15	0.15	0.14		0.11	0.49	0.49	0.02	0.40	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	286	527	236	268	485		193	1728	773	43	751	638
v/s Ratio Prot	c0.14	c0.08		0.13	0.06		c0.09	0,18		0.01	c0.32	
v/s Ratio Perm		na dal	0.01						0.10			0.04
v/c Ratio	0.87	0.57	0.09	0.87	0.40		0.86	0.38	0.21	0.42	0.80	0,11
Uniform Delay, d1	35.1	33.9	31.5	35.5	33.7		37.6	13.8	12.5	41.2	22.6	16.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.8	1.4	0.2	24.0	0.5		30.1	0.6	0.6	6,5	8,9	0.4
Delay (s)	58.9	35.3	31.7	59.6	34,2	all and the	67.7	14.4	13.2	47.7	31.5	16.3
Level of Service	E	D	С	E	С		e de Est	В	<b>B</b> _,	D	C .	В
Approach Delay (s)		43.0			47.8		ttart i	21.7			29.1	
Approach LOS		D			D			С			С.	
Intersection Summary						os de las es						
HCM 2000 Control Delay			32.1	i de la compañía de l	ICM 2000	) Level of	Service		С			
HCM 2000 Volume to Capac	ity ratio		0.79		. the star				أرم مرد ا	· .	da a ser en	
Actuated Cycle Length (s)	an ta <sup>ba</sup> r		85.8	5	Sum of los	t time (s)	(hate) es	na Dheanaich Tha an An	16.0			
Intersection Capacity Utilizati	ion		69.2%	ŀ	CU Level	of Service	Э		С	n na		
Analysis Period (min)			15									i e e e

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Movement	EBI	EBR	NRI	NBT	SBT	SBR		and the second second				Me
Lane Configurations	<u>کی</u>		۲	Å	<b></b>							
Traffic Volume (vph)	249	94	141	1092	735	229	Note the	p Nain ei		ALCONTRACT		
Future Volume (vph)	249	94	141	1092	735	229		· · ·				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900					Ref Lesser and	
Total Lost time (s)	4.0	, 10.00,000 M, 10	4.0	4.0	4.0							
Lane Util. Factor	1.00		1.00	1.00	1.00						ala tangan sa	. '
Frt	0.96		1.00	1.00	0.97							
Flt Protected	0.96		0.95	1.00	1.00							•
Satd. Flow (prot)	1731		1770	1863	1803							
Flt Permitted	0.96		0.95	1.00	1.00							
Satd. Flow (perm)	1731		1770	1863	1803							
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90			e stradine Alternation			
Adj. Flow (vph)	277	104	157	1213	817	254		- 				
RTOR Reduction (vph)	15	0	0	0	13	0						÷ .
Lane Group Flow (vph)	366	00	157	1213	1058	0						
Turn Type	Prot		Prot	NA	NA							•
Protected Phases	4		5	2	6		an an an an a		· · · · · · · · ·			
Permitted Phases		an an an Alaman An Alaman						n a sua sua sua sua sua sua sua sua sua s				•
Actuated Green, G (s)	18.5	e e constructo de la	8.6	63.5	50.9	n a sangar tahu	an a	econoria.	the state	na santasy	s segura da t	
Effective Green, g (s)	18.5		8.6	63.5	50.9					i se		÷.
Actuated g/C Ratio	0.21		0.10	0.71	0.57	a ta ta sa		en anter en a	lan bara sette	an an Ar	en de la composition de la composition Composition de la composition de la comp	
Clearance Time (s)	4.0		4.0	4.0	4.0					상가 관계가	e det hated	
Vehicle Extension (s)	3.0		3.0	3.0	3.0			Alexandra Later		·····	e en el terre	<u></u>
Lane Grp Cap (vph)	355		169	1314	1019		kang bagarang Kang bagarang			e pintesisipinet Nun titipine		
v/s Ratio Prot	c0.21		0.09	c0.65	c0.59		1			an serve	the text	
v/s Ratio Perm					and and a second se		n de seu			i tri tre to	e fers de la set	
v/c Ratio	1.03	a general	0.93	0.92	1.04	antate da s	je v sta			the second	and the t	
Uniform Delay, d1	35.8		40.4	11.2	19.0			e ta filia		e e che		
Progression Factor	1.00	an ta gitana	1.00	1.00	1.00	e na state d	. 1940a ek	dina parte				
Incremental Delay, d2	55.9		48.4	12.2	00.1 50.2		(1997) A Maria (1997) Anna Anna Anna Anna Anna Anna Anna Anna				dan kang dia sa	
Delay (s)	91.6	a pag <sup>an</sup> g sa ang ping	00.7	ZJ.4	00.0 E							5
Level of Service			сарад <b>Г</b> .,	20.0	50 C	e (ALAS), see		erister vitte	and the second	usuku isi tertiti.	an an she ar	
Approach Delay (s)	91.6	section and	ant and	30.9	00.3 E	e serenda s	Assessment and the	NACE N			ng sha ta ng	
Approach LUS	Ę.	NA PER	an Arra I.a.	Č.	o gave.			la secola de la com		wanten and a conc	nasoratika katalar	Nates
Intersection Summary			20 050 00 <u>0</u> 0				<u></u>	<u> </u>	<u> </u>			
HCM 2000 Control Delay			49.5		ICM 2000	Level of S	Service		<b>₽</b>			
HCM 2000 Volume to Capacit	y ratio	and the second	1.04	u ge te te	gaba da kasisa	ann an	a mataka ang sa	orena en	10.0	u.N.Natas	essi (16 mili	
Actuated Cycle Length (s)			90.0	S	Sum of los	t time (s)			וצ,U ר			
Intersection Capacity Utilization	n	al anti-	90.0%	)  	UU Level	or Service	nt structure			endea 14	Alateration de la	
Analysis Period (min)			15			- ANN - A Ann - Ann	1999					2
Effective Green, g (s) Actuated g/C Ratio Clearance Time (s) Vehicle Extension (s) Lane Grp Cap (vph) v/s Ratio Prot v/s Ratio Perm v/c Ratio Uniform Delay, d1 Progression Factor Incremental Delay, d2 Delay (s) Level of Service Approach Delay (s) Approach Delay (s) Approach LOS Intersection Summary HCM 2000 Control Delay HCM 2000 Volume to Capacit Actuated Cycle Length (s) Intersection Capacity Utilizatic Analysis Period (min)	18.5 0.21 4.0 355 c0.21 1.03 35.8 1.00 55.9 91.6 F 91.6 F 91.6		8.6 0.10 4.0 3.0 169 0.09 0.93 40.4 1.00 48.4 88.7 F 49.5 1.04 90.0 90.0% 15	63 5 0.71 4.0 <u>3.0</u> 1314 c0.65 0.92 11.2 1.00 12.2 23.4 C 30.9 C	50.9 0.57 4.0 3.0 1019 c0.59 1.04 19.6 1.00 38.7 58.3 E 58.3 E 58.3 E 58.3 E 58.3 E 58.3 E 58.3 E	Level of S It time (s) of Service	Service		0 12.0 E			

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		<del>4</del> 7+			<b>4</b> 7+		ሻ	<b>†</b> 1>		۲	<b>≜</b> †≽	
Traffic Volume (vph)	240	0	34	2	0	6	38	687		4	801	280
Future Volume (vph)	240	0	34	2	Ó	6	38	687	1	4	801	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	and a second	1.00	0.95		1.00	0.95	
Frt	· ·	0.98			0.90		1.00	1.00		1.00	0.96	
Flt Protected	h tipes	0,96		a dan dari da Maria dari dari	0.99		0.95	1.00		0.95	1.00	
Satd, Flow (prot)		1755			1649		1770	3539		1770	3402	
Flt Permitted		0.96			0,99		0,95	1.00		0.95	1.00	r de la
Satd, Flow (perm)		1755			1649		1770	3539		1770	3402	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0,90
Adj. Flow (vph)	267	0	38	2	0	7	42	763	1	4	890	311
RTOR Reduction (vph)	0	89	0	0	9	0	0	0	0	0	28	: 0
Lane Group Flow (vph)	0	216	0	0	0	0	42	764	0	4	1173	0
Turn Type	Split	NA		Split	NA		Prot	NĂ		Prot	NÁ	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases								get sú				
Actuated Green, G (s)		12.1			0.9		3.0	36.5	tan a series a series	0.9	34.4	
Effective Green, g (s)		12.1			0.9		3.0	36.5		0.9	34.4	
Actuated g/C Ratio		0.18			0.01		0.05	0.55	tt. st. s.	0.01	0.52	÷., .
Clearance Time (s)		4.0		in en la Ali. De la factoria	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3,0	
Lane Grp Cap (vph)		319			22		79	1945	n i de la composición Esta de la composición	23	1762	
v/s Ratio Prot		c0.12			c0.00		c0.02	0.22		0.00	c0.34	
v/s Ratio Perm							Yatar Mary		at Sheeda			
v/c Ratio		0.68			0.01	a an an	0.53	0.39		0.17	0.67	
Uniform Delay, d1		25.3			32.3		31.0	8.6		32.4	11.8	1
Progression Factor		1.00			1.00	. New York Concern	1.00	1.00	(Listaren (M)	1.00	1,00	a tu a
Incremental Delay, d2	22172	5.6			0 1	음악수가	6./	0.6	anene k	3.0	40.0	
Delay (s)		30.9		ana anag	32.4		37.7	9.2	ang san	30.0	13.8	
Level of Service		С			C.	환경상품	S D	A	endere di	'D.	10.0	
Approach Delay (s)		30.9			32.4	a teo file di	en er er kanste	10.7	ala toto sua		13.8	
Approach LOS		C			<b>.</b>			В			В	
Intersection Summary						19. 35 AB 45			en en strage s			
HCM 2000 Control Delay			15.1	- E	ICM 2000	) Level of	Service		B	ing ing se		
HCM 2000 Volume to Capacity	ratio		0.64					a ay teta ina				
Actuated Cycle Length (s)			66.4	S	um of lo	st time (s)			16.0	n an the second s	dia Attack President	
Intersection Capacity Utilization	n		60.3%	) – K	CU Level	of Service	<b>)</b>		B		. •	
Analysis Period (min)			15					e de la contra de la La contra de la contr				· · · · ·

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ኻ	ኈ		ኻ	<del>در</del>		ኘ	<u>ተ</u> ኩ		ሻ	<b>≜</b> 1⊳	
Traffic Volume (vph)	113	0	125	3	2	7	136	582		2	701	97
Future Volume (vph)	113	0	125	3	2	7	136	582	0	2	701	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	e na Nar	1.00	0.95	
Frt	1.00	0.85		1.00	0.88		1.00	1.00		1.00	0.98	
Fit Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1583		1770	1639		1770	3539		1770	3475	
FIt Permitted	0.95	1.00	e e e e	0.95	1.00		0.95	1.00		0.95	1.00	1
Satd. Flow (perm)	1770	1583		1770	1639		1770	3539		1770	3475	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adi, Flow (vph)	126	0	139	3	2	8	151	647	0	. 2	779	108
RTOR Reduction (vph)		119	0	0	8	0	0	0	0	0		0
Lane Group Flow (vph)	126	20	0	3	2	0	151	647	0	2	878	0
Turn Type	Split	NA		Split	NA	2011년 1947년 Seletite	Prot	NA		Prot	NA	
Protected Phases	4	4	· · ·	8	8		5	2		1	6	
Permitted Phases	e en											
Actuated Green, G (s)	9.6	9.6		1.1	1.1		9.6	39.3	e e ate a	0.9	30.6	
Effective Green, g (s)	9.6	9.6		<u>1.1</u>	1.1		9.6	39.3		0.9	30.6	÷
Actuated g/C Ratio	0.14	0.14		0.02	0.02		0.14	0.59	e la tuta	0.01	0.46	
Clearance Time (s)	4.0	4.0	n Friedrich Statistics	4.0	4.0		4.0	4.0		4.0	4.0	• • • •
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	253	227		29	26		253	2078		23	1589	* :
v/s Ratio Prot	c0.07	0.01		c0.00	0.00		c0.09	0.18		0.00	c0.25	
v/s Ratio Perm				~ 문화						0.00	0.55	
v/c Ratio	0.50	0.09		0.10	0.08		0.60	0.31		0.09	0.00	
Uniform Delay, d1	26.4	24.9	n di Anglan A	32.4	32.4	· · · ·	26.8	7.0	de la composición de	32.0	10.2	
Progression Factor	1.00	1.00		1.00	1.00	un tutata	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.5	0.2		1.6	14		3,8	0.4		1.0	44.6	1.11
Delay (s)	28.0	25.0		34.0	33.8		30.6	1,4	s stander	34.2	14.0	
Level of Service	С	C		С	C		C	A		U	14 C	·
Approach Delay (s)		26.4			33.8			11.8	the second	a, a te	14.0	
Approach LOS		C			С			В			D	n in a sub-
Intersection Summary												
HCM 2000 Control Delay			15.2		ICM 2000	) Level of	Service		В			÷.
HCM 2000 Volume to Capaci	ty ratio		0.54		an en de terre	a sector de la compaña	an sa tar	saa qirtadi m			A stand	·
Actuated Cycle Length (s)			66.9		Sum of los	st time (s)			16.0 ^	e je stolje bije Politika Politika		5

Intersection Capacity Utilization 52.9% ICU Level of Service Intersection capacity duitzation 22.970 ICO Level of Service A Analysis Period (min) c Critical Lane Group

	٦		•	↑	L.	*	/						
	roi		י אוסוא שי	NIDT	T COT	Q.				de de test	Rokenia		
Novement		CDK			ريون ۲.	U	<u> </u>					C	
Lane Configurations	<b>1</b> 1	040	1 400	T 614	4 650	4	an						
Traπic Volume (ven/n)	120	319	100	041 6/1	650	4)- 1 - 2 1	30	the second					
Future Volume (Ven/n)	CL2	319	100	041	009 Eroo	n Se And	<b></b>	wa buga	in in t	·			
Sign Control	Stop	te dese	1 N				n de de la	in fear th	fare Ville	· · ·		1.	
Grade	0%	0.00	ີດດາວ	0.02	0/0	0	02	n de la com	in a start a st	Alfan de		· · ·.	
Peak Hour Factor	0.92	0.92	400	0.9Z	740	,∪∵, ∷ 4	92 11				e fra i		
Hourly flow rate (vph)	130	347	190	091	110	1	4) ••• (* * *	ja te ayar	a an Na chaol c		1.1 ×.		
Pedestrians		· · · ·					in in a	i in e		a ferra d		· · · ·	
		a stra		a gu shu	Alteration				a da chi				
Walking Speed (IVS)		i ka ing		in the second	n i sessi n			Al North N	shi bi shi		1 + . + +	- 1	
Percent Blockage	ng pana	n de la composition d	esse tem	a an	l. kashitta		ay in hay?	edette.	y			1.11	
Right turn hare (ven)				Nono	None	n air ia. N	na Rossa	11 분가지 가가? 	an Nethola I	ang til bar	1 + 1 + 1 		
Median type		en telefik							ana ang sa Kang berta da	at dir.		againt -	
Median Storage Ven)		N 11 (1 (N) (1)		el ter (Fr	CT PADAR	si dilan	nu harrei	Second Charles	Nutification of s	· · · · ·	· · · · ·		
Upstream signar (it)	ang sa	n sa	Adaptaria	ang pantangan		leine eise		Rena	<u>pagad</u>			1	
pA, platooli unbiocked	1876	786	857	, 1916 - Like			na l'au						
vCt. connicting volume	1070			an she i dh		ber here	a di pa	e Estados	i Alfred	$g_{\rm e} = \sum_{i=1}^{N} g_{\rm e} g_{\rm e}$			
vC1, stage 2 conf vol		al the agent.		. 1944. 14	1.1.1.1.1.1.1.1.1		al se e						
vCu, unblocked vol	1876	786	857	s de la cal		a ha je							
tC single (s)	6.4	6.2	4.1			· •							
tC, 2 stade (s)													
fF(s)	3.5	3.3	2.2		1.1.1.1.1								
n0 queue free %	0	11	75	e ta es						i ta i	·. ·		
cM capacity (veh/h)	59	392	783										
		NID 4	NID	OD 4						Maria productional de la companya d	52.50.50A		
Direction, Lane #				057						221/221/222			
Volume   otal	483	190	097	007									
Volume Lett	130	190	0	111		Na 191	1997 - N. S.	a fina n		· ·			
	047 	U 792ି:-	U 1700:	1700	a a statu		e de la con	Lief-da	la de la c	si je bije da			·
Colling to Conneity	2 10	0.25	0 <i>4</i> 1	0.50	es di sedi.	1.1.1.1.1.1.1	11 (1 V ) 4	genini, m	a selona tona e con	142	1.1.1.1.1.1	· · · ·	
Volume to Capacity	J.IJ Enc	25	ີດ ເ	0.00 N	a-strada	4.248		isa Ne	1993.3				
Queue Lengin 95ur (it)	rigasjelije. Frr	44 11 1	0.0	0.0	a y na ji a 1915. Ali	en si ssi	·	n an Albertan A	1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -	· · · ·			· .
	En En	S S Rob	<b></b>		No. a pop					n de la			
Approach Delay (s)	Frr	2.4	le e sugarte u	0.0		5. T.S.		·· · ·					
Approach LOS	E.										an ta Kabupatén	· · ·	a de la composición de la comp
Abbiogon Foo			ue generation								y south	8483-868 8	e se anna anna anna anna anna anna anna
Intersection Summary			0100.0	e solen debe (free i	an a	SHASHARA		AN AND AN AN		<u>(1993) (1996)</u>			e de la seconda de la secon
Average Delay	an teach		2163.8	÷ • *				Sundaya y	and all states of a	·····	· · · · · ·		2 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -

Intersection Capacity Utilization 89.1% ICU Level of Service E Analysis Period (min) 15

Infrastructure Group, Inc.

#### MITIGATED CONDITIONS

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······	<u>ب</u>	~	•	+	[	2	WITH RESTRIPE AND SIGNAL
	***	•	7	•••••	•	na n	MODIFICATION
Movement	EBL	EBR	NBL	<u>NBT.</u>	SBT	SBR	
Lane Configurations	٦	, T	្រា	1	<b>₽</b>		
Traffic Volume (vph)	342	306	166	757	785	119	1949 - Andrea Bardella, dan bertar Malana ang kanang ang kanang ang kanang kanang ang kanang ang kanang kanang Mang kanang k Mang kanang k
Future Volume (vph)	342	306	166	757	785	119	l Navara se se su 199 meter a la casa de la casa de da casa de la c
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	a jana	na an a
Lane Util. Factor	1.00	1,00	1.00	1.00	1.00		
Frt	1.00	0.85	1.00	1.00	0.98	e de la deserva	
Flt Protected	0.95	1.00	0.95	1.00	1.00	action is	
Satd, Flow (prot)	1770	1583	1770	1863	1830	t inner da	
Flt Permitted	0.95	1.00	0.95	1,00	1,00	idas art	
Satd. Flow (perm)	1770	1583	1//0	1863	1830		
Peak-hour factor, PHF	0.90	0.90	0.90	0,90	0.90	0.90	
Adj. Flow (vph)	380	340	184	841	872	132	n Anno 1997 - Anno
RTOR Reduction (vph)	0	229	0	U	6	Ű	홍수 동안은 물건 방법에 관계 가장 가장 가장 것이 없는 것이 없는 것이 없다.
Lane Group Flow (vph)	380	111	184	841	998	U	) - Andrewski berezen ander ander en der ander ander en der einer einer einer einer einer einer einer einer einer
Turn Type	Prot	Perm	Prot	NA	NA	같은 것은 	· 동안 같은 · · · · · · · · · · · · · · · · · ·
Protected Phases	4	· ••••	5	2	6	salati si s	e danear a steart de levela de la companya de la co
Permitted Phases		4		소문물을		a de la composición d	비행 승규는 방법을 위한 것을 위한 것으로 가지 않는 것이 없는 것이다.
Actuated Green, G (s)	20.0	20.0	10.2	62.0	47.8	5 15 a 5 a	and a subset of the second
Effective Green, g (s)	20.0	20.0	10.2	62.0	47.8		사람은 사람은 가장에 있는 것은 것은 가장에 가장에 있는 것이 있는 것이다. 같은 것은
Actuated g/C Ratio	0.22	0.22	0.11	0.69	0.53	e i tra	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	393	351	200	1283	971		
v/s Ratio Prot	c0.21		c0.10	0.45	c0.55		
v/s Ratio Perm		0.07					a da katalan da katalan katalan katalan da k Katalan da katalan da matalan da katalan da ka
v/c Ratio	0.97	0.31	0.92	0.66	1.03		
Uniform Delay, d1	34.7	29.3	39.5	7.9	21.1		
Progression Factor	1.00	1,00	1.00	1.00	1.00		and a second
Incremental Delay, d2	36.4	0.5	41.8	2.6	36.2		
Delay (s)	71.1	29.8	81.3	10.6	57.3		
Level of Service	E	<b>.</b>	sta s (Fri	В	E	n <sup>te</sup> rne s	
Approach Delay (s)	51.6			23.3	57.3		
Approach LOS				С	k se s <b>e</b> s		
Intersection Summary				191 (A. 189 (A. 197			
HCM 2000 Control Delay			43.1	H	CM 2000	Level o	of Service
HCM 2000 Volume to Capa	city ratio		1.00		n Maria Ara		an an the second state of the s
Actuated Cycle Length (s)			90.0	S	um of losi	time (s	s) des de tradición de la 12:0 de la desta de la companya de la desta de la companya de la desta de la desta d
Intersection Capacity Utiliza	tion		86.7%	IC	CU Level o	of Servio	ice E
Analysis Period (min)		Alberta	15		a sa	e de NA	

SIGNAL CONSTRUCTION WITH

	٠	$\mathbf{r}$	*	1	¥	1	WIT	2104	5 MC-	0014.2	120.011	
Movement	EBL	EBR	NBL	NBT	SBT	SBR			ann an an			
Lane Configurations	۲¥		ሻ	ł	ţ,							
Traffic Volume (vph)	136	218	310	1012	634	147				1210	t Maler I	
Future Volume (vph)	136	218	310	1012	634	147						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900						•
Total Lost time (s)	4.0		4.0	4.0	4.0							
Lane Utill Factor	1.00		1.00	1.00	1.00			na selational Na selational				
Frt	0.92		1.00	1.00	0.97	a se acata a	. Salah sa katala katal		en titul			
Fit Protected	0.98		0.95	1.00	1.00						la de la composition Composition	
Satd. Flow (prot)	1676		1770	1863	1815	ant that the		. K. L. M. L. M. K. M.	er al trans	at as it.		
Flt Permitted	0.98		0.95	1.00	1.00							
Satd. Flow (perm)	1676		1770	1863	1815							
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90						
Adj. Flow (vph)	151	242	344	1124	704	163				8 N		
RTOR Reduction (vph)	64	0	0	0	9	0						$\mathbb{M}_{n}^{(N)} = \mathbb{M}_{n}^{(N)} = \mathbb{M}_{n}^{(N)}$
Lane Group Flow (vph)	329	0	344	1124	858	0						
Turn Type	Prot		Prot	NA	NA				e en el			
Protected Phases	4		5	2	6				a e a a ter		en en en en en el	ant i ser
Permitted Phases												
Actuated Green, G (s)	18.0		18.0	64.0	42.0						· · · · ·	
Effective Green, g (s)	18.0		18.0	64.0	42.0							
Actuated g/C Ratio	0.20		0.20	0.71	0.47	e u tea trae	e se nostra de	tana ita din	engel, feldele		the second	
Clearance Time (s)	4.0		4.0	4.0	4.0				de de Mu			
Vehicle Extension (s)	3.0		3.0	3.0	3.0							
Lane Grp Cap (vph)	335		354	1324	847						se na tra	· · · · ·
v/s Ratio Prot	c0.20		c0.19	0.60	c0.47		an an star				a si si si si si	
v/s Ratio Perm												
v/c Ratio	0.98		0.97	0.85	1.01							
Uniform Delay, d1	35.8		35.7	9.5	24.0		a an an an a'					
Progression Factor	1.00		1.00	1.00	1.00			. Alter i series				
Incremental Delay, d2	44 1		40.1	5.3	34.2				a de la de	1.11		
Delay (s)	79.9		75.8	14.8	58.2		n a na sa					·
Level of Service	E	이 영화	:∍ E	В	E	영화하는	이 아이지?			de la com		
Approach Delay (s)	79.9			29.1	58.2			Antrea (1714)	Salata Ma		second A.	
Approach LOS	E			С							영상품 문문	
Intersection Summary						an deres	1976				91281873	
HCM 2000 Control Delay	55.55 <sup>5</sup>		45.6	H	ICM 2000	Level of	Service		Ď			
HCM 2000 Volume to Capacit	y ratio		1.00									
Actuated Cycle Length (s)			90.0	S	ium of los	it time (s)			12.0	an gele		
Intersection Capacity Utilizatio	n	3	90.4%	IC	CU Level	of Servic	е		E			
Analysis Period (min)			15			an da da		5.4				ter an sea Alta

c Critical Lane Group

Synchro 9 Report Page 2

WITH RESTRICE AND SIGNAL MODIFILATION

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	۳i آ	۲	ኘ	<b>↑</b>	î-	
Traffic Volume (vph)	249	94	141	1092	735	$_{12}$ 3 $229_{ m example}$ , where $_{12}$ is the state of the state
Future Volume (vph)	249	94	141	1092	735	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	in the second state of the
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.97	and a second
Flt Protected	0.95	1.00	0.95	1.00	1.00	동생동물 전쟁 방법은 방법은 동안을 가지 않는 것이다
Satd. Flow (prot)	1770	1583	1770	1863	1803	an an an an ann an an an an an an an an
Fit Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1770	1583	1770	1863	1803	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	277	104	157	1213	817	254
RTOR Reduction (vph)	0	84	0	0	12	0
Lane Group Flow (vph)	277	20	157	1213	1059	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	and the second
Permitted Phases		4				· 홍수 사람이 아파 아들 것은 것이 있는 것이 아파
Actuated Green, G (s)	16.9	16.9	8.6	63.5	50.9	and the second state of the se
Effective Green, g (s)	16.9	16.9	8.6	63.5	50.9	<u>물건성 관계 관련 관련 것 같은 것 같아. 그는 것 같아. 한 것 같아</u>
Actuated g/C Ratio	0.19	0.19	0.10	0.72	0.58	an an an an an an ann an an an an an an
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	못했는 양님은 못 잘 못 한 것 같아. 이번 것 같아. 이번 이들은
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	338	302	172	1338	1038	있는 것은 이 가슴을 알고 있는 것을 것을 가지 않는 것을 것을 가지 않는 것이다. 같은 것은 것은 것은 것은 것은 것을
v/s Ratio Prot	c0.16		0.09	c0.65	c0.59	and the second state of the se
v/s Ratio Perm		0.01				
v/c Ratio	0.82	0.07	0.91	0.91	1.02	and a state of the
Uniform Delay, d1	34.3	29.3	39.5	10.1	18.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	and a second
Incremental Delay, d2	14.3	0,1	44.1	10.5	33.1	
Delay (s)	48.6	29.4	83.7	20.5	51.8	and the second
Level of Service		C	i se si <b>f</b> e	С	D	
Approach Delay (s)	43.4			27.7	51.8	a an ann a' shear ann an tarraighte a tha ann a' stairte a tha ann a' st
Approach LOS	D			С	D	
Intersection Summary						
HCM 2000 Control Delay			39.0	H	ICM 2000	) Level of Service D
HCM 2000 Volume to Cana	city ratio	a nationalista. Alternationalista	0,98	· · · · · · · · · · · · · · · · · · ·		
Actuated Cycle Length (s)		e de la celebra	88.4	Ś	um of lo	st time (s)
Intersection Canacity Litiliza	ation	n a tha a d	84.2%	IC	CU Level	of Service E
Analysis Period (min)		e. George e.e	15			
<ul> <li>Critical Lana Group</li> </ul>	, ng ang Alipitet I	an an ta		an ta ch	a di farra fas	
C Ontical Lane Group						

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WITH SIGNAL CONSTRUCTION

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Movement	EBL	EBR	NBL	NBT	SBT	SBR					
Lane Configurations	¥7		۲	<b>†</b>	14						
Traffic Volume (vph)	125	319	180	641	659	130	공공 감사 같은 것				
Future Volume (vph)	125	319	180	641	659	130					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		Sec.			
Total Lost time (s)	4.0		4.0	4.0	4.0			and the second	n na second	terra a legale	
Lane Util, Factor	1.00		1.00	1.00	1.00						
Frt	0.90		1.00	1.00	0.98	an of the second	ter e son a terra da card	en an		e esta construcción	and the second
Fit Protected	0.99		0.95	1.00	1.00		2월 18일 - 19일 - 19일 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993			seden (	
Satd. Flow (prot)	1659		1770	1863	1821		e seu entre en com			ر به د در ا	
Flt Permitted	0.99		0.95	1.00	1.00			ege soort			
Satd. Flow (perm)	1659		1770	1863	1821						
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92				New Meridian Provident	
Adj. Flow (vph)	136	347	196	697	716	141		- <u>.</u>		, satisfies	1.1
RTOR Reduction (vph)	93	0	0	0	7	0					
Lane Group Flow (vph)	390	0	196	697	850	0					
Turn Type	Prot		Prot	NA	NA			경망가			
Protected Phases	4		5	2	6						na di si t
Permitted Phases											ye Marian
Actuated Green, G (s)	24.1		12.1	63.2	47.1					and the second second	
Effective Green, g (s)	24.1		12.1	63.2	47.1						
Actuated g/C Ratio	0.25		0.13	0.66	0.49	system and	na terra paletere a defensa	e alekser far	e e de la calencia	, waata baasa	an an a
Clearance Time (s)	4.0		4.0	4.0	4.0						
Vehicle Extension (s)	3.0		3.0	3.0	3.0						
Lane Grp Cap (vph)	419		224	1235	899						
v/s Ratio Prot	c0.24		c0.11	0.37	c0.47						
v/s Ratio Perm									ang tanan Nganasiri		
v/c Ratio	0.93		0.88	0.56	0.95					· .	
Uniform Delay, d1	34.8		40.9	8.6	22.9		$= \frac{1}{2} \left( \frac{1}{2} \left( \frac{1}{2} + \frac{1}{2} \right) + \frac{1}{2} \left( \frac{1}{2} + \frac{1}{2} \right) \right) + \frac{1}{2} \left( \frac{1}{2} + \frac{1}{2} \right) \left( \frac{1}{2} + \frac{1}{2} \right) + \frac{1}{2} \left( \frac{1}{2} + \frac{1}{2} \right) + \frac{1}{2} \left( \frac{1}{2} + \frac{1}{2} \right) \left( \frac{1}{2} + \frac{1}{2} \right) + \frac{1}{2} \left( \frac{1}{2} + \frac{1}{2} \right) + \frac{1}{2} \left( \frac{1}{2} + \frac{1}{2} \right) \left( \frac{1}{2} + \frac{1}{2} \right) + \frac{1}{2} \left( \frac{1}{2} + \frac{1}{2} \right) \left( \frac{1}{2} + \frac{1}{2} \right) \left( \frac{1}{2} + \frac{1}{2} \right) + \frac{1}{2} \left( \frac{1}{2} + \frac{1}{2} \right) \left( \frac{1}{2} + \frac{1}{2}$	an a		e esté tito tito de terres	
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Delay (s)	62.3		70.2	9.2	40.9			· · · · · ·			. tee jaar
Level of Service	<b>E</b>		E.	A	D						
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HCM 2000 Control Delay			38.2	H	CM 2000	Level o	of Service		D		
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Actuated Cycle Length (s)			95.3	S	um of los	t time (s	s)		2.0	a ta tito tito Altra altra	
Intersection Capacity Utilizati	ion		89.1%	IC	CU Level	of Servi	ice		E	· · ·	
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c Critical Lane Group											

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Infrastructure Group, Inc.

ACCESS ANALYSIS

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Movement	EBL	EBR	NBL	NBT	SBT	SBR		halon san			
Lane Configurations	¥	<u></u>	ሻ	ţ	4						
Traffic Volume (veh/h)	36	24	10	1190	1077	. 14	a salada	al to th	an an an	e est pos	han e
Future Volume (Veh/h)	36	24	10	1190	1077	14					
Sign Control	Stop		la esta arada. Esta alta arada	Free	Free	이 같은 것이다.					
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Walking Speed (ft/s)							말랐음을록			의학사람들	
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Right turn flare (veh)					방말과 전문법						
Median type				TWLTL	TWLTL		vili e la sta	an gene		and the state	
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vC2, stage 2 conf vol	1275	a tana da tana k			ned and the	e da se acesa		1	an sa	a de marca de la	ang karaté
vCu, unblocked vol	4322	1142	1149	n in the second							State i se
tC, single (s)	6.4	6.2	4.1			an a tao A	ha na tanta an				
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Volume Right	25	0	0	15							
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Volume to Capacity	0.42	0.02	0.74	0.68						a se e v	
Queue Length 95th (ff)	46	<u>1</u>	0	0					집을		
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Lane LOS	en Eler	В								e gerek	
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Future Volume (Veh/h)	24	16	25	908	792	37					
Sign Control	Stop			Free	Free						an an tha an
Grade	0%			0%	0%				· · · ·		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				session de	
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cSH	258	741	1700	1700							
Volume to Capacity	0.17	0.04	0.59	0.54							
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Lane LOS	C	В									
Approach Delay (s)	21.9	0.3		0.0	5.						
Approach LOS	C						n en en de la de Referencia en 1913				
Intersection Summary											
Average Delay	enter ne ne seguere de la s		0.6								

Intersection Capacity Utilization 57.8% ICU Level of Service B Analysis Period (min) 15

# **APPENDIX 5b**



November 09, 2022

Mr. George Mears BOWLUS PACIFIC 1662 Dustin Place Riverside, CA 92506

#### Subject: Lakepointe Apartments Project Focused Traffic Impact Analysis, City of Lake Elsinore, CA

Dear Mr. Mears:

#### A. Introduction & Purpose of Report

RK ENGINEERING GROUP, INC. (RK) is pleased to provide this Focused Traffic Impact Analysis for the proposed Lakepointe Apartments Project located north of the Lakeside High School along Riverside Drive (State Highway 74), in the City of Lake Elsinore. This letter report serves as a supplemental analysis to the *Lakepointe Apartments Traffic Impact Study, dated July 7, 2021*, prepared by RK Engineering Group Inc.

RK previously prepared the *Lakepointe Apartments Traffic Impact Study*, dated July 7, 2021. Since then, the proposed Lakepointe Apartments development plan has been slightly modified, increasing from 150 multifamily dwelling units to 152 multifamily dwelling units. This Focused Traffic Impact Analysis will demonstrate that the increase in trip generation from 150 multifamily dwelling units to 152 multifamily dwelling units is expected to be nominal and will not cause any new traffic impacts to the previously studied intersections. In addition, based on comments received by Caltrans, the City of Lake Elsinore has requested a Focused Traffic Impact Analysis be prepared to analyze the impacts of the Riverside Drive (Highway 74) at "Proposed Street" intersection that was not previously studied in the 2021 Traffic Study.

This Focused Traffic Impact Analysis is prepared in accordance with the scope of work that has been submitted to the City of Lake Elsinore staff, which is contained in Appendix A, as well as the *City of Lake Elsinore Traffic Impact Analysis Preparation Guide*, revised May 3, 2022.

#### **B.** Project Description & Study Area

The proposed Lakepointe Apartments Residential Project (hereinafter referred to as "project") is located north of the Lakeside High School and west of Riverside Drive (State Highway 74), in the City of Lake Elsinore. As previously mentioned, the modified project consists of the construction of 152 multifamily residential dwelling units.

The project site is currently vacant and undeveloped.

Access to the project site is planned to be provided via:

- One (1) proposed unsignalized full-access driveway to be maintained on a newly constructed street ("Proposed" Street) shared between the project and existing retail uses north of the project site.
- One (1) proposed unsignalized right-in/right driveway along Riverside Drive.

This focused traffic impact analysis evaluates the following study intersection:

1. Riverside Drive (State Highway 74) (N/S) at "Proposed" Street (E/W)

As analyzed in the *Lakepointe Apartments Traffic Impact Study, dated July 7, 2021*, the project is planned to open in 2023 and will be evaluated in one single phase.

Exhibit A illustrates the location of the proposed project. Exhibit B shows the modified proposed site plan.

Consistent with the *Lakepointe Apartments Traffic Impact Study, dated July 7, 2021*, this Focused Traffic Impact Analysis evaluates traffic conditions for the following scenarios during the weekday AM (7:00 AM to 9:00 AM) and weekday PM (4:00 PM to 6:00 PM) peak hours. Since the one (1) study intersection does not currently exist, only the "With Project" traffic scenarios from the 2021 Traffic Study will be analyzed.

- Project Completion Conditions (2023) With Project Conditions; and
- Cumulative Conditions (2023) With Project Conditions.



#### C. Existing Conditions (2021) Traffic Volumes

In the 2021 traffic study, existing (2021) traffic volumes were derived by applying a two percent (2%) per year adjustment factor to 2019 historical traffic counts as at the time, collection of new and valid traffic count data was not feasible due to the impacts of the COVID-19 pandemic.

This Focused Traffic Impact Analysis utilizes these baseline 2021 traffic volumes referenced in the *Lakepointe Apartments Traffic Impact Study, dated July 7, 2021*. Volumes have been tracked from the intersection of Riverside Drive (State Highway 74) at Lincoln Street to determine the existing (2021) through volumes at the "Proposed" Street along Riverside Drive.

Existing (2021) traffic volumes are shown in Exhibit C for the one (1) study intersection.

#### D. Project Trip Generation

Trip generation represents the amount of traffic that is attracted and produced by a development.

Trip generation is typically estimated based on the trip generation rates from the latest *Institute of Transportation Engineers (ITE) Trip Generation Manual.* This publication provides a comprehensive evaluation of trip generation rates for a variety of land uses. To maintain consistency with the previously prepared 2021 Traffic Study, the trip generation rates from the *2017 ITE Trip Generation Manual* (10th Edition) have been utilized in this Focused Traffic Impact Analysis.

Table 1 shows the ITE trip generation rates utilized for the trip generation analysis for the modified Lakepointe Apartments development plan as well as the previous Lakepointe Apartments development plan as detailed in the *Lakepointe Apartments Traffic Impact Study*, dated July 7, 2021.



Land Lice		llmite <sup>2</sup>		AM		РМ			Daily
	The Code	Units	In	Out	ut Total I	In	Out	Total	Daily
Multifamily Housing (Low-Rise)	220	DU	0.11	0.35	0.46	0.35	0.21	0.56	7.32

#### Table 1 ITE Trip Generation Rates<sup>1</sup>

<sup>1</sup> Source: *ITE Trip Generation Manual* (10th Edition, 2017).

<sup>2</sup> DU = Dwelling Units.

Table 2 shows the trip generation comparison for the modified Lakepointe Apartments development plan vs. the previous Lakepointe Apartments development plan utilizing the trip generation rates shown in Table 1.

Project Trip Generation Comparison – Modified Project vs. Previous Project <sup>1</sup>											
	Quantita	11	AM				Della				
Land Use (TE Code)	Quantity	Units	In	Out	Total	In	Out	Total	Dally		
Modified Lakepointe Apartments Description [1]	152	DU	17	53	70	53	32	85	1,113		
Previous Lakepointe Apartments Description <sup>3</sup> [2]	150	DU	16	53	69	53	31	84	1,098		
Modified vs. Previous Lakepointe Apartments Trip Generation [1] – [2]			+1	0	+1	0	+1	+1	+15		

Table 2

<sup>1</sup> Source: *ITE Trip Generation Manual* (10th Edition, 2017).

<sup>2</sup> DU: Dwelling Units.

<sup>3</sup> Source: Lakepointe Apartments Traffic Impact Study, dated July 7, 2021

As shown in Table 2, the modified project is forecast to generate approximately 1,113 daily weekday trips, which include approximately 70 AM peak hour trips and approximately 85 PM peak hour trips. When the modified project is compared to the previous project from the 2021 Traffic Study (i.e., 1,098 daily trips, 69 AM trips, and 84 PM trips), this results in 15 greater trips on a daily basis, 1 greater trip during the AM peak hour, and 1 greater trip during the PM peak hour. This increase in project traffic from the modified development plan (i.e., 15 greater daily trips, 1 greater AM peak hour trip, and 1 greater PM peak hour trip) is considered nominal, and therefore no new traffic impacts are expected to be generated to the previously studied intersections from the 2021 traffic study.



#### E. Project Trip Distribution

Trip distribution represents the directional orientation of traffic to and from the project site. Trip distribution is heavily influenced by the geographical location of the site and the proximity to the regional freeway system. The directional orientation of traffic was determined by evaluating existing and proposed land uses and highways within the study area.

The outbound and inbound project trip distribution patterns are consistent with the directional orientation of traffic originally analyzed in the 2021 Traffic Study. The outbound and inbound project trip distributions for the proposed project are shown in Exhibit D-1 and Exhibit D-2, respectively.

#### F. Project and Future Traffic Volumes

#### Project Traffic Volumes

The assignment of project traffic to the adjoining roadway system is based upon the project's trip generation, trip distribution, and proposed arterial highway and local street systems that would be in place by the time of initial occupancy of the site. It should be noted that in order to provide a conservative assessment, the trip generation for the modified project (i.e., 1,113 daily trips, 70 AM peak hour trips, 85 PM peak hour trips) have been utilized.

Project traffic volumes are shown in Exhibit E.

#### Project Completion Conditions (2023) With Project Traffic Volumes

Project Completion Conditions (2023) With Project traffic volumes consist of two (2) years of annual growth on top of the existing Year 2021 traffic volumes at two percent (2%) per year (i.e., 4% total growth), plus traffic generated by the proposed project.

Project Completion Conditions (2023) With Project Traffic Volumes for weekday AM and PM peak hours are shown in Exhibit F.

#### Cumulative Conditions (2023) With Project Traffic Volumes

Cumulative Conditions (2023) With Project traffic volumes consist of two (2) years of annual growth on top of the existing Year 2021 traffic volumes at two percent (2%) per



year (i.e., 4% total growth), plus traffic generated by the cumulative projects and traffic generated by the proposed project.

Cumulative Conditions (2023) With Project Traffic Volumes for weekday AM and PM peak hours are shown in Exhibit G.

#### G. Study Intersection Peak Hour Level of Service Analysis

In accordance with the *City of Lake Elsinore Traffic Impact Analysis Preparation Guide*, revised May 3, 2022, the Highway Capacity Manual 6<sup>th</sup> Edition (HCM 6) is utilized as the technical guide in the evaluation of traffic operations.

The HCM defines level of service as a qualitative measure that describes operational conditions within a traffic stream, generally in terms of factors such as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. The criteria used to evaluate LOS (Level of Service) conditions vary based on the type of roadway and whether the traffic flow is considered interrupted or uninterrupted.

The definitions of level of service for interrupted flow (flow regulated by the existence of traffic control devices) are:

- LOS A (Free Flow / Insignificant Delays) describes traffic operations in which progression is exceptionally favorable or the cycle length is extremely short. Generally, LOS A operations for signalized intersections tend to result in most vehicles arriving during the green phase and traveling through the intersection without stopping.
- LOS B (Stable Operation / Minimal Delays) describes traffic operations in which progression slightly diminishes but is still considered highly favorable and the cycle length is short. Vehicles stop more often causing a marginal increase in average delay.
- LOS C (Stable Operation / Acceptable Delays) describes traffic operations in which progression is favorable and the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear. Many vehicles still pass through the intersection but a significant number of vehicles are stopping. Average delay is fair.



- LOS D (Approaching Unstable / Tolerable Delays) describes traffic operations in which progression is ineffective and/or cycle length is long. A considerable amount of vehicles stop and individual cycle failures are noticeable. Average delay is adequate.
- LOS E (Unstable Operation / Significant Delays) describes traffic operations in which progression is unfavorable and the cycle length is exceedingly long. Individual cycle failures are frequent. Average delay is high.
- LOS F (Forced Flow / Excessive Delays) describes traffic operations in which progression is extremely poor and the cycle length is extremely long. Most cycles fail to clear the queue. Average delay is vast.

For intersections with stop control on the minor approach only, the calculation of level of service is dependent on the occurrence of gaps occurring in the free-flow traffic movement of the major street, and the level of service is determined based on the worst individual movement on the stop-controlled minor approach or movements sharing a single lane on the stop-controlled minor approach.

Table 3 shows the level of service criteria based on the HCM methodology.

, , , , , , , , , , , , , , , , , , , ,								
LOS	Average Control Delay Per Vehicle (Seconds) Unsignalized							
	01151911200							
А	0.00 - 10.00							
В	10.01 - 15.00							
С	15.01 - 25.00							
D	25.01 - 35.00							
E	35.01 - 50.00							
F	>50.00							

Table 3 HCM Intersection LOS & Delay Ranges



The City of Lake Elsinore Traffic Impact Analysis Preparation Guide, revised May 3, 2022, in general, requires that peak hour intersection operate at LOS "D" or better to be considered acceptable. Therefore, any City intersection operating at LOS "E" or LOS "F" will be considered deficient. However, LOS "E" will be considered acceptable in both the Main Street Overlay area and the Ballpark District Planning Districts in an effort to increase and revitalize these areas. Any intersection operating at LOS "F" will be considered deficient.

As such, the minimum acceptable LOS for the one (1) study intersection is LOS "D" or better.

#### Project Completion Conditions (2023) With Project Level of Service

Project Completion Conditions (2023) With Project LOS calculations for the study intersection are shown in Table 4 and are based on the Project Completion Conditions (2023) traffic volumes shown in Exhibit F.

	Project Completion Conditions (2023) with Project										
Study Intersection		Traffic Control <sup>1</sup>	Methodolo	Acceptable I	Delay (sec/veh) <sup>2,3</sup>		Level of Service				
			gу	-0S	AM	PM	AM	PM			
1.	Riverside Drive (State Highway 74) at "Proposed" Street	CSS	HCM 6	D	22.1	21.0	С	С			

#### Table 4 Study Intersection LOS Analysis Summary Project Completion Conditions (2023) With Project

1 CSS = Cross-Street Stop

2 Deficient operation shown in **Bold**.

3 HCM Analysis Software: PTV Vistro, Version 2022. Per the Highway Capacity Manual 6th Edition, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown for intersections with cross-street stop control.



As shown in Table 4, the one (1) study intersection is forecast to operate at an acceptable LOS (D or better) during the AM and PM peak hours under Project Completion Conditions (2023) With Project. Detailed LOS analysis worksheets for Project Completion Conditions (2023) With Project are included in Appendix B.

Cumulative Conditions (2023) With Project Level of Service

Cumulative Conditions (2023) With Project LOS calculations for the study intersection are shown in Table 5 and are based on the Cumulative Conditions (2023) traffic volumes shown in Exhibit G.

#### Table 5 Study Intersection LOS Analysis Summary Cumulative Conditions (2023) With Project

Study Intersection	Traffic Control <sup>1</sup>	Methodo	Acceptable LOS	Delay (sec/veh) <sup>2,3</sup>		Level of Service	
		logy		AM	PM	AM	РМ
1. Riverside Drive (State Highway 74) at "Proposed" Street	CSS	HCM 6	D	32.7	30.6	D	D

1 CSS = Cross-Street Stop

2 Deficient operation shown in **Bold**.

3 HCM Analysis Software: PTV Vistro, Version 2022. Per the Highway Capacity Manual 6th Edition, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown for intersections with cross-street stop control.

As shown in Table 5, the one (1) study intersection is forecast to operate at an acceptable LOS (D or better) during the AM and PM peak hours under Cumulative Conditions (2023) With Project. Detailed LOS analysis worksheets for Cumulative Conditions (2023) With Project are included in Appendix C.

#### H. Northbound Left-Turn Pocket Feasibility Analysis

This section of the Focused Traffic Impact Analysis addresses the feasibility of a northbound left-turn pocket from Riverside Drive onto the "Proposed" Street serving the project access driveway.



As previously shown in Appendices B & C, the 95<sup>th</sup> percentile queue (utilizing the HCM 6 methodology) for the northbound left-turn movement is not expected to exceed 4 feet for any traffic scenario analyzed in this Focused Traffic Impact Analysis. Northbound left-turning vehicles can easily queue within the existing two-way-left-turn (TWLT) median along Riverside Drive before turning onto the "Proposed" Street.

A striped left-turn pocket could be accommodated should that be the preference of the City. This would require restriping the existing TWLT median along Riverside Drive. A maximum pocket of approximately 100 feet could be provided to allow for a 90-foot back-to-back transition with the existing 150-foot southbound left-turn pocket at Le Harve Street. A striped northbound left-turn pocket would better enforce the proposed right-turn only access restrictions (i.e., no left-turn ingress/egress) at the project access driveway along Riverside Drive, as compared to the existing TWLT median.

#### I. Conclusions

RK Engineering Group, Inc. has completed this Focused Traffic Impact Analysis for the proposed Lakepointe Apartments Project.

RK previously prepared the *Lakepointe Apartments Traffic Impact Study*, dated July 7, 2021. Since then, the proposed Lakepointe Apartments development plan has been slightly modified, increasing from 150 multifamily dwelling units to 152 multifamily dwelling units. When the modified project is compared to the previous project from the 2021 Traffic Study (i.e., 1,098 daily trips, 69 AM trips, and 84 PM trips), this results in 15 greater trips on a daily basis, 1 greater trip during the AM peak hour, and 1 greater trip during the PM peak hour. This increase in project traffic from the modified development plan (i.e., 15 greater daily trips, 1 greater AM peak hour trip, and 1 greater PM peak hour trip) is considered nominal, and therefore no new traffic impacts are expected to be generated to the previously studied intersections from the 2021 traffic study.

The one (1) study intersection of Riverside Drive (State Highway 74) at "Proposed" Street is forecast to operate at an acceptable LOS (D or better) during the AM and PM peak hours under Project Completion Conditions (2023) With Project and Cumulative Conditions (2023) With Project traffic scenarios.

Lastly, the northbound left-turn movement is not expected to exceed 4 feet for any traffic scenario analyzed in this Focused Traffic Impact Analysis. Northbound left-turning vehicles can easily queue within the existing two-way-left-turn (TWLT) median along Riverside Drive



before turning onto the "Proposed" Street. A striped left-turn pocket could be accommodated should that be the preference of the City. This would require restriping the existing TWLT median along Riverside Drive. A maximum pocket of approximately 100 feet could be provided to allow for a 90-foot back-to-back transition with the existing 150-foot southbound left-turn pocket at Le Harve Street.

RK appreciates the opportunity to assist BOWLUS PACIFIC on this project. If you have any questions regarding this analysis and report, please call me at (949) 474-0809.

Sincerely,

RK ENGINEERING GROUP, INC.

Justin Tucker, P.E. Principal Engineer



michael Fice

Michael Torres, E.I.T. Engineer II



# **Exhibits**

# Exhibit A Location Map



✤ = Project Site

- – Project Site Boundary
- === = Future Roadway / Project Access







2395-2021-01 LAKE POINTE APARTMENTS FOCUSED TRAFFIC IMPACT STUDY, City of Lake Elsinore, CA

N

# Exhibit C Existing Conditions (2021) Traffic Volumes

engineering group, inc.

RK



\*

- = Project Site Boundary
- = Future Roadway / Project Access

Exhibit D-1
Outbound Project Trip Distribution



#### ✤ = Project Site

- - = Project Site Boundary
- === = Future Roadway / Project Access



Exhibit D-2
Inbound Project Trip Distribution



#### \* = Project Site

- -- = Project Site Boundary
- === = Future Roadway / Project Access



### Exhibit E Project Traffic Volumes

**RK** engineering group, inc.



#### ✤ = Project Site

- -- = Project Site Boundary
- === = Future Roadway / Project Access



engineering group, inc.

R

= Future Roadway / Project Access

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N



engineering group, inc.

RK

= Future Roadway / Project Access

\*
# Appendices

# Appendix A

Focused Traffic Impact Analysis Scoping Agreement

### Exhibit B

## SCOPING AGREEMENT FOR TRAFFIC IMPACT STUDY

This letter acknowledges the City of Lake Elsinore requirements for traffic impact analysis of the following project. The analysis must follow the City of Lake Elsinore Traffic Study Guidelines dated May 2020.

Case No. (	i.e. TR, PM, CU	P, PP)				
Related Cases	S -	·				
SP No. Pro	ovide SP No. and lis	t of other appro	ved or active pr	ojects within the SP.		
EIR No.						
GPA No.						
CZ No.						
Project Name:	Lakepointe Apartmer	its				
Project Addres	SS: Northwest corner	of Riverside Drive/L	e-Harve Street inter	rsection in the City of Lake Elsino	ore, CA.	
Project Descri	ption: Construction	of 152 multi-family	housing dwelling un	its.		
		<u>Consultant</u>			<u>Develope</u>	<u>er</u>
Name:	Justin Tucker, P.E			George Mears		
Address:	4000 Westerly Pla	ice, Suite 280		1662 Dustin Place		
	Newport Beach, C	A 92660		Riverside, CA 92506		
Telephone:	(949) 474-0809			(951) 894-7117		
A. Trip Genera	tion Source:	(ITE 11 <sup>th</sup> Edit	ion or other a	s approved)		
Current GP La	and Use Residenti	al Mixed Use		Proposed Land Use	Residential M	lixed Use
Current Zoning	g Residenti	al Mixed Use (RMU)		Proposed Zoning	Residential M	lixed Use (RMU)
Current 7	rip Generation	Proposed	Trip Generati	on (PCE)		
	In	Out	Total	In	Out	Total
AM Trips <u>-</u>				17	53	70
PM Trips _	<u>-</u>	<u>-</u>		53	32	85
Internet Trin A	lleurenee			1		· · · · · · · · · · · · · · · · · · ·
Doce By Trip	Newance			(	% Trip Dis	scount)
газэ-ру тпри	Allowance			(		scourit)
Internal and Pa	ss-Rv trin allowa	nce nercentar	nes shall he n	er NCHRP 684 and th	e ITF Trin (	Generation
Manual The pa	ass-by trips at ad	acent study a	rea intersecti	ons and project drivew	avs shall b	e
indicated on a r	eport figure. Inte	rnal trips that	use external	streets shall be indicat	ed on a rea	oort figure.
	1 5	1			'	5
B. Trip Geogra	phic Distributio	n: N	60 %	S 40 % E	0 %	W 0%
(Attach exhib	it for detailed assigr	nment)				
See Exhibit C-1 an	d Exhibit C-2 for Outbound	and Inbound Project T	rip Distributions. Trip I	Distribution is consistent with previous	s 2021 traffic stud	у.
C. Background	1 Traffic					
Drain at Duild a				Appuel Ambie	nt Crowth	Data: 20/
Project Build-C	Jul Year: <u>2023</u>			Annual Ample	ni Giowin	Rale: <u>2 %</u>
Other area pr	hindequeu.	zed: (to bo	provided by	 the City planning done	rtmont)	
	Jecis to be analy		provided by			
Model/Foreca	st methodology	HCM 6th Edition a	nd Vistro 2022.			

### Exhibit B – Scoping Agreement – Page 2

**D. Study intersections:** (NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.)

1.	Riverside Drive (N/S) at "Proposed" Street (E/W)	6.	
2.		7.	
3.		8.	
4.		9.	
5.		10.	

**E. Study Roadway Segments:** (NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.)

1.	6.
2.	7.
3.	8.
4.	9.
5.	10.

#### E. Other Jurisdictional Impacts

Is this project within one-mile radius of another jurisdiction or a State Highway? 🗹 Yes 🗌 No

If so, name of Agency: Caltrans

F. Site Plan (please attach figure) See Exhibit B

G. Specific issues to be addressed in the Study (in addition to the standard analysis described in the Guideline) (To be filled out by City)

#### **H. Existing Conditions**

Traffic count data must be new or recent within 1 calendar year. Provide traffic count dates if using other than new counts. Date of counts: April 4, 2019

#### I. Traffic Study Requirements

Traffic Study Required: Focused Study Required: Exempt from Analysis:			
Recommended by:		Approved Scoping Agreement:	
Justin Tucker, P.E.	10/24/2022		
Consultant's Representative	Date	City of Lake Elsinore Engineering Department	Date
Scoping Agreement Submitted on 10/14/20	022		
Revised on 10/24/2022			

# LAKEPOINTE APARTMENTS Focused Traffic Impact Study Scoping Agreement

## October 24, 2022

The following provides information on the proposed project and summarizes the analysis scope, parameters, and assumptions for review and approval.

RK previously prepared the *Lakepointe Apartments Traffic Impact Study*, dated July 7, 2021. Since then, the proposed Lakepointe Apartments development plan has been slightly modified, increasing from 150 multifamily dwelling units to 152 multifamily dwelling units. As directed by City staff, since the project trip generation difference is expected to result in a nominal increase, a memorandum letter would suffice demonstrating the modified project will not cause any new traffic impacts to the previously studied intersections. However, based on comments received by Caltrans, the City of Lake Elsinore requests that a Focused Traffic Impact Study be prepared to analyze the impacts of the Riverside Drive (Highway 74) at "Proposed Street" intersection that was not previously studied in the 2021 Traffic Study. This Focused Traffic Impact Study will conservatively utilize the trip generation forecast for the modified project (i.e., 152 multifamily dwelling units).

This scope of work has been prepared consistent with the previously prepared Lakepointe Apartments Traffic Impact Study, dated July 7, 2021.

**A. Project Description:** The proposed Lakepointe Apartments Residential Project (hereinafter referred to as "project") is located north of the Lakeside High School and west of Riverside Drive (State Highway 74), in the City of Lake Elsinore. As discussed above, the modified project consists of the construction of 152 multifamily residential dwelling units.

The project site is currently vacant and undeveloped.

Access for the project site is planned to be provided via:

- One (1) proposed unsignalized full-access driveway maintained on a newly constructed street shared between the project and existing retail uses north of the site. The Focused Traffic Study will analyze the feasibility of a northbound left-turn pocket from Riverside Drive (within the existing TWLT striped median), onto the "Proposed" Street serving this project access driveway.
- One (1) proposed unsignalized right-in/right-out driveway along Riverside Drive.

As analyzed in the *Lakepointe Apartments Traffic Impact Study*, dated July 7, 2021, the project is planned to open in 2023 and will be evaluated in one single phase.

Exhibit A shows the location of the proposed project. Exhibit B shows the proposed site plan.

**B. Project Trip Generation:** Trip generation represents the amount of traffic that is attracted and produced by a development.

Trip generation is typically estimated based on the trip generation rates from the latest *Institute of Transportation Engineers (ITE) Trip Generation Manual.* This publication provides a comprehensive evaluation of trip generation rates for a variety of land uses. To maintain consistency with the previously prepared 2021 Traffic Study, the trip generation rates from the *2017 ITE Trip Generation Manual* (10<sup>th</sup> Edition) have been utilized for this scoping agreement.

Table 1 shows the ITE trip generation rates utilized for the trip generation analysis for the modified Lakepointe Apartments development plan as well as the previous Lakepointe Apartments development plan as detailed in the *Lakepointe Apartments Traffic Impact Study*, dated July 7, 2021.

Land Use		ITE Code	АМ			РМ			Daily
			In	Out	Total	In	Out	Total	Dally
Multifamily Housing (Low-Rise)	DU	220	0.11	0.35	0.46	0.35	0.21	0.56	7.32

Table 1 ITE Trip Generation Rates<sup>1</sup>

<sup>1</sup> Source: *ITE Trip Generation Manual* (10th Edition, 2017).

<sup>2</sup> DU: Dwelling Units.

Table 2 shows the trip generation comparison for the modified Lakepointe Apartments development plan vs. the previous Lakepointe Apartments development plan utilizing the trip generation rates shown in Table 1.

	Ouentitu	Quantity Units <sup>2</sup>		AM			РМ		
Land Use (TE Code)	Quantity Units <sup>2</sup>		In	Out	Total	In	Out Total		Dally
Modified Lakepointe Apartments Description [1]	152	DU	17	53	70	53	32	85	1,113
Previous Lakepointe Apartments Description <sup>3</sup> [2]	150	DU	16	53	69	53	31	84	1,098
Modified vs. Previous Lakepointe Apartments Trip Generation [1] – [2]			+1	0	+1	0	+1	+1	+15

 Table 2

 Project Trip Generation Comparison – Modified Project vs. Previous Project<sup>1</sup>

<sup>1</sup> Source: *ITE Trip Generation Manual* (10th Edition, 2017).

<sup>2</sup> DU: Dwelling Units.

<sup>3</sup> Source: Lakepointe Apartments Traffic Impact Study, dated July 7, 2021

As shown in Table 2, the modified project is forecast to generate approximately 1,113 daily weekday trips, which include approximately 70 AM peak hour trips and approximately 85 PM peak hour trips. When the modified project is compared to the previous project from the 2021 Traffic Study (i.e., 1,098 daily trips, 69 AM trips, and 84 PM trips), this results in 15 greater trips on a daily basis, 1 greater trip during the AM peak hour, and 1 greater trip during the PM peak hour.

**C. Project Trip Distribution:** Exhibit C-1 shows the outbound trip distribution for the proposed project. Exhibit C-2 shows the inbound trip distribution for the proposed project.

**D. Study Intersections:** The Focused Traffic Analysis will evaluate the following study intersection:

1. Riverside Drive (State Highway 74) (N/S) at "Proposed" Street (E/W).

**E. Analysis Scenarios:** Consistent with the previously prepared *Lakepointe Apartments Traffic Impact Study*, dated July 7, 2021, the analysis will evaluate traffic conditions for the following scenarios during the weekday AM (7:00 AM to 9:00 AM) and weekday PM (4:00 PM to 6:00 PM) peak hours. Since the one (1) study intersection does not currently exist, only the "With Project" traffic scenarios from the 2021 Traffic Study will be analyzed.

- Project Completion Conditions (2023) With Project Conditions; and
- Cumulative Conditions (2023) With Project Conditions.

**F. Traffic Analysis Parameters:** This Focused Traffic Analysis will utilize the following parameters:

- PTV Vistro 2022 analysis software and the Highway Capacity Manual 6<sup>th</sup> Edition (HCM 6) methodology.
- Optimized signal timing.

**G. Existing Traffic Counts:** The analysis will utilize the 2019 traffic volumes utilized in the *Lakepointe Apartments Traffic Impact Study*, dated July 7, 2021. Volumes will be tracked from the intersection of Riverside Drive (State Highway 74) at Lincoln Street to determine the existing through volumes at the "Proposed" street along Riverside Drive (State Highway 74).

**H. Project Completion (Year 2023) Conditions Traffic Volumes:** Project completion (Year 2023) background traffic volumes will be derived by applying an annual growth rate of two percent (2%) per year to Year 2019 existing traffic volumes (i.e., 8% total growth).

**I. Cumulative Conditions (Year 2023) Conditions Traffic Volumes:** Cumulative (Year 2023) background traffic volumes will be derived by applying an annual growth rate of two percent (2%) per year to Year 2019 existing traffic volumes (i.e., 8% total growth) and addition of traffic associated with the specific cumulative previously utilized in the *Lakepointe Apartments Traffic Impact Study*, dated July 7, 2021.

**J. Performance Criteria:** The *City of Lake Elsinore Traffic Impact Analysis Preparation Guide*, revised May 3, 2022, the City of Lake Elsinore, in general, requires that peak-hour intersections operate at LOS "D" or better to be considered acceptable. Therefore, any City intersection operating at LOS "E" or LOS "F" will be considered deficient. However, LOS "E" will be considered acceptable in both the Main Street Overlay area and the Ballpark District Planning Districts in an effort to increase activity and revitalize these areas. Any intersection operating at LOS "F" will be considered deficient.

As such, the minimum acceptable LOS for the one (1) study intersection is LOS "D" or better.

**K. Impact Criteria:** Improvements shall be identified to improve intersection operations to the General Plan target LOS (LOS "D" or better).

If you have any questions regarding this scope of work, please call us at (949) 474-0809.

Sincerely,

RK ENGINEERING GROUP, INC.

Justin Tucker, P.E. Principal Engineer

Approved by:

City of Lake Elsinore

Date

Attachments

Attachments

# Exhibit A Location Map



✤ = Project Site

Ν

- - = Project Site Boundary
- === = Proposed Roadway







2395-2021-01 LAKE POINTE APARTMENTS FOCUSED TRAFFIC IMPACT STUDY, City of Lake Elsinore, CA

N

Exhibit C-I **Outbound Project Trip Distribution** 



= Project Site \*

Ν

- = Project Site Boundary
- = Proposed Roadway



Exhibit C-2 **Inbound Project Trip Distribution** 



= Project Site \*

Ν

- = Project Site Boundary
- = Proposed Roadway



# Appendix B

Project Completion Conditions (2023) With Project LOS Analysis Worksheets



Version 2022 (SP 0-10)

Lakepointe Apartments Focused TIA

(JN: 2395-2021-01)

Intersection Level Of Service Report

Intersection 1: Riverside Drive (NS) at Proposed Street (EW)

Control Type:	Two-way stop	Delay (sec / veh):	22.1
Analysis Method:	HCM 6th Edition	Level Of Service:	С
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.139

#### Intersection Setup

Name	Riversio	de Drive	Riversi	de Drive	Proposed Street		
Approach	North	bound	South	Southbound		bound	
Lane Configuration	٦	1	İ	<b>•</b>	+	r -	
Turning Movement	Left	Thru	Thru	Right	Left	Right	
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	
No. of Lanes in Entry Pocket	1	0	0	0	0	0	
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	
No. of Lanes in Exit Pocket	0	0	0	0	0	0	
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	
Speed [mph]	30	.00	30	0.00	30	.00	
Grade [%]	0.	00	0.	.00	0	00	
Crosswalk	No		No		Yes		

#### Volumes

Name	Riversio	de Drive	Riversid	le Drive	Propose	d Street
Base Volume Input [veh/h]	7	884	995	5	32	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	884	995	5	32	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	233	262	1	8	0
Total Analysis Volume [veh/h]	7	931	1047	5	34	0
Pedestrian Volume [ped/h]	(	)	C	)	(	)

Generated with PTV VISTRO

Lakepointe Apartments Focused TIA

Version 2022 (SP 0-10)

#### (JN: 2395-2021-01)

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			Yes
Number of Storage Spaces in Median	0	0	2

#### Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.01	0.00	0.14	0.00	
d_M, Delay for Movement [s/veh]	10.50	0.00	0.00	0.00	22.07	20.40	
Movement LOS	В	A	A	A	С	С	
95th-Percentile Queue Length [veh/ln]	0.03	0.00	0.00	0.00	0.48	0.48	
95th-Percentile Queue Length [ft/ln]	0.80	0.00	0.00	0.00	11.89	11.89	
d_A, Approach Delay [s/veh]	0.08		0.00		22	.07	
Approach LOS	ŀ	A A		4	С		
d_I, Intersection Delay [s/veh]	0.41						
Intersection LOS		С					



Version 2022 (SP 0-10)

Lakepointe Apartments Focused TIA

(JN: 2395-2021-01)

Intersection Level Of Service Report

Intersection 1: Riverside Drive (NS) at Proposed Street (EW)

Control Type:	Two-way stop	Delay (sec / veh):	21.0
Analysis Method:	HCM 6th Edition	Level Of Service:	С
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.081

#### Intersection Setup

Name	Riverside Drive		Riverside Drive		Proposed Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	лİ		F		T	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30	.00	30.00		30.00	
Grade [%]	0.00		0.00		0	00
Crosswalk	N	lo	No		Yes	

#### Volumes

Name	Riversio	le Drive	Riverside Drive		Proposed Street	
Base Volume Input [veh/h]	21	966	845	16	19	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	21	966	845	16	19	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	254	222	4	5	0
Total Analysis Volume [veh/h]	22	1017	889	17	20	0
Pedestrian Volume [ped/h]	(	)	0		0	

Generated with PTV VISTRO

Lakepointe Apartments Focused TIA

Version 2022 (SP 0-10)

#### (JN: 2395-2021-01)

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			Yes
Number of Storage Spaces in Median	0	0	2

#### Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.01	0.00	0.08	0.00	
d_M, Delay for Movement [s/veh]	9.94	0.00	0.00	0.00	20.96	16.94	
Movement LOS	A	A	A	A	С	С	
95th-Percentile Queue Length [veh/ln]	0.09	0.00	0.00	0.00	0.26	0.26	
95th-Percentile Queue Length [ft/ln]	2.26	0.00	0.00	0.00	6.59	6.59	
d_A, Approach Delay [s/veh]	0.2	21	0.0	00	20.	96	
Approach LOS	ŀ	4	A	A	C	>	
d_I, Intersection Delay [s/veh]	0.32						
Intersection LOS		С					

# Appendix C

Cumulative Conditions (2023) With Project LOS Analysis Worksheets



Version 2022 (SP 0-10)

Lakepointe Apartments Focused TIA

(JN: 2395-2021-01)

Intersection Level Of Service Report

Intersection 1: Riverside Drive (NS) at Proposed Street (EW)

Control Type:	Two-way stop	Delay (sec / veh):	32.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.208

#### Intersection Setup

Name	Riverside Drive		Riverside Drive		Proposed Street	
Approach	Northbound		South	Southbound		bound
Lane Configuration	<b>1</b>		F		T	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30	.00	30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Ν	lo	No		Yes	

#### Volumes

Name	Riversio	de Drive	Riverside Drive		Proposed Street	
Base Volume Input [veh/h]	7	1223	1280	5	32	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	1223	1280	5	32	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	322	337	1	8	0
Total Analysis Volume [veh/h]	7	1287	1347	5	34	0
Pedestrian Volume [ped/h]	(	)	0		0	

Generated with PTV VISTRO

Lakepointe Apartments Focused TIA

Version 2022 (SP 0-10)

#### (JN: 2395-2021-01)

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			Yes
Number of Storage Spaces in Median	0	0	2

#### Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.01	0.00	0.21	0.00	
d_M, Delay for Movement [s/veh]	12.17	0.00	0.00	0.00	32.66	30.22	
Movement LOS	В	A	A	A	D	D	
95th-Percentile Queue Length [veh/In]	0.04	0.00	0.00	0.00	0.75	0.75	
95th-Percentile Queue Length [ft/ln]	1.05	0.00	0.00	0.00	18.79	18.79	
d_A, Approach Delay [s/veh]	0.0	07	0.0	0.00		.66	
Approach LOS	ŀ	4	A	A		)	
d_I, Intersection Delay [s/veh]	0.45						
Intersection LOS		D					



Version 2022 (SP 0-10)

Lakepointe Apartments Focused TIA

(JN: 2395-2021-01)

Intersection Level Of Service Report

Intersection 1: Riverside Drive (NS) at Proposed Street (EW)

Control Type:	Two-way stop	Delay (sec / veh):	30.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.125

#### Intersection Setup

Name	Riverside Drive		Riverside Drive		Proposed Street	
Approach	Northbound		South	Southbound		bound
Lane Configuration	<b>1</b>		F		T	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30	0.00	30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	N	10	No		Yes	

#### Volumes

Name	Riverside Drive		Riverside Drive		Proposed Street	
Base Volume Input [veh/h]	21	1272	1193	16	19	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	21	1272	1193	16	19	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	335	314	4	5	0
Total Analysis Volume [veh/h]	22	1339	1256	17	20	0
Pedestrian Volume [ped/h]	(	)	0		0	

Generated with PTV VISTRO

Lakepointe Apartments Focused TIA

Version 2022 (SP 0-10)

#### (JN: 2395-2021-01)

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			Yes
Number of Storage Spaces in Median	0	0	2

#### Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.01	0.01	0.00	0.12	0.00
d_M, Delay for Movement [s/veh]	11.88	0.00	0.00	0.00	30.63	25.59
Movement LOS	В	A	A	A	D	D
95th-Percentile Queue Length [veh/ln]	0.13	0.00	0.00	0.00	0.42	0.42
95th-Percentile Queue Length [ft/ln]	3.15	0.00	0.00	0.00	10.44	10.44
d_A, Approach Delay [s/veh]	0.19		0.00		30.63	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	0.33					
Intersection LOS	D					

# **APPENDIX 5c**



traffic engineering & design transportation planning parking acoustical engineering air quality & ghg

October 24, 2022

Approved 11/16/2022 BB

Mr. Kirk Bowlus BOWLUS PACIFIC 1662 Dustin Place Riverside, CA 92506

# Subject: Lakepointe Apartments Vehicle Miles Traveled Analysis, City of Lake Elsinore, CA

Dear Mr. Bowlus:

## A. Introduction

RK ENGINEERING GROUP, INC. (RK) is pleased to provide this Vehicle Miles Traveled (VMT) Analysis for the proposed Lakepointe Apartments residential project. The currently vacant and undeveloped project site is located north of the Lakeside High School along Riverside Drive, in the City of Lake Elsinore.

Senate Bill (SB) 743 mandates that VMT replace LOS as the transportation metric under CEQA. As a result, the City of Lake Elsinore updated their TIA Guidelines (*City of Lake Elsinore Traffic Impact Analysis Preparation Guide*, revised May 3, 2022) to reflect the appropriate VMT methodologies, thresholds of significance, and feasible mitigation measures for CEQA documents.

The California Governor's Office of Planning and Research (OPR) issued a Technical Advisory in December 2018 which described their recommended procedures and methodology for VMT analysis.

A key element of SB 743, signed in 2013, is the elimination of automobile delay and LOS as the sole basis of determining CEQA impacts. Pursuant to CEQA guidelines, Section 15064.3, VMT is the most appropriate measure of transportation impacts. However, SB 743 does not prevent a city or county from continuing to analyze delay or LOS as part of other plans (i.e., the general plan), studies, or ongoing network monitoring.

## **B. Project Description**

The currently vacant and undeveloped project site is located north of the Lakeside High School along Riverside Drive, in the City of Lake Elsinore.

The project site is currently zoned as Residential Mixed Use. The proposed project will not require a zone change or General Plan Amendment.

The proposed project is planned to open in Year 2023.

The proposed project is planned to consist of the following land use:

• 152 multi-family residential dwelling units.

Access to the project site is planned to be provided via the following:

- One (1) proposed unsignalized full access driveway maintained on a new constructed street shared between the project and existing retail uses north of the site. Future left-turn access may be restricted on Riverside Drive due to its classification as a 6-lane Urban Arterial Highway with raised median; and
- One (1) proposed unsignalized right-in/right-out access driveway along Riverside Drive.

Exhibit A shows the location of the proposed project. Exhibit B shows the proposed site plan.

### C. VMT Screening Criteria

Consistent with the recommendations of the OPR Technical Advisory, screening thresholds may quickly identify whether or not a project should be expected to have a less than significant impact without conducting a detailed project-level assessment.

There are three types of screening that lead agencies can apply to effectively screen projects from project-level assessment. These are summarized below:



## Step 1: Transit Priority Area (TPA) Screening

A TPA is defined as a half-mile area around an existing major transit stop or an existing stop along a high-quality transit corridor. Major transit stops are rail, ferry, or bus terminals served by bus or rail service at the intersection of two or more major bus routes with a service interval frequency of 15 minutes or less during the morning and afternoon peak periods. A high-quality transit corridor is a corridor with fixed route bus service with a service interval frequency of 15 minutes or less during the morning and afternoon peak periods.

Projects located within a TPA may be presumed to have a less than significant impact absent substantial evidence to the contrary. This presumption may not be appropriate if the project:

- 1. Has a Floor Area Ratio (FAR) of less than 0.75;
- 2. Includes more parking for use by residents, customers, or employees of the project than required by the jurisdiction (if the jurisdiction requires the project to supply parking);
- 3. Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Planning Organization); or
- 4. Replaces affordable residential units with a smaller number of moderate-or highincome residential units.

Utilizing the WRCOG (Western Riverside Council of Governments) VMT Screening Tool, the proposed project <u>is not</u> located within a Transit Priority Area.

The WRCOG VMT tool output for the proposed project is provided in Appendix A.

### Step 2: Low VMT Area Screening

Residential and office projects located within a low VMT-generating area may be presumed to have a less than significant impact absent substantial evidence to the contrary.

To identify if the project is in a low VMT-generating area, the WRCOG (Western Riverside Council of Governments) VMT Screening Tool was used to compare the appropriate baseline project TAZ VMT to the City's threshold of significance.



The results of the VMT screening analysis are summarized in Table 1.

Vivit Screening Analysis						
Project TAZ	Baseline Year	VMT per Service Population				
1011	2023	27.4				
City of Lake Elsinore Threshold of Significance		35.5				
Potentially Significant Impact? (Yes/No)		No				

Table 1 VMT Screening Analysis<sup>1</sup>

 Western Riverside Council of Governments (WRCOG) VMT Screening Tool Website: <u>https://fehrandpeers.maps.arcgis.com/apps/webappviewer/index.html?id=4e34ad3196464c8086c881189237b25c</u>. Accessed: October 2022.

Based on the results of WRCOG VMT Screening Tool (as provided in Appendix A), the proposed project's TAZ VMT is calculated to be 27.4 VMT per service population. Since the project's TAZ VMT is less than the City of Lake Elsinore Threshold of Significance of 35.5 VMT per service population, the proposed project satisfies the Low VMT Area Screening procedure.

As a result, the proposed project is screened out based on the Low VMT Area Screening criteria and may be presumed to have a less than significant impact on VMT under CEQA. Therefore, no further VMT analysis is required.

The WRCOG VMT tool output for the proposed project is provided in Appendix A.

### Step 3: Project Type Screening

Local serving retail projects less than 50,000 square feet may be presumed to have a less than significant impact absent substantial evidence to the contrary. Local serving retail generally improves the convenience of shopping close to home and has the effect of reducing vehicle travel.

In addition to local serving retail, the following uses can also be presumed to have a less than significant impact absent substantial evidence to the contrary as their uses are local serving in nature:

- Local-serving K-12 schools
- Local parks



- Day care centers
- Local-serving gas stations
- Local-serving banks
- Local-serving hotels (e.g., non-destination hotels)
- Student housing projects
- Local serving community colleges that are consistent with the assumptions noted in the RTP/SCS
- Projects generating less than 110 daily vehicle trips per California OPR VMT Guidance, the latest edition of the ITE Trip Generation Manual, or acceptable trip generation methodology.

In addition to the above uses, the following uses and project sizes would also be presumed to have a less than significant impact based on the analysis provided in Exhibit G of the *City* of Lake Elsinore Traffic Impact Analysis Preparation Guide, revised May 3, 2022:

- Single Family Residential 148 Dwelling Units
- Multi Family Low Rise Residential (Up to 2 levels) 200 Dwelling Units
- Multi Family Mid Rise Residential (between three and 10 levels) 266 Dwelling Units
- General Office Building 224,000 square feet
- Retail 91,000 square feet
- Warehousing (Unrefrigerated) 258,000 square feet
- Light Industrial 149,000 square feet
- Project GHG emissions less than 3,000 Metric Tons of Carbon Dioxide Equivalent (CO2e) as determined by a methodology acceptable to the City. Use of project-specific trip lengths from RIVCOM and resulting GHG data from CalEEMod runs are acceptable.



As previously described, the project consists of 152 multi-family residential dwelling units, which is less than the 200 dwelling unit (low rise multi-family) threshold listed above. As a result, the proposed project can be presumed to have a less than significant impact on VMT under CEQA. Therefore, no further VMT analysis is required

## E. Conclusions

RK Engineering Group, Inc. has completed this Vehicle Miles Traveled (VMT) Analysis for the proposed Lakepointe Apartments residential project.

Based on the WRCOG VMT Screening Tool, the proposed project is screened out based on Step 2: Low VMT Area Screening and Step 3: Project Type Screening. As a result, the project may be presumed to have a less than significant impact on VMT under CEQA. Therefore, no further VMT analysis is required.

RK Engineering Group, Inc. appreciates this opportunity to work with BOWLUS PACIFIC on this project. If you have any questions regarding this study, please do not hesitate to contact us at (949) 474-0809.

Sincerely,

RK ENGINEERING GROUP, INC.

Justin Tucker, P.E. Principal Engineer

Attachments





# **Exhibits**

# Exhibit A Location Map



### Legend:

\* = Project Site --- = Project Site Boundary

Ν





Z



Exhibit B **Site Plan** 

# Appendices

# Appendix A

Vehicle Miles Traveled (VMT) WRCOG Tool Output




117 201 23,079 (July to 271)















BDRMS:	22 D.U. X 2.33 SF	PACES =	52 SP/	ACES
DTAL:	152 D.U.			328 SPA
JANTITY	PROVIDED: 336	SPACES		
PE		QUANTITY REQUIRED		QUANTIT PROVIDEI
RPORTS:		152 SPACES		152 SPACE
PEN SPACI	ES:	176 SPACES		184 SPACE
ANDICAP S ARPORTS OPEN SPA ASSIGNE GUEST: 4	SPACES: : 152 X 2% CES: D: 144 X 2% Ю X 5%	4 SPACES 3 SPACES 2 SPACES		4 SPACES 3 SPACES 2 SPACES

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7	1 068 S F	80 S F	80 S F	חצ
<u>د</u>				
<u> </u>	<u>1,204 S.F.</u>			
IOTAL:	15,272 S.F.	1,312 S.F.	1,312 S.F.	16 L
BUILDING T	YPE C (3 BU	ILDINGS)		
PLAN NO.	D.U. S.F.	COVERED	BALCONY S.F.	QU
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ו ר	1060 C E	07 J.I.	02 J.I. 00 C E	
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	<u>1,204 S.F.</u>	82 S.F.	<u>82 S.F.</u>	
IOTAL:	17,088 S.F.	1,280 S.F.	1,280 S.F.	16 L
BUILDING T	YPE D (2 BU	ILDINGS)		
PLAN NO.:	D.U. S.F.	COVERED	BALCONY S.F.	OU
				201
1	841 S F	84 S F	87 S F	חצ
י ר	1 060 C E		02 J.I . QA C E	
۲ ۲		00 אר. סיגר	טט א.ר. ססכר	
	<u>1,204 S.F.</u>			
IOTAL:	16,360 S.F.	1,312 S.F.	1,312 S.F.	16 L
	YPF F			
				$\cap \square$
	D.0. 5.1 .	PATIO S.F.	DALCONT 5.1.	20/
1	841 S.F.	84 S.F.	82 S.F.	18 E
2	1,068 S.F.	80 S.F.	80 S.F.	0 D
3	1.204 S.F.	82 S.F.	82 S.F.	6 D.
TOTAL:	22,362 S.F.	2,004 S.F.	1,968 S.F.	24 [
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2		00 3.F.	00 J.F.	
5	1,204 S.F.		ŏΖ Σ.Γ.	
IOTAL:	25,632 S.F.	640 S.F.	640 S.F.	24 l
	ΤΟΤΑΙ			
				٢F
	J.U. J.I .	PATIO S.	F.	J.I .
1	35,322 S.F	. 1,512 S.F	. 1,968 S.F.	
2	93,984 S.F	. 3,520 S.F	F. 3,520 S.F.	
3	26.488 S F	. 820 S.F.	984 S.F.	
TOTAL:	155,794 S.I	F. 5,852 S.F	F. 6,472 S.F.	
			-	
CLUBHOUS	E:			
CLUBHO	JUZE		2,212 S.F.	<b>7</b>
			176 CE 🖊	



### VICINITY MAP





## LEGACY FINANCIAL GROUP, LP

## LAKE POINTE APARTMENTS LAKE ELSINORE, CA 152 Apartment Homes













Lake Pointe Apartments 152 Apartments RIVERSIDE DRIVE, LAKE ELSINORE, CA















## Lake Pointe Apartments 152 Apartments RIVERSIDE DRIVE, LAKE ELSINORE, CA







## Lake Pointe Apartments 152 Apartments RIVERSIDE DRIVE, LAKE ELSINORE, CA

LEGACY FINANCIAL GROUP, LP 1(951) 894-7177



### **1ST FLOOR PLAN**

PLAN 3 1,204 S.F. 3 BDRM./ 2 BATH







### Lake Pointe Apartments 152 Apartments RIVERSIDE DRIVE, LAKE ELSINORE, CA













RIGHT SIDE VIEW



Lake Pointe Apartments 152 Apartments RIVERSIDE DRIVE, LAKE ELSINORE, CA

> LEGACY FINANCIAL GROUP, LP 1(951) 894-7177



### BUILDING TYPE A ROOF PLAN



### FRONT & REAR VIEWS

EXTERIOR ELEVATIONS **ROOF PLAN** SECTION

MICHAEL MCHALE, ARCHITECT (949) 566-4951 3/9/21 SCALE: 1" = 8' - 0"





## 152 Apartments RIVERSIDE DRIVE, LAKE ELSINORE, CA

















RIGHT SIDE VIEW



### Lake Pointe Apartments 152 Apartments RIVERSIDE DRIVE, LAKE ELSINORE, CA

LEGACY FINANCIAL GROUP, LP 1(951) 894-7177

FRONT & REAR VIEWS

BUILDING TYPE B EXTERIOR ELEVATIONS ROOF PLAN SECTION

MICHAEL MCHALE, ARCHITECT (949) 566-4951 3/9/21 SCALE: 1" = 8' - 0"



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1	841 S.F.
2	1,068 S.F.
3	1,204 S.F.
fotal:	17,088 S.F.





RIGHT SIDE VIEW





### Lake Pointe Apartments 152 Apartments RIVERSIDE DRIVE, LAKE ELSINORE, CA

LEGACY FINANCIAL GROUP, LP 1(951) 894-7177

FRONT & REAR VIEWS



(949) 566-4951 3/9/21 SCALE: 1" = 8' - 0"





	F
1	841 S.F.
2	1,068 S.F.
3	1,204 S.F.
Total:	16,360 S.F.









### LEFT SIDE VIEW

RIGHT SIDE VIEW

### Lake Pointe Apartments 152 Apartments RIVERSIDE DRIVE, LAKE ELSINORE, CA

LEGACY FINANCIAL GROUP, LP 1(951) 894-7177

### FRONT & REAR VIEWS











LEGACY FINANCIAL GROUP, LP 1(951) 894-7177

## 152 Apartments RIVERSIDE DRIVE, LAKE ELSINORE, CA











LEFT SIDE VIEW











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### BUILDING TYPE E ROOF PLAN

FRONT VIEW (REAR VIEW OPPOSITE HAND)

BUILDING TYPE E EXTERIOR ELEVATIONS ROOF PLAN SECTION

MICHAEL MCHALE, ARCHITECT (949) 566-4951 3/9/21 SCALE: 1" = 8' - 0"

# -6" SHAPED FOAM TRIM T.O.VENEER T.O.SLAB - SIMULATED STONE VENEER 16

OUTLOOKERS — 2X6 RE/S FASCIA/BARGE W/ G.I. GUTTER Γ ( ) W/Γ GUARDI GUARDR/ FIN.FLR. EXTERIOR PLASTER T.O.WD









PLAN NO.:	D.U. S.F. (
1	841 S.F.
2	1,068 S.F.
3	1,204 S.F.
Total:	25,632 S.F.





LEGACY FINANCIAL GROUP, LP 1(951) 894-7177

## Lake Pointe Apartments 152 Apartments

RIVERSIDE DRIVE, LAKE ELSINORE, CA

165'-4"

165'-4"

PLAN 2 PLAN 2R

PLAN 2R PLAN 2

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# MICHAEL MCHALE, ARCHITECT (949) 566-4951 3/9/21 SCALE: 1" = 8' - 0"



<b>DWELLING UNITS DATA</b>					
PLAN NO.:	D.U. S.F. C				
1	841 S.F.				
2	1,068 S.F.				
3	1,204 S.F.				
TOTAL:	25,632 S.F.				

## FLOOR PLANS





### RIGHT SIDE VIEW



### LEFT SIDE VIEW



Lake Pointe Apartments 152 Apartments RIVERSIDE DRIVE, LAKE ELSINORE, CA

> LEGACY FINANCIAL GROUP, LP 1(951) 894-7177



BUILDING TYPE F EXTERIOR ELEVATIONS ROOF PLAN

SECTION MICHAEL MCHALE, ARCHITECT (949) 566-4951 3/9/21 SCALE: 1" = 8' - 0"



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						T.O.ARCH T.O.WDO.
		42" HIGH W.I. GUARDRAIL			SIMULATED STONE VENEER	
FRONT \	/IEW (REA	AR VIEW (	OPPOSITE	HAND)		



19



CLUBHOUSE S.F. 2,212 S.F. PORCH S.F. MAIL ROOM S.F.











LEGACY FINANCIAL GROUP, LP 1(951) 894-7177



WICHAEL MCHALE, AI (949) 566-4951 3/9/21 SCALE: 1" = 4' - 0"

	22	
USE AN architect		



LEGACY FINANCIAL GROUP, LP 1(951) 894-7177

Lake Pointe Apartments 152 Apartments RIVERSIDE DRIVE, LAKE ELSINORE, CA







SIDE VIEWS

## Lake Pointe Apartments 152 Apartments RIVERSIDE DRIVE, LAKE ELSINORE, CA

















LEGACY FINANCIAL GROUP, LP 1(951) 894-7177



FRONT & REAR VIEWS

ROOF PLAN

CONCRETE "S" TILE ROOF	
ASCIA/BARGE W/ GUTTER & DOWNSPOUT TOP OF PLATE	
BOTT. OF HEADER 6X6 SHAPED FOAM CORBEL	
SHAPED FOAM TIGHT TRIM 6X BULKHEAD WRAPPE	
WITH EXTERIOR PLASTER 6" DIA. STEEL POST	
AR VIEWS	
 D.S. 1'-0' 	
OF PLAN	
6X BULKHEAD WRAPPED WITH EXTERIOR PLASTER	
6" DIA. STEEL POST	
<b>/</b>	
6-SPACE CARPORT	
MICHAEL MCHALE, ARCHITECT	
(949) 566-4951 8/3/22 SCALE: 1" = 4' - 0"	
26	



SIDE VIEWS

RETE "S" TILE ROOF	12	-C(
/S WOOD /BARGE W/ GUTTER /NSPOUT TOP OF PLATE		-2> FA &
BOTT. OF HEADER		- 6X CC - SH Tlı - 6X PL - 6"





### Lake Pointe Apartments 152 Apartments RIVERSIDE DRIVE, LAKE ELSINORE, CA

LEGACY FINANCIAL GROUP, LP 1(951) 894-7177





## 4:12 RIDGE 4:12





SIDE VIEWS

### LEGACY FINANCIAL GROUP, LP 1(951) 894-7177

### Lake Pointe Apartments 152 Apartments RIVERSIDE DRIVE, LAKE ELSINORE, CA







# 



12

FLOOR PLAN

**7-SPACE CARPORT** 

MICHAEL McHALE, ARCHITECT (949) 566-4951 8/3/22 SCALE: 1" = 4' - 0"







# 152 Apartments









LEGACY FINANCIAL GROUP, LP 1(951) 894-7177



SIDE VIEWS

FRONT & REAR VIEWS

MICHAEL MCHALE, ARCHITECT (949) 566-4951 8/3/22 SCALE: 1" = 4' - 0"




	0    9'-6" X 20' 	9'-6" X 20'	9'-6" X 20'	9'-6" X 20'	9'-6" X 20'	9'-6
	                   		 		<b>b</b>	-
_	19	'-0"	19	'-0"	1	9'-0"
_	ļ				9	5'-0"









(951) 894-7177; (851) 538-1974

33







LEFT SIDE VIEW

152 Apartments RIVERSIDE DRIVE, LAKE ELSINORE, CA LEGACY FINANCIAL, LLC C/O GEORGE MEARS / KIRK BOWLUS, 41663 DATE ST. STE. 200, MURRIETA,CA 92562 (951) 894-7177; (851) 538-1974

# Lake Pointe Apartments

— 36" WIDE X 5'-6" HIGH RIBBED METAL GATE

— 6' HIGH SPLIT FACE BLOCK







34



# NOTICE OF PUBLIC HEARING

**NOTICE IS HEREBY GIVEN** that the Planning Commission of the City of Lake Elsinore, California, will hold a Public Hearing on September 19, 2023, at the Lake Elsinore Cultural Center, 183 North Main Street, Lake Elsinore, California, 92530, at 6:00 p.m., or as soon thereafter as the matter may be heard, to consider the following:

**Planning Application No. 2022-15 (Lakepointe Apartments):** A request by George Mears, Legacy Financial Group, LP requesting approval of Residential Design Review No. 2022-04 proposing to construct 152 apartment units within nine (9) residential buildings including two (2) three-story buildings and seven (7) two-story buildings. The project also proposes a 2,212 sq. ft. clubhouse and a 780 sq. ft. maintenance building and other related site improvements on an 8.27-acre site located in the Residential Mixed Use Zoning District. The proposed project is generally located northerly of Grand Avenue, southwesterly of Eisenhower Drive, adjacent to Lakeside High School, and more specifically referred to as Assessor's Parcel Number (APN) 379-090-022.

Pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15162, the project would not have a significant effect on the environment and no new environmental documentation is necessary because all potentially significant effects have been adequately analyzed and mitigated in an earlier Mitigated Negative Declaration (MND No. 2016-01; SCH No. 2016071001 and none of the conditions described in Section 15162 exist. Pursuant to CEQA Guidelines, 15164, Addendum No. 1 to MND 2016-01 SCH # 2016071001 was prepared providing minor additions and changes has been prepared for the project. All potentially significant effects have been avoided or mitigated pursuant to MND 2016-01 SCH # 2016071001 and none of the conditions described in Section 15162 have occurred.

ALL INTERESTED PERSONS are invited to submit written information, express opinions or otherwise submit written evidence by email to <u>dlongoria@Lake-Elsinore.org</u>.

If you wish to legally challenge any action taken by the City on the above matter, you may be limited to raising only those issues you or someone else at the Public Hearing described in this notice, or in written correspondence delivered to the City prior to or at the Public Hearing. If you require accommodation to participate in a Public Hearing, please contact the Administrative Secretary at (951) 674-3124 ext. 297. All Agenda materials are available for review on the City's website at www.lake-elsinore.org the Friday before the Public Hearing.

**FURTHER INFORMATION** on this item may be obtained by contacting Carlos Serna, Associate Planner in the Planning Division at <u>cserna@lake-elsinore.org</u> or (951) 674-3124, ext. 916.

Damaris Abraham, Assistant Community Development Director

# **THE PRESS-ENTERPRISE**

KEEP YOUR EYES ON THE 'PRISE pe.com

3512 14 Street Riverside, California 92501 (951) 368-9229 neller@scng.com

> City of Lake Elsinore 130 South Main Street Lake Elsinore, California 92530

Account Number: Ad Order Number: Customer's Reference/PO Number: Publication: Publication Dates: Total Amount: Payment Amount: Amount Due: Notice ID: Invoice Text: 5209153 0011622804 The Press-Enterprise 09/09/2023 \$383.82 \$0.00 \$383.82 mGJQkTZREqrI6X6UjDHF [https://res.cloudinary.com/c

[https://res.cloudinary.com/dgqq2xsfd/image/upload/enoticeproduction/exports/1694027284545/image001.jpg?invalidate=true] NOTICE OF PUBLIC HEARING NOTICE IS HEREBY GIVEN that the Planning Commission of the City of Lake Elsinore, California, will hold a Public Hearing on September 19, 2023, at the Lake Elsinore Cultural Center, 183 North Main Street, Lake Elsinore, California, 92530, at 6:00 p.m., or as soon thereafter as the matter may be heard, to consider the following: Planning Application No. 2022-15 (Lakepointe Apartments): A request by George Mears, Legacy Financial Group, LP requesting approval of Residential Design Review No. 2022-04 proposing to construct 152 apartment units within nine (9) residential buildings including two (2) three-story buildings and seven (7) two-story buildings. The project also proposes a 2,212 sq. ft. clubhouse and a 780 sq. ft. maintenance building and other related site improvements on an 8.27-acre site located in the Residential Mixed Use Zoning District. The proposed project is generally located northerly of Grand Avenue, southwesterly of Eisenhower Drive, adjacent to Lakeside High School, and more specifically referred to as Assessor's Parcel Number (APN) 379-090-022. Pursuant to California Environmental Quality Act (CEOA) Guidelines Section 15162, the project would not have a significant effect on the environment and no new environmental documentation is necessary because all potentially significant effects have been adequately analyzed and mitigated in an earlier Mitigated Negative Declaration (MND No. 2016-01; SCH No. 2016071001 and none of the conditions described in Section 15162 exist. Pursuant to CEQA Guidelines, 15164, Addendum No. 1 to MND 2016-01 SCH # 2016071001 was

## THE PRESS-ENTERPRISE KEEP YOUR EYES ON THE 'PRISE

The Press-Enterprise 3512 14 Street Riverside, California 92501 (951) 368-9229

City of Lake Elsinore 130 South Main Street Lake Elsinore, California 92530

Publication: The Press-Enterprise

PROOF OF PUBLICATION OF

Ad Desc: 0011622804

# FILE NO. 0011622804

# **PROOF OF PUBLICATION**

I am a citizen of the United States. I am over the age of eighteen years and not party to or interested in the aboveentitled matter. I am an authorized representative of THE PRESS-ENTERPRISE, a newspaper of general circulation, printed and published daily in the County of Riverside, and which newspaper has been adjudicated a newspaper of general circulation by the Superior Court of the County of Riverside, State of California, under date of April 25, 1952, Case Number 54446, under date of March 29, 1957, Case Number 65673, under date of August 25, 1995, Case Number 267864, and under date of September 16, 2013, Case Number RIC 1309013; that the notice, of which the annexed is a printed copy, has been published in said newspaper in accordance with the instructions of the person(s) requesting publication, and not in any supplement thereof on the following dates, to wit:

# 09/09/2023

I certify (or declare) under the penalty of perjury that the foregoing is true and correct.

Date: September 9, 2023. At: Riverside, California

Signature



NOTICE OF PUBLIC HEARING NOTICE IS HEREBY GIVEN that the Planning Commission of the City of Lake Elsinore, California, will hold a Public Hearing on September 19, 2023, at the Lake Elsinore Cultural Center, 183 North Main Street, Lake Elsinore, California, 92530, at 6:00 p.m., or as soon thereafter as the matter may be heard, to consider the following:

**Planning Application No. 2022-15 (Lakepointe Apartments):** A request by George Mears, Legacy Financial Group, LP requesting approval of Residential Design Review No. 2022-04 proposing to construct 152 apartment units within nine (9) residential buildings including two (2) three-story buildings and seven (7) two-story buildings. The protect also proposes a 2,212 sq. ft. clubhouse and a 780 sq. ft. maintenance building and other related site improvements on an 8.27-acre site located in the Residential Mixed Use Zoning District. The proposed project is generally located northerly of Grand Avenue, southwesterly of Elsenhower Drive, adjacent to Lakeside High School, and more specifically referred to as Assessor's Parcel Number (APN) 379-090-022.

Pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15162, the project would not have a significant effect on the environment and no new environmental documentation is necessary because all potentially significant effects have been adequately analyzed and mitigated in an earlier Mitigated Negative Declaration (MND No. 2016-01; SCH No. 2016071001 and none of the conditions described in Section 15162 exist. Pursuant to CEQA Guidelines, 15164, Addendum No. 1 to MND 2016-01 SCH # 2016071001 was prepared providing minor additions and changes has been prepared for the project. All potentially significant effects have been avoided or mitigated pursuant to MND 2016-01 SCH # 2016071001 and none of the conditions described in Section 15162 have occurred.

ALL INTERESTED PERSONS are invited to submit written information, express opinions or otherwise submit written evidence by email to diongoria@Lake-Elsinore.org.

If you wish to legally challenge any action taken by the City on the above matter, you may be limited to raising only those issues you or someone else at the Public Hearing described in this notice, or in written correspondence delivered to the City prior to or at the Public Hearing. If you require accommodation to participate in a Public Hearing, please contact the Administrative Secretary at (951) 674-3124 ext. 297. All Agenda materials are available for review on the City's website at www.lake-elsinore.org the Friday before the Public Hearing.

FURTHER INFORMATION on this item may be obtained by contacting Carlos Serna, Associate Planner in the Planning Division at cserna@ lake-elsinore.org or (951) 674-3124, ext. 916.

Damarls Abraham, Assistant Community Development Director The Press-Enterprise Published: 9/9/23



# **NOTIFICATION PACKAGE**

Riverside Dr, Lake Elsinore APNs 379-090-024

INCLUDES: 300' OWNER LIST (min of 30 unique owners included) 300' RADIUS MAP (2) SETS OF GUMMED LABELS EXCEL FILE CERTIFICATION COUNT: 38 (duplicates consolidated)

PREPARED 08/16/2023 FILE #3286

> orders@expressmapping.com www.expressmapping.com 4000 Barranca Pkwy #250, Irvine CA 92604

Local (949) 771-0051 Toll Free (888) 990-MAPS



CITY OF	
LAKE <b>E</b> LSINORE	AFFIDAVIT OF NOTIFICATION LIST
DREAM EXTREME.	

Application No.

**Applicant Name** 

Legacy Financial Group, LP

Project Name/Location Riverside Dr, Lake Elsinore

I certify that on <u>16th</u> day of <u>August</u>, 20\_23, we prepared a notification list and a radius map, including properties entirely and partially within <u>300</u> feet of the most exterior boundaries of the property being considered in the above referenced project known as (Property Address) <u>Riverside Dr, Lake Elsinore</u>. The property owner names and addresses listed on the notification list, provided in an excel spreadsheet on a CD or external hard drive, were taken from the latest records of the Riverside County Assessor. Such names are recorded in the records of the Riverside County Assessor as being the present owner or owners of both the subject property and the property/properties within the required mailing radius of the subject property.

ULL	08/16/2023
Applicant/Representative Signature	Date
This instrument was acknowledged before me on this $\frac{16\text{th}}{2}$	day of <u>August</u> , <sub>20</sub> <u>23</u> , by
In witness whereof I	hereunto set my hand and official seal.
Kaun Simon	LAURA EMERSON Notary Public - California
Notary Public	Orange County Commission # 2408793 My Comm. Expires Jul 18, 2026
My Commission expires on: 07/18/2026	

Pursuant to Government Code Sections 65090-65096 notification lists shall be from the most recent Accessor Tax rolls. In order for the application to be deemed complete please return the completed, notarized affidavit to the assigned case planner at your earliest convenience.

379-050-017 Southern California Edison Co 2 Innovation Way Pomona CA 91768

379-070-008 Lake Shore Elsinore P O Box 118 San Juan Capo CA 92693

379-090-021 Plaza Lakeshore 8558 Chalmin Dr #401 Los Angeles CA 90035

379-100-010 Sui Ho Tsai 3658 Capitol Ave #313a Fremont CA 94538

379-313-018 Swh 2017-1 Borrower 8665 Hartford Dr #200 Scottsdale AZ 85255

379-314-001 Francisco Farias Flores 3501 Eisenhower Dr Lake Elsinore CA 92530

379-314-005 Eleazar Ramirez 3509 Eisenhower Dr Lake Elsinore CA 92530

379-314-008 Imelda Gonzalez 2755 W Fairview Dr Rialto CA 92377

379-314-011 Liliana Moreno 3701 Eisenhower Dr Lake Elsinore CA 92530

379-314-014 John Charles Earhart Po Box 77851 Corona CA 92877 379-050-037 Hines Nurseries Inc 22941 Mill Creek Dr Laguna Hills CA 92653

379-070-009 Rv Park Roadrunner P O Box 86 Lake Elsinore CA 92531

379-090-024 Legacy Financial Group 41663 Date St #200 Murrieta CA 92562

379-313-016 Roberto Escoto 1132 Cleveland Ct Lake Elsinore CA 92530

379-313-019,314-003 Norine E May 29880 Longhorn Dr Canyon Lake CA 92587

379-314-002 Rsc Marketing & Sales Inc P O Box 310856 Fontana CA 92331

379-314-006 Judith G Madrigal 35885 Trabuco Rd #52 Lake Forest CA 92630

379-314-009 Matthew James Harrison 3607 Eisenhower Dr Lake Elsinore CA 92530

379-314-012 Fidencio Delgado 3703 Eisenhower Dr Lake Elsinore CA 92530

379-314-015 Roman Mendoza 3709 Eisenhower Dr Lake Elsinore CA 92530 379-050-038 Lake Elsinore Unified School Dist 420 E Lakeshore Dr Lake Elsinore CA 92530

379-090-012,13,23 William Craig Seers 12100 Copper Ct Tyler TX 75706

379-100-009 Jennifer Chieng Fen Chen 606 N 1st St San Jose CA 95112

379-313-017 Diana Meza 1134 Cleveland Ct Lake Elsinore CA 92530

379-313-020 Chad Hernaez 160 W Foothill Pkwy #194 Corona CA 92882

379-314-004 Juan Ramos Morales 3507 Eisenhower Dr Lake Elsinore CA 92530

379-314-007 Gilbert S Carmona 5286 Norcris Ln Yorba Linda CA 92886

379-314-010 Abel Varela 3609 Eisenhower Dr Lake Elsinore CA 92530

379-314-013 Oak Tree Apartments 110 N Lincoln Ave #100 Corona CA 92882

379-314-016 Andre Davis 3801 Eisenhower Dr Lake Elsinore CA 92530 379-314-017 Arampath Gunawardhana 4521 Campus Dr #377 Irvine CA 92612

379-314-020 Cynthia L Solis 3809 Eisenhower Dr Lake Elsinore CA 92530

379-314-023 Nicodemus K Mathews 3905 Eisenhower Dr Lake Elsinore CA 92530 379-314-018 Norberto F Disummo 31553 Canyon View Dr Lake Elsinore CA 92532

379-314-021 Canis Trust Dtd 08/05/21 27042 Marbella Mission Viejo CA 92691

379-314-024 Isidro L Preciado 26006 Westridge Ave Menifee CA 92586 379-314-019 Tomas Perez 3807 Eisenhower Dr Lake Elsinore CA 92530

379-314-022 Arthur S Alarcon 2229 1/2 W Ball Rd Anaheim CA 92804 Owner/Representative Legacy Financial Group/George Mears 41663 Date St #200 Murrieta CA 92562

Owner/Representative Legacy Financial Group/George Mears 41663 Date St #200 Murrieta CA 92562 Owner/Representative Legacy Financial Group/George Mears 41663 Date St #200 Murrieta CA 92562 Owner/Representative Legacy Financial Group/George Mears 41663 Date St #200 Murrieta CA 92562