



UCI

JANUARY 2023

PUBLIC REVIEW DRAFT
SUBSEQUENT INITIAL STUDY / MITIGATED NEGATIVE DECLARATION

MESA COURT RESIDENCE HALL EXPANSION



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1.0 INTRODUCTION

The Mesa Court Residence Hall Expansion (herein referenced as the “project”) involves expansion of the existing University of California, Irvine (UCI) Mesa Court Residence Hall through construction of a new student housing building with up to 450 beds at Parking Lot 5; refer to [Section 2.0, Project Description](#).

The Mesa Court Residence Hall is an ancillary student housing development located within the larger UCI campus, and is a planned component of the *2007 Long Range Development Plan, A Framework to Guide Physical Development at the University of California, Irvine, Through 2025-2026* (2007 LRDP). The 2007 LRDP is a comprehensive policy and land use plan that guides the growth of a campus. The plan is neither an enrollment plan nor an implementation plan; rather, it provides a framework of policies and guidelines to support key academic and student life goals, identifies development objectives, delineates campus land uses, and estimates the new building space needed to support projected program expansion through the planning horizon year. The 2007 LRDP for the campus provides a framework of policies and guidelines to shape land use and physical development at UCI through 2025-2026.

The *2007 Long Range Development Plan, Final Environmental Impact Report* (LRDP EIR) analyzes potential environmental impacts associated with the implementation of the 2007 LRDP pursuant to the California Environmental Quality Act (CEQA) Guidelines Sections 15152 and 15168. According to CEQA Guidelines, Section 15168(c), subsequent activities in a program must be examined in the light of the Program EIR to determine whether an additional environmental document must be prepared. If the lead agency finds that pursuant to Public Resources Code Section 21166 and CEQA Guidelines Section 15162 no new effects could occur or no new mitigation measures would be required, then the lead agency can approve the activity as being within the scope of the project covered by a Program EIR (CEQA Guidelines Section 15168(c)(2)). Otherwise, further environmental review would be required if circumstances under Public Resources Code Section 21166 and CEQA Guidelines Section 15162 are triggered. The CEQA Guidelines go on to state that where subsequent activities involve site specific operations, the lead agency should use a written checklist or similar device to document the evaluation of the site and the activity to determine whether the environmental effects of the operation were covered in the Program EIR (CEQA Guidelines, Section 15168(c)(4)).

Following a preliminary review of the proposed project, UCI, as the CEQA Lead Agency, has determined that the Mesa Court Residence Hall Expansion constitutes a “project” that is subject to CEQA. Based upon the legal principles outlined above, UCI staff have prepared this Initial Study to determine whether any of the circumstances under Public Resources Code Section 21166 and CEQA Guidelines Section 15162 are triggered by the project such that further environmental review would be required. The discussion in this Initial Study is intended to focus the further environmental review to only the new effects which have not been considered before (CEQA Guidelines Section 15168(d)(3)).

1.1 STATUTORY AUTHORITY AND REQUIREMENTS

In accordance with CEQA (Public Resources Code Section 21000 - 21177), this Initial Study has been prepared to evaluate whether any of the circumstances in Public Resources Code Section 21166 and CEQA Guidelines Section 15162 are triggered by the proposed project such that further environmental review would be required. In accordance with Section 15063 of the CEQA Guidelines, this Initial Study is a preliminary analysis prepared by the Lead Agency, UCI, in consultation with other jurisdictional agencies, to determine the scope of any necessary further environmental review that would be required for the proposed project.

As explained above, CEQA Guidelines Section 15168(c) requires lead agencies to consider subsequent activities in a program in the light of the Program EIR to determine whether an additional environmental document must be prepared. If a later activity would have effects that were not examined in the Program EIR, a new initial study would need to be prepared leading to either an EIR or a negative declaration (CEQA Guidelines Section 15168(c)(1)).



Public Resources Code Section 21166 provides guidance with respect to when a subsequent or supplement to a prior certified EIR is required for a later project. The presumption is that:

When an environmental impact report has been prepared for a project pursuant to this division, no subsequent or supplemental environmental impact report shall be required by the lead agency or by any responsible agency, unless one or more of the following events occurs:

- (a) Substantial changes are proposed in the project which will require major revisions of the environmental impact report.*
- (b) Substantial changes occur with respect to the circumstances under which the project is being undertaken which will require major revisions in the environmental impact report.*
- (c) New information, which was not known and could not have been known at the time the environmental impact report was certified as complete, becomes available and shows that the project will have one or more significant effects not discussed in the previous environmental impact report.*

CEQA Guidelines Section 15162 further provides as follows:

When an EIR has been certified for a project, no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following:

- (1) Substantial changes are proposed in the project which will require major revisions of the previous EIR 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 previous EIR due to the involvement of 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 previous EIR was certified as complete or 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 EIR;*
 - (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 measure or alternative;*
 - (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.*

1.2 CEQA DOCUMENT TIERING

The Public Resources Code and the CEQA Guidelines discuss the use of “tiering” environmental impact reports by lead agencies. Public Resources Code Section 21068.5 defines “tiering” as:



The coverage of general matters and environmental effects in an environmental impact report prepared for a policy, plan, program or ordinance followed by narrower or site-specific environmental impact reports which incorporate by reference the discussion in any prior environmental impact report and which concentrate on the environmental effects which: (a) are capable of being mitigated, or (b) were not analyzed as significant effects on the environment in the prior environmental impact report.

Tiering is further discussed in Public Resources Code Section 21094, as follows:

- (a) *Where a prior environmental impact report has been prepared and certified for a program, plan, policy, or ordinance, the lead agency for a later project that meets the requirements of this section shall examine significant effects of the later project upon the environment by using a tiered environmental impact report, except that the report on the later project is not required to examine those effects that the lead agency determines were either of the following:*
 - (1) *Mitigated or avoided pursuant to paragraph (1) of subdivision (a) of Section 21081 as a result of the prior environmental impact report.*
 - (2) *Examined at a sufficient level of detail in the prior environmental impact report to enable those effects to be mitigated or avoided by site-specific revisions, the imposition of conditions, or by other means in connection with the approval of the later project.*
- (b) *This section applies only to a later project that the lead agency determines is all of the following:*
 - (1) *Consistent with the program, plan, policy, or ordinance for which an environmental impact report has been prepared and certified.*
 - (2) *Consistent with applicable local land use plans and zoning of the city, county, or city and county in which the later project would be located.*
 - (3) *Not subject to Section 21166.*
- (c) *For purposes of compliance with this section, an initial study shall be prepared to assist the lead agency in making the determinations required by this section. The initial study shall analyze whether the later project may cause significant effects on the environment that were not examined in the prior environmental impact report.*
- (d) *All public agencies that propose to carry out or approve the later project may utilize the prior environmental impact report and the environmental impact report on the later project to fulfill the requirements of Section 21081.*
- (e) *When tiering is used pursuant to this section, an environmental impact report prepared for a later project shall refer to the prior environmental impact report and state where a copy of the prior environmental impact report may be examined.*

Tiering is a method to streamline EIR preparation by allowing a Lead Agency to focus on the issues that are ripe for decision and exclude from consideration issues already decided or not yet ready for decisions (CEQA Guidelines Section 15152 and 15385). According to CEQA Guidelines Section 15152 (a), "tiering" is defined as:

Tiering refers to using the analysis of general matters contained in a broader EIR (such as 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.



When an EIR has been prepared and certified for a program or plan consistent with CEQA requirements, a Lead Agency, should, for a later project pursuant to or consistent with the program or plan, concentrate on the environmental effects that were not examined as significant effects on the environment in the prior EIR; refer to Public Resources Code Section 21068.5. In those situations where a programmatic document does not specifically address and analyze the impacts and mitigation measures necessary for a project-level action, the project-level environmental review can be streamlined by tiering from the program-level documents. Agencies are encouraged to tier their CEQA analysis to avoid repetition of issues and to focus on the issues for decision at each level of review. Subsequent CEQA compliance involves either the preparation of a further EIR (subsequent or supplemental) or a further Negative Declaration.

Pursuant to CEQA Guidelines Section 15152(f)(3), for purposes of tiering, significant environmental effects have been “adequately addressed” if the Lead Agency determines that the significant environmental effects:

- Have been mitigated or avoided as a result of the prior EIR and adopted findings in connection with that prior EIR; or
- Have been examined at a sufficient level of detail in the prior EIR to enable those effects to be mitigated or avoided by site-specific revisions, the imposition of conditions, or by other means with the approval of the later project.

Where appropriate, this Initial Study tiers off of the LRDP EIR. As discussed above, under CEQA Guidelines Section 15152, tiering is appropriate when the sequence of analysis follows from an EIR prepared for a general plan, policy, or program to an EIR of lesser scope, or to a site-specific EIR or negative declaration. Under CEQA, the LRDP EIR, as amended, is considered the first tier document. This Initial Study, for the proposed project, is being prepared to determine whether a second tier document would be required. This Initial Study will identify impacts that were adequately analyzed in the LRDP EIR. While subsequent analyses can rely on previous tier analyses, it also has the obligation to discuss any changed circumstances or new information that might alter the previous analyses.

1.3 INITIAL STUDY

Consistent with the Public Resource Code and CEQA Guidelines (refer to [Section 1.2](#), above), the LRDP EIR is incorporated into the analysis and utilized to focus the discussion on new effects which had not been considered prior to the LRDP EIR or effects that may be more significant than what was previously analyzed. While potentially significant impacts may be identified in the Initial Study requiring further analysis, ultimately those impacts may be found less than significant with or without mitigation measures, project changes, or alternatives to the project. In addition, adopted LRDP EIR mitigation measures may require site specific studies for certain topical areas. Accordingly, when a site specific study is required for a particular topical area and the study has not been finalized to date, this Initial Study may determine that the topical area will be discussed in detail in a further EIR even though it may not result in a new or more significant effect than what was previously studied in the LRDP EIR. Following completion of the Initial Study, UCI will make a formal determination as to whether the project may or may not have potentially significant and unmitigatable environmental impacts. A determination that a project’s impacts were adequately addressed in the programmatic document and/or that a project will have less than significant effects would result in the preparation of a Negative Declaration. A determination that a project may have new or more severe significant impacts on the environment would require the preparation of a further EIR to evaluate issues identified in this Initial Study.

This Initial Study is subject to a public review period. During this review, agency and public comments on the document relative to environmental issues should be addressed to UCI. Following review of any comments received, UCI will consider these comments as a part of the project’s environmental review and include them with the Initial Study documentation for consideration by UCI.

CEQA Guidelines Section 15063(d) identifies specific disclosure requirements for inclusion in an Initial Study. Pursuant to those requirements, an Initial Study shall include:



- A description of the project, including the location of the project;
- Identification of the environmental setting;
- Identification of environmental effects by use of a checklist, matrix, or other method, provided that entries on a checklist or other form are briefly explained to indicate that there is some evidence to support the entries;
- Discussion of ways to mitigate significant effects identified, if any;
- Examination of whether the project is compatible with existing zoning, plans, and other applicable land use controls; and
- The name(s) of the person(s) who prepared or participated in the preparation of the Initial Study.

1.4 CONSULTATION

As soon as a Lead Agency (in this case, UCI) has determined that an Initial Study would be required for the project, the Lead Agency is directed to consult informally with all Responsible Agencies and Trustee Agencies that are responsible for resources affected by the project, to obtain the recommendations of those agencies as to whether an EIR or Negative Declaration should be prepared for the project. Following receipt of any written comments from those agencies, the Lead Agency considers any recommendations of those agencies in the formulation of the preliminary findings. Following completion of this Initial Study, the Lead Agency initiates formal consultation with these and other governmental agencies as required under CEQA and its implementing guidelines.

1.5 INCORPORATION BY REFERENCE

The 2007 LRDP and LRDP EIR documents were utilized during preparation of this Initial Study and are incorporated into this document by reference. The documents are available for review at the UCI Office of Campus Physical and Environmental Planning, located at 120 Theory, Suite 100, Irvine, CA 92617. The LRDP is also available for viewing electronically at <https://cpep.uci.edu/physical/campus-lrdp.php>, while the LRDP EIR is available for viewing electronically at <https://cpep.uci.edu/environmental/campus-feir.php>.



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2.0 PROJECT DESCRIPTION

2.1 PROJECT LOCATION

The University of California, Irvine (UCI, or University) is located in the southwestern portion within the City of Irvine (City), in the central portion of the County of Orange (County); refer to Exhibit 2-1, Regional Vicinity. Regionally, the cities of Costa Mesa and Newport Beach are to the west, Tustin and Santa Ana are located to the north, Lake Forest is to the east, and Laguna Hills and Laguna Woods are to the south.

The proposed Mesa Court Residence Hall Expansion (project) site is located in the northern portion of the UCI campus at the existing Mesa Court Residence Hall (southwest of the intersection of Campus Drive and University Drive), refer to Exhibit 2-2, Site Vicinity. Specifically, the site occupies the northwest corner of the existing surface Mesa Court Residence Hall Parking Lot 5 (Lot 5). Regional access to the project site is provided via Interstate 405 (I-405) and State Route 73 (SR-73). Local access to the project site is provided via Pereira Drive/West Peltason Drive and Mesa Road/Alumni Court.

2.2 ENVIRONMENTAL SETTING

The approximately 2.5-acre project site is a fully paved parking lot and is currently occupied by a temporary trailer used for student service, administrative offices, and food pantry storage. Vehicular access is currently provided via a signalized intersection at Pereira Drive/West Peltason Drive and Mesa Road/Alumni Court, and pedestrian access is provided via existing sidewalk to the west of the site. Existing ornamental landscaping is present along the northern, eastern, and western perimeters, as well as parking lot trees.

Topography of the project area gently slopes downwards to the northeast. On-site elevations ranging from 26 feet to 31 feet above mean sea level (msl). Existing off-site multi-family residences and Stanford Park are present to the east across Campus Drive and are up-gradient, approximately 30 feet higher in elevation.

LAND USE AND PLANNING SECTORS

Based on the *2007 Long Range Development Plan (LRDP) Figure 4-1, Campus Planning Sectors*, the UCI campus consists of five planning sectors: North Campus, East Campus, South Campus, West Campus, and the Academic Core. The project site is located in the northwest quadrant of the Academic Core. Further, based on the *Amended Land Use Map for the 2007 LRDP*, the project site is designated Student Housing.¹

SURROUNDING LAND USES

Surrounding land uses include a mixture of transportation, institutional, residential, recreational, and open space uses. Specifically, land uses surrounding the project site include:

- North: Mesa Court Field bounds the project site to the north. This area is designated Open Space – Athletics & Recreation by the LRDP;

¹ University of California, Irvine, *2007 LRDP Land Use Plan, Page 67, Updated per 2019 Student Housing Amendment*, https://cpep.uci.edu/physical/pdf/campus-lrdp/20-01-30_LRDP-Student-Housing-Amendment-Land-Use.pdf, accessed September 21, 2022.





Source: Google Earth Pro, September 2022



- East: Campus Drive bounds the project site to the east. A steep vegetated slope and multi-family residences are further east. These areas are located outside of the UCI campus and are located within Planning Area (PA) 24, University Town Center, per the City of Irvine (City's) Planning Area Map, and zoned by the City as 2.4, Medium-High Density Residential, and 3.1A, Multi-Use - University Town Center;
- South: A surface parking lot is located to the south of the site within Lot 5. This area is designated Student Housing by the LRDP; and
- West: Existing student housing associated with the Mesa Court Residence Hall is located to the west of the project site and is designated Student Housing.

2.3 BACKGROUND AND HISTORY

UCI provides a variety of on-campus housing options, including traditional residence halls (Mesa Court Residence Hall and Middle Earth Towers), undergraduate theme houses (Arroyo Vista Tower), and graduate apartments (Campus Village, Palo Verde, and Verano Place). Mesa Court Residence Hall (one of two traditional residence halls on UCI campus) is a first-year housing community with twenty-nine "Classic" halls and three towers (known as the Mesa Court Towers). Located along the northern edge of the Academic Core, the Mesa Court "Classics" were constructed in phases in the 1960s. UCI's LRDP underscored the need to build higher-density housing tailored to the modern student's need for shared community space and easily accessible amenities. Three six-story, mid-rise residence halls (i.e., the Mesa Court Towers) were built in 2016 to fill this gap in UCI's housing portfolio. The 250,000-square-foot Mesa Court Towers include 269 quadruple rooms, study areas, computer labs, great rooms, a fitness center, a recreation room, student office space, shared kitchens, laundry facilities, and a 780-seat dining commons known as the Anteatory. The Mesa Court Towers pioneered a new type of residential living on campus and created a highly successful model, with many elements repeated in the 2019 Middle Earth Tower.

In February 2022, UCI initiated development of the Mesa Court Expansion Detailed Project Program (DPP) and cost estimate for student housing and ancillary spaces at the Mesa Court Residence Hall. The project aims to serve future residents seeking affordable housing and inclusive, universal design. UCI has identified four overarching vision statements for the proposed project:

- Provide Affordable, Inclusive Student Housing
 - Address housing insecurity in the student population
 - Provide low-income students the opportunity to thrive in an amenity-rich communal hub
 - Leverage student housing to increase retention and academic performance
- Promote Students' Well-being
 - Support the growth and well-being of students.
 - Respond to students' needs for privacy, technology, and social living
- Foster Interaction Amongst the Mesa Court Community
 - Invigorate connections across various student residences
 - Provide improved access to support services and amenities



- Enhance the University's Identity
 - Provide an inviting identity to welcome students
 - Create an architectural presence along Campus Drive, one recognizing the "gateway" location and prominence of the project

The project location was selected for its connection to the existing Mesa Court Residence Hall community and the ability to utilize current amenities for the new housing. The site also supports student pedestrian circulation through the Mesa Court Residence Hall complex.

2.4 PROJECT CHARACTERISTICS

The project proposes to replace the existing parking lot on-site with a new student housing development that would serve as an expansion to the existing Mesa Court Residence Hall; refer to Exhibit 2-3, Conceptual Site Plan. Specifically, the new housing development would consist of one multi-story building up to six stories in height (75 feet in height) to house up to 450 beds. Rooms would be organized for quadruple occupancy. The development would also include common areas throughout the building, including study areas, collective hubs with kitchens, and laundry facilities. Site work and development would include clearing of the existing parking lot; site grading; connection to campus utility and drainage systems; construction of building(s), pathways, ramps, and sidewalks; installation of site lighting and landscape improvements; and construction of outdoor gathering spaces with wireless connectivity.

RESIDENTIAL SPACES

The project would have clustered dorm-style housing that offers common areas of various scales. As discussed under Chapter 3, *Space Program*, in the DPP, the project would develop a total of approximately 61,724 assignable square feet (ASF)² of residential building features, including the following:

- Approximately 42,694 ASF would encompass bedrooms and bathrooms;
- Approximately 16,363 ASF for residential resources (e.g., communal kitchen, "front porch" area, universal zoom room, study area, quiet/sensory room, laundry, trash chute room, storage, custodial closet);
- Approximately 2,149 ASF for building resources (e.g., entry lobby, emergency student room, residence life coordinator apartment); and
- Approximately 518 ASF for operations (e.g., maintenance closet, trash chute collection room).

ARCHITECTURAL GUIDING PRINCIPALS AND CRITERIA

UCI has identified the following guiding principles and criteria requirements for the project:

- The building(s) would have a 42-foot setback from the face of the curb at Campus Drive;
- The building(s) would have a 46-foot minimal setback from the existing trees to the northwest of the project site to protect the existing perimeter trees and ensure their survival during the construction process;

² Assignable square feet (ASF) refer to the assigned square footage of space (equal to capacity times ASF/unit) that is typically described as "wall-to-wall" or "usable area".



LEGEND



- | | | |
|-------------------------------------|--------------------------------------|-------------------------|
| 1. DROP OFF PICK UP | 8a. PRIMARY ENTRANCE | 14. CONCRETE SEAT WALL |
| 2. ENTRY PLAZA | 8b. SECONDARY ENTRANCE | 15. BIO SWALE PLANTING |
| 3. BICYCLE PARKING (SHORT TERM) | 9. ACCESSIBLE PARKING | 16. PRIVATE PATIO |
| 4. SHADED OUTDOOR LIVING ROOM | 10. BICYCLE PARKING (LONG TERM) | 17. HOSE PULL PATH |
| 5. GRASSCRETE FIRE LANE WITH GRAVEL | 11. MULTI PURPOSE EVENT HANG OUT | 18. FIRE LANE/PROMENADE |
| 6. TRASH COMPACTOR | 12. OUTDOOR STUDY AREA | 19. SHADE CANOPY |





- The forms and height of the building massing and design would relate to the pedestrian scale found at the adjacent three-story Mesa Court Classics and the nearby Mesa Court Towers;
- The proposed building would have one primary entry lobby. This lobby would be centrally located on the ground floor. This entry point would be a focal point for the overall project and establish a clear hierarchy for the building. This entry point should be highly visible from north, south, and west pedestrian pathways and address student circulation from each direction.

CIRCULATION/PATH OF TRAVEL

Accessible pedestrian pathways, per California Building Code (CBC) Title 24, would be provided linking the proposed project with existing campus pedestrian pathways at the perimeters of the site. As currently proposed, a primary pedestrian path on-site would be provided along the western perimeter of the site, between the proposed structure and the existing Mesa Court residence hall to the west, and along the southern perimeter of the structure. Pedestrian connections to existing Mesa Court Residence Hall ancillary structures would be provided. All on-site pedestrian pathways would be a minimum of six feet in width to accommodate carts.

VEHICLE ACCESS

Vehicle access would be provided within the project site to provide service and emergency access. All elements of vehicle access and roadway improvement, including size, configuration, vertical and horizontal alignment, lane widths, striping, signage, lighting, and traffic control measures (i.e., stop signs and speed humps) would be designed and constructed in compliance with the UCI Master Specification and Campus Standards and Design Criteria (CS&DC). The aesthetics of the vehicle access points would be integrated with the pedestrian pathways, landscape design, and potential storm water quality treatment areas. Vehicle access would include fire department access in compliance with CS&DC, Designated Campus Fire Marshal (DCFM), and Orange County Fire Authority (OCFA) requirements and standards.

LANDSCAPING

The project would remove existing parking lot trees and plant new ornamental landscaping throughout the project site. The plant palette would consist of low-water, low-maintenance and long-lived plant materials that thrive in the Southern California landscape, particularly the Southern Coast with marine influences. The plant palette would also consist of a native, adaptive, and Mediterranean mix that adapts to the cool wet winters and the hot dry summers that are consistent with the temperate region the campus is located in and would be low maintenance for campus operations. Further, trees would be used for shading throughout the site. Proposed trees would have a minimum 36-inch box size. Specimen sized trees would be incorporated into the outdoor open space, to provide additional shade. Specimen trees are intended to be used to provide shade in courtyards, seating areas, and outdoor rooms.

UTILITIES AND SERVICES

The following utilities and services would serve the project site:

- Water. An existing 8-inch UCI-owned water main runs north to south directly west of the proposed building. The project proposes a new private water lateral, as well as a new fire line, in the northwest corner of the site to connect to the existing 8-inch UCI-owned water main. It should be noted that all project water connections would be made at the UCI-owned existing water main and would not connect to any IRWD-owned water mains. Water connections connect to UCI pipelines before connecting to IRWD pipelines at the campus boundaries. Two fire hydrants currently located on-site would be relocated.



- Sewer. The project proposes to construct a private sewer lateral in the northwest corner of the site to connect to an existing 8-inch sewer main that runs east west just west of the project site. Similarly, sewer connections connect to UCI pipelines before connecting to IRWD pipelines at the campus boundaries.
- Drainage. The project would include a new on-site storm drain system with several catch basins with rip rap. Low impact development (LID) features in compliance with UCI's MS4 permit would be determined during the final design phase. Ultimate project site discharge would enter an existing 18-inch storm drain underneath the site and then flow north to the corner of University Drive and Campus Drive, where flows would connect to an existing 42-inch drainage pipe that continues westerly on UCI property, adjacent to University Drive.
- Dry Utilities. Southern California Edison would provide electricity service to the site. AT&T and Cox Communication would provide telecommunication services. The project would install connections on-site to these existing dry utility systems.

SUSTAINABILITY

The project would be designed per the *University of California Policy on Sustainable Practices*. Accordingly, the energy performance of the proposed building would outperform minimum compliance with the current *California Building Energy Efficiency Standards for Residential and Nonresidential Buildings* (California Code of Regulations, Title 24, Part 6) by 20 percent. Calculations indicating this performance requirement as achieved would be required to be submitted in the early stages of the design submittal process. As currently proposed, the project would seek to achieve a Leadership in Energy and Environmental Design (LEED) Gold certification or better. The new building(s) would be used as an educational and teaching opportunity to cultivate sustainable literacy. The building design would be encouraged to maximize opportunities to inform and shape behavior towards UCI's sustainability goals of carbon neutrality and zero waste. Further, the project would only use electric utilities and would not involve the use of natural gas. The electricity consumed during project operation would be carbon free as it is anticipated to be provided by the UC Clean Power Program.

POPULATION

The proposed (up to) 450 beds would be provided for first-year students as envisioned within the LRDP. It is assumed that the up to 450 students would be chosen from the on-campus student housing waitlist.

2.5 PHASING/CONSTRUCTION

Construction activities are anticipated to occur in one phase for approximately 24 months. Removal of existing temporary structures on the site is anticipated to take place in December 2023. Grading and paving activities would begin in March 2024 for the first four months and building construction and architectural painting activities occurring for the remaining time, ending in Summer 2025. Project earthwork would include approximately 150 cubic yards of cut and 3,150 cubic yards of fill, with 3,000 cubic yards of soil to be imported.

2.6 AGREEMENTS, PERMITS, AND APPROVALS

The proposed project would require agreements, permits, and approvals from the following agencies prior to construction. These discretionary actions are listed below and may change as the project entitlement process proceeds.

UCI (Lead Agency)

- CEQA Clearance.

Santa Ana Regional Water Quality Control Board (Santa Ana RWQCB) (Responsible Agency)

- National Pollutant Discharge Elimination System (NPDES) Construction General Permit.



3.0 LEAD AGENCY DETERMINATION

On the basis of this initial evaluation:

The University finds that the proposed project **WOULD NOT** have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.

The University finds that although the proposed project could have a significant effect on the environment, the project impacts were adequately addressed in an earlier document or there will not be a significant effect in this case because revisions in the project have been made that will avoid or reduce any potential significant effects to a less than significant level. A **MITIGATED NEGATIVE DECLARATION** will be prepared.

The University finds that the proposed project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** will be prepared.

Signature: DocuSigned by:
R. Umashankar
D4A6D009E06B42D... _____

Title: Executive Director

Printed Name: R. Umashankar

Agency: University of California, Irvine

Date: 1/25/2023



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4.0 INITIAL STUDY CHECKLIST

4.1 BACKGROUND

1. Project Title:

Mesa Court Residence Hall Expansion

2. Lead Agency Name and Address:

University of California, Irvine
Office of Campus Physical and Environmental Planning
120 Theory, Suite 100
Irvine, California 92617

3. Contact Person and Phone Number:

Lindsey Hashimoto, Principal Environmental Planner
949.824.8692

4. Project Location:

The proposed project is located southwest of the intersection of Campus Drive and University Drive, in the northwest corner of the existing surface Mesa Court Residence Hall Parking Lot 5 within the northern portion of the University of California, Irvine (UCI) campus, in the City of Irvine, County of Orange.

5. Project Sponsor's Name and Address:

University of California, Irvine
Office of Campus Physical and Environmental Planning
120 Theory, Suite 100
Irvine, California 92617

6. Long Range Development Plan Designation:

The project site is located in the Academic Core and is designated Student Housing on the *Amended Land Use Map for the 2007 LRDP*, which allows for development of student residential facilities.

7. Zoning:

Not applicable. Land use planning for UCI is established by the LRDP. The University is constitutionally exempt from local land use laws and regulations under Article IX, Section 9 of the California Constitution, which includes being exempt from all city and county general plans, as well as community plans and zoning regulations.

8. Description of Project:

The project involves expansion of the existing UCI Mesa Court Residence Hall through construction of a new student housing building with up to 450 beds at Parking Lot 5; refer to [Section 2.0, *Project Description*](#).

9. Surrounding Land Uses and Setting:

Surrounding land uses include a mixture of transportation, institutional, residential, recreational, and open space uses. Specifically, land uses surrounding the project site include:

- North: Mesa Court Field bounds the project site to the north. This area is designated Open Space – Athletics & Recreation by the LRDP;
- East: Campus Drive bounds the project site to the east. A steep vegetated slope and multi-family residences are further east. These areas are located outside of the UCI campus and are located within Planning Area



(PA) 24, University Town Center, per the City of Irvine’s *Planning Area Map*, and zoned by the City as 2.4, Medium-High Density Residential, and 3.1A, Multi-Use - University Town Center;

- South: A surface parking lot is located to the south of the site within Lot 5. This area is designated Student Housing by the LRDP; and
- West: Existing student housing associated with the Mesa Court Residence Hall is located to the west of the project site and is designated Student Housing.

10. Other public agencies whose approval is required:

Santa Ana Regional Water Quality Control Board (Santa Ana RWQCB)

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

In compliance with Assembly Bill (AB) 52, UCI distributed letters notifying each local Native American tribe that requested to be on UCI’s list for the purposes of AB 52 of the opportunity to consult with UCI regarding the proposed project. The letters were distributed by certified mail on November 23, 2022; refer to Section 5.18, Tribal Cultural Resources.

4.2 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”, “Less Than Significant Impact With Project-Level Mitigation Incorporated”, or “Project Impact Adequately Addressed in LRDP EIR”.

<input checked="" type="checkbox"/>	Aesthetics	<input type="checkbox"/>	Agriculture and Forestry	<input checked="" type="checkbox"/>	Air Quality
<input checked="" type="checkbox"/>	Biological Resources	<input checked="" type="checkbox"/>	Cultural Resources	<input type="checkbox"/>	Energy
<input checked="" type="checkbox"/>	Geology and Soils	<input type="checkbox"/>	Greenhouse Gas Emissions	<input type="checkbox"/>	Hazards and Hazardous Materials
<input checked="" type="checkbox"/>	Hydrology and Water Quality	<input type="checkbox"/>	Land Use and Planning	<input type="checkbox"/>	Mineral Resources
<input checked="" type="checkbox"/>	Noise	<input type="checkbox"/>	Population and Housing	<input type="checkbox"/>	Public Services
<input type="checkbox"/>	Recreation	<input type="checkbox"/>	Transportation	<input checked="" type="checkbox"/>	Tribal Cultural Resources
<input type="checkbox"/>	Utilities and Service Systems	<input type="checkbox"/>	Wildfire	<input checked="" type="checkbox"/>	Mandatory Findings of Significance

4.3 EVALUATION OF ENVIRONMENTAL IMPACTS

This section analyzes the potential environmental impacts associated with the proposed project. The issue areas evaluated in this Initial Study include:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire



- Hydrology and Water Quality
- Land Use and Planning
- Mandatory Findings of Significance

The environmental analysis in this section is patterned after the Initial Study Checklist recommended by the CEQA Guidelines Appendix G and used by the UCI in its environmental review process. For the preliminary environmental assessment undertaken as part of this Initial Study's preparation, a determination that there is a potential for significant effects indicates the need to more fully analyze the development's impacts and to identify mitigation.

For the evaluation of potential impacts, the questions in the Initial Study Checklist are stated and an answer is provided according to the analysis undertaken as part of the Initial Study. The analysis considers the long-term, direct, indirect, and cumulative impacts of the development. To each question, there are four possible responses:

- Potentially Significant Impact. The project would have impacts which are considered potentially significant, if there is substantial evidence that the project's effect may be significant. If there are one or more potentially significant impacts, an Environmental Impact Report (EIR) will be prepared.
- Project Impact Adequately Addressed in LRDP EIR. The potential impacts of the proposed project were adequately addressed in the LRDP EIR and mitigation measures identified in the LRDP EIR would mitigate any impacts of the proposed project to the extent feasible. All applicable LRDP EIR mitigation measures are incorporated into the project as proposed. The impact analysis in this document summarizes and cross-references the relevant analysis in the LRDP EIR.
- Less Than Significant With Project-Level Mitigation Incorporated. The incorporation of project-specific mitigation measures (i.e., mitigation measures not included in the LRDP EIR) would reduce an effect from potentially significant to less than significant levels. All project-level mitigation measures are described, including a brief explanation of how the measures reduce the effect to a less than significant level.
- Less Than Significant Impact. The project would not result in any significant effects. The effects may or may not have been discussed in the LRDP EIR. The project impact is less than significant without the incorporation of LRDP EIR or project-level mitigation.
- No Impact. The project would not result in any impact in the category or the category does not apply. Information is provided to show that the impact does not apply to projects like the one involved (e.g., the project falls outside of a fault rupture zone). A conclusion of no impact may be based on project-specific factors as well as general standards (e.g., the project would not expose sensitive receptors to pollutants, based on a project specific screening analysis).



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5.0 ENVIRONMENTAL ANALYSIS

5.1 AESTHETICS

<i>Except as provided in Public Resources Code Section 21099, would the project:</i>	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant Impact With Project-Level Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?				✓	
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?					✓
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 and 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?		✓			

a) Have a substantial adverse effect on a scenic vista?

Less Than Significant Impact. Scenic views or vistas are generally defined as panoramic public views to various natural features, including large water bodies, striking or unusual natural terrain, or unique urban or historic features. Public access to these views may be from park lands, privately and publicly owned sites, and public rights-of-way.

According to the LRDP EIR, implementation of residential and mixed-use projects along the southern edge of the campus under the 2007 LRDP would substantially degrade the existing visual character and quality of the South Campus as viewed from Bonita Canyon Drive. LRDP EIR Mitigation Measure Aes-1A, which would require a review of design elements by the UCI Design Review Team for visual compatibility for projects planned on the South Campus which would be visible from Bonita Canyon Drive, would reduce any significant impacts. The LRDP EIR concluded that impacts for projects within the South Campus would be reduced to less than significant levels with mitigation incorporated. It should be noted that the project site would not be visible from Bonita Canyon Drive due to distance, topography, and intervening structures.

The LRDP EIR concluded impacts would be less than significant for the Academic Core, where the project site is located. The Academic Core is visible along Campus Drive, with off-campus adjacent land uses including residential and commercial land uses. Views from these land uses looking south towards the campus consist of academic buildings, student housing, and parking. This viewshed is completely developed with compatible land uses and implementation of the 2007 LRDP would not result in a significant impact to the visual quality of the area. Therefore, the LRDP EIR concluded that impacts for projects within the Academic Core, including the project site, would be less than significant.



Land use planning for UCI is established by the 2007 LRDP. The University is constitutionally exempt from local land use laws and regulations under Article IX, Section 9 of the California Constitution, which includes exemption from all city and county general plans, as well as community plans and zoning regulations. However, UCI has and shall continue to work cooperatively with adjacent local communities to pursue cooperative planning, land use compatibility and consistency with local plans and policies, whenever feasible; therefore, the following analysis of the City's General Plan Land Use Element regarding scenic vistas is provided for informational purposes.

The Land Use Element of the City's General Plan does not designate official scenic resources or scenic vistas within Irvine. However, General Plan Figure A-4, *Scenic Highways*, identifies Scenic Corridors within the City that highlight urban character, rural or natural character, or a major view. According to the General Plan, University Drive is considered a Scenic Corridor with rural or natural character due to its proximity to the San Joaquin Freshwater Marsh Reserve (SJFMR).¹ The project site is located southwest of the intersection of Campus Drive and University Drive; therefore, project activities would not obscure views of the SJFMR, which is situated to the north of the intersection. Although construction activities may cause visual obstructions due to the presence of construction equipment and materials looking south towards the project site from University Drive, any views of project construction would be temporary in nature and buffered by the adjacent Mesa Court Field and the mature along the northern perimeter of the project site.

Development of the proposed project would replace an existing surface parking lot and temporary building with the proposed student housing building and associated ornamental landscaping. The new housing development would consist of one multi-story building up to five stories in height and building design and architecture would complement the adjacent three-story Mesa Court Classics and the nearby Mesa Court Towers. As discussed above, the viewshed of the Academic Core consists of academic buildings, student housing, and parking, and is completely developed with compatible land uses. As the proposed project would serve as an expansion to the existing Mesa Court Residence Hall, it would be visually compatible with the surrounding land uses. Therefore, the project would not have a substantial adverse effect on a scenic vista, and impacts would be less than significant.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

b) *Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?*

No Impact. The Initial Study for the 2007 LRDP indicated that development on the UCI campus would not substantially damage scenic resources such as trees, rock outcroppings, and historic buildings within a state scenic highway; therefore, it is considered not to be significant and additional analysis was not required in the LRDP EIR.

There are no eligible or State-designated scenic highways in the vicinity of the project site.² No impact would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

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*

¹ City of Irvine, *General Plan Land Use Element*, <https://alfresco.cityofirvine.org/alfresco/guestDownload/direct?path=/Company%20Home/Shared/CD/Planning%20and%20Development/General%20Plan/02.%20Land%20Use%20Element%20-%20Aug%202015.pdf>, 2009.

² California Department of Transportation, *State Scenic Highway Program – Scenic Highway System Lists*, <https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways>, accessed November 29, 2022.



vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less Than Significant Impact. As discussed in Response 5.1(a), according to the LRDP EIR, implementation of residential and mixed-use projects along the southern edge of the campus under the 2007 LRDP would substantially degrade the existing visual character and quality of the South Campus as viewed from Bonita Canyon Drive. The LRDP EIR concluded that impacts for projects within the South Campus would be reduced to less than significant levels with mitigation incorporated, and impacts for projects within the Academic Core (which encompasses the project site) would be less than significant.

The project site is currently a fully paved parking lot occupied by a temporary trailer. The project would replace the existing parking lot with a new student housing development that would serve as an expansion to the existing Mesa Court Residence Hall, which would consist of one multi-story building up to five stories in height. Surrounding land uses include a mixture of transportation, institutional, residential, recreational, and open space uses.

CONSTRUCTION

Construction activities are anticipated to occur in one phase for approximately 24 months. During this time, short-term construction activities, construction equipment, and truck traffic would be visible to local roadway travelers along University Drive and Campus Drive. However, views of project construction from University Drive would be buffered by the adjacent Mesa Court Field and the line of trees between the Mesa Court Field and the project site. Views of project construction from Campus Drive would be buffered by the line of trees between the roadway and the project site. Additionally, construction-related visual impacts are considered to be temporary and would cease upon completion of construction. Therefore, impacts related to construction in this regard would be less than significant.

OPERATIONS

Development of the proposed project would replace an existing surface parking lot and temporary building with the proposed student housing building and associated ornamental landscaping. The building design and architecture of the proposed project would complement the adjacent three-story Mesa Court Classics and the nearby Mesa Court Towers. The project would comply with the UCI Campus Standards and Design Criteria and UCI Physical Design Framework, which would strengthen the project's visual relationship to the surrounding space. As discussed in Response 5.1(a), the viewshed of the Academic Core consists of academic buildings, student housing, and parking, and is developed with compatible land uses. As the proposed project would serve as an expansion to the existing Mesa Court Residence Hall, it would be visually compatible with the surrounding land uses.

As discussed in Response 5.1(a), the University is constitutionally exempt from local land use laws and regulations, including all city and county general plans, as well as community plans and zoning regulations. However, UCI has and continues to work cooperatively with adjacent local communities to pursue cooperative planning, land use compatibility, and consistency with local plans and policies, whenever feasible. Based on the *Amended Land Use Map for the 2007 LRDP*, the project site is designated Student Housing. Thus, the project would not conflict with applicable zoning and other regulations governing scenic quality. Impacts related to operation would be less than significant in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Project Impact Adequately Addressed in LRDP EIR. There are two primary sources of light: light emanating from building interiors that pass through windows and light from exterior sources, such as street lighting, parking lot lighting,



building illumination, security lighting, and landscape lighting. Light introduction can be a nuisance to adjacent uses and diminish the view of the clear night sky.

According to the LRDP EIR, additional lighting from new development in the North and South Campuses as a result of implementation of the 2007 LRDP could significantly impact sensitive biological resources in the SJFMR and residential areas along Bonita Canyon Drive. New development throughout the campus could produce additional buildings which would increase glare impacts to both on- and off-campus viewers and create locations with an increase in light impacts resulting from additional vehicles. LRDP EIR Mitigation Measure Aes-2A, which would require nonreflective exteriors and glass, and LRDP EIR Mitigation Measure Aes-2B, which would require exterior lighting direction and shielding of outdoor lighting and vehicle headlights, would reduce lighting impacts to a level below significance. The LRDP EIR concluded that impacts related to light and glare would be reduced to less than significant levels with mitigation incorporated.

CONSTRUCTION

Project construction could involve temporary light and glare impacts as a result of construction equipment and materials. However, based on the project's limited construction duration and scope of activities, these sources of light and glare would not be substantial. Although the project would not be subject to City construction operation standards, the project would be consistent with the City of Irvine Municipal Code as well as LRDP EIR Mitigation Measure Noi-2A, which requires project construction activities occurring Monday through Friday to be limited to the hours of 7:00 a.m. to 7:00 p.m., except during summer, winter, or spring break at which construction may occur at the times approved by UCI; refer to [Section 5.13, Noise](#). Construction noise occurring on weekends that can be heard from off-campus land uses and on-campus residential housing are limited to the hours of 9:00 a.m. to 6:00 p.m. on Saturdays, with no construction occurring on Sundays or holidays. However, as determined by UCI, if on-campus residential housing is unoccupied (during summer, winter, or spring break, for example), or would otherwise be unaffected by construction noise, construction may occur at any time. With the implementation of LRDP EIR Mitigation Measure Noi-2A, construction-related impacts concerning light and glare would be less than significant.

OPERATIONS

The project site is developed with a parking lot and trailer, which provides existing ambient lighting such as pole lights and trailer lights. The proposed project would include additional site lighting to provide safe levels of illumination for students and staff, such as pedestrian or vehicular scale lights, LED lights, and landscape lights. However, as the project site is situated within the Mesa Court Residence Hall, implementation of the project would not substantially increase ambient lighting levels. The site lighting would be designed to integrate into the existing Mesa Housing lighting, and exterior lighting would conform to the campus exterior lighting policy. Lighting design would also follow CALGreen's Bird-Friendly Design, which regulates outdoor night lighting to promote safety for wildlife, due to the project site's proximity to the SJFMR. In addition, a lighting plan would be prepared during the design phase, as required by LRDP EIR Mitigation Measure Aes-2B, which would include several design features to reduce impacts from project light sources, such as standardized cutoff lighting fixtures and shielding to minimize light pollution. Furthermore, all building surfaces would be designed in accordance with LRDP EIR Mitigation Measure Aes-2A, to reduce any sources of glare for passing motorists and pedestrians. Therefore, with implementation of LRDP EIR Mitigation Measures Aes-2A and Aes-2B and project design features, operational impacts due to the addition of light and glare would be less than significant. As such, the proposed project's impacts in this regard would be considered adequately addressed in LRDP EIR.

LRDP EIR Mitigation Measures:

LRDP EIR Aes-2A Prior to project design approval for future projects that implement the 2007 LRDP, UCI shall ensure that the projects include design features to minimize glare impacts. These design features shall include use of non-reflective exterior surfaces and low-reflectance glass (for example, double or triple glazing glass, high technology glass, low-E glass, or equivalent materials with low reflectivity) on all project surfaces that could produce glare.



LRDP EIR Aes-2B Prior to approval of construction documents for future projects that implement the 2007 LRDP, UCI shall approve an exterior lighting plan for each project. In accordance with UCI's Campus Standards and Design Criteria for outdoor lighting, the plan shall include, but not be limited to, the following design features:

- i. Full-cutoff lighting fixtures to direct lighting to the specific location intended for illumination (for example, roads, walkways, or recreation fields) and to minimize stray light spillover into adjacent residential areas, sensitive biological habitat, and other light sensitive receptors;
- ii. Appropriate intensity of lighting to provide campus safety and security while minimizing light pollution and energy consumption; and
- iii. Shielding of direct lighting within parking areas, parking structures, or roadways away from adjacent residential areas, sensitive biological habitat, and other light-sensitive receptors through site configuration, grading, lighting design, or barriers such as earthen berms, walls, or landscaping.

Project-Level Mitigation Measures: No project-level mitigation measures are required.



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5.2 AGRICULTURE AND FORESTRY RESOURCES

<p><i>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 Department 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:</i></p>	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant Impact With Project-Level Mitigation Incorporated	Less Than Significant Impact	No Impact
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?					✓
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?					✓
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?					✓

- 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?**

No Impact. According to the LRDP EIR, implementation of the 2007 LRDP did not have the potential to result in significant impacts related to Agricultural Resources. According to the California Department of Conservation Farmland Mapping and Monitoring Program, the UCI campus is classified as a mix of "Other Land" and "Urban and Built-up Land." The "Other Lands" classification is used for lands which do not fall into any other category and the "Urban and Built-Up Land" classification is used for land which is occupied by structures with a building density of at least one unit



to 1.5 acres, or approximately six structures to a 10-acre parcel. Common examples include residential, commercial, industrial, and institutional facilities. The LRDP EIR concluded that no impacts to agricultural resources would occur.

The project site is designated as "Urban and Built-up Land." There is no land designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance within the project site or vicinity.¹ Therefore, the project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. No impact would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. According to the LRDP EIR, the University of California is constitutionally exempt from local zoning and land use plan/element requirements, and no portion of the campus is under a Williamson Act contract. Due to the specific tax-exempt status of the University of California, land owned by the University of California is not subject to Williamson Act land use/tax contracts. Accordingly, development of the 2007 LRDP would not result in a conflict with existing zoning or with Williamson Act contracts. The LRDP EIR concluded that no impact would occur.

The proposed project would not conflict with existing zoning for agricultural use or a Williamson Act contract. Based on the *Amended Land Use Map for the 2007 LRDP*, the project site is designated Student Housing. In addition, Orange County does not offer Williamson Act contracts.² Last, the project site does not include, nor is in the vicinity of, agricultural lands. Therefore, no impact would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

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))?

No Impact. This threshold was added in a subsequent CEQA Guidelines update. As such, this threshold was not included in the LRDP EIR.

Based on the *Amended Land Use Map for the 2007 LRDP*, the project site is designated Student Housing. The project site and vicinity are not used for forest land, timberland, or timberland production. Further, project implementation would not result in the rezoning of forest land, timberland, or timberland zoned timberland production. No impact would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

¹ California Department of Conservation, *California Important Farmland Finder*, <https://maps.conservation.ca.gov/DLRP/CIFF/>, accessed November 17, 2022.

² California Department of Conservation, *The Williamson Act Status Report*, https://www.conservation.ca.gov/dlrp/wa/Documents/stats_reports/2022%20WA%20Status%20Report.pdf, May 2022.



d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. This threshold was added in a subsequent CEQA Guidelines update. As such, this threshold was not included in the LRDP EIR.

As discussed in Response 5.2(c), the project site is designated as Student Housing and the project site and surrounding vicinity are not used for forest land. No impact would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

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?

No Impact. According to the LRDP EIR, implementation of the 2007 LRDP would not convert agricultural lands to non-agricultural uses. The LRDP EIR concluded there would be no impact.

As discussed in Responses 5.2(a) through 5.2(d), there is no land designated as farmland or forest land within the project site and vicinity, and the project site is designated as Student Housing. Therefore, the proposed project would not involve other changes in the existing environment which would result in conversion of farmland, to non-agricultural use or conversion of forest land to non-forest use. No impacts would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.



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5.3 AIR QUALITY

<i>Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:</i>	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant With Project-Level Mitigation Incorporated	Less Than Significant Impact	No Impact
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 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?				✓	

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact. The LRDP EIR found less than significant impacts related to consistency with an applicable air quality plan.

The project site is located within the South Coast Air Basin (Basin), which is governed by the South Coast Air Quality Management District (SCAQMD). On December 2, 2022, the SCAQMD Governing Board adopted the 2022 Air Quality Management Plan (2022 AQMP). The 2022 AQMP incorporates the latest scientific and technical information and planning assumptions, including the latest applicable growth assumptions, updated emission inventory methodologies for various source categories. Additionally, the 2022 AQMP utilized information and data from the Southern California Associations of Governments (SCAG) and its 2020-2045 *Regional Transportation Plan/Sustainable Communities Strategy* (2020-2045 RTP/SCS). The SCAQMD considers projects that are consistent with the AQMP, which is intended to bring the Basin into attainment for all criteria pollutants, to also have less than significant cumulative impacts.

Criteria for determining consistency with an AQMP are defined by the following indicators:

CRITERION 1:

With respect to the first criterion, SCAQMD methodologies require that an air quality analysis for a project include forecasts of project emissions in relation to contributing to air quality violations and delay of attainment.

a) Would the project result in an increase in the frequency or severity of existing air quality violations?

Since the consistency criteria pertains to pollutant concentrations, rather than to total regional emissions, an analysis of the project’s pollutant emissions relative to localized pollutant concentrations is used as the basis for evaluating project consistency. As discussed in Response 5.3(c), localized concentrations of carbon monoxide (CO), nitrogen oxides (NO_x), particulate matter less than 10 microns in diameter (PM₁₀), and particulate matter less than 2.5 microns in diameter (PM_{2.5}) would be less than significant during project construction and operations. Therefore, the proposed project would not result in an increase in the frequency or severity of existing air quality violations.



b) *Would the project cause or contribute to new air quality violations?*

As discussed in Response 5.3(b), the proposed project would result in emissions that are below the SCAQMD thresholds. Therefore, the project would not have the potential to cause or affect a violation of the ambient air quality standards.

c) *Would the project delay timely attainment of air quality standards or the interim emissions reductions specified in the AQMP?*

The proposed project would result in less than significant impacts with regard to localized concentrations during project construction and operations; refer to Responses 5.3(b) and 5.3(c). As such, the project would not delay the timely attainment of air quality standards or 2022 AQMP emissions reductions.

CRITERION 2:

With respect to the second criterion for determining consistency with SCAQMD and SCAG air quality policies, it is important to recognize that air quality planning within the Basin focuses on attainment of ambient air quality standards at the earliest feasible date. Projections for achieving air quality goals are based on assumptions regarding population, housing, and growth trends. Thus, the SCAQMD's second criterion for determining project consistency focuses on whether or not the proposed project exceeds the assumptions utilized in preparing the forecasts presented in the 2022 AQMP. Determining whether or not a project exceeds the assumptions reflected in the 2022 AQMP involves the evaluation of the three criteria outlined below. The following discussion provides an analysis of each of these criteria.

a) *Would the project be consistent with the population, housing, and employment growth projections utilized in the preparation of the AQMP?*

A project is consistent with the 2022 AQMP in part if it is consistent with the population, housing, and employment assumptions that were used in the development of the 2022 AQMP. In the case of the 2022 AQMP, three sources of data form the basis for the projections of air pollutant emissions: general plans, SCAG's regional growth forecast, and SCAG's 2020-2045 RTP/SCS. The 2020-2045 RTP/SCS also provides socioeconomic forecast projections of regional population growth.

Based on the City of Irvine General Plan (General Plan), the project site is designated Educational Facilities and is under the jurisdiction of UCI. Based on the 2007 LRDP, the project site is designated Student Housing. The project proposes a new student housing development to house up to 450 beds. As such, the project would be consistent with the site's 2007 LRDP designation as well as the designation identified by the General Plan.

As discussed in [Section 5.14, *Population and Housing*](#), the proposed (up to) 450 beds within the new housing development would be provided for first-year students as envisioned within the 2007 LRDP; it is assumed that up to 450 students would be chosen from the on-campus student housing waitlist. As such, the new housing development would not generate population growth and instead serve the existing student population. The proposed project would not increase student enrollment beyond what was planned for in the 2007 LRDP. Given that no population increase would be generated by the project, the proposed project would be consistent with the types, intensity, and patterns of land use envisioned for the site in the 2020-2045 RTP/SCS. Additionally, as the SCAQMD has incorporated similar population projections into the 2022 AQMP, it can be concluded that the proposed project would be consistent with the population projections included in the 2022 AQMP. It is also noted that the project's construction and operational air emissions would not exceed the SCAQMD regional thresholds, and localized emissions during construction would also be below SCAQMD Localized Significance Thresholds (LSTs); refer to Responses 5.3(b) and 5.3(c). The project would also be required to comply with the applicable SCAQMD emission reduction measures such as Rule 403. As such, a less than significant impact would occur with regard to project consistency with the 2022 AQMP.



b) *Would the project implement all feasible air quality mitigation measures?*

The proposed project would result in less than significant air quality impacts. Compliance with all feasible emission reduction rules and measures identified by the SCAQMD would be required as identified in Responses 5.3(b) and 5.3(c). As such, the proposed project meets this 2022 AQMP consistency criterion.

c) *Would the project be consistent with the land use planning strategies set forth in the AQMP?*

Land use planning strategies set forth in the 2022 AQMP are primarily based on the 2020-2045 RTP/SCS. The project is a new housing development that would serve existing undergraduate students. The project site is located on campus, in close proximity to bus stops, and would provide bicycle parking spaces. As a result, the project would provide students the opportunity to use alternative forms of transportation (i.e., walking, bicycling, public transportation) and therefore reduce criteria pollutant emissions. As such, the proposed project meets this AQMP consistency criterion.

In conclusion, the determination of 2022 AQMP consistency is primarily concerned with the long-term influence of a project on air quality in the Basin. The proposed project would not result in a long-term impact on the region's ability to meet federal and State air quality standards. As discussed above, the proposed project's long-term influence would also be consistent with the SCAQMD and SCAG's goals and policies and is, therefore, considered consistent with the 2022 AQMP. Impacts associated with compliance with the 2022 AQMP would be less than significant.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

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?***

Project Impact Adequately Addressed in LRDP EIR. The LRDP EIR anticipated future development within the campus and predicted maximum air quality impacts based on worst-case assumptions. The LRDP EIR determined that worst-case construction scenario and operational emissions from future projects associated with implementation of the 2007 LRDP would exceed SCAQMD significance thresholds for CO, VOCs, NO_x, PM₁₀, and PM_{2.5}. However, individual construction projects may or may not result in significant impacts, depending on the project size and features. The LRDP EIR also determined that operational emissions from future projects would exceed SCAQMD significance thresholds and that emissions would be significant and unavoidable despite the implementation of mitigation. Operational mitigation measures in the LRDP EIR include requiring UCI to continue implementing its alternative transportation program, complying with SCAQMD Rules, and minimizing area source emissions (e.g., cooling and heating systems, landscaping, consumer products, etc.). The LRDP EIR determined that since construction and operational emissions would exceed SCAQMD thresholds, the impacts would also result in a cumulatively considerable air quality impact.

CRITERIA POLLUTANTS

The following discusses the specific criteria pollutants of concern considered as part of this analysis.

Carbon Monoxide (CO). CO is an odorless, colorless toxic gas that is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. In cities, automobile exhaust can cause as much as 95 percent of all CO emissions. CO replaces oxygen in the body's red blood cells. Individuals with a deficient blood supply to the heart, patients with diseases involving heart and blood vessels, fetuses (unborn babies), and patients with chronic hypoxemia (oxygen deficiency) as seen in high altitudes are most susceptible to the adverse effects of CO exposure. People with heart disease are also more susceptible to developing chest pains when exposed to low levels of CO.



Ozone (O₃). O₃ occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. The troposphere extends approximately 10 miles above ground level, where it meets the second layer, the stratosphere. The stratospheric (the "good" O₃ layer) extends upward from about 10 to 30 miles and protects life on Earth from the sun's harmful ultraviolet rays. "Bad" O₃ is a photochemical pollutant, and needs volatile organic compounds (VOCs), NO_x, and sunlight to form; therefore, VOCs and NO_x are O₃ precursors. To reduce O₃ concentrations, it is necessary to control the emissions of these O₃ precursors. Significant O₃ formation generally requires an adequate amount of precursors in the atmosphere and a period of several hours in a stable atmosphere with strong sunlight. High O₃ concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

While O₃ in the upper atmosphere (stratosphere) protects the Earth from harmful ultraviolet radiation, high concentrations of ground-level O₃ (in the troposphere) can adversely affect the human respiratory system and other tissues. O₃ is a strong irritant that can constrict the airways, forcing the respiratory system to work hard to deliver oxygen. Individuals exercising outdoors, children, and people with pre-existing lung disease such as asthma and chronic pulmonary lung disease are considered to be the most susceptible to the health effects of O₃. Short-term exposure (lasting for a few hours) to O₃ at elevated levels can result in aggravated respiratory diseases such as emphysema, bronchitis and asthma, shortness of breath, increased susceptibility to infections, inflammation of the lung tissue, increased fatigue, as well as chest pain, dry throat, headache, and nausea.

Nitrogen Dioxide (NO₂). NO_x are a family of highly reactive gases that are a primary precursor to the formation of ground-level O₃ and react in the atmosphere to form acid rain. NO₂ (often used interchangeably with NO_x) is a reddish-brown gas that can cause breathing difficulties at elevated levels. Peak readings of NO₂ occur in areas that have a high concentration of combustion sources (e.g., motor vehicle engines, power plants, refineries, and other industrial operations). NO₂ can irritate and damage the lungs and lower resistance to respiratory infections such as influenza. The health effects of short-term exposure are still unclear. However, continued or frequent exposure to NO₂ concentrations that are typically much higher than those normally found in the ambient air may increase acute respiratory illnesses in children and increase the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO₂ may aggravate eyes and mucus membranes and cause pulmonary dysfunction.

Coarse Particulate Matter (PM₁₀). PM₁₀ refers to suspended particulate matter, which is smaller than 10 microns or ten one-millionths of a meter. PM₁₀ arises from sources such as road dust, diesel soot, combustion products, construction operations, and dust storms. PM₁₀ scatters light and significantly reduces visibility. In addition, these particulates penetrate into lungs and can potentially damage the respiratory tract. On June 19, 2003, the California Air Resources Board (CARB) adopted amendments to the Statewide 24-hour particulate matter standards based upon requirements set forth in the Children's Environmental Health Protection Act (Senate Bill 25).

Fine Particulate Matter (PM_{2.5}). Due to recent increased concerns over health impacts related to PM_{2.5}, both State and federal PM_{2.5} standards have been created. Particulate matter impacts primarily affect infants, children, the elderly, and those with pre-existing cardiopulmonary disease. In 1997, the U.S. Environmental Protection Agency (EPA) announced new PM_{2.5} standards. Industry groups challenged the new standard in court and the implementation of the standard was blocked. However, upon appeal by the EPA, the United States Supreme Court reversed this decision and upheld the EPA's new standards. On January 5, 2005, the EPA published a Final Rule in the Federal Register that designates the Basin as a nonattainment area for federal PM_{2.5} standards. On June 20, 2002, CARB adopted amendments for Statewide annual ambient particulate matter air quality standards. These standards were revised/established due to increasing concerns by CARB that previous standards were inadequate, as almost everyone in California is exposed to levels at or above the current State standards during some parts of the year, and the Statewide potential for significant health impacts associated with particulate matter exposure was determined to be large and wide-ranging.

Sulfur Dioxide (SO₂). SO₂ is a colorless, irritating gas with a rotten egg smell; it is formed primarily by the combustion of sulfur-containing fossil fuels. Sulfur dioxide is often used interchangeably with SO_x. Exposure of a few minutes to low levels of SO₂ can result in airway constriction in some asthmatics.



Volatile Organic Compounds (VOC). VOCs are hydrocarbon compounds (any compound containing various combinations of hydrogen and carbon atoms) that exist in the ambient air. VOCs contribute to the formation of smog through atmospheric photochemical reactions and/or may be toxic. Compounds of carbon (also known as organic compounds) have different levels of reactivity; that is, they do not react at the same speed or do not form O₃ to the same extent when exposed to photochemical processes. VOCs often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints. Exceptions to the VOC designation include CO, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate. VOCs are a criteria pollutant since they are a precursor to O₃, which is a criteria pollutant. The SCAQMD uses the terms VOC and ROG (see below) interchangeably.

Reactive Organic Gases (ROG). Similar to VOC, ROG are also precursors in forming O₃ and consist of compounds containing methane, ethane, propane, butane, and longer chain hydrocarbons, which are typically the result of some type of combustion/decomposition process. Smog is formed when ROG and NO_x react in the presence of sunlight. ROG are a criteria pollutant since they are a precursor to O₃, which is a criteria pollutant. The SCAQMD uses the terms ROG and VOC interchangeably.

SHORT-TERM CONSTRUCTION EMISSIONS

The project involves construction activities associated with demolition, grading, building construction, paving, and architectural coating applications. The project would be constructed over a duration of approximately 24 months. Grading activities would include approximately 3,000 cubic yards of soil import. Exhaust emission factors for typical diesel-powered heavy equipment are based on the California Emissions Estimator Model (CalEEMod) version 2020.4.0 program defaults. Variables factored into estimating the total construction emissions include the level of activity, length of construction period, number of pieces and types of equipment in use, site characteristics, weather conditions, number of construction personnel, and the amount of materials to be transported on- or off-site. The analysis of daily construction emissions has been prepared utilizing CalEEMod. Refer to [Appendix A, Air Quality/GHG/Energy Data](#), for the CalEEMod outputs and results. [Table 5.3-1, Construction Related Emissions](#), presents the anticipated daily short-term construction emissions.

**Table 5.3-1
Construction Related Emissions**

Emissions Source	Maximum Daily Emissions (pounds/day) ¹					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Construction Related Emissions²						
Year 1	1.51	14.34	13.83	0.03	0.82	0.67
Year 2	2.76	21.66	28.84	0.05	3.47	1.87
Year 3	14.21	13.89	18.75	0.04	1.84	0.86
Maximum Daily Emissions	14.21	21.66	28.84	0.05	3.47	1.87
SCAQMD Thresholds	75	100	550	150	150	55
Threshold Exceeded?	No	No	No	No	No	No
Notes:						
1. Emissions were calculated using CalEEMod, version 2020.4.0. Winter emissions represent the worst-case scenario.						
2. Modeling assumptions include compliance with SCAQMD Rule 403 which requires the following: properly maintain mobile and other construction equipment; replace ground cover in disturbed areas quickly; water exposed surfaces three times daily; cover stockpiles with tarps; water all haul roads twice daily; and limit speeds on unpaved roads to 15 miles per hour.						
Source: Refer to Appendix A for detailed model input/output data.						



Fugitive Dust Emissions

Construction activities are a source of fugitive dust emissions that may have a substantial, temporary impact on local air quality. In addition, fugitive dust may be a nuisance to those living and working in the project area. Fugitive dust emissions are associated with land clearing, ground excavation, cut-and-fill, and truck travel on unpaved roadways (including demolition as well as construction activities). Fugitive dust emissions vary substantially from day to day, depending on the level of activity, specific operations, and weather conditions. Fugitive dust from grading, excavation and construction is expected to be short-term and would cease upon project completion. Most of this material is inert silicates, rather than the complex organic particulates released from combustion sources, which are more harmful to health.

Dust (larger than 10 microns) generated by such activities usually becomes more of a local nuisance than a serious health problem. Of particular health concern is the amount of PM₁₀ generated as a part of fugitive dust emissions. PM₁₀ poses a serious health hazard alone or in combination with other pollutants. PM_{2.5} is mostly produced by mechanical processes. These include automobile tire wear, industrial processes such as cutting and grinding, and re-suspension of particles from the ground or road surfaces by wind and human activities such as construction or agriculture. PM_{2.5} is mostly derived from combustion sources, such as automobiles, trucks, and other vehicle exhaust, as well as from stationary sources. These particles are either directly emitted or are formed in the atmosphere from the combustion of gases such as NO_x and SO_x combining with ammonia. PM_{2.5} components from material in the Earth's crust, such as dust, are also present, with the amount varying in different locations.

Construction activities would comply with SCAQMD Rule 403, which requires that excessive fugitive dust emissions be controlled by regular watering or other dust prevention measures (LRDP EIR Mitigation Measure Air-2B). Adherence to Rule 403 greatly reduces PM₁₀ and PM_{2.5} concentrations. It should be noted that these reductions were applied in CalEEMod. As indicated in [Table 5.3-1](#), total PM₁₀ and PM_{2.5} emissions would not exceed the SCAQMD thresholds during construction. Therefore, construction-related air quality impacts from fugitive dust emissions would be less than significant.

Construction Equipment and Worker Vehicle Exhaust

Exhaust emissions from construction activities include emissions associated with the transport of machinery and supplies to and from the project site, employee commutes to the project site, emissions produced on-site as the equipment is used, and emissions from trucks transporting materials to/from the site. As presented in [Table 5.3-1](#), construction equipment and worker vehicle exhaust emissions would not exceed the established SCAQMD threshold for all criteria pollutants. Therefore, impacts in this regard would be less than significant.

ROG Emissions

In addition to gaseous and particulate emissions, the application of asphalt and surface coatings creates ROG emissions, which are O₃ precursors. In accordance with the methodology prescribed by the SCAQMD, the ROG emissions associated with paving and architectural coating have been quantified with the CalEEMod model. The project would be required to comply with SCAQMD Rule 1113, which provides specifications on painting practices as well as regulation on the ROG content of paint used during all architectural coating activities for the proposed structures. ROG emissions associated with the proposed project would be less than significant; refer to [Table 5.3-1](#).

NATURALLY OCCURRING ASBESTOS

Asbestos is a term used for several types of naturally occurring fibrous minerals that are a human health hazard when airborne. The most common type of asbestos is chrysotile, but other types such as tremolite and actinolite are also found in California. Asbestos is classified as a known human carcinogen by State, federal, and international agencies and was identified as a toxic air contaminant by the CARB in 1986.



Asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects, and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading for development projects, and at quarry operations. All of these activities may have the effect of releasing potentially harmful asbestos into the air. Natural weathering and erosion processes can act on asbestos bearing rock and make it easier for asbestos fibers to become airborne if such rock is disturbed. According to the Department of Conservation Division of Mines and Geology, *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos Report*, serpentinite and ultramafic rocks are not known to occur within the project area.¹ Thus, there would be no impact in this regard.

LONG-TERM OPERATIONAL EMISSIONS

Long-term air quality impacts would consist of mobile source emissions generated from project-related traffic and emissions from stationary area and energy sources. The project would remove the temporary trailer on-site used for food services. However, as a conservative analysis, emissions generated by the existing temporary trailer were not modeled or deducted from project-generated emissions. Emissions associated with each source are detailed in Table 5.3-2, Project-Generated Operational Emissions, are discussed below.

**Table 5.3-2
Project-Generated Operational Emissions**

Emissions Source	Maximum Daily Emissions (lbs/day) ^{1, 2}					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Project Winter Emissions						
Area Source	3.03	0.09	7.20	<0.01	0.04	0.04
Energy Source	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.30	0.32	2.95	<0.01	0.82	0.22
Total Emissions	3.32	0.40	10.16	<0.01	0.86	0.26
<i>SCAQMD Regional Threshold</i>	55	55	550	150	150	55
Threshold Exceeded?	No	No	No	No	No	No
Project Summer Emissions						
Area Source	3.03	0.09	7.20	<0.01	0.04	0.04
Energy Source	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.30	0.30	2.98	<0.01	0.82	0.22
Total Emissions	3.32	0.38	10.19	<0.01	0.86	0.26
<i>SCAQMD Regional Threshold</i>	55	55	550	150	150	55
Threshold Exceeded?	No	No	No	No	No	No
Notes:						
1. Emissions were calculated using CalEEMod, version 2020.4.0.						
2. The numbers may be slightly off due to rounding.						
Source: Refer to <u>Appendix A</u> , for detailed model input/output data.						

Mobile Source

Mobile sources are emissions from motor vehicles, including tailpipe and evaporative emissions. Depending upon the pollutant being discussed, the potential air quality impact may be of either regional or local concern. For example,

¹ Department of Conservation Division of Mines and Geology, *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos Report*, August 2000, https://ww3.arb.ca.gov/toxics/asbestos/ofr_2000-019.pdf, accessed November 8, 2022.



ROG, NO_x, SO_x, PM₁₀, and PM_{2.5} are all pollutants of regional concern (NO_x and ROG react with sunlight to form O₃ [photochemical smog], and wind currents readily transport SO_x, PM₁₀, and PM_{2.5}). However, CO tends to be a localized pollutant, dispersing rapidly at the source.

The mobile source emissions were calculated using the trip generation data provided in the *Draft UCI Mesa Court Residence Hall Expansion Project Transportation Analysis* (Transportation Analysis) developed by Stantec (dated November 18, 2022). According to the Transportation Analysis, the proposed project would generate approximately 113 average daily trips, including 106 on-campus vehicle trips and 7 off-campus vehicle trips. As shown in Table 5.3-2, emissions generated by vehicle traffic associated with the project would not exceed established SCAQMD thresholds. Impacts from mobile source emissions would be less than significant.

Area Source Emissions

Area source emissions would be generated from consumer products, area architectural coatings, and landscaping equipment associated with the development of the proposed project. The project would use all-electric landscaping equipment throughout the project site, which have been accounted for in Table 5.3-2. As shown in Table 5.3-2, area source emissions during both summer and winter would not exceed established SCAQMD thresholds. Impacts would be less than significant in this regard.

Energy Source Emissions

The primary use of electricity by the project would be for space heating and cooling, water heating, ventilation, lighting, appliances, landscaping equipment, and electronics. According to the project applicant and as detailed in Section 2.4, Project Characteristics, the project would not consume natural gas during operation. As such, no natural gas use has been assumed in the modeling. Criteria air pollutant emissions from electricity use were not quantified since criteria pollutants emissions occur at the site of the power plant, which is off-site. Therefore, energy source emissions would be zero and would not exceed established SCAQMD thresholds; refer to Table 5.3-2. Impacts in this regard would be less than significant.

Total Operational Emissions

As shown in Table 5.3-2, the total operational emissions for both summer and winter would not exceed established SCAQMD thresholds. Therefore, impacts in this regard would be less than significant.

AIR QUALITY HEALTH IMPACTS

Adverse health effects induced by criteria pollutant emissions are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, and the number and character of exposed individual [e.g., age, gender]). In particular, O₃ precursors, VOCs and NO_x, affect air quality on a regional scale. Health effects related to O₃ are therefore the product of emissions generated by numerous sources throughout a region. Existing models have limited sensitivity to small changes in criteria pollutant concentrations, and, as such, translating project-generated criteria pollutants to specific health effects or additional days of nonattainment would produce meaningless results. In other words, the project's less than significant increases in regional air pollution from criteria air pollutants would have nominal or negligible impacts on human health.

Further, as noted in the Brief of Amicus Curiae by the SCAQMD², the SCAQMD acknowledged it would be extremely difficult, if not impossible to quantify health impacts of criteria pollutants for various reasons including modeling limitations as well as where in the atmosphere air pollutants interact and form. As noted in the Brief of Amicus Curiae

² South Coast Air Quality Management District, *Application of the South Coast Air Quality Management District for Leave to File Brief of Amicus Curiae in Support of Neither Party and Brief of Amicus Curiae. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno*, 2014.



by the San Joaquin Valley Air Pollution Control District (SJVAPCD)³, SJVAPCD has acknowledged that currently available modeling tools are not equipped to provide a meaningful analysis of the correlation between an individual development project's air emissions and specific human health impacts.

The SCAQMD acknowledges that health effects quantification from O₃, as an example is correlated with the increases in ambient level of O₃ in the air (concentration) that an individual person breathes. SCAQMD's Brief of Amicus Curiae states that it would take a large amount of additional emissions to cause a modeled increase in ambient O₃ levels over the entire region. The SCAQMD states that based on their own modeling in the SCAQMD's 2012 *Air Quality Management Plan*, a reduction of 432 tons (864,000 pounds) per day of NO_x and a reduction of 187 tons (374,000 pounds) per day of VOCs would reduce O₃ levels at highest monitored site by only nine parts per billion. As such, the SCAQMD concludes that it is not currently possible to accurately quantify O₃-related health impacts caused by NO_x or VOC emissions from relatively small projects (defined as projects with regional scope) due to photochemistry and regional model limitations. Thus, as the project would not exceed SCAQMD thresholds for construction and operational air emissions, the project would have a less than significant impact for air quality health impacts.

CUMULATIVE CONSTRUCTION IMPACTS

With respect to the proposed project's construction-period air quality emissions and cumulative Basin-wide conditions, the SCAQMD has developed strategies to reduce criteria pollutant emissions outlined in the 2022 AQMP pursuant to Clean Air Act mandates. The project would be required to comply with SCAQMD Rule 403 requirements (LRDP EIR Mitigation Measure Air-2B) and implement all feasible SCAQMD rules to reduce construction air emissions to the extent feasible. Rule 403 requires that fugitive dust be controlled with the best available control measures in order to reduce dust so that it does not remain visible in the atmosphere beyond the property line of the proposed project. In addition, the proposed project would comply with adopted 2022 AQMP emissions control measures. Pursuant to SCAQMD rules and mandates, as well as the CEQA requirement that significant impacts be mitigated to the extent feasible, these same requirements (i.e., Rule 403 compliance and compliance with adopted AQMP emissions control measures) would also be imposed on construction projects throughout the Basin, which would include related projects.

As discussed above, the project's short-term construction emissions would be below the SCAQMD thresholds and would result in a less than significant impact. Thus, it can be reasonably inferred that the project's construction emissions would not contribute to a cumulatively considerable air quality impact for nonattainment criteria pollutants in the Basin. Thus, a less than significant impact would occur in this regard.

CUMULATIVE OPERATIONAL IMPACTS

As discussed, the proposed project would not result in long-term air quality impacts as emissions would not exceed SCAQMD-adopted operational thresholds. Additionally, adherence to SCAQMD rules and regulations would alleviate potential impacts related to cumulative conditions on a project-by-project basis. Emission reduction technology, strategies, and plans are constantly being developed. As a result, the proposed project would not contribute a cumulatively considerable net increase of any nonattainment criteria pollutant. Therefore, cumulative operational impacts associated with implementation of the proposed project would be less than significant.

LRDP EIR Mitigation Measures:

LRDP EIR Air-2B Prior to initiating on-site construction for future projects that implement the 2007 LRDP, UCI shall ensure that the project construction contract includes a construction emissions mitigation plan, including measures compliant with SCAQMD Rule 403 (Fugitive Dust), to be implemented

³ San Joaquin Valley Air Pollution Control District, *Application for Leave to File Brief of Amicus Curiae Brief of San Joaquin Valley Unified Air Pollution Control District in Support of Defendant and Respondent, County of Fresno and Real Party In Interest and Respondent, Friant Ranch, L.P. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno*, 2014.



and supervised by the on-site construction supervisor, which shall include, but not be limited to, the following BMPs:

- i. During grading and site preparation activities, exposed soil areas shall be stabilized via frequent watering, non-toxic chemical stabilization, or equivalent measures at a rate to be determined by the on-site construction supervisor.
- ii. During windy days when fugitive dust can be observed leaving the construction site, additional applications of water shall be required at a rate to be determined by the onsite construction supervisor.
- iii. Disturbed areas designated for landscaping shall be prepared as soon as possible after completion of construction activities.
- iv. Areas of the construction site that will remain inactive for three months or longer following clearing, grubbing and/or grading shall receive appropriate BMP treatments (e.g., revegetation, mulching, covering with tarps, etc.) to prevent fugitive dust generation.
- v. All exposed soil or material stockpiles that will not be used within 3 days shall be enclosed, covered, or watered twice daily, or shall be stabilized with approved nontoxic chemical soil binders at a rate to be determined by the on-site construction supervisor.
- vi. Unpaved access roads shall be stabilized via frequent watering, non-toxic chemical stabilization, temporary paving, or equivalent measures at a rate to be determined by the on-site construction supervisor.
- vii. Trucks transporting materials to and from the site shall allow for at least two feet of freeboard (i.e., minimum vertical distance between the top of the load and the top of the trailer). Alternatively, trucks transporting materials shall be covered.
- viii. Speed limit signs at 15 mph or less shall be installed on all unpaved roads within construction sites.
- ix. Where visible soil material is tracked onto adjacent public paved roads, the paved roads shall be swept and debris shall be returned to the construction site or transported off site for disposal.
- x. Wheel washers, dirt knock-off grates/mats, or equivalent measures shall be installed within the construction site where vehicles exit unpaved roads onto paved roads.
- xi. Diesel powered construction equipment shall be maintained in accordance with manufacturer's requirements, and shall be retrofitted with diesel particulate filters where available and practicable.
- xii. Heavy duty diesel trucks and gasoline powered equipment shall be turned off if idling is anticipated to last for more than 5 minutes.
- xiii. Where feasible, the construction contractor shall use alternatively fueled construction equipment, such as electric or natural gas-powered equipment or biofuel.



- xiv. Heavy construction equipment shall use low NOx diesel fuel to the extent that it is readily available at the time of construction.
- xv. To the extent feasible, construction activities shall rely on the campus's existing electricity infrastructure rather than electrical generators powered by internal combustion engines.
- xvi. The construction contractor shall develop a construction traffic management plan that includes the following:
 - Scheduling heavy-duty truck deliveries to avoid peak traffic periods
 - Consolidating truck deliveries
- xvii. Where possible, the construction contractor shall provide a lunch shuttle or on-site lunch service for construction workers.
- xviii. The construction contractor shall, to the extent possible, use pre-coated architectural materials that do not require painting. Water-based or low VOC coatings shall be used that are compliant with SCAQMD Rule 1113. Spray equipment with high transfer efficiency, such as the high volume-low pressure spray method, or manual coatings application shall be used to reduce VOC emissions to the extent possible.
- xix. Project construction plans and specifications will include a requirement to define and implement a work program that would limit the emissions of reactive organic gases (ROG's) during the application of architectural coatings to the extent necessary to keep total daily ROG's for each project to below 75 pounds per day, or the current SCAQMD threshold, throughout that period of construction activity to the extent feasible. The specific program may include any combination of restrictions on the types of paints and coatings, application methods, and the amount of surface area coated as determined by the contractor.
- xx. The construction contractor shall maintain signage along the construction perimeter with the name and telephone number of the individual in charge of implementing the construction emissions mitigation plan, and with the telephone number of the SCAQMD's complaint line. The contractor's representative shall maintain a log of any public complaints and corrective actions taken to resolve complaints.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

c) *Expose sensitive receptors to substantial pollutant concentrations?*

Less Than Significant Impact. The LRDP EIR found that implementation of the 2007 LRDP would not expose sensitive receptors to carcinogenic, non-carcinogenic, and localized CO pollutant concentrations in excess of regulatory standards.

LOCALIZED SIGNIFICANCE THRESHOLDS

Localized Significance Thresholds (LSTs) were developed in response to SCAQMD Governing Boards' Environmental Justice Enhancement Initiative (I-4). The SCAQMD provided the *Final Localized Significance Threshold Methodology* (dated June 2003 [revised 2008]) for guidance. The LST methodology assists lead agencies in analyzing localized air quality impacts. The SCAQMD provides the LST lookup tables for one-, two-, and five-acre projects emitting CO, NO_x, PM_{2.5}, and/or PM₁₀. The LST methodology and associated mass rates are not designed to evaluate localized impacts



from mobile sources traveling over the roadways. The SCAQMD recommends that any project over five acres should perform air quality dispersion modeling to assess impacts to nearby sensitive receptors. The project site is located within Source Receptor Area (SRA) 20, Central Orange County Coastal. LST thresholds are provided for distances to sensitive receptors of 25, 50, 100, 200, and 500 meters. In order to identify impacts to sensitive receptors, the SCAQMD recommends addressing LSTs for construction and operational impacts (stationary sources only).

Sensitive Receptors

Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. The CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The closest sensitive receptors to the project site are existing student housing residents associated with the Mesa Court Residence Hall adjoining the project site to the west.

CONSTRUCTION LST

The SCAQMD's guidance on applying CalEEMod to LSTs specifies the number of acres a particular piece of equipment would likely disturb per day. Based on default information provided by CalEEMod, the project is anticipated to disturb up to 43 acres during the grading phase. The grading phase would take approximately 43 days in total to complete. As such, the project would actively disturb an average of approximately one acre per day (43 acres divided by 43 days). Therefore, the LST thresholds for one acre was utilized for the construction LST analysis. As the nearest sensitive receptors adjoin the project site, the lowest available LST values for 25 meters were used.

Table 5.3-3, *Localized Emissions Significance*, shows the localized construction-related emissions for NO_x, CO, PM₁₀, and PM_{2.5} compared to the LSTs for SRA 20. It is noted that the localized emissions presented in Table 5.3-3 are less than those in Table 5.3-1 because localized emissions include only on-site emissions (e.g., from construction equipment and fugitive dust) and do not include off-site emissions (e.g., from hauling activities). As shown in Table 5.3-3, the project's localized construction emissions would not exceed the LSTs for SRA 20. Therefore, localized significance impacts from project-related construction activities would be less than significant.

**Table 5.3-3
Localized Emissions Significance**

Maximum Emissions	Maximum Daily Emissions (pounds/day)			
	NO _x	CO	PM ₁₀	PM _{2.5}
Year 1 ^{1,4}	14.32	13.46	0.68	0.63
Year 2 ^{2,4}	13.89	14.10	3.20	1.80
Year 3 ^{3,4}	12.02	14.01	0.47	0.45
Maximum Daily Emissions	14.32	14.10	3.20	1.80
<i>Localized Significance Threshold Mass Rate Screening Criteria</i>	92	647	4	3
Thresholds Exceeded?	No	No	No	No
Note: 1. Maximum on-site daily emissions occur during demolition phase for NO _x , CO, PM ₁₀ , and PM _{2.5} in Year 1 (2023). 2. Maximum on-site daily emissions occur during demolition phase for NO _x , during grading phase for PM ₁₀ , and PM _{2.5} , and during building construction phase for CO in Year 2 (2024). 3. Maximum on-site daily emissions occur during building construction phase for NO _x , CO, PM ₁₀ , and PM _{2.5} in Year 3 (2025). 4. Modeling assumptions include compliance with SCAQMD Rule 403 which requires the following: properly maintain mobile and other construction equipment; replace ground cover in disturbed areas quickly; water exposed surfaces three times daily; cover stockpiles with tarps; water all haul roads twice daily; and limit speeds on unpaved roads to 15 miles per hour.				



5. The Localized Significance Threshold Mass Rate Screening Criteria was determined using Appendix C of the SCAQMD *Final Localized Significant Threshold Methodology* guidance document for pollutants NO_x, CO, PM₁₀, and PM_{2.5}. The Localized Significance Threshold was based on the anticipated daily acreage disturbance for construction (approximately one acre; therefore, the one-acre threshold was used) and Source Receptor Area 20.

Source: Refer to [Appendix A](#) for assumptions used in this analysis.

OPERATIONAL LST

According to SCAQMD LST methodology, LSTs would apply to the operational phase of a proposed project if the project includes stationary sources or attracts mobile sources that may spend extended periods queuing and idling at the site (e.g., warehouse or transfer facilities). The proposed project does not include such uses. Thus, due to the lack of such emissions, no long-term LST analysis is needed. Operational LST impacts would be less than significant in this regard.

CARBON MONOXIDE HOTSPOTS

CO emissions are a function of vehicle idling time, meteorological conditions, and traffic flow. Under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels (e.g., adversely affecting residents, school children, hospital patients, and the elderly).

The Basin is designated as an attainment/maintenance area for the federal CO standards and an attainment area under State standards. There has been a decline in CO emissions even though vehicle miles traveled (VMT) on U.S. urban and rural roads have increased; estimated anthropogenic CO emissions have decreased 68 percent between 1990 and 2014. In 2014, mobile sources accounted for 82 percent of the nation's total anthropogenic CO emissions.⁴ Three major control programs have contributed to the reduced per-vehicle CO emissions, including exhaust standards, cleaner burning fuels, and motor vehicle inspection/maintenance programs.

According to the SCAQMD *CEQA Air Quality Handbook*, a potential CO hotspot may occur at any location where the background CO concentration already exceeds 9.0 parts per million (ppm), which is the 8-hour California ambient air quality standard. As previously discussed, the site is located in SRA 20. Communities within SRAs are expected to have similar climatology and ambient air pollutant concentrations. The monitoring station representative of SRA 20 is the Mission Viejo station, which is located approximately 9.7 miles southeast of the site. The maximum CO concentration at Mission Viejo station was measured at 1.009 ppm in 2021.⁵ Given that the background CO concentration does not currently exceed 9.0 ppm, a CO hotspot would not occur at the project site. Therefore, CO hotspot impacts would be less than significant in this regard.

AIR QUALITY HEALTH IMPACTS

As evaluated above, the project's air emissions would not exceed the SCAQMD's LST thresholds, and CO hotspots would not occur as a result of the proposed project. Therefore, the project would not exceed the most stringent applicable federal or State ambient air quality standards for emissions of CO, NO_x, PM₁₀, or PM_{2.5}. It should be noted that the ambient air quality standards are developed and represent levels at which the most susceptible persons (children and the elderly) are protected. In other words, the ambient air quality standards are purposefully set in a stringent manner to protect children, elderly, and those with existing respiratory problems. Thus, an air quality health impact would be less than significant in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

⁴ U.S. Environmental Protection Agency, *Carbon Monoxide Emissions*, https://cfpub.epa.gov/roe/indicator_pdf.cfm?i=10, accessed November 8, 2022.

⁵ California Air Resources Board, *AQMIS2: Air Quality Data*, <https://www.arb.ca.gov/aqmis2/aqdselect.php>, accessed November 8, 2022.



Project-Level Mitigation Measures: No project-level mitigation measures are required.

d) ***Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?***

Less Than Significant Impact. The LRDP EIR concluded that the 2007 LRDP would not generate objectionable odors. No mitigation was required.

According to the SCAQMD *CEQA Air Quality Handbook*, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed project does not include any uses identified by the SCAQMD as being associated with odors.

Construction activities associated with the project may generate detectable odors from heavy-duty equipment exhaust and architectural coatings. However, construction-related odors would be short-term in nature and cease upon project completion. In addition, the project would be required to comply with the California Code of Regulations, Title 13, Sections 2449(d)(3) and 2485, which minimizes the idling time of construction equipment either by requiring equipment to be shut off when not in use or limiting idling time to no more than five minutes. Compliance with these existing regulations would further reduce the detectable odors from heavy-duty equipment exhaust. The project would also be required to comply with the SCAQMD Rule 1113, which would minimize odor impacts from ROG emissions during architectural coating. Any odor impacts to existing adjacent land uses would be short-term and negligible. As such, the project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. Impacts would be less than significant in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.



5.4 BIOLOGICAL RESOURCES

<i>Would the project:</i>	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant Impact With Project-Level Mitigation Incorporated	Less Than Significant Impact	No Impact
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?				✓	
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?					✓
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?					✓
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?					✓

- 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?***

Less Than Significant Impact. According to the LRDP EIR, the UCI Natural Communities Conservation Program (NCCP) Reserve Area consists of: (1) the large open space corridor stretching between State Route 73 (SR-73) and East Peltason Drive (also referred to as the “UCI Ecological Reserve”), in the South Campus; (2) the west-facing slopes adjacent to SR-73, in the West Campus; and (3) the closed landfill and a portion of the adjacent San Diego Creek to the south of the closed landfill, in the North Campus. The San Joaquin Freshwater Marsh Reserve (SJFMR) is located east of the North Campus, encompassing approximately 200 acres of the area northeast of the intersection of University Drive and MacArthur Boulevard. It is to be noted that the SJFMR is not part of the UCI NCCP Reserve Area or the subregional NCCP Reserve System.



According to the LRDP EIR, implementation of the 2007 LRDP could result in indirect impacts to existing or potentially occurring candidate, sensitive, or special status plant species within the campus Planning Areas or in adjacent areas within the UCI Natural Communities Conservation Program (NCCP) Reserve Area and the San Joaquin Freshwater Marsh Reserve (SJFMR). However, LRDP EIR Mitigation Measure Bio-1A, which would require implementation of construction and post-construction measures if a biological survey identifies sensitive plants adjacent to construction sites, would reduce any significant impacts. The LRDP EIR concluded that impacts would be reduced to less than significant levels with mitigation incorporated.

The project site is located within a built out, urbanized area of the UCI campus and is currently a fully paved parking lot occupied by a temporary trailer. The project site supports minimal ornamental landscaping present along the northern, eastern, and western perimeters, as well as parking lot trees throughout. In addition, the project site is not located within any portions of the NCCP Reserve Area in the UCI campus. Although the project site is located in the vicinity of the SJFMR which is situated approximately 0.24 miles to the north, it is buffered by the Mesa Court Field, University Drive, a six-lane arterial roadway, and a Class I off-street trail. Project activities would occur within the existing student housing area of the campus. Based on the project site's disturbed condition, lack of native vegetation, and location, project development would not adversely impact candidate, sensitive, or special status species. Thus, impacts would be less than significant in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

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?*

Less Than Significant Impact. Riparian habitats are those occurring along the banks of rivers and streams. Sensitive natural communities are natural communities that are considered rare in the region by regulatory agencies, known to provide habitat for sensitive animal or plant species, or known to be important wildlife corridors.

According to the LRDP EIR, implementation of the 2007 LRDP would result in direct impacts to mule fat scrub and herbaceous wetland, and indirect impacts to a variety of sensitive vegetation communities within dedicated open space areas in the campus Planning Areas or in adjacent areas within the UCI NCCP Reserve Area and the SJFMR. However, the following LRDP EIR mitigation measures would reduce any significant impacts:

- Survey sites (Bio-3A);
- Avoidance and minimization during project design (Bio-3B);
- On-campus and/or off-campus habitat creation, restoration, and/or enhancement (Bio-3C);
- Wetland buffers (Bio-3D); and
- Construction and post-construction measures if a biological survey identifies sensitive habitats adjacent to construction sites (Bio-1A).

Therefore, the LRDP EIR concluded that impacts would be reduced to less than significant levels with mitigation incorporated.

The project site currently encompasses a paved parking lot and temporary trailer. There is no existing riparian habitat or other sensitive natural communities within the project site. As such, construction and operation of the proposed project would not directly impact any riparian habitat or other sensitive natural community. While the proposed project



would not result in direct impacts, the project site is located in proximity to the SJFMR (approximately 0.24 miles to the north of the project site). Construction activities could potentially result in indirect impacts to the SJFMR, such as erosion, pollutants in runoff, and fugitive dust. However, as discussed in Section 5.10, *Hydrology and Water Quality*, the project would be required to obtain a General Construction Permit under the National Pollutant Discharge Elimination System (NPDES) program. The General Construction Permit requires the project Applicant to prepare and implement a stormwater pollution prevention plan, which would specify best management practices to be implemented during construction of the project to prevent erosion, minimize siltation impacts, and protect water quality. Upon compliance with the NPDES requirements, short-term indirect impacts during construction to nearby riparian habitat or other sensitive natural communities would be less than significant.

Operations of the project would involve student housing activities, similar to the existing Mesa Court Residence Hall facility. Such activities are not anticipated to result in indirect impacts to stormwater pollutants or erosion, compared to the existing parking lot facility. As such, long-term direct and indirect impacts to nearby riparian habitat or other sensitive natural communities would be less than significant.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

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?***

No Impact. According to the LRDP EIR, implementation of the 2007 LRDP would result in direct and indirect impacts to federally-protected wetlands and other areas that could be subject to United States Army Corps of Engineers, California Department of Fish and Wildlife, or Regional Water Quality Control Board jurisdiction. However, the following LRDP EIR mitigation measures would reduce any significant impacts:

- Wetland delineation (LRDP EIR Mitigation Measure Bio-4A);
- Avoidance and minimization during project design (LRDP EIR Mitigation Measure Bio-3B);
- On-campus and/or off-campus habitat creation, restoration, and/or enhancement (LRDP EIR Mitigation Measure Bio-3C);
- Wetland buffers (LRDP EIR Mitigation Measure Bio-3D); and
- Construction and post-construction measures if a biological survey identifies sensitive habitats adjacent to construction sites (LRDP EIR Mitigation Measure Bio-1A).

Therefore, the LRDP EIR concluded that impacts would be reduced to less than significant levels with mitigation incorporated.

The existing project site is a fully paved parking lot. Although the SJFMR is classified as a Freshwater Forested/Shrub Wetland habitat,¹ no State or federally protected wetlands are located within the project site boundaries. As such, the project would not involve direct removal, filling, hydrological interruption, or other direct impacts to any wetlands. No impact would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

¹ U.S. Fish and Wildlife Service, *National Wetlands Inventory*, <https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/>, accessed October 25, 2022.



Project-Level Mitigation Measures: No project-level mitigation measures are required.

- 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?***

Project Impact Adequately Addressed in LRDP EIR. According to the LRDP EIR, implementation of the 2007 LRDP would not interfere with wildlife movement corridors or impede movement by native species. The UCI campus has designated open space corridors between the Planning Areas, including the UCI NCCP Reserve Area. These corridors facilitate wildlife movement between the campus and the SJFMR. However, because the campus is surrounded by the SR-73 toll road to the west and mixed use and residential areas to the north, east, and south, there are limited wildlife movement corridors in the vicinity of the campus. Drainage culverts under the SR-73 Toll Road were designed to support some wildlife movement between the Bonita Canyon Wetland areas, San Joaquin Hills, and the UCI NCCP Reserve System. In addition, there is movement of bird species between off-campus habitat areas south and west of SR-73. These corridors would not be impacted by campus development. The LRDP EIR concluded that impacts would be reduced to less than significant levels with mitigation incorporated.

There are no areas within the project site which could function as a wildlife corridor for native and migratory wildlife, as the existing site is a fully paved parking lot located in an urbanized area of the campus. In addition, the project site is located more than a mile from drainage culverts that were placed under the SR-73 Toll Road to support wildlife movement.

However, due to the potential removal of ornamental trees in the parking lot which may provide suitable nesting habitat for birds protected under the Migratory Bird Treaty Act (MBTA), direct impacts to suitable nesting habitat could occur. Additionally, noise and dust generated during construction could indirectly impact nesting birds by causing them to avoid the area during construction. Such impacts due to construction activities occurring during the nesting bird season, generally considered to extend from February 15 through September 15, would be avoided by complying with the MBTA, which protects nesting birds. Since entirely avoiding the nesting bird season is not possible due to the duration of construction associated with the project, compliance with the MBTA would be achieved through the implementation of the LRDP EIR Mitigation Measure Bio-2B. With implementation of LRDP EIR Mitigation Measure Bio-2B, any direct or indirect impacts of construction on nesting birds would be reduced to less than significant. As such, the proposed project's impacts in this regard would be considered adequately addressed in LRDP EIR.

LRDP EIR Mitigation Measures:

LRDP EIR Bio-2B Prior to initiating on-site construction for future projects that implement the 2007 LRDP and that involve land clearing, grading, or similar land development activities adjacent to habitat areas identified as suitable for sensitive wildlife species, UCI shall retain a qualified biologist to conduct a sensitive wildlife survey of the respective areas within 150 feet of the approved limits of disturbance. If sensitive wildlife species are detected from the survey, then UCI shall approve contractor specifications that include measures to reduce indirect construction and post-construction impacts to the identified species, to the maximum extent feasible. These measures shall include, but are not limited to, the following:

- i. ~~A pre-construction meeting shall be held to ensure that construction crews are informed of the sensitive wildlife and habitats in the vicinity of the construction site. Prior to commencement of clearing or grading activities, a biologist (or other qualified person) shall supervise the installation of temporary construction fencing along the approved limits of disturbance to discourage errant intrusions into the identified sensitive wildlife habitats by construction vehicles or personnel. All construction access and circulation shall be limited to designated construction zones. This fencing shall be removed upon completion of construction activities.~~



- ii. If suitable habitat for raptors or protected bird species is present and raptors or protected bird species are observed in the vicinity, the pre-construction surveys for active nests shall be performed within 30 calendar days prior to commencement of clearing or grading activities during the breeding season for raptors and protected bird species (generally February 1 through August 31) at locations where suitable nesting habitat exists within 500 feet of the approved limits of disturbance. Construction activities within 500 feet of active raptor nests (300 feet for protected bird species) shall be monitored by the biologist and modified as directed by the biologist until the biologist determines that the nest is no longer active. Construction activity may encroach into the 500-foot buffer area only at the discretion of the biologist.
- iii. Refer to mitigation measure Noi-2A for noise abatement measures during construction.
- ~~iv. Storm water treatment and erosion control measures or facilities shall be maintained in a manner that avoids the discharge of polluted runoff and erosion impacts to the identified sensitive plants.~~
- v. Refer to mitigation measure Air-2B for dust control measures during construction.
- ~~vi. Night lighting shall be avoided during construction. Any necessary lighting shall be shielded to minimize temporary lighting of the surrounding habitat.~~
- ~~vii. A biological monitor shall be present on-site on at least a weekly basis during rough grading to ensure that the fenced construction limits are not exceeded.~~
- ~~viii. Permanent lighting adjacent to natural habitat areas shall be selectively placed, shielded, and directed to minimize impacts to sensitive wildlife.~~

Project-Level Mitigation Measures: No project-level mitigation measures are required.

e) ***Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?***

No Impact. This threshold was added in a subsequent CEQA Guidelines update. As such, this threshold was not included in the LRDP EIR.

The proposed project would not conflict with applicable federal, State, or local policies protecting biological resources. The University is the only agency with local land use jurisdiction over campus land. The 2007 LRDP identifies areas of Open Space consisting of interconnected parks, athletic fields, recreational facilities, trail systems, open space corridors, and habitat areas within the campus, and lists relevant Key Planning Objectives for the Open Space network. The Key Planning Objectives would not apply to the project, as no portion of the project site is designated as Open Space, but instead as Student Housing. Nonetheless, the project is situated in proximity to these areas. As discussed in Responses 5.4(a) through 5.4(d), the project would not result in significant impacts to biological resources. Therefore, the proposed project would not conflict with local policies protecting biological resources and no impact would occur.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.



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?***

No Impact. The Orange County NCCP and Habitat Conservation Plan for the Central and Coastal Subregion (NCCP/HCP) is intended to protect and manage habitats supporting a broad range of plant and animal populations found within the Central and Coastal Subregion. Additionally, the NCCP/HCP establishes a habitat Reserve System which allows participating members to proceed with projects containing impacts to sensitive plant or animal populations located outside of the Reserve System.

According to the LRDP EIR, UCI is a participating landowner within the Orange County NCCP/HCP. For participating landowners, development activities and uses that are addressed by the Orange County NCCP/HCP are considered fully mitigated under the NCCP Act, the Federal Endangered Species Act, and California Endangered Species Act for impacts to habitats occupied by listed and other species “identified” by the Orange County NCCP/HCP and its associated Implementation Agreement. As discussed in Response 5.4(a), the project site is not located within any portions of the NCCP Reserve Area in the UCI campus, and the SJFMR is not part of the UCI NCCP Reserve Area or the subregional NCCP Reserve System. Based on the project site’s disturbed condition, lack of native vegetation, and location, the project site is not expected to contain special status species or habitat. In addition, as demonstrated in Responses 5.4(b) through 5.4(e), the proposed project would not result in significant impacts to sensitive natural communities, federally protected wetlands, or migratory species with the implementation of LRDP EIR Mitigation Measure Bio-2B. Thus, the proposed project would not conflict with any provisions related to such plans. No impacts would occur.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.



5.5 CULTURAL RESOURCES

<i>Would the project:</i>	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant With Project-Level Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?					✓
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?		✓			
c. Disturb any human remains, including those interred outside of dedicated cemeteries?				✓	

This section is primarily based upon the *Cultural and Paleontological Resources Identification Report for the Mesa Court Residence Hall Expansion Project, City of Irvine, Orange County, California* (Cultural/Paleo Report) prepared by Michael Baker International and dated November 16, 2022; refer to Appendix B, Cultural/Paleontological Resources Assessment.

a) Cause a substantial adverse change in the significance of a historical resource pursuant to in Section 15064.5?

No Impact. The LRDP EIR identified that anticipated and potential development and redevelopment projects under the 2007 LRDP could demolish, relocate, or significantly change historic structures, which could result in changes to the historic significance of the structure. LRDP EIR Mitigation Measures Cul-2A through Cul-2D were identified to provide a progressive mitigation program for avoiding and/or mitigating impacts to historic resources. Implementation of LRDP EIR Mitigation Measures Cul-2A through Cul-2D for all applicable projects under the 2007 LRDP would reduce the significance of impacts to a less than significant level.

As part of the proposed project’s Cultural/Paleo Report, a South Central Coastal Information Center (SCCIC) records search, literature review, historical map and aerial photos review, local historical group consultation, archaeological field survey, and buried site sensitivity analysis were conducted to determine whether the project could result in a significant adverse change to cultural resources in accordance with CEQA. The field survey was conducted on September 25, 2022. The records search of the California Historical Resources Inventory System (CHRIS) was conducted at the SCCIC to identify previously recorded cultural resources and previously conducted cultural resource studies within a 0.5-mile of the project site. The CHRIS search results were provided on October 6, 2022 and included a review of the California Inventory of Historic Resources, California Points of Historical Interest, California Historical Landmarks, Archaeological Determinations of Eligibility, and Built Environment Resource Directory which includes resources evaluated for listing and listed in the National Register of Historical Places (National Register), National Historic Landmarks, California Register of Historical Resources (California Register), California Historical Landmarks, and California Points of Historical Interest in Orange County. Additionally, a local historical group (the Irvine Historical Society) consultation was conducted as part of the Cultural/Paleo Report.

The records search identified 27 previous cultural resource studies conducted within a 0.5-mile radius of the project site. Of these, four studies included portions of the project site, and the entire project site was covered under these four studies. The record search also identified four previously recorded cultural resources (i.e., prehistoric archaeological resources) within a 0.5-mile radius of the project site, none of which were identified within the project site. It should be noted that no response was received the Irvine Historical Society in regard to the proposed project.



Based on results of the SCCIC records search, literature review, historical society consultation, and archaeological field survey, the Cultural/Paleo Report concluded that no historical resources, as defined by CEQA Section 15064.5(a), were identified within the project site. As such, project development would not result in adverse effects to historical resources. No impacts would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Project Impact Adequately Addressed in LRDP EIR. The LRDP EIR concluded that proposed grading or excavation from implementation of the 2007 LRDP could damage or destroy recorded resources that are determined to be significant upon testing, or unrecorded resources that are determined to be significant. Implementation of LRDP EIR Mitigation Measures Cul-1A and Cul-1B would reduce these impacts to a level considered less than significant. Impacts to unrecorded subsurface archaeological resources would be mitigated to less than significant levels with implementation of LRDP EIR Mitigation Measure Cul-1C.

As discussed in Response 4.5(a) and detailed in the Cultural/Paleo Report, four prehistoric archaeological resources were previously identified within a half-mile of the project site, including two prehistoric archaeological sites (P-30-000118 and P-30-000119) that were identified immediately adjacent to the project site. While the surficial expressions of these sites have been reportedly destroyed by grading and road construction, the boundaries of the sites were not accurately mapped according to maps associated with the archaeological site records. As no subsurface testing or evaluation was recorded or identified within the records search, the Cultural/Paleo Report determined that subsurface components of these sites may extend into the project site.

Subsurface site and artifact preservation is dependent on factors including slope, erosion and flood potential, proximity to water, and soil type. In areas where slope gradient is decreased, erosion is less likely, leading to increased soil deposition and a greater chance for buried deposits. Additionally, clay rich soils are more likely to preserve artifacts poorly. Younger soils with a higher potential for preservation, such as soils lacking a B horizon, are more likely to contain archaeological sites and artifacts than older soils containing clay rich horizons. As detailed in the Cultural/Paleo Report, the Corralitos series, which represents approximately 47 percent of the project site, usually formed in recent sandy alluvium on relatively level slopes and lacks a clay rich B horizon. As such, areas of the project site mapped within the Corralitos series have a higher sensitivity for buried archaeological sites. Further, San Diego Creek, located approximately 0.24 mile north of the project site, represented a widespread and important resource prehistorically. As such, its proximity to the project site increases the archaeological sensitivity of the site. Overall, the project site is located in an area known to be highly sensitive for prehistoric resources based on the proximity of previously recorded resources to the project site. As the project proposes to excavate up to eight feet below ground surface, the Cultural/Paleo Report determined that the project carries the potential to impact previously undiscovered subsurface archaeological sites.

As detailed in the Cultural/Paleo Report, potential impacts pertaining to previously undiscovered subsurface archaeological sites would be mitigated to less than significant levels through implementation of LRDP EIR Mitigation Measure Cul-1C. LRDP EIR Mitigation Measure Cul-1C requires projects located in areas of identified archaeological sensitivity to retain a qualified archaeologist (and, if necessary, a culturally affiliated Native American) to monitor any land clearing, grading, or similar land development activities. In the event of an unexpected archaeological discovery during grading, the on-site construction supervisor would redirect work away from the location of the archaeological find, and a qualified archaeologist would oversee the evaluation and recovery of said archaeological resource. If an archaeological discovery is determined to be significant, the archaeologist would prepare and implement a data recovery plan, which would include performing technical analyses, report filing with SCCIC, and providing the recovered material to an appropriate repository for curation in consultation with a culturally-affiliated Native American.



With the implementation of LRDP EIR Mitigation Measure Cul-1C, the project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines, and impacts in this regard would be reduced to less than significant levels. Potential impacts in this regard would be considered adequately addressed in the LRDP EIR.

LRDP EIR Mitigation Measures:

LRDP EIR Cul-1C Prior to land clearing, grading, or similar land development activities for future projects that implement the 2007 LRDP in areas of identified archaeological sensitivity, UCI shall retain a qualified archaeologist (and, if necessary, a culturally-affiliated Native American) to monitor these activities. In the event of an unexpected archeological discovery during grading, the onsite construction supervisor shall be notified and shall redirect work away from the location of the archaeological find. A qualified archaeologist shall oversee the evaluation and recovery of archaeological resources, in accordance with the procedures below, after which the on-site construction supervisor shall be notified and shall direct work to continue in the location of the archaeological find. A record of monitoring activity shall be submitted to UCI each month and at the end of monitoring. If the archaeological discovery is determined to be significant, the archaeologist shall prepare and implement a data recovery plan. The plan shall include, but not be limited to, the following measures:

- i. Perform appropriate technical analyses;
- ii. File any resulting reports with the South Coastal Information Center; and
- iii. Provide the recovered materials to an appropriate repository for curation, in consultation with a culturally-affiliated Native American.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

c) *Disturb any human remains, including those interred outside of dedicated cemeteries?*

Less Than Significant Impact. Due to the level of disturbance in the site vicinity, it is not anticipated that human remains, including those interred outside of formal cemeteries, would be encountered during earth removal or ground-disturbing activities. Nonetheless, if human remains are found, those remains would require proper treatment in accordance with applicable laws. California Resources Health and Safety Code Section 7050.5 through 7055 describe the general provisions for human remains. Specifically, State Health and Safety Code Section 7050.5 requires if any human remains are accidentally discovered during excavation of a site, the County Coroner shall be notified of the find immediately, and no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. As required by State law, if the remains are determined to be Native American, the County Coroner shall notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). Following compliance with the aforementioned regulations, impacts related to the disturbance of human remains are less than significant.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.



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5.6 ENERGY

<i>Would the project:</i>	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant With Project-Level Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?				✓	
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				✓	

Energy thresholds were added in the 2018 CEQA Guidelines Update, which came into effect on December 28, 2018. As such, an Energy section was not specifically included in the LRDP EIR. However, many energy-related issues are discussed in Section 5.0 of the LRDP EIR, which addresses climate change and greenhouse gas emissions.

REGULATORY FRAMEWORK

California Building Energy Efficiency Standards

The 2022 California Building Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6), commonly referred to as “Title 24,” will become effective on January 1, 2023. In general, Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The 2022 Title 24 standards encourage efficient electric heat pumps, establish electric-ready requirements for new homes, expand solar photovoltaic and battery storage standards, strengthen ventilation standards, and more. Buildings whose permit applications are applied for on or after January 1, 2023, must comply with the 2022 Title 24 standards.

California Green Building Standards

The 2022 California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as CALGreen, will go into effect on January 1, 2023. CALGreen is the first-in-the-nation mandatory green buildings standards code. The California Building Standards Commission developed CALGreen in an effort to meet the State’s landmark initiative Assembly Bill (AB) 32 goals, which established a comprehensive program of cost-effective reductions of greenhouse gas (GHG) emissions to 1990 levels by 2020. CALGreen was developed to (1) reduce GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, and healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the environmental directives of the administration. CALGreen requires that new buildings employ water efficiency and conservation, increase building system efficiencies (e.g., lighting, heating/ventilation and air conditioning [HVAC], and plumbing fixtures), divert construction waste from landfills, and incorporate electric vehicles charging infrastructure. There is growing recognition among developers and retailers that sustainable construction is not prohibitively expensive, and that there is a significant cost-savings potential in green building practices and materials.

Senate Bill 100

Senate Bill (SB) 100 (Chapter 312, Statutes of 2018) requires that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt-



hours (kWh) of those products sold to their retail end-use customers achieve 44 percent of retail sales by December 31, 2024; 52 percent by December 31, 2027; 60 percent by December 31, 2030; and 100 percent by December 31, 2045. The bill requires the California Public Utilities Commission (CPUC), California Energy Commission (CEC), State board or the California Air Resources Board's (CARB), and all other State agencies to incorporate the policy into all relevant planning. In addition, SB 100 requires the CPUC, CEC, and CARB to utilize programs authorized under existing statutes to achieve that policy and, as part of a public process, issue a joint report to the Legislature by January 1, 2021, and every four years thereafter, that includes specified information relating to the implementation of SB 100.

California Energy Commission Integrated Energy Policy Report

In 2002, the California State Legislature adopted Senate Bill (SB) 1389, which requires the California Energy Commission (CEC) to develop an Integrated Energy Policy Report (IEPR) every two years. SB 1389 requires the CEC to conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices, and use these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the State's economy, and protect public health and safety.

The CEC adopted the 2021 integrated energy policy report (2021 IEPR) Volume I, Volume II, and Volume IV on February 1, 2022 and Volume III on February 24, 2022.¹ the 2021 IEPR provides information and policy recommendations on advancing a clean, reliable, and affordable energy system for all Californian.² Volume I of the 2021 IEPR addresses actions needed to reduce the GHG emissions related to the buildings in which California live and work, with an emphasis on energy efficiency; Volume II examines actions needed to increase the reliability and resiliency of California's energy system; Volume III looks at the evolving role of gas in California's energy system; and Volume IV reports on California's energy demand outlook, including a forecast to 2035 and long-term energy demand scenarios of 2050. The 2021 IEPR builds on the goals and work in response to AB 758 (Energy: energy audit), SB 350 (Clean Energy and Pollution Reduction Act), AB 3232 (Zero-emissions buildings and sources of heat energy), and the 2019 IEPR to further a comprehensive approach toward decarbonizing buildings in a cost-effective and equitable manner. For the 2021 IEPR, the CEC extends the forecast timeframe to 15 years to coincide with several state goals that are planned for 2035 and improves methodologies to better quantify and predict the likelihood, severity, and duration of future extreme heat events.

University of California Policy on Sustainable Practices

The University of California (UC) Policy on Sustainable Practices (Policy) establishes goals for all the UC campuses, five medical centers, and other University properties in nine areas of sustainable practices, including climate protection. The Policy establishes goals in 12 areas of sustainable practices: green building, clean energy, climate protection, transportation, sustainable operations, zero waste, procurement, foodservice, water, health care, performance assessment, and health and well-being. Consistent with this policy, each UC campus must adopt and implement a Climate Action Plan (CAP) to achieve specific GHG reduction targets for 2020, 2025, and 2045. The Policy was most recently updated in March 2022. UC also tracks and reports annual progress towards the Policy goals via an *Annual Report on Sustainable Practices*, last updated in 2022. As discussed in Section III.C, *Climate Protection*, of the Policy, the current goals for climate protection include:

1. Maintain greenhouse gas (GHG) emissions at or below 1990 levels, pursuant to the California Global Warming Solutions Act of 2006.
2. Achieve climate neutrality for Scope 1 (combustion) and 2 (purchased electricity) emissions by 2025 (UC President's Carbon Neutrality Initiative).

¹ California Energy Commissions, *2021 Integrated Energy Policy Report*, <https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2021-integrated-energy-policy-report>, accessed October 25, 2022.

² California Energy Commissions, *Final 2021 Integrated Energy Policy Report Volume I Building Decarbonization*, February 2022.



3. Achieve climate neutrality for Scope 3 (commuting and University funded air travel) emissions by 2045 or sooner.

Energy Service Unit

Energy Service Unit (ESU) supports the university's diverse asset base and helps to chart a path to carbon neutrality with increased procurement transparency. Program areas include wholesale electric, retail load (e.g., campus energy efficiency and renewable energy), natural gas and biogas procurement and development, management of environmental attributes (e.g., carbon allowances), university legislative and regulatory representation on facility issues, and the purchased utility database.

UC Irvine Climate Action Plan

The UC Irvine (UCI) Climate Action Plan (CAP) provides a road map for the UCI to achieve its institutional climate protection commitments in support of UC sustainability policy, the UC 2025 Carbon Neutrality Initiative, and campus sustainability goals. These commitments include reduction of GHG emissions to 1990 levels by the year 2020 (a reduction of approximately 49 percent from projected emissions), climate neutrality Scope 1 and 2 sources (on-site combustion of fossil fuels and purchased electricity) by 2025, and climate neutrality including Scope 3 sources (UCI commuters and University funded air travel by 2045). The CAP has guided an array of climate protection actions and projects to reduce UCI GHG emissions. The CAP was initially adopted in 2007 and last published in 2016. It is updated annually to reflect current emissions inventory and update mitigation strategies on an online platform (Fovea) and status is reported in the *Annual Report on Sustainable Practices*, last updated in 2022. UC Irvine Long Range Development Plan

The UC Irvine Long Range Development Plan (2007 LRDP), adopted in 2007, is a comprehensive land use plan that guides physical development on the UC Irvine campus through 2025-26. The 2007 LRDP identifies general types of campus development and land uses to support projected expansion of existing academic programs and to enable new academic program initiatives at UCI through the plan horizon year of 2025-26. The infrastructure element indicates the expansion of utility infrastructure required to meet the program needs identified in the 2007 LRDP. Pursuant to the planning principles outlined in the 2007 LRDP, UCI is committed to stewardship of the environment and reducing its dependence on non-renewable energy sources. The following are the key planning objectives for the infrastructure element that are applicable to the project.

- Provide utility infrastructure in cooperation with public utility providers to enable the physical growth of the campus consistent with UCI's strategic academic objectives.
- Adopt efficient, "green" energy system to conserve resources, manage energy costs, and promote environmentally beneficial practices.
- Pursue energy self-sufficiency through cogeneration and other means in order to acquire a reliable supply of energy and to reduce impacts on local utility systems.

METHODOLOGY

CEQA Guidelines Appendix F is an advisory document that assists in determining whether a project will result in the inefficient, wasteful, and unnecessary consumption of energy. The analysis below relies upon Appendix F of the CEQA Guidelines, which includes the following criteria to determine whether this threshold of significance is met:

- Criterion 1: The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance and/or removal. If appropriate, the energy intensiveness of materials may be discussed.



- Criterion 2: The effects of the project on local and regional energy supplies and on requirements for additional capacity.
- Criterion 3: The effects of the project on peak and base period demands for electricity and other forms of energy.
- Criterion 4: The degree to which the project complies with existing energy standards.
- Criterion 5: The effects of the project on energy resources.
- Criterion 6: The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

Quantification of the project's energy usage is presented and addresses Criterion 1. The discussion on construction-related energy use focuses on Criteria 2, 4, and 5. The discussion on operational energy use is divided into transportation energy demand and building energy demand. The transportation energy demand analysis discusses Criteria 2, 3, and 6, and the building energy demand analysis discusses Criteria 2, 3, 4, and 5.

a) *Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?*

Less Than Significant Impact.

PROJECT-RELATED SOURCES OF ENERGY CONSUMPTION

This analysis focuses on two sources of energy that are relevant to the proposed project: electricity and transportation fuel for vehicle trips associated with project construction and operations. It should be noted that the project would not consume natural gas during operation according to the project applicant, therefore no natural gas use was assumed in the modeling. The analysis of operational electricity usage is based on the California Emissions Estimator Model version 2020.4.0 (CalEEMod) modeling results for the project, which quantifies energy use for occupancy. The project would remove the temporary trailer on-site used for food services. However, as a conservative analysis, energy consumptions of the existing temporary trailer were not modeled or deducted from the project's energy consumptions. The project's estimated electricity consumption is based primarily on CalEEMod's default settings for Orange County, and consumption factors provided by Southern California Edison (SCE), the electricity provider for the City and the project site. The results of the CalEEMod modeling are included in Appendix A, Air Quality/GHG/Energy Data. The amount of operational fuel consumption was estimated using the California Air Resources Board's Emissions Factor 2017 (EMFAC2017) computer program which provides projections for typical annual fuel usage in Orange County, and the project's annual vehicle miles traveled (VMT) outputs from CalEEMod. The estimated construction fuel consumption is based on the project's construction equipment list timing/phasing, and hours of duration for construction equipment.

The project's estimated energy consumption is summarized in Table 5.6-1, Energy Consumption. As shown in Table 5.6-1, the project's electricity usage would constitute an approximate 0.0031 percent increase over Orange County's typical annual electricity consumption. The project's construction and operational vehicle fuel consumption would increase Orange County's consumption by 0.2220 percent and 0.0019 percent, respectively.



**Table 5.6-1
Energy Consumption**

Energy Type	Project Annual Energy Consumption ¹	Orange County Annual Energy Consumption ²	Percentage Increase Countywide ²
Electricity Consumption	580 MWh	18,931,839 MWh	0.0031%
Fuel Consumption			
• Construction (Heavy-Duty Diesel Vehicle) Fuel Consumption ³	144,620 gallons	65,152,282 gallons	0.2220%
• Operational Automotive Fuel Consumption ³	22,782 gallons	1,199,092,373 gallons	0.0019%
Notes:			
1. As modeled in CalEEMod version 2020.4.0.			
2. The project's increases in electricity consumption are compared to the total consumption in Orange County in 2021. The project increases in construction and automotive fuel consumption are compared with the projected Countywide fuel consumption in 2023 and 2025, respectively. Orange County electricity consumption data source: California Energy Commission, <i>Electricity Consumption by County</i> , http://www.ecdms.energy.ca.gov/elecbycounty.aspx , accessed October 19, 2022.			
3. Project fuel consumption calculated based on CalEEMod results. Countywide fuel consumption is from the California Air Resources Board EMFAC2017 model.			
Source: Refer to <u>Appendix A, Air Quality/GHG/Energy Data</u> , for assumptions used in this analysis.			

Construction-Related Energy Consumption

During construction, the project would consume energy in two general forms: (1) the fuel energy consumed by construction vehicles and equipment; and (2) bound energy in construction materials, such as asphalt, steel, concrete, pipes, and manufactured or processed materials such as lumber and glass.

Fossil fuels used for construction vehicles and other energy-consuming equipment would be used during grading, paving, building construction, and architectural coatings. Fuel energy consumed during construction would be temporary and would not represent a significant demand on energy resources. In addition, some incidental energy conservation would occur during construction through compliance with State requirements that heavy-diesel equipment not in use for more than five minutes be turned off. Project construction equipment would also be required to comply with latest U.S. Environmental Protection Agency (EPA) and CARB engine emissions standards. These emissions standards require highly efficient combustion systems that maximize fuel efficiency and reduce unnecessary fuel consumption. Due to increasing transportation costs and fuel prices, contractors and owners have a strong financial incentive to avoid wasteful, inefficient, and unnecessary consumption of energy during construction (**Criterion 4**).

Substantial reduction in energy inputs for construction materials can be achieved by selecting green building materials composed of recycled materials that require less energy to produce than non-recycled materials.³ The integration of green building materials can help reduce environmental impacts associated with the extraction, transport, processing, fabrication, installation, reuse, recycling, and disposal of these building industry source material.⁴ The project-related incremental increase in the use of energy bound in construction materials such as asphalt, steel, concrete, pipes and manufactured or processed materials (e.g., lumber and gas) would not substantially increase demand for energy compared to overall local and regional demand for construction materials. As indicated in Table 5.6-1, the project's fuel consumption from construction would be approximately 144,620 gallons, which would increase fuel use in the County by approximately 0.2220 percent. As such, construction would have a nominal effect on the local and regional energy supplies (**Criterion 2**). It is noted that construction fuel use is temporary and would cease upon completion of construction activities. There are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy efficient than comparable construction sites in the region or State (**Criterion 5**).

³ California Department of Resources Recycling and Recovery, *Green Building Materials*, <https://www.calrecycle.ca.gov/greenbuilding/materials#Material>, accessed October 4, 2022.

⁴ Ibid.



Therefore, construction fuel consumption would not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature. As such, a less than significant impact would occur in this regard.

Operational Energy Consumption

Transportation Energy Demand

Pursuant to the Federal Energy Policy and Conservation Act of 1975, the National Highway Traffic and Safety Administration is responsible for establishing additional vehicle standards and for revising existing standards. Compliance with Federal fuel economy standards is not determined for each individual vehicle model. Rather, compliance is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the United States. [Table 5.6-1](#) provides an estimate of the daily fuel consumed by vehicle traveling to and from the project site. Based on the *Draft UCI Mesa Court Residence Hall Expansion Project Transportation Analysis* (Transportation Analysis) prepared by Stantec (dated November 18, 2022), the proposed project would generate approximately 113 average daily trips, including 106 on-campus vehicle trips and 7 off-campus vehicle trips. As indicated in [Table 5.6-1](#), project operational daily trips are estimated to consume approximately 22,782 gallons of fuel per year, which would increase the County's automotive fuel consumption by 0.0019 percent. The project does not propose any unusual features that would result in excessive long-term operational fuel consumption (**Criterion 2**).

The key drivers of transportation-related fuel consumption are commuting distance and many personal choices on when and where to drive for various purposes. Those factors are outside of the scope of the design of the proposed project. The project would serve on-campus undergraduate students who have limited travel needs. Additionally, the project would locate in close proximity to bus stops and would provide bicycle parking spaces, which would promote alternative mode of transportation (**Criterion 4** and **Criterion 6**).

Therefore, fuel consumption associated with vehicle trips generated by the project would not be considered inefficient, wasteful, or unnecessary in comparison to other similar developments in the region. A less than significant impact would occur in this regard.

Building Energy Demand

The CEC developed 2020 to 2035 forecasts for energy consumption and peak demand in support of the 2021 IEPR for each of the major electricity and natural gas planning areas and the State based on the economic and demographic growth projections.⁵ CEC forecasts that the Statewide annual average growth rates of energy demand between 2021 and 2030 would be 1.3 percent to 2.3 percent for electricity and less than 0.1 percent to 0.8 percent increase for natural gas.⁶ As shown in [Table 5.6-1](#), operational energy consumption of the project would represent approximately 0.0030 percent increase in electricity consumption over the current Countywide usage, which would be significantly below CEC's forecasts and the current Countywide usage. Therefore, the project would be consistent with the CEC's energy consumption forecasts. As such, the project would not require additional energy capacity or supplies (**Criterion 2**). Additionally, the proposed project would be a student housing development and the energy consumption would peak in the evening, similar to residential developments. As a result, the project would not result in unique or more intensive peak or base period electricity demand (**Criterion 3**).

The proposed student housing building would be required to comply with current Title 24 Building Energy Efficiency Standards, which provides minimum efficiency standards related to various building features, including appliances, space heating and cooling equipment, building insulation and roofing, and lighting. Implementation of the current Title 24 standards significantly reduces energy usage. The Title 24 Building Energy Efficiency Standards are updated every three years and become more stringent between each update, as such, complying with the latest (2022) Title 24 standards would make the proposed project more energy efficient than existing buildings built under the earlier versions of the Title 24 standards. In addition, the project would exceed Title 24 standards by 20 percent, install high efficiency

⁵ California Energy Commission, *Final 2021 Integrated Energy Policy Report Volume IV California Energy Demand Forecast*, February 2022. Annual average growth rates of electricity demand and natural gas per capita demand are shown in Figure 10 and Figure 14, respectively.

⁶ Ibid.



lighting fixtures, and use energy efficient appliances, all of which have been accounted for in [Table 5.6-1](#). As currently proposed, the project would also seek to achieve a Leadership in Energy and Environmental Design (LEED) Gold certification or better (**Criterion 4**).

Furthermore, the electricity provider, SCE, is subject to California's Renewables Portfolio Standard (RPS). The RPS requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020 to 60 percent of total procurement by 2030. Renewable energy is generally defined as energy that comes from resources which are naturally replenished within a human timescale such as sunlight, wind, tides, waves, and geothermal heat. The increase in reliance of such energy resources further ensures that new development projects will not result in the waste of the finite energy resources (**Criterion 5**).

Therefore, the project would not cause wasteful, inefficient, and unnecessary consumption of building energy during project operation, or preempt future energy development or future energy conservation. A less than significant impact would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

b) Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?

Less than Significant Impact. State and regional plans for renewable energy and energy efficiency include the California Energy Commission's Integrated Energy Policy Report (IEPR), Title 24 standards, and CALGreen standards. The project would exceed the current (2022) Title 24 and CALGreen standards by 20 percent and incorporates all applicable energy efficiency measures. Compliance with the current Title 24 and CALGreen standards would ensure the project's consistency with the IEPR building energy efficiency recommendations, which would ensure project conformance with the State's energy reduction goals. In addition, the project would be in compliance with the University of California Policy on Sustainable Practices, UCI CAP, and the 2007 LRDP; refer to [Table 45.8-2, Project Consistency with the Plans in Section 5.8, Greenhouse Gas Emissions](#). As such, the proposed project would result in less than significant impacts associated with renewable energy or energy efficiency plans.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.



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5.7 GEOLOGY AND SOILS

<i>Would the project:</i>	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant With Project-Level Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:					
1) 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.					✓
2) Strong seismic ground shaking?				✓	
3) Seismic-related ground failure, including liquefaction?				✓	
4) Landslides?					✓
b. Result in substantial soil erosion or the loss of topsoil?		✓			
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?				✓	
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?				✓	
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?					✓
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		✓			

a) ***Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:***

1) ***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.***

No Impact. Southern California is located within a seismically active margin between the North American and Pacific tectonic plates. According to the LRDP EIR, the UCI campus is not located in the immediate vicinity of any known active faults based on the Alquist-Priolo Earthquake Fault Zoning Map. However, ground surface rupture is possible



along the UCI Campus Fault, which is classified as a potentially active fault, as a result of an earthquake or seismic event. Nonetheless, the LRDP EIR concluded that being sited near the UCI Campus Fault is not expected to result in significant impacts to people or structures, since UCI routinely reviews all building plans for compliance with the California Building Code and the UC Seismic Safety Policy, as well as independent review of structural seismic design of both new construction and remodeling projects. In addition, through design review, UCI enforces the Restricted Use Zone (RUZ), a 50-foot setback for occupied buildings on either side of the UCI Campus Fault. Therefore, the LRDP EIR concluded that impacts associated with fault ruptures are considered to be less than significant.

The project site is not located within an Alquist-Priolo earthquake fault zone.¹ Further, based on review of Figure 4.5-1, *Fault Line on UCI Campus*, of the LRDP EIR, the project site located approximately 1,000 feet away from the UCI campus fault as delineated on the LRDP EIR. As such, the project is not located on the UCI Campus fault, and no impacts would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

2) ***Strong seismic ground shaking?***

Less Than Significant Impact. As discussed in LRDP EIR, UCI minimizes potential ground shaking hazards by:

- Reviewing and approving all draft building plans for compliance with the California Building Code, which includes specific structural seismic safety provisions;
- Upgrading or replacing existing buildings not adequately prepared to withstand seismic hazards;
- Complying with the *University of California Seismic Safety Policy*, which requires anchorage for seismic resistance of nonstructural building elements such as furnishings, fixtures, material storage facilities, and utilities that could create a hazard if dislodged during an earthquake; and
- Incorporating seismic related emergency procedures into departmental emergency response plans.

These programs and procedures reduce the hazards from seismic shaking by preparing faculty, staff, and students for emergencies. All of these programs and procedures would continue to be implemented as new facilities are developed on campus under the 2007 LRDP. As such, the LRDP EIR concluded that impacts associated with ground shaking are considered to be less than significant.

The project site would likely experience strong seismic ground shaking during the project's lifetime as expected for the southern California region. Nonetheless, the project would comply with the UCI programs and procedures as discussed above to minimize potential ground shaking hazards. Further, a detailed site-specific geotechnical investigation would be conducted by a licensed Professional Geologist during the project design phase, and any recommendations intended to reduce potential ground shaking hazards within the site-specific geotechnical investigation would be required to be implemented in accordance with the California Building Code. Upon compliance with existing seismic design requirements of the California Building Code and other requirements imposed by UCI, the project would not directly or indirectly cause potential substantial adverse effects with respect to strong seismic ground shaking, and impacts would be less than significant in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

¹ California Geological Survey, *Earthquake Zones of Required Investigation*, <https://maps.conservation.ca.gov/cgs/EQZApp/app/>, accessed October 24, 2022.



Project-Level Mitigation Measures: No project-level mitigation measures are required.

3) Seismic-related ground failure, including liquefaction?

Less Than Significant Impact. Liquefaction is a response to severe groundshaking that can occur in loose soils and near surface ground water. This transformation from solid state to quicksand, as a response to seismically-induced groundshaking, can cause structures supported on the soils to tilt or settle as the supporting capabilities of the soils diminish. Water saturated clay-free sediments generally are expected to have a high susceptibility to liquefaction.

According to the LRDP EIR, the majority of soils on the UCI campus are terraced deposits. Therefore, it is unlikely that these soils would be subject to liquefaction due to the denseness of the material and the depth to groundwater. Furthermore, geotechnical investigations that address the potential for liquefaction, lateral spreading, and other types of ground failure are routinely performed for applicable projects. Compliance with the California Building Code and implementation of recommendations in a site-specific geotechnical investigation would reduce hazards associated with liquefaction. Therefore, the LRDP EIR concluded that impacts associated with liquefaction are considered to be less than significant.

According to the California Geological Survey, at least portions of the project site are located in a liquefaction zone.² The project would be required to comply with UCI programs and procedures as outlined in Response 5.7(a)(2) and minimize potential seismic-related hazards, including liquefaction. Further, a detailed site-specific geotechnical investigation would be conducted by a licensed Professional Geologist during the project design phase, and any recommendations intended to minimize liquefaction concerns, if identified, within the site-specific geotechnical investigation would be implemented in accordance with the California Building Code. Upon mandatory compliance with California Building Code as well as applicable UCI policy, impacts would be less than significant in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

4) Landslides?

No Impact. Earthquake-induced landslides on steep slopes occur in either bedrock or soils and can result in undermining of buildings, severe foundation damage, and collapse. Although earthquake activity does induce some landsliding, most slides occur from the weight of water-saturated soil and rock exceeding the shear strength of the underlying material.

According to the LRDP EIR, the majority of the campus is characterized as gentle sloping to flat terrain with the exception of the South Campus. Further, building designs that comply with the California Building Code and the *University of California Seismic Safety Policy*, which requires an independent review of the structural seismic design to ensure compliance with the California Building Code, would reduce any potential hazards associated with implementation of the 2007 LRDP. As such, the LRDP EIR concluded that impacts associated with landslides are considered to be less than significant.

According to the California Geological Survey, the project site is not located within a State of California Seismic Hazard Zone for earthquake-induced landslides.³ Further, the projects site is not located in an area with steep slopes where potential for seismically-induced landsliding to occur. As such, no impacts would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

² Ibid.

³ Ibid.



Project-Level Mitigation Measures: No project-level mitigation measures are required.

b) *Result in substantial soil erosion or the loss of topsoil?*

Project Impact Adequately Addressed in LRDP EIR. As discussed in the LRDP EIR, all construction activities occurring within the UCI campus would comply with Chapter 29 of the California Building Code, which regulates excavation activities and the construction of foundations and retaining walls, and Chapter 70 of the California Building Code, which regulates grading activities, including drainage and erosion control. UCI would also implement dust control measures consistent with South Coast Air Quality Management District (SCAQMD) regulations, and would comply with the National Pollutant Discharge Elimination System (NPDES) general construction permit requirements for construction activities such as the preparation of an erosion control plan, and implementation of sedimentation control Best Management Practices (BMP) such as silt fences, watering for dust control, straw bale check dams, hydroseeding, and other measures. For all future development occurring under the 2007 LRDP, UCI would implement LRDP EIR Mitigation Measure Hyd-1A which would reduce stormwater runoff velocities to pre-existing conditions. Other LRDP EIR mitigation measures, such as Hyd-1B, Hyd-2A, and Hyd-2B, which protect slopes and channels, such as energy dissipaters, vegetation, and slope/channel stabilizers would be applied where appropriate. With the continued implementation of measures required by law as well as LRDP EIR Mitigation Measures Hyd-1A, Hyd-1B, Hyd-2A, and Hyd-2B, the LRDP EIR concluded that substantial erosion or topsoil loss is unlikely to occur during construction and/or operation associated with implementation of the 2007 LRDP, and the associated impacts would be less than significant.

As discussed in Section 5.10, Hydrology and Water Quality, the project would comply with applicable water quality standards developed by the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Board (RWQCB) for stormwater through required permits, including the General Construction Storm Water Permit, which would control pollutants contained in runoff generated from campus properties. The General Construction Permit requires the project Applicant to prepare and implement a stormwater pollution prevention plan (SWPPP), which would specify best management practices (BMPs) to be implemented during construction of the project to prevent erosion, minimize siltation impacts, and protect water quality. Compliance with the permit would ensure that runoff from the construction activities associated with the project would not violate any water quality standards. In addition, potential impacts related to potential soil erosion or loss of top soil during grading activities would be further reduced with implementation of LRDP EIR Mitigation Measures Hyd-1A, which requires project specific drainage studies and implement recommended site design and flow control features if necessary, and Hyd-2A, which requires the preparation of an erosion control plan during the design phase and implementation of design features to prevent contaminants from entering the stormwater system. Therefore, in compliance with the stormwater permits described above and implementation of LRDP EIR Mitigation Measures Hyd-1A and Hyd-2A, impacts concerning substantial soil erosion and loss of topsoil would be less than significant. As such, the proposed project's impacts in this regard would be considered adequately addressed in LRDP EIR.

LRDP EIR Mitigation Measures: Refer to Section 5.10, Hydrology and Water Quality, for LRDP EIR Mitigation Measures Hyd-1A and Hyd-2A.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

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?*

Less Than Significant Impact. Refer to Responses 5.7(a)(3), 5.7(a)(4), and 5.7(d) for a discussion concerning liquefaction, landslides, and expansive soils, respectively.



COMPRESSIBLE SOILS/LATERAL SPREADING

Lateral spreading is limited displacement ground failure, often associated with liquefaction. Lateral spreading is typically exemplified by the formation of vertical cracks on the surface of liquefied soils, and usually takes place on gently sloping ground or level ground with nearby free surface such as a drainage or stream channel.

As discussed in the LRDP EIR, loose or compressible soils exist in undeveloped areas of the South Campus. According to the LRDP EIR, geotechnical investigations that address the potential for liquefaction, lateral spreading, and other types of ground failure are routinely performed for applicable projects. Mandatory compliance with the California Building Code and implementation of recommendations in a site-specific geotechnical investigation would remove such soils and reduce hazards to people or structures associated with unstable soils to less than significant levels. Therefore, the LRDP EIR concluded that impacts associated with compressible soils are considered to be less than significant, and no mitigation is required.

The project site is currently developed with a surface parking lot and temporary trailer. In order to minimize potential concerns regarding on-site soils, a detailed site-specific geotechnical investigation would be conducted by a licensed Professional Geologist during the project design phase, and any recommendations intended to minimize potential lateral spreading or hazards associated with compressible soils, if identified, within the site-specific geotechnical investigation would be required to be implemented in accordance with the California Building Code. Therefore, less than significant impacts would occur in this regard.

SUBSIDENCE/COLLAPSE

Subsidence is the downward settling of surface materials caused by natural or artificial removal of underlying support. Land subsidence would occur from one or more of several causes including withdrawal of fluids (oil, gas, or water) or the application of water to moisture-deficient unconsolidated deposits. Subsidence is a relatively slow process that may continue for several decades.

As discussed in the LRDP EIR, no areas of subsidence have occurred within the campus. As discussed, geotechnical investigations that address the potential for ground failure are routinely performed for applicable projects. Compliance with the California Building Code and implementation of recommendations in a site-specific geotechnical investigation would reduce hazards associated with subsidence or collapse. Therefore, the LRDP EIR concluded that impacts in this regard are considered to be less than significant.

The project would be required to comply with the California Building Code and remove any unstable soils that may result in potential ground hazards, including subsidence and collapse, prior to construction of the proposed student housing development. A detailed site-specific geotechnical investigation would be conducted by a licensed Professional Geologist during the project design phase, and any recommendations intended to minimize potential subsidence or collapse, if identified, within the site-specific geotechnical investigation would be required to be implemented in accordance with the California Building Code. Therefore, less than significant impacts would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

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?***

Less Than Significant Impact. Expansive soils are those that are high in expansive clays or silts and that swell and shrink with wetting and drying, respectively. This shrinking and swelling can be detrimental to foundations, concrete slabs, flatwork, and pavement. Expansive top soils are prevalent on campus and are generally a dark brown sandy



clay, clayey sand, or lean clay. The top soil located through the UCI campus is highly expansive ranging from 8 to 12 percent swell. The underlying material consists of terrace deposits which is non-expansive to moderately expansive with a swell ranging from 0 to 8 percent.

As discussed in the LRDP EIR, the geographic context for the analysis of impacts of expansive soils is generally site specific. Nevertheless, when considering the impacts in a larger geographic context, the California Building Code includes provisions for construction on expansive soils. Proper fill selection, moisture control, and compaction during construction can prevent these soils from causing significant damage. Expansive soils can be treated by removal (typically the upper three feet below finish grade) and replacement with low expansive soils, lime-treatment, and/or moisture conditioning. It is noted that all development on the UCI campus and in the surrounding jurisdictions is required to undergo analysis of the soil conditions applicable to the development site in question. The analysis would provide recommendations to prepare the site for development to avoid the hazards associated with expansive soils. Typical measures to treat expansive soils involve removal, proper fill selection, and compaction. Because restrictions on development would be applied in the event that expansive soils are located on any development site, the LRDP EIR concluded that continued compliance with the California Building Code and applicable UC policies would ensure that impacts from development on expansive soils would be less than significant.

The project would be required to comply with the California Building Code and remove any unstable soils that may result in potential ground hazards, including those induced by expansive soils, prior to construction of the proposed student housing development. Further, a detailed site-specific geotechnical investigation would be conducted by a licensed Professional Geologist during the project design phase, and any recommendations intended to minimize potential hazards associated with expansive soils, if identified, within the site-specific geotechnical investigation would be required to be implemented in accordance with the California Building Code. Therefore, less than significant impacts would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

e) ***Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?***

No Impact. As discussed in Section 5.19, Utilities and Service Systems, the project proposes to construct a private sewer lateral in the northwest corner of the site to connect to an existing 8-inch sewer main south of the project site. No septic tanks or alternative wastewater systems currently exist, nor would be constructed as part of the project. As such, no impact would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

f) ***Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?***

Project Impact Adequately Addressed in LRDP EIR. As discussed in the LRDP EIR, UCI campus is underlain by various geologic units with varying potentials to contain fossils, with the majority of the campus is rated as High Sensitivity for paleontological resources and the remainder of the campus is rated as Low to Moderate Sensitivity. Therefore, development that occurs from the implementation of the 2007 LRDP that involves earthwork could significantly impact paleontological resources, and LRDP EIR Mitigation Measures Cul-4A through Cul-4C would be required for any future project on the UCI campus involving the excavation of sedimentary rock material other than topsoil. The LRDP EIR concluded that implementation of LRDP EIR Mitigation Measures Cul-4A through Cul-4C would reduce potential significant impacts to paleontological resources to a level that is less than significant.



This analysis is primarily based upon the *Cultural and Paleontological Resources Identification Report for the Mesa Court Residence Hall Expansion Project, City of Irvine, Orange County, California* (Cultural/Paleo Report) prepared by Michael Baker International and dated November 16, 2022; refer to Appendix B, *Cultural/Paleontological Resources Assessment*. As part of the Cultural/Paleo Report, a search of the Natural History Museum of Los Angeles County (NHMLAC) paleontological records and other online and published databases was completed to assess the paleontological sensitivity of the project area. The field survey was conducted on September 25, 2022. The records search of NHMLAC for locality and specimen data within three miles of the project site was conducted on October 9, 2022. The records search did not identify any previously known fossil localities within the project site. However, eight fossil localities bearing invertebrate and vertebrate fossils were identified within three miles of the project site from similar sedimentary deposits as those found on the project site. Additionally, supplemental paleontological records searches of the University of California Museum of Paleontology Locality Search, San Diego Natural History Museum Collection Database, The Paleobiology Database, and the Quaternary Faunal Mapping Project (FAUNMAP) were conducted within five miles of the project site. While results of these records searches did not identify previously identified fossil-bearing localities within the project site, several localities have been reported within five miles of the project site containing several groups of vertebrate and invertebrate fossils.

According to the Cultural/Paleo Report, the NHMLAC records search results indicate that potentially fossil-bearing units are present in the project site, since the same Pleistocene-age deposits outside of the project site have contained fossils. Further, although the Holocene-age deposits within the project site have a low sensitivity, the Pleistocene-age alluvial sediments may underlie these younger sediments at a relatively shallow depth. Therefore, the Cultural/Paleo Report concluded that sediments in the project site are considered to have paleontological sensitivity, increasing with depth. As the project proposes to excavate up to eight feet below ground surface, the Cultural/Paleo Report determined that the project carries the potential to disturb previously undiscovered paleontological resources.

As detailed in the Cultural/Paleo Report, potential impacts in this regard would be mitigated to less than significant levels through implementation of LRDP EIR Mitigation Measures Cul-4A through Cul-4C. LRDP EIR Mitigation Measure Cul-4A requires projects that would excavate sedimentary rock material other than topsoil, to retain a qualified paleontologist to monitor any ground-disturbing activities. In the event fossils are discovered during grading, the on-site construction supervisor would be notified and would redirect work away from the location of the discovery. The recommendations of the paleontologist would be implemented with respect to the evaluation and recovery of fossils, in accordance with LRDP EIR Mitigation Measures Cul-4B and Cul-4C, after which the on-site construction supervisor would be notified and would direct work to continue in the location of the fossil discovery. A record of monitoring activity would be submitted to UCI each month and at the end of monitoring. LRDP EIR Mitigation Measure Cul-4B mandates the implementation of LRDP EIR Mitigation Measure Cul-4C in the event that the uncovered fossils are determined to be significant by a qualified paleontologist, while LRDP Mitigation Measure Cul-4C requires a data recovery plan to be prepared for significant fossils by a qualified paleontologist, which may require the paleontologist to clean, identify, catalogue, and curate all significant fossils collected with an appropriate repository for curation; that specialty studies are completed, as appropriate, for any significant fossil collected; and that curation of fossils are completed in consultation with UCI.

Based on the Cultural/Paleo Report, impacts regarding paleontological resources would be reduced to less than significant levels with implementation of LRDP EIR Mitigation Measures Cul-4A through Cul-4C. As such, potential impacts in this regard have been adequately addressed in the LRDP EIR.

LRDP EIR Mitigation Measures:

LRDP EIR Cul-4A Prior to grading or excavation for future projects that implement the 2007 LRDP and would excavate sedimentary rock material other than topsoil, UCI shall retain a qualified paleontologist to monitor these activities. In the event fossils are discovered during grading, the on-site construction supervisor shall be notified and shall redirect work away from the location of the discovery. The recommendations of the paleontologist shall be implemented with respect to the evaluation and recovery of fossils, in accordance with mitigation measures



Cul-4B and Cul-4C, after which the on-site construction supervisor shall be notified and shall direct work to continue in the location of the fossil discovery. A record of monitoring activity shall be submitted to UCI each month and at the end of monitoring.

LRDP EIR Cul-4B If the fossils are determined to be significant, then mitigation measure Cul-4C shall be implemented.

LRDP EIR Cul-4C For significant fossils as determined by mitigation measure Cul-4B, the paleontologist shall prepare and implement a data recovery plan. The plan shall include, but not be limited to, the following measures:

- i. The paleontologist shall ensure that all significant fossils collected are cleaned, identified, catalogued, and permanently curated with an appropriate institution with a research interest in the materials (which may include UCI);
- ii. The paleontologist shall ensure that specialty studies are completed, as appropriate, for any significant fossil collected; and
- iii. The paleontologist shall ensure that curation of fossils are completed in consultation with UCI. A letter of acceptance from the curation institution shall be submitted to UCI.

Project-Level Mitigation Measures: No project-level mitigation measures are required.



5.8 GREENHOUSE GAS EMISSIONS

<i>Would the project:</i>	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant With Project-Level Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?				✓	
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				✓	

GLOBAL CLIMATE CHANGE

California is a substantial contributor of global greenhouse gases (GHGs), emitting approximately 418.1 million metric tons of carbon dioxide equivalent (MMT CO_2e) per year.¹ Methane (CH_4) is also an important GHG that potentially contributes to global climate change. GHGs are global in their effect, which is to increase the earth's ability to absorb heat in the atmosphere. As primary GHGs have a long lifetime in the atmosphere, accumulate over time, and are generally well-mixed, their impact on the atmosphere is mostly independent of the point of emission. Every nation emits GHGs and as a result makes an incremental cumulative contribution to global climate change; therefore, global cooperation will be required to reduce the rate of GHG emissions enough to slow or stop the human-caused increase in average global temperatures and associated changes in climatic conditions.

The impact of human activities on global climate change is apparent in the observational record. Air trapped by ice has been extracted from core samples taken from polar ice sheets to determine the global atmospheric variation of CO_2 , CH_4 , and nitrous oxide (N_2O) from before the start of industrialization (approximately 1750), to over 650,000 years ago. For that period, it was found that CO_2 concentrations ranged from 180 to 300 parts per million (ppm). For the period from approximately 1750 to the present, global CO_2 concentrations increased from a pre-industrialization period concentration of 280 to 379 ppm in 2005, with the 2005 value far exceeding the upper end of the pre-industrial period range. As of October 2022, the highest monthly average concentration of CO_2 in the atmosphere was recorded at 420 ppm.²

The Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. It concluded that a stabilization of GHGs at 400 to 450 ppm carbon dioxide equivalent (CO_2e)³ concentration is required to keep global mean warming below 2 degrees Celsius ($^\circ\text{C}$), which in turn is assumed to be necessary to avoid dangerous climate change.

REGULATORY FRAMEWORK

Various Statewide and local initiatives to reduce the State's contribution to GHG emissions have raised awareness that, even though the various contributors to and consequences of global climate change are not yet fully understood, global climate change is under way, and there is a real potential for severe adverse environmental, social, and

¹ California Air Resources Board, *California Greenhouse Gas Emissions for 2000 to 2019, Trends of Emissions and Other Indicators*, <https://ww2.arb.ca.gov/ghg-inventory-data>, accessed October 20, 2022.

² Scripps Institution of Oceanography, *Carbon Dioxide Concentration at Mauna Loa Observatory*, <https://scripps.ucsd.edu/programs/keelingcurve/>, accessed October 20, 2022.

³ Carbon Dioxide Equivalent (CO_2e) – A metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential.



economic effects in the long term. Every nation emits GHGs and as a result makes an incremental cumulative contribution to global climate change; therefore, global cooperation is necessary to reduce the rate of GHG emissions enough to slow or stop the human-caused increase in average global temperatures and associated changes in climatic conditions.

Assembly Bill 32 (California Global Warming Solutions Act of 2006). California passed the California Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on Statewide GHG emissions. AB 32 requires that Statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

Executive Order S-3-05. Executive Order S-3-05 set forth a series of target dates by which Statewide emissions of GHGs would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

Senate Bill 32. Signed into law on September 2016, Senate Bill (SB) 32 codifies the 2030 GHG reduction target in Executive Order B-30-15 (40 percent below 1990 levels by 2030). The bill authorizes CARB to adopt an interim GHG emissions level target to be achieved by 2030.

California Building Energy Efficiency Standards (Title 24). The *2022 Building Energy Efficiency Standards for Residential and Nonresidential Buildings* (California Code of Regulations, Title 24, Part 6), commonly referred to as "Title 24," will become effective on January 1, 2023. In general, Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The 2022 Title 24 standards encourage efficient electric heat pumps, establish electric-ready requirements for new homes, expand solar photovoltaic and battery storage standards, strengthen ventilation standards, and more. Buildings whose permit applications are applied for on or after January 1, 2023, must comply with the 2022 Title 24.

CARB Scoping Plan. On December 11, 2008, CARB adopted its *Climate Change Scoping Plan* (Scoping Plan), which functions as a roadmap to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. CARB's Scoping Plan contains the main strategies California will implement to reduce CO₂e emissions by 174 million metric tons (MT), or approximately 30 percent, from the State's projected 2020 emissions level of 596 million MTCO₂e under a business-as-usual (BAU)⁴ scenario. This is a reduction of 42 million MTCO₂e, or almost ten percent, from 2002 to 2004 average emissions, but requires the reductions in the face of population and economic growth through 2020.

In December 2017, CARB approved the *California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target*. This update focuses on implementation of a 40 percent reduction in GHGs by 2030 compared to 1990 levels. To achieve this, the updated Scoping Plan draws on a decade of successful programs that addresses the major sources of climate changing gases in every sector of the economy.

⁴ Based on the Scoping Plan, "Business-as-Usual" (BAU) scenario refers to GHG emissions that would be expected to occur in the absence of existing reductions policies. Note that there is significant controversy as to what BAU means. In determining the GHG 2020 limit, CARB used the above as the "definition." It is broad enough to allow for design features to be counted as reductions.



On December 15, 2022, CARB released the *2022 Scoping Plan for Achieving Carbon Neutrality* (2022 Scoping Plan), which identifies the strategies achieving carbon neutrality by 2045 or earlier. The 2022 Scoping Plan contains the GHG reductions, technology, and clean energy mandated by statutes. The 2022 Scoping Plan was developed to achieve carbon neutrality by 2045 through a substantial reduction in fossil fuel dependence, while at the same time increasing deployment of efficient non-combustion technologies and distribution of clean energy. The plan would also reduce emissions of short-lived climate pollutants (SLCPs) and would include mechanical CO₂ capture and sequestration actions, as well as emissions and sequestration from natural and working lands and nature-based strategies. Under 2022 Scoping Plan, by 2045, California aims to cut GHG emissions by 85 percent below 1990 levels, reduce smog-forming air pollution by 71 percent, reduce the demand for liquid petroleum by 94 percent compared to current usage, improve health and welfare, and create millions of new jobs. This plan also builds upon current and previous environmental justice efforts to integrate environmental justice directly into the plan, to ensure that all communities can reap the benefits of this transformational plan.

Southern California Association of Governments 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy. On September 3, 2020, the Regional Council of Southern California Association of Governments (SCAG) formally adopted the *2020-2045 Regional Transportation Plan/Sustainable Communities Strategy of the Southern California Association of Governments – Connect SoCal* (2020-2045 RTP/SCS). The SCS portion of the 2020-2045 RTP/SCS highlights strategies for the region to reach the regional target of reducing GHGs from autos and light-duty trucks by 8 percent per capita by 2020, and 19 percent by 2035 (compared to 2005 levels). Specially, these strategies are:

- Focus growth near destinations and mobility options;
- Promote diverse housing choices;
- Leverage technology innovations;
- Support implementation of sustainability policies; and
- Promote a green region.

Furthermore, the 2020-2045 RTP/SCS discusses a variety of land use tools to help achieve the state-mandated reductions in GHG emissions through reduced per capita vehicle miles traveled (VMT). Some of these tools include center focused placemaking, focusing on priority growth areas, job centers, transit priority areas, as well as high quality transit areas and green regions.

University of California Policy on Sustainable Practices. The University of California (UC) Policy on Sustainable Practices (Policy) establishes goals for all the UC campuses, five medical centers, and other University properties in nine areas of sustainable practices, including climate protection. The Policy establishes goals in 12 areas of sustainable practices: green building, clean energy, climate protection, transportation, sustainable operations, zero waste, procurement, foodservice, water, health care, performance assessment, and health and well-being. Consistent with this policy, each UC campus must adopt and implement a Climate Action Plan (CAP) to achieve specific GHG reduction targets for 2020, 2025, and 2045. The Policy was most recently updated in March 2022. UC also tracks and reports annual progress towards the Policy goals via an *Annual Report on Sustainable Practices*, last updated in 2022. According to the *2022 Annual Report on Sustainable Practices*, UC Clean Power Program currently supplies approximately 40 percent of the University's purchased electricity. Overall, 55 percent of UC's electricity use comes from renewable or carbon-free sources.

As discussed in Section III.C, *Climate Protection*, of the Policy, the current goals for climate protection include:

1. Maintain GHG emissions at or below 1990 levels, pursuant to the California Global Warming Solutions Act of 2006.
2. Achieve climate neutrality for Scope 1 (combustion) and 2 (purchased electricity) emissions by 2025 (UC President's Carbon Neutrality Initiative).



3. Achieve climate neutrality for Scope 3 (commuting and University funded air travel) emissions by 2045 or sooner.

University of California Carbon Neutrality Initiative. In late 2013, UC strengthened its climate protection goals by announcing the Carbon Neutrality Initiative (CNI). The CNI commits the University of California to net carbon neutrality for Scope 1 and 2 emissions by 2025. To help in the implementation of this initiative, UC formed the Global Climate Leadership Council (GCLC) in 2014 to advise UC leadership and to “connect carbon neutrality to UC’s teaching, research, and public service mission”.

Second Nature Carbon Commitment. UC is a signatory of Second Nature’s Carbon Commitment, formerly known as the American College and University President’s Climate Commitment (ACUPCC). This commitment focuses on reduction of GHG emissions with the goal of reaching carbon neutrality as soon as possible.

Energy Service Unit. Energy Service Unit (ESU) supports the university’s diverse asset base and helps to chart a path to carbon neutrality with increased procurement transparency. Program areas include wholesale electric, retail load (e.g., campus energy efficiency and renewable energy), natural gas and biogas procurement and development, management of environmental attributes (e.g., carbon allowances), university legislative and regulatory representation on facility issues, and the purchased utility database.

UC Irvine Climate Action Plan. The UC Irvine (UCI) Climate Action Plan (CAP) provides a road map for the UCI to achieve its institutional climate protection commitments in support of UC sustainability policy, the UC 2025 Carbon Neutrality Initiative, and campus sustainability goals. These commitments include reduction of GHG emissions to 1990 levels by the year 2020 (a reduction of approximately 49 percent from projected emissions), climate neutrality Scope 1 and 2 sources (on-site combustion of fossil fuels and purchased electricity) by 2025, and climate neutrality including Scope 3 sources (UCI commuters and University funded air travel by 2045). The CAP has guided an array of climate protection actions and projects to reduce UCI GHG emissions. The CAP was initially adopted in 2007 and last published in 2016. It is updated annually to reflect current emissions inventory and update mitigation strategies on an online platform (Fovea) and status is reported in the *Annual Report on Sustainable Practices*, last updated in 2022.

UC Irvine Long Range Development Plan. The UC Irvine Long Range Development Plan (2007 LRDP), adopted in 2007, is a comprehensive land use plan that guides physical development on the UC Irvine campus through 2025-26. The 2007 LRDP identifies general types of campus development and land uses to support projected expansion of existing academic programs and to enable new academic program initiatives at UCI through the plan horizon year of 2025-26. The infrastructure element indicates the expansion of utility infrastructure required to meet the program needs identified in the 2007 LRDP. Pursuant to the planning principles outlined in the 2007 LRDP, UCI is committed to stewardship of the environment and reducing its dependence on non-renewable energy sources. The following are the key planning objectives for the infrastructure element that are applicable to the project.

- Provide utility infrastructure in cooperation with public utility providers to enable the physical growth of the campus consistent with UCI’s strategic academic objectives.
- Adopt efficient, “green” energy system to conserve resources, manage energy costs, and promote environmentally beneficial practices.
- Pursue energy self-sufficiency through cogeneration and other means in order to acquire a reliable supply of energy and to reduce impacts on local utility systems.

THRESHOLDS OF SIGNIFICANCE

Amendments to CEQA Guidelines Section 15064.4 were adopted to assist lead agencies in determining the significance of the impacts of GHG emissions and gives lead agencies the discretion to determine whether to assess those emissions quantitatively or qualitatively. This section recommends certain factors to be considered in the



determination of significance (i.e., the extent to which a project may increase or reduce GHG emissions compared to the existing environment; whether the project exceeds an applicable significance threshold; and the extent to which the project complies with regulations or requirements adopted to implement a plan for the reduction or mitigation of GHGs). The amendments do not establish a threshold of significance; rather, lead agencies are granted discretion to establish significance thresholds for their respective jurisdictions, including looking to thresholds developed by other public agencies or suggested by other experts, such as the California Air Pollution Control Officers Association (CAPCOA), so long as any threshold chosen is supported by substantial evidence (CEQA Guidelines Section 15064.7(c)). The California Natural Resources Agency has also clarified that the CEQA Guidelines amendments focus on the effects of GHG emissions as cumulative impacts, and therefore GHG emissions should be analyzed in the content of CEQA's requirements for cumulative impact analyses (CEQA Guidelines Section 15064(h)(3)).^{5,6} A project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements to avoid or substantially lessen the cumulative problem within the geographic area of the project.⁷

In 2008, South Coast Air Quality Management District (SCAQMD) developed and recommended two types of GHG thresholds: (1) separate numerical thresholds for residential projects (3,500 MTCO_{2e}), commercial projects (1,400 MTCO_{2e}), and Mixed Use projects (3,000 MTCO_{2e}); or (2) a singular numerical threshold for all non-industrial projects (3,000 MTCO_{2e}). These SCAQMD thresholds were developed using substantial evidence by the SCAQMD GHG Working Group—a group of various resource agencies, cities, counties, utilities, and environmental groups—with the objective of capturing 90 percent of GHG emissions from larger projects above the screening threshold and allowing smaller projects to be implemented without further investigation of possible mitigative elements. Additionally, the long-term goal of Executive Order S-3-05 to reduce statewide GHG emissions to 80 percent below 1990 levels by 2050 formulated the basis of the SCAQMD recommendation, which is also consistent with analysis published by the California Air Pollution Control Officer's Association in its 2008 White Paper on CEQA and Climate Change. SCAQMD's GHG Working Group consensus “clearly states that it is at the lead agency's discretion to apply the appropriate threshold to the project for CEQA review. In other words, SCAQMD's recommendation is that the lead agency will need to decide which threshold is most appropriate.”

The City and UCI have not adopted a numerical significance threshold for assessing impacts related to GHG emissions nor has the SCAQMD, CARB, or any other State or regional agency adopted a numerical significance threshold for assessing GHG emissions that is applicable to the proposed project. Since there is no applicable adopted or accepted numerical threshold of significance for GHG emissions, the methodology for evaluating the project's impacts related to GHG emissions focuses on its consistency with Statewide, regional, and local plans adopted for the purpose of reducing and/or mitigating GHG emissions. This evaluation of consistency with such plans is the sole basis for determining the significance of the project's GHG-related impacts on the environment.

Notwithstanding, for informational purposes, the analysis also calculates the amount of GHG emissions that would be attributable to the project using recommended air quality models, as described below. The primary purpose of quantifying the project's GHG emissions is to satisfy CEQA Guidelines Section 15064.4(a), which calls for a good-faith effort to describe and calculate emissions. The estimated emissions inventory is also used to determine if there would be a reduction in the project's incremental contribution of GHG emissions as a result of compliance with regulations and requirements adopted to implement plans for the reduction or mitigation of GHG emissions. However, the significance of the project's GHG emissions impacts are not based on the amount of GHG emissions resulting from the project. Further, as the proposed project is a residential (non-industrial) project, the University has determined to utilize SCAQMD's recommended threshold for non-industrial projects (3,000 MTCO_{2e}) to demonstrate potential project-related GHG impacts quantitatively, for informational purposes.

⁵ California Natural Resources Agency, *Final Statement of Reasons for Regulatory Action*, pp. 11-13, 14, 16, December 2009, https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/Final_Statement_of_Reasons.pdf, accessed September 22, 2022.

⁶ State of California Governor's Office of Planning and Research, *Transmittal of the Governor's Office of Planning and Research's Proposed SB97 CEQA Guidelines Amendments to the Natural Resources Agency*, April 13, 2009, <https://planning.lacity.org/eir/CrossroadsHwd/deir/files/references/C01.pdf>, accessed September 22, 2022.

⁷ California Code of Regulations Title 14 Section 15064(h)(3).



a) **Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?**

Less Than Significant Impact. The LRDP EIR determined that implementation of the 2007 LRDP would increase GHG emissions from construction and operations, particularly from vehicle operations. However, GHG emissions would be less than significant.

PROJECT-RELATED SOURCES OF GREENHOUSE GASES

Project-related GHG emissions include emissions from direct and indirect sources. The proposed project would result in direct and indirect emissions of CO₂, N₂O, and CH₄, and would not result in other GHGs that would facilitate a meaningful analysis. Therefore, this analysis focuses on these three forms of GHG emissions. Direct project-related GHG emissions include emissions from construction activities, area sources, and mobile sources, while indirect sources include emissions from electricity consumption, water demand, and solid waste generation.⁸ It should be noted that the project would not consume natural gas, as accounted for in CalEEMod. As discussed in Section 2.4, Project Characteristics, this project is striving to be all electric and the electricity consumed during project operation would be carbon free as it would be provided by UC Clean Power Program. However, as a conservative analysis, electricity emission factors from Southern California Edison (SCE) were used to quantify the project's emissions from energy sources.

The project proposes to replace the existing parking lot on-site with a new student housing development that would serve as an expansion to the existing Mesa Court Residential Hall. As a conservative analysis, emissions generated by the existing temporary trailer were not modeled or deducted from project-generated emissions. The amount of GHG emissions that would be attributable to the project is calculated using the California Emissions Estimator Model (CalEEMod) version 2020.4.0. CalEEMod relies upon trip generation rates and project specific land use data to calculate emissions. The *Draft UCI Mesa Court Residence Hall Expansion Project Transportation Analysis* (Transportation Analysis) developed by Stantec (dated November 18, 2022), was prepared for the proposed project. According to the Transportation Analysis, the project would generate approximately 113 average daily trips. Table 5.8-1, Estimated Greenhouse Gas Emissions, presents the estimated CO₂, N₂O, and CH₄ emissions of the proposed project. The CalEEMod outputs are contained within the Appendix A, Air Quality/GHG/Energy Data.

Direct Project-Related Sources of Greenhouse Gases

Construction Emissions. Construction GHG emissions are typically summed and amortized over the lifetime of the project (assumed to be 30 years), then added to the operational emissions.⁹ As shown in Table 5.8-1, the proposed project would result in 22.16 MTCO₂e when amortized over 30 years (664.73 MTCO₂e total).

Area Source. Area source emissions were calculated using CalEEMod and project-specific land use data. Project-related area sources include exhaust emissions from landscape maintenance equipment. The project would install all electric landscape equipment. The project would directly result in 1.38 MTCO₂e per year from area source emissions; refer to Table 5.8-1.

⁸ "Direct" GHG emissions refer to activities that result in active, localized GHG emissions (e.g., burning fuels where such activity occurs), while "indirect" GHG emissions refer to activities that result in GHG emissions elsewhere (e.g., water being transported using electricity; electricity being generated thousands of miles away and directed to where water needs to be transported.)

⁹ The project lifetime is based on the standard 30-year assumption of the South Coast Air Quality Management District (South Coast Air Quality Management District, *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold*, October 2008).



Mobile Source. As previously discussed, the project is anticipated to generate approximately 113 average daily trips. The project would directly result in 119.17 MTCO₂e per year of mobile source-generated GHG emissions; refer to [Table 5.8-1](#).

**Table 5.8-1
Estimated Greenhouse Gas Emissions**

Source	CO ₂	CH ₄		N ₂ O		Total Metric Tons of CO ₂ e ^{2,3}
	Metric Tons/yr ¹	Metric Tons/yr ¹	Metric Tons of CO ₂ e ¹	Metric Tons/yr ¹	Metric Tons of CO ₂ e ¹	
Direct Emissions						
Construction (amortized over 30 years)	21.96	<0.01	0.09	<0.01	0.11	22.16
Area Source	1.36	<0.01	0.02	0.00	0.00	1.38
Mobile Source	117.53	<0.01	0.18	<0.01	1.47	119.17
<i>Total Direct Emissions²</i>	<i>140.84</i>	<i>0.01</i>	<i>0.29</i>	<i><0.01</i>	<i>1.58</i>	<i>142.71</i>
Indirect Emissions						
Energy ⁴	102.80	<0.01	0.22	<0.01	0.31	103.33
Solid Waste	6.55	0.39	9.69	0.00	0.00	16.23
Water Demand	28.12	0.23	5.67	<0.01	1.66	35.46
<i>Total Indirect Emissions²</i>	<i>137.48</i>	<i>0.62</i>	<i>15.58</i>	<i><0.01</i>	<i>1.97</i>	<i>155.02</i>
Total Project-Related Emissions²	297.73 MTCO₂e/yr					
SCAQMD Threshold for Reference	3,000 MTCO₂e/yr					
Notes: CO ₂ = carbon dioxide; CH ₄ = methane; N ₂ O = nitrous oxides, MTCO ₂ e/yr = metric tons of carbon dioxide equivalent per year						
1. Emissions were calculated using CalEEMod version 2020.4.0, as recommended by the SCAQMD.						
2. Totals may be slightly off due to rounding.						
3. Carbon dioxide equivalent values calculated using the U.S. Environmental Protection Agency, <i>Greenhouse Gas Equivalencies Calculator</i> , http://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator , accessed October 20, 2022.						
4. According to UCI and as detailed in Section 2.4, Project Characteristics , the project would not consume natural gas during operation. As such, no natural gas use has been assumed in the modeling.						
Refer to Appendix A, Air Quality/Greenhouse Gas/Energy Data , for detailed model input/output data.						

Indirect Project-Related Sources of Greenhouse Gases

Energy Consumption. Energy consumption emissions were calculated using CalEEMod (refer to [Appendix A](#)) and project-specific land use data, including consumption factors provided by Southern California Edison (the electricity provider for the City of Irvine and the project site). It should be noted that according to UCI and as detailed in [Section 2.4](#), the project would not consume natural gas during operation. As such, no natural gas use has been assumed in the modeling. Further, according to UCI, approximately 75% of purchased electricity for the campus is provided by UC's Clean Power Program which provides 100 percent carbon free electricity for the campus. However, this has not been accounted for in the modeling to provide a conservative analysis. The project would indirectly result in 103.33 MTCO₂e per year due to energy consumption; refer to [Table 5.8-1](#).

Solid Waste. The project would recycle or compost 80 percent of the solid waste. Solid waste associated with operations of the proposed project would result in 16.23 MTCO₂e per year; refer to [Table 5.8-1](#).

Water Demand. The project would install low-flow water fixtures and utilize water-efficient irrigation systems and draught-tolerant landscaping. Emissions from indirect energy impacts due to water supply would result in 35.46 MTCO₂e per year; refer to [Table 5.8-1](#).

Total Project-Related Sources of Greenhouse Gases

As shown in [Table 5.8-1](#), the total amount of proposed project-related GHG emissions from direct and indirect sources combined would total 297.73 MTCO₂e per year.



CONCLUSION

The total amount of proposed project-related GHG emissions from direct and indirect sources combined would total 297.73 MTCO_{2e} per year and would not exceed the SCAQMD threshold of 3,000 MTCO_{2e} per year for non-industrial projects. For informational purposes, the analysis calculates the amount of GHG emissions that would be attributable to the project using recommended air quality models. The primary purpose of quantifying the project's GHG emissions is to satisfy CEQA Guidelines Section 15064.4(a), which calls for a good-faith effort to describe and calculate emissions. The estimated emissions inventory is also used to determine if there would be a reduction in the project's incremental contribution of GHG emissions as a result of compliance with regulations and requirements adopted to implement plans for the reduction or mitigation of GHG emissions. However, the significance of the project's GHG emissions impacts are not based on the amount of GHG emissions resulting from the project. As discussed in Respond 5.8(b), the proposed project would not conflict with Statewide, regional, and local plans adopted for the purpose of reducing and/or mitigating GHG emissions. As such, the project's generation of greenhouse gas emissions would be considered a less than significant impact.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less Than Significant Impact. The LRDP EIR identified various existing UCI emissions reductions programs, including alternative fuel use, green building programs, sustainable landscaping, shuttle programs, transportation demand management programs, on-campus, housing, and waste prevention and recycling. Additional University of California reduction strategies include green building design for new buildings and renovations, clean energy standards, climate protection practices, sustainable transportation practices, sustainable operations, recycling and waste management, and environmentally preferable purchasing practices.

CONSISTENCY WITH APPLICABLE GHG PLANS, POLICIES, OR REGULATIONS

The proposed project would be subject to the University of California Policy on Sustainable Practices, UCI CAP, and 2007 LRDP. The University of California on Sustainable Practices establishes goals in nine areas including: green building, clean energy, transportation, climate protection, sustainable operations, waste reduction and recycling, environmental preferable purchasing, sustainable foodservice, and sustainable water systems. The CAP provides guidance for UCI to achieve its institutional climate protection commitments in support of UC sustainability policy and campus sustainability goals. As such, consistent with UC sustainability policy would make the project also consistent with UCI CAP. The 2007 LRDP Infrastructure Element acknowledges UCI's commitment to environmental stewardship and its goal to reduce dependence on non-renewable energy sources. Table 5.8-2, Project Consistency with the Plans, discusses the proposed project's consistency with the applicable goals and policies in University of California Policy on Sustainable Practices, UCI CAP and 2007 LRDP.

**Table 5.8-2
Project Consistency with the Plans**

Goals/Policies/Objectives	Project Consistency Analysis
University of California Policy on Sustainable Practices	
A. Green Building Design 1) New Buildings a) All new building projects, other than acute care facilities, will be designed, constructed, and commissioned to outperform the California Building Code (CBC) energy-efficiency standards by at least 20% or meet the whole-building energy performance targets listed in Table 1 of Section V.A.1. The University will strive to design, construct, and commission buildings that outperform CBC energy efficiency standards by 30% or more or meet the stretch	Consistent. The project would be designed per the UC Green Building Design Sustainable Practices Policy. Accordingly, the energy performance of the proposed building would outperform minimum compliance with the California Energy Code (CEC) by 20 percent. According to the project applicant and as detailed in <u>Section 2.4</u> , the project would not consume natural gas during operation. Further, as currently proposed, the project would seek to achieve a LEED Gold certification or better. As such, the project would be consistent with the goal.



Goals/Policies/Objectives	Project Consistency Analysis
<p>whole-building energy performance targets listed in Table 1 of Section V.A.1, whenever possible within the constraints of program needs and standard budget parameters.</p> <p>c) No new building or major renovation that is approved after June 30, 2019, will use onsite fossil fuel combustion (e.g., natural gas) for space and water heating (except those projects connected to an existing campus central thermal infrastructure). Projects unable to meet this requirement will document the rationale for this decision, as described in Section V.A.1.d.</p> <p>d) All new buildings will achieve a USGBC LEED “Silver” certification at a minimum. All new buildings will strive to achieve certification at a USGBC LEED “Gold” rating or higher, whenever possible within the constraints of program needs and standard budget parameters.</p> <p>f) All new building projects will achieve at least two points within the available credits in LEED-BD+C’s Water Efficiency category (in support of section III.I.) and prioritize earning waste reduction and recycling credits (per section V.F.)</p>	
<p>B. Clean Energy In support of the climate neutrality goals outlined in Section C of this Policy, the University of California is committed to reducing its greenhouse gas emissions by reducing energy use and switching to clean energy supplies.</p> <p>1) Energy Efficiency: Each location will implement energy efficiency actions in buildings and infrastructure systems to reduce the location’s energy use intensity by an average of at least 2 % annually.</p> <p>2) On-campus Renewable Electricity: Campuses and health locations will install additional on-site renewable electricity supplies and energy storage systems whenever cost-effective and/or supportive of the location’s Climate Action Plan or other goals.</p> <p>3) Off-campus Clean Electricity: By 2025, each campus and health location will obtain 100% clean electricity. The UC Clean Power Program will provide 100% clean electricity to participating locations.</p>	<p>Consistent. As discussed above, the energy performance of the proposed building would outperform minimum compliance with the CEC by 20 percent. Further, UCI aims to participate in the UC Clean Power Program. As such, the project would be consistent with the goal.</p>
<p>C. Climate Protection</p> <p>1) Greenhouse Gas Emissions: Each Campus and the UC Office of the President will develop strategies for meeting the following UC goals:</p> <p>a) Achieve climate neutrality from scope 1 and 2 sources by 2025.</p> <p>b) Achieve climate neutrality from specific scope 3 sources by 2050 or sooner.</p> <p>c) Maintain greenhouse gas (GHG) emissions at or below 1990 levels, pursuant to the California Global Warming Solution Act of 2006.</p>	<p>Consistent. As discussed above, the project would outperform minimum compliance with the CEC by 20 percent. The proposed project would seek to achieve a LEED Gold certification or better. Additionally, the building design would be encouraged to maximize opportunities to inform and shape behavior towards UCI’s sustainability goals of carbon neutrality and zero waste. As such, the project would not conflict the policy’s sustainable practice on Climate Protection.</p>
<p>D. Sustainable Transportation The University will implement transportation programs and greenhouse gas (GHG) emissions reduction strategies that reduce the environmental impacts from commuting, fleet and business air travel related to achieving the Climate Protection Section of this Policy (see Section III.C.).</p> <p>1) Each location will reduce GHG emissions from its fleet and report annually on its progress. Locations will implement strategies to reduce emissions from University-owned or operated fleet vehicles to align with UC’s 2025 carbon neutrality goals (as defined in the Climate Protection sections of this Policy). Carbon neutral fleets can be achieved if vehicles produce no tailpipe</p>	<p>Consistent. The project would provide 100 spaces for bicycle parking. Additionally, the project would promote a Commute Trip Reduction Program. The project would be constructed within the North Campus, adjacent to existing UCI buildings and facilities, including Laguna Mesa Court Classic Hall, Jardin Residence Hall, and Barranca Mesa Court Classic Hall. As the project is located within the developed area of the campus, it would benefit from the surrounding multimodal transportation systems, including sidewalks/walking trails, municipal bus service, campus shuttles, vanpool/carpool parking spaces, and electric charging stations. Additionally, UCI has replaced its diesel bus</p>



Goals/Policies/Objectives	Project Consistency Analysis
<p>emissions, use a clean transportation fuel, and/or if carbon offsets are purchased. To support this goal, each location will ensure that:</p> <ol style="list-style-type: none"> a) After July 1, 2023, zero-emission vehicles, plug-in hybrid, or dedicated clean transportation fueled vehicles will account for at least 50% of all vehicle acquisitions (including both leased and purchased vehicles). b) All sedans and minivan acquisitions will be zero-emission or plug-in hybrid vehicles, except for public safety vehicles with special performance requirements. c) In applications where zero-emission vehicles are not available, regardless of vehicle size class, the use of clean transportation fuels and other low-emission fuels will be prioritized <p>2) The University recognizes that single-occupant vehicle (SOV) commuting is a primary contributor to commute-related GHG emissions and localized transportation impacts.</p> <ol style="list-style-type: none"> a) By 2025, each location will strive to reduce its percentage of employees and students commuting by SOV by 10% relative to its 2015 SOV commute rates. b) By 2050, each location will strive to have no more than 40% of its employees and no more than 30% of all employees and students commuting to the location by SOV. <p>3) Recognizing that flexible work arrangements, including telecommuting, are a low-cost, effective way to reduce emissions and carbon footprint, each location should review and update local employee telecommute and flexible work policies, guidelines, procedures, and other applicable documents to normalize and promote telecommuting options and other flexible scheduling, as aligned appropriately based on business needs.</p> <p>4) Consistent with the State of California goal of increasing alternative fuel – specifically electric – vehicle usage, the University will promote purchases and support investment in alternative fuel infrastructure at each location.</p> <ol style="list-style-type: none"> a) By 2025, each location will strive to have at least 4.5% of commuter vehicles be zero-emissions vehicles (ZEV). b) By 2050, each location will strive to have at least 30% of commuter vehicles be ZEV. 	<p>fleet with an all-electric fleet to reduce GHG emissions. As such, the project would be consistent with the goal.</p>
<p>UC Irvine Long Range Development Plan</p>	
<ul style="list-style-type: none"> • Provide utility infrastructure in cooperation with public utility provides to enable the physical growth of the campus consistent with UCI’s strategic academic objectives. • Adopt efficient, “green” energy system to conserve resources, manage energy costs, and promote environmentally beneficial practices. • Pursue energy self-sufficiency through cogeneration and other means in order to acquire a reliable supply of energy and to reduce impacts on local utility systems. 	<p>Consistent. As discussed above, the proposed building would outperform CEC by 20 percent. the project would seek to achieve a LEED Gold certification or better. The project would install solar ready roof, high efficiency lighting, and all electric landscape equipment. Additionally, the project would not consume any natural gas. Further, the project would comply with sustainable practices included in the Title 24 standards and CALGreen Code, such as energy efficient appliance, low-flow water features, water-efficient irrigation, and drought-tolerant landscaping. There would be 80 percent of waste recycled or composted. As such, the project would not conflict the objective of the 2007 LRDP.</p>
<p>Source: 1. University of California, <i>Policy on Sustainable Practices</i>, adopted March 10, 2022. 2. University of California Irvine, <i>Long Range Development Plan</i>, 2007.</p>	

In summary, the project would not conflict the goals and policies set in University of California Policy on Sustainable Practices, UCI CAP, and 2007 LRDP. Therefore, the project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing emissions of GHGs, and impacts would be less than significant.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.



Project-Level Mitigation Measures: No project-level mitigation measures are required.



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5.9 HAZARDS AND HAZARDOUS MATERIALS

<i>Would the project:</i>	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant With Project-Level Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?				✓	
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?				✓	
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?					✓
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?					✓
e. 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?				✓	
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?					✓

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less Than Significant Impact. As discussed in the LRDP EIR, UCI's transport, use, and disposal of hazardous materials is expected to increase in general proportion to the growth of the campus in accordance with the 2007 LRDP. While the amount and type of hazardous materials may vary over time with changes in disposal, products, research, and additions to hazardous materials lists, the general range and type of hazardous materials used on campus is not expected to substantially change through the duration of the 2007 LRDP implementation. Further, the 2007 LRDP noted that UCI contracts with licensed hazardous waste transporters to ensure that all hazardous wastes generated by the campus are transported off campus for treatment or disposal at licensed hazardous waste facilities. Overall, the LRDP EIR concluded that impacts associated with the four general categories of hazardous materials (chemical, radiological, biohazardous, and hazardous materials associated with infrastructure) used at UCI would be less than significant and no mitigation measures were required.



During construction of the proposed project, limited amounts of hazardous materials could be used (e.g., paints and solvents), vehicle fuel, and other hazardous materials. The routine transportation, use, and disposal of these materials would be required to adhere to State and local standards and regulations for handling, storage, and disposal of hazardous materials/substances. Upon compliance with the existing State and local procedures that are intended to minimize potential health risks associated with their use, impacts concerning the routine transport, use, or disposal of hazardous materials during project construction would be less than significant.

Operation of the proposed student housing building is not anticipated to involve hazardous materials or substances, as these materials/substances are not typically associated with residential uses. Minor cleaning products, along with the occasional use of pesticides and herbicides for landscape maintenance, are generally the extent of hazardous materials that would be routinely utilized on-site. The types and quantities of hazardous materials utilized by residential development are not anticipated to result in significant hazards to the public or environment during operation of the project. Further, the project would be required to comply with the California Building Code, California Fire Code, as well as other Federal, State, and local regulations related to the protection of the public's health and safety. Upon compliance with the existing State and local procedures, impacts concerning the routine transport, use, or disposal of hazardous materials during project operations would be less than significant.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

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?*

Less Than Significant Impact. One of the means through which human exposure to hazardous substance could occur is through accidental release. Incidents that result in an accidental release of hazardous substance into the environment can cause contamination of soil, surface water, and groundwater, in addition to any toxic fumes that might be generated. If not cleaned up immediately and completely, the hazardous substances can migrate into the soil or enter a local stream or channel causing contamination of soil and water. Human exposure of contaminated soil, soil vapor, or water can have potential health effects on a variety of factors, including the nature of the contaminant and the degree of exposure.

As discussed in the LRDP EIR, hazardous materials and waste storage on campus must comply with applicable regulations, including suitable containers that are sealed at all times (when not adding or removing waste), and campus policy requires that all hazardous materials shipped on public roads be packaged in compliance with all applicable regulations. Compliance with these regulations minimizes the potential for accidental release of hazardous materials being transported to or from campus. In the events of accidents, UCI has prepared an Emergency Management Plan that addresses the campus community's planned response to various levels of human-made or natural emergency situation, including the release of hazardous materials. Overall, the LRDP EIR concluded that implementation of the 2007 LRDP would have a less than significant impact on the release of hazardous materials into the environment from an accident due to compliance with associated regulations, programs, practices, and procedures, and no mitigation measures were required.

During project construction, there is a possibility of accidental release of hazardous substances such as petroleum-based fuels or hydraulic fluid used for construction equipment. The level of risk associated with the accidental release of hazardous substances is not considered significant due to the small volume and low concentration of hazardous materials utilized during construction. The construction contractor would be required to use standard construction controls and safety procedures that would avoid and minimize the potential for accidental release of such substances into the environment. Standard construction practices would be observed such that any materials released are appropriately contained and remediated as required by local, State, and Federal law.



Refer to Response 4.9(a), above, for a description of impacts related to proposed operations at the project site. Upon adherence to existing regulations related to chemical safety, impacts pertaining to the potential for accidental conditions during project operations would be less than significant.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

c) *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. Based on the LRDP EIR, the 2007 LRDP does not include specific proposals for new development that might involve the use or transport of hazardous materials and the campus would continue to comply with the provisions of Section 15186 of the CEQA Guidelines (which establishes requirements for school projects, as well as projects near schools, to ensure that potential health impacts resulting from exposure to hazardous materials, wastes, and substances are examined and disclosed in an environmental document) as it applies to any future development. Compliance with Federal and State regulations pertaining to hazardous wastes, including the CEQA Guidelines section specified above, along with the existing campus programs, practices, and procedures would ensure that risks associated with hazardous emissions or materials to existing or proposed schools located one-quarter mile from the campus would remain less than significant through proper handling procedures, disposal practices, and/or clean-up procedures.

Other than the UCI campus, which includes the project site, the closest school to the project site is the University Park Elementary School, located approximately 1.4 mile northeast of the site at 4572 Sandburg Way, Irvine. Further, the project proposes a new student housing building and is not anticipated to involve emissions or handling of hazardous or acutely hazardous materials, substances, or waste in reportable quantities. Based on the distance and the nature of the proposed project (student housing), project implementation is not anticipated to result in adverse impacts in regard to emitting hazardous emissions or handling hazardous materials within 0.25-mile of an existing school. Thus, no impact would result in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

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?*

No Impact. Government Code Section 65962.5 requires the Department of Toxic Substances Control (DTSC) and State Water Resources Control Board (SWRCB) to compile and update a regulatory sites list (pursuant to the criteria of the Section). The California Department of Health Services is also required to compile and update, as appropriate, a list of all public drinking water wells that contain detectable levels of organic contaminants and that are subject to water analysis pursuant to Health and Safety Code Section 116395. Government Code Section 65962.5 requires the local enforcement agency, as designated pursuant to Section 18051 of Title 14 of the California Code of Regulations, to compile, as appropriate, a list of all solid waste disposal facilities from which there is a known migration of hazardous waste.

As discussed in the LRDP EIR, the only potentially hazardous site identified on the UCI campus is located in the North Campus. Leaking underground storage tanks (LUSTs) were removed from the Corporation Yard located on the North Campus in 1998. Several remediation methods were used prior to, and following, the removal of the UST's. The site was expected to be fully rehabilitated by the end of 2007. As such, the LRDP EIR concluded that implementation of the 2007 LRDP would have a less than significant impact to the public or environment associated with this hazardous site.



According to the California Environmental Protection Agency, the project site is not listed pursuant to Government Code Section 65962.5.¹ Thus, no impact would result in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are 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 result in a safety hazard or excessive noise for people residing or working in the project area?***

No Impact. As discussed in the LRDP EIR, UCI is located approximately 1.5 miles east of the John Wayne Airport (JWA) and is within the airport planning area for JWA. The LRDP EIR concluded that as UCI was not located within a designated Accident Potential Zone (none have been adopted for JWA at the time) and that no aircraft accidents have occurred in the vicinity of the UCI Campus within the past 30 years, it is unlikely that aircraft operations at JWA would pose a safety hazard to people residing or working at the UCI Campus. Therefore, implementation of the 2007 LRDP would not result in a significant aircraft safety hazard associated with JWA and no mitigation measure were required.

JWA is located approximately 1.71 mile to the northwest of the project site. According to the *Airport Environs Land Use Plan for John Wayne Airport* (AELUP), the project site is located outside of the Airport Impact Zones, AELUP Notification Area, Federal Aviation Regulation Part 77 Notification Area, and Airport Safety Zones.² Additionally, the project site is not located within the vicinity of a private airstrip or related facilities. Therefore, project implementation would not expose people residing or working in the project area to excessive airport noise levels or safety hazards. No impacts would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

- f) ***Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?***

Less Than Significant Impact. As discussed in the LRDP EIR, UCI trains and equips emergency response personnel to respond to hazardous materials emergencies; prepares and updates safety planning documents; implements safety training upon occupying new buildings; develops the Illness and Injury Prevention Plan, Chemical Hygiene Plan, and Evacuation Site Plan for all new buildings as necessary; and assigns a Building Coordinator for each building. In addition, the Orange County Fire Authority (OCFA) is trained and equipped to implement emergency hazardous materials intervention and control techniques on campus. UCI has an Emergency Management Plan, which addresses planned responses, instructions, and procedures to various levels of human-made or natural emergency situations for all campus staff, students, and visitors. Multiple emergency response regions, located throughout the campus, are equipped to provide necessary supplies and trained personnel in the event of an emergency. Although implementation of the 2007 LRDP could interfere with emergency response and evacuation on the campus through construction-related road closures and through operational obstructions (e.g., non-synchronized traffic signals, locked gates, etc.), the LRDP EIR concluded that impacts from construction-related road closures and operational obstructions could be reduced to less than significant levels with implementation of LRDP EIR Mitigation Measures Haz-6A through Haz-6C.

The proposed project would not cause any permanent alterations to vehicular circulation routes and/or patterns or obstruct public access or travel. During project construction, all construction activities, including construction staging, would be contained within the project site and no lane closure is anticipated. Further, the project proposes to construct appropriate fire lane access along its northern and eastern boundary to connect to the existing fire lane within and

¹ Ibid.

² Orange County Airport Land Use Commission, *Airport Environs Land Use Plan for John Wayne Airport*, April 17, 2008.



outside of the project site. The project site also includes a hammerhead turnabout in the northwest corner of the site to facilitate emergency access. Overall, given that the project site is located in an existing student housing area of campus, project development is not anticipated to result in any new specific effects or greater impacts in inadequate emergency access or interfere with any adopted emergency response plan or emergency evacuation plan than previously analyzed in the LRDP EIR. Impacts in this regard would be less than significant.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

g) ***Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?***

No Impact. Refer to Response 4.20(a).

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.



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5.10 HYDROLOGY AND WATER QUALITY

<i>Would the project:</i>	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant Impact With Project-Level Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?		✓			
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?					✓
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				✓	
1) Result in substantial erosion or siltation on- or off-site?		✓			
2) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?		✓			
3) 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?		✓			
4) Impede or redirect flood flows?				✓	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?					✓
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?					✓

a) ***Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?***

Project Impact Adequately Addressed in LRDP EIR. As part of Section 402 of the Clean Water Act, the U.S. Environmental Protection Agency has established regulations under the National Pollution Discharge Elimination System (NPDES) program to control direct stormwater discharges. In California, the State Water Resources Control Board (SWRCB) administers the NPDES permitting program and is responsible for developing NPDES permitting requirements. The NPDES program regulates industrial pollutant discharges, which include construction activities. The SWRCB works in coordination with the Regional Water Quality Control Boards (RWQCB) to preserve, protect, enhance, and restore water quality. The Santa Ana RWQCB oversees permits at UCI.



Impacts related to water quality typically range over three different periods: 1) during the earthwork and construction phase, when the potential for erosion, siltation, and sedimentation would be the greatest; 2) following construction, prior to the establishment of ground cover, when the erosion potential may remain relatively high; and 3) following completion of the project, when impacts related to sedimentation would decrease markedly, but those associated with urban runoff would increase.

According to the LRDP EIR, implementation of the 2007 LRDP would have the potential to generate stormwater runoff pollutants during construction and post-construction activities that could significantly impact downstream water quality, if not properly controlled. However, LRDP EIR Mitigation Measures Hyd-2A, which would require the preparation and implementation of an erosion control plan for construction sites less than one acre, and Hyd-2B, which would implement site design and treatment control design measures to reduce pollutants of concern in runoff, would reduce any significant impacts. The LRDP EIR concluded that impacts would be reduced to less than significant levels with mitigation incorporated.

Similarly, development of the proposed project would have the potential to generate stormwater runoff pollutants during construction and post-construction activities that could significantly impact downstream water quality, if not properly controlled.

CONSTRUCTION

Potential sources of water quality impacts during construction of the proposed project would be from activities associated with grading and paving, building construction, architectural painting, and project earthwork with imported and exported soils. Pollutants associated with these construction activities that could result in water quality impacts may include soils, debris, other materials generated during site clearing and grading, fuels and fluids associated with construction equipment, and paints and other hazardous materials. These pollutants could impact water quality if washed, blown, or tracked off site.

The proposed project would comply with applicable water quality standards developed by the SWRCB and RWQCB for stormwater through required permits, including the General Construction Storm Water Permit, which would control pollutants contained in runoff generated from campus properties.¹ The proposed project would be required to comply with the General Construction Storm Water Permit program, which would require implementation of construction control measures specified in a Storm Water Pollution Prevention Plan (SWPPP). Compliance with the permit would ensure that runoff from the construction activities associated with the project would not violate any water quality standards. In addition, potential impacts related to potential erosion during grading activities would be further reduced with implementation of LRDP EIR Mitigation Measures Hyd-1A, which requires project specific drainage studies and implement recommended site design and flow control features if necessary, and Hyd-2A, which requires the preparation of an erosion control plan during the design phase and implementation of design features to prevent contaminants from entering the stormwater system. Therefore, in compliance with the stormwater permits described above and implementation of LRDP EIR Mitigation Measures Hyd-1A and Hyd-2A, construction impacts would be reduced to a less than significant level.

OPERATION

Development of the proposed project would replace an existing surface parking lot and temporary building with the proposed student housing building and associated ornamental landscaping. The project would replace the existing on-site storm drain system with a new system to accommodate the project. The new system would include several catch basins with rip rap. Low impact development (LID) features in compliance with UCI's MS4 permit would be determined during the final design phase. Ultimate project site discharge would enter an existing 18-inch storm drain underneath the site and then flow north to the corner of University Drive and Campus Drive, where flows would connect to an existing 42-inch drainage pipe that continues westerly on UCI property, adjacent to University Drive. Peak flows during

¹ State Water Resources Control Board, *Order No. R8-2009-0030 NPDES No. CAS618030*, 2010.



operation of the project would be designed such that proposed flows would not exceed the amount of peak flows currently experienced at discharge locations.

The proposed project would implement erosion and sediment control BMPs which would minimize erosion and related impacts on water quality during operations. LRDP EIR Mitigation Measure Hyd-2B would require implementation of design features to prevent contaminants from entering the stormwater system during operation of the project. Therefore, in compliance with the stormwater permits described above and implementation of LRDP EIR Mitigation Measure Hyd-2B, post-construction impacts would be reduced to a less than significant level.

LRDP EIR Mitigation Measures:

LRDP EIR Hyd-1A As early as possible in the planning process of future projects that implement the 2007 LRDP and would result in land disturbance of 1 acre or greater, and for all development projects occurring on the North Campus in the watershed of the San Joaquin Freshwater Marsh, a qualified engineer shall complete a drainage study. Design features and other recommendations from the drainage study shall be incorporated into project development plans and construction documents. Design features shall be consistent with UCI's Storm Water Management Program, shall be operational at the time of project occupancy, and shall be maintained by UCI. At a minimum, all drainage studies required by this mitigation measure shall include, but not be limited to, the following design features:

- i. Site design that controls runoff discharge volumes and durations shall be utilized, where applicable and feasible, to maintain or reduce the peak runoff for the 10-year, 6-hour storm event in the post-development condition compared to the pre-development condition, or as defined by current water quality regulatory requirements.
- ii. Measures that control runoff discharge volumes and durations shall be utilized, where applicable and feasible, on manufactured slopes and newly-graded drainage channels, such as energy dissipaters, revegetation (e.g., hydroseeding and/or plantings), and slope/channel stabilizers.

LRDP EIR Hyd-2A Prior to initiating on-site construction for future projects that implement the 2007 LRDP, UCI shall approve an erosion control plan for project construction. The plan shall include, but not be limited to, the following applicable measures to protect downstream areas from sediment and other pollutants during site grading and construction:

- i. Proper storage, use, and disposal of construction materials.
- ii. Removal of sediment from surface runoff before it leaves the site through the use of silt fences, gravel bags, fiber rolls or other similar measures around the site perimeter.
- iii. Protection of storm drain inlets on-site or downstream of the construction site through the use of gravel bags, fiber rolls, filtration inserts, or other similar measures.
- iv. Stabilization of cleared or graded slopes through the use of plastic sheeting, geotextile fabric, jute matting, tackifiers, hydro-mulching, revegetation (for example, hydroseeding and/or plantings), or other similar measures.
- v. Protection or stabilization of stockpiled soils through the use of tarping, plastic sheeting, tackifiers, or other similar measures.
- vi. Prevention of sediment tracked or otherwise transported onto adjacent roadways through use of gravel strips or wash facilities at exit areas (or equivalent measures).



- vii. Removal of sediment tracked or otherwise transported onto adjacent roadways through periodic street sweeping.
- viii. Maintenance of the above-listed sediment control, storm drain inlet protection, slope/stockpile stabilization measures.

LRDP EIR Hyd-2B Prior to project design approval for future projects that implement the 2007 LRDP and would result in land disturbance of 1 acre or more, the UCI shall ensure that the projects include the design features listed below, or their equivalent, in addition to those listed in mitigation measure Hyd-1A. Equivalent design features may be applied consistent with applicable MS4 permits (UCI's Storm Water Management Plan) at that time. All applicable design features shall be incorporated into project development plans and construction documents; shall be operational at the time of project occupancy; and shall be maintained by UCI.

- i. All new storm drain inlets and catch basins within the project site shall be marked with prohibitive language and/or graphical icons to discourage illegal dumping per UCI standards.
- ii. Outdoor areas for storage of materials that may contribute pollutants to the storm water conveyance system shall be covered and protected by secondary containment.
- iii. Permanent trash container areas shall be enclosed to prevent off-site transport of trash, or drainage from open trash container areas shall be directed to the sanitary sewer system.
- iv. At least one treatment control is required for new parking areas or structures, or for any other new uses identified by UCI as having the potential to generate substantial pollutants. Treatment controls include, but are not limited to, detention basins, infiltration basins, wet ponds or wetlands, bio-swales, filtration devices/inserts at storm drain inlets, hydrodynamic separator systems, increased use of street sweepers, pervious pavement, native California plants and vegetation to minimize water usage, and climate-controlled irrigation systems to minimize overflow. Treatment controls shall incorporate volumetric or flow-based design standards to mitigate (infiltrate, filter, or treat) storm water runoff, as appropriate.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

b) *Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?*

No Impact. According to the LRDP EIR, no removal of groundwater would be proposed as part of the LRDP, as the project would use potable water supplied by the Irvine Ranch Water District (IRWD) via existing lines on UCI's campus. The LRDP EIR concluded that no impact would occur.

The proposed project does not require groundwater use. The project would use the existing water distribution system and all project water connections would connect to the existing UCI-owned water main, supplied by the IRWD. Therefore, the proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge. No impact would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.



c) ***Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:***

1) ***Result in substantial erosion or siltation on- or off-site?***

Project Impact Adequately Addressed in LRDP EIR. According to the LRDP EIR, implementation of 2007 LRDP projects that would disturb one acre or more of land and all future development occurring in the San Joaquin Freshwater Marsh Reserve (SJFMR) watershed would have the potential to substantially alter drainage patterns and hydrology which could significantly increase runoff volumes resulting in flooding, exceedance of the existing storm drainage system capacity, and erosion and siltation at downstream water bodies. The LRDP EIR concluded that impacts would be less than significant with the implementation of LRDP EIR Mitigation Measure Hyd-1A, which requires a project to conduct project specific drainage studies and implement recommended site design and flow control features, if necessary.

As discussed, the proposed project would construct a storm drain system that would implement design improvements to direct stormwater runoff to catch basins with rip rap, as well as LID strategies and BMPs for treatment of all impervious area runoff. Peak flows during operation of the project would not exceed the amount of existing peak flows experienced at the project site and all concentrated discharge locations would include energy dissipators to reduce erosion impacts. The proposed project would implement erosion and sediment control BMPs required as part of the project's LID, which would minimize erosion and related impacts on water quality. In addition, LRDP EIR Mitigation Measure Hyd-2B would require implementation of design features to prevent contaminants from entering the stormwater system during operation of the project, including treatment controls to mitigate storm water runoff, which would further reduce impacts related to erosion or siltation. Therefore, compliance with applicable regulations for stormwater runoff and implementation of LRDP EIR Mitigation Measure Hyd-2B would ensure that impacts related to erosion and siltation would be less than significant.

LRDP EIR Mitigation Measures: Refer to LRDP EIR Mitigation Measure Hyd-2B.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

2) ***Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?***

Project Impact Adequately Addressed in LRDP EIR. As discussed in the LRDP EIR, implementation of the 2007 LRDP projects that would disturb one acre or more of land and all future development occurring in the SJFMR watershed would have the potential to substantially alter drainage patterns and hydrology which could significantly increase runoff volumes resulting in flooding, exceedance of the existing storm drainage system capacity, and erosion and siltation at downstream water bodies. The LRDP EIR concluded that impacts would be less than significant with the implementation of LRDP EIR Mitigation Measure Hyd-1A, which requires a project to conduct project specific drainage studies and implement recommended site design and flow control features, if necessary.

UCI desires to reduce impervious surfaces on campus, choosing landscaping finishes that would assist with integrated storm water management. As such, the proposed project would utilize porous paving such as concrete permeable pavers where practical. As discussed, the peak flow following implementation of the project would not exceed the amount of peak flow during existing conditions. Drainage systems would be designed to carry rainfall, including rainfall discharges from buildings and roadways, from a 25-year storm per standards of the Orange County Flood Control District. In addition, LRDP EIR Mitigation Measure Hyd-1A would require project specific drainage studies and implement recommended site design and flow control features if necessary to reduce impacts to surface runoff and flooding. Therefore, compliance with applicable regulations for stormwater runoff and implementation of LRDP EIR Mitigation Measure Hyd-1A would ensure that impacts related to surface runoff resulting in flooding would be less than significant.



LRDP EIR Mitigation Measures: Refer to LRDP EIR Mitigation Measure Hyd-1A.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

3) ***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?***

Project Impact Adequately Addressed in LRDP EIR. As discussed in the LRDP EIR, implementation of 2007 LRDP projects that would disturb one acre or more of land and all future development occurring in the SJFMR watershed would have the potential to substantially alter drainage patterns and hydrology which could significantly increase runoff volumes resulting in flooding, exceedance of the existing storm drainage system capacity, and erosion and siltation at downstream water bodies. The LRDP EIR concluded that impacts would be less than significant with the implementation of mitigation measure Hyd-1A, which requires a project to conduct project specific drainage studies and implement recommended site design and flow control features, if necessary.

Construction of the proposed project would result in short-term soil-disturbing activities that could lead to increased runoff. However, the project would comply with the regulations of UCI's MS4 Permit, as well as the project's SWPPP and WQMP. Post-development runoff volumes would be adequately accommodated by the proposed on-site storm drain system, and the proposed project is not anticipated to exceed the capacity of existing or planned stormwater drainage systems. In addition potential impacts related to stormwater capacity or polluted runoff during construction and operation would be further reduced with implementation of LRDP EIR Mitigation Measures Hyd-1A, Hyd-2A, and Hyd-2B, as discussed in Response 5.10(a) and Response 5.10(c)(1). As a result, project implementation is not anticipated to 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. Impacts would be less than significant in this regard.

LRDP EIR Mitigation Measures: Refer to LRDP EIR Mitigation Measures Hyd-1A, Hyd-2A, and Hyd-2B.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

4) ***Impede or redirect flood flows?***

Less Than Significant Impact. According to the LRDP EIR, development under the 2007 LRDP would not place structures within the 100-year flood hazard area, as the entire campus is located in Flood Zone X which is outside of the 100- and 500-year floodplains. Therefore, 2007 LRDP implementation would not impede or redirect flood flows. The LRDP EIR concluded that no impact would occur.

As discussed above in Responses 5.10(a) and 5.10(c)(2), the on-site drainage system, which may include on-site retention basins or LID features, would be designed to provide sufficient capacity to manage the level of water runoff anticipated upon completion of construction. In addition, the proposed building(s) would be graded at levels to prevent flooding and promote positive drainage, to discharge similar to existing conditions. As such, the proposed project would not impede or redirect flood flows. Impacts would be less than significant in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

d) ***In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?***

No Impact. According to the LRDP EIR, implementation of the 2007 LRDP would not likely expose people to structures to seiches, tsunamis, or mudflows due to the topography of the campus and the location of the campus from landlocked



bodies of water, the Pacific Ocean, and the surrounding foothills. The LRDP EIR concluded that impacts would be less than significant.

As discussed, the UCI campus is not located within a flood hazard zone.² The project site is located over four miles inland from the Pacific Ocean and thus, is located at a sufficient distance to avoid tsunami-related hazards. Furthermore, the UCI campus is not located in an area with potential for seiche and is relatively flat, which is not conducive for mudflows. Thus, the proposed project would not risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones. No impacts would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

e) ***Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?***

No Impact. This threshold was added in a subsequent CEQA Guidelines update. As such, this threshold was not included in the LRDP EIR.

As discussed in Response 5.10(b), the proposed project does not require groundwater use. Furthermore, the project site is not located within an area with an applicable groundwater management plan.³ Thus, the project is not subject to the requirements of a groundwater management plan. The proposed project would implement and comply with the UCI Storm Water Management Plan as required by MS4 permit requirements. All projects constructed on the campus are subject to review by UCI's Office of Environmental Health and Safety, which ensures project compliance with the Storm Water Management Plan and NPDES permit. Therefore, in compliance with the applicable plans and permits, the proposed project would not conflict with a water quality control plan or groundwater management plan. No impact would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

² Federal Emergency Management Agency, *FEMA's National Flood Hazard Layer Viewer; Search by Address*, <https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd>, accessed October 18, 2022.

³ Department of Water Resources, *Sustainable Groundwater Management Act Data Viewer*, <https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer>, accessed November 17, 2022.



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5.11 LAND USE AND PLANNING

<i>Would the project:</i>	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant With Project-Level Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Physically divide an established community?					✓
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?					✓

a) *Physically divide an established community?*

No Impact. The LRDP EIR included an analysis of whether the implementation of the 2007 LRDP would result in land use incompatibilities between campus development and adjacent community land uses. According to the LRDP EIR, The Central Academic Core, as described above, supports a mix of academic uses, residential areas, support uses, commercial uses, and open space uses. Privately-owned apartment and condominium communities in the University Center border the Academic Core along Campus Drive and provide housing opportunities within walking distance of the campus for students, faculty, and staff that wish to live in the campus vicinity. The LRDP EIR also states that the UCI campus is located within the context of an established urban area and has grown in a manner consistent with the general urbanization of the region. The 2007 LRDP plans to maintain the general land use organization and permitted uses established in the 1989 LRDP with minor adjustments such that compatibility with surrounding areas continues. These minor adjustments include, but are not limited to, redesignation of a student housing area as housing reserve to provide greater flexibility to serve future campus housing needs; moving a student housing area from the Central Campus to the West Campus to accommodate additional academic development; designating small areas as mixed use or campus support services; and increasing the density of housing. The Central Academic Core, which includes the project site, supports a mix of academic uses, residential areas, support uses, commercial uses, and open space uses. The Central Academic Core is designed with a strong linkage to the University Center, located north of the Academic Core. This area was planned to serve as the primary commercial center serving the campus community. Privately-owned apartment and condominium communities in the University Center border the Academic Core along Campus Drive and provide housing opportunities within walking distance of the campus for students, faculty, and staff that wish to live in the campus vicinity. Therefore, adjacent land uses to the north of campus support and interact with on-campus land uses.

A significant impact could occur if implementation of the project would result in physical barriers that change the connectivity between areas of a community to the extent that persons are physically separated from other areas of the community. The project site is located in the northwest quadrant of the Academic Core. The proposed project would replace the existing parking lot on-site with a new student housing development that would serve as an expansion to the existing Mesa Court Residence Hall. Accessible pedestrian pathways would be provided linking the proposed project with existing campus pedestrian pathways at the perimeters of the site. Various access points would accommodate safe pedestrian circulation. The proposed project would be designed to integrate into the existing Mesa Court campus housing community and would not disrupt the land use pattern of the surrounding community, either on- or off-campus. No roadways, driveways, bikeways, or pedestrian pathways would be removed as part of the project, and no separation of uses or disruption of access between land use types would occur. As such, the proposed project would not physically divide and established community. Therefore, no impact would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.



Project-Level Mitigation Measures: No project-level mitigation measures are required.

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?

No Impact. According to the LRDP EIR, UCI is part of the UC system, a constitutionally created entity of the State of California and is not subject to municipal regulations, such as the City of Irvine General Plan. Therefore, campus development that is consistent with the 2007 LRDP would have no land use impact under this threshold and impacts would be less than significant. Nevertheless, based on UCI's interest in coordinating campus development with neighboring cities and communities, the City of Irvine General Plan and Zoning Code and the City of Newport Beach General Plan were reviewed as a part of the analysis in the LRDP EIR. Upon review of these plans, none contained specific policies or regulations that address the development of the campus in relation to adjacent off-campus land uses. Therefore, no impacts were identified with regard to applicable land use plans, policies, and regulations. The applicable land use plan for the proposed project is the campus's 2007 LRDP. State land use plans, policies, and regulations relevant to the analysis in this EIR are limited to the California Coastal Act, as a portion of the North Campus is located within the coastal zone. Additionally, three areas on the campus are included in the NCCP Reserve, including the southern portion of the North Campus, the West Campus slope areas adjacent to SR-73, and the South Campus Ecological Reserve. As a signatory of the NCCP Implementation Agreement, UCI is bound by the terms of the NCCP. Consistent with these terms, adjustments to the NCCP boundary due to implementation of a project under the 2007 LRDP would be implemented to result in no net loss of Reserve acreage or habitat value. The LRDP EIR concluded that implementation of the 2007 LRDP would not result in inconsistencies with City of Irvine and City of Newport Beach General Plans, the California Coastal Act, or the NCCP Implementation Agreement.

The project site is located in the Academic Core and is designated Student Housing on the *Amended Land Use Map for the 2007 LRDP*, which allows for development of student residential facilities.¹ The project site is currently a fully paved parking lot occupied by a temporary trailer. The proposed project would replace the existing parking lot on-site with a new student housing development that would serve as an expansion to the existing Mesa Court Residence Hall. As discussed, the applicable land use plan is the campus's 2007 LRDP. The proposed uses are consistent with the existing 2007 LRDP land use designation of Student Housing at the project site. Additionally, the project site is not located within the boundaries of the coastal zone or the NCCP Reserve. Therefore, the proposed project would not conflict with any land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. No impact would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

¹ University of California, Irvine, *2007 LRDP Land Use Plan, Page 67, Updated per 2019 Student Housing Amendment*, https://cpep.uci.edu/physical/pdf/campus-lrdp/20-01-30_LRDP-Student-Housing-Amendment-Land-Use.pdf, accessed September 21, 2022.



5.12 MINERAL RESOURCES

<i>Would the project:</i>	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant Impact With Project-Level Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?					✓
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?					✓

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?*

No Impact. According to the LRDP EIR, implementation of the 2007 LRDP did not have the potential to result in significant impacts related to mineral resources. Mineral resources do not occur on UCI property. The predominant formational materials that underlie the UCI campus are the Topanga formation. This formation consists of sandstone, breccia, volcanic flows, and siltstone. The Topanga formation does not contain mineral resources; therefore, the loss of known mineral resources valuable locally or regionally would not occur as a result of development of the 2007 LRDP. The LRDP EIR concluded that no impact would occur.

The California Geological Survey is responsible for classifying land into Mineral Resource Zones (MRZ) under the Surface Mining Control and Reclamation Act based on the known or inferred mineral resource potential of that land. As discussed above, no mineral resources of value to the region and the residents of the state are identified within the project site. The project site is located within areas classified as MRZ-3, which are areas containing known or inferred Portland cement concrete aggregate resource of undetermined mineral resource significance.¹ However, the project site is currently used as a surface parking lot and not for mining of aggregate. Further, the LRDP EIR states that mineral resources do not occur on UCI property. As such, implementation of the proposed project would not result in the loss of availability of a known mineral resource of value in the State, region, or local area. No impact would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

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?*

No Impact. Refer to Response 5.12(a).

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

¹ Miller, R.V., *Update of Mineral Land Classification of Portland Cement Concrete Aggregate in Ventura, Los Angeles, and Orange Counties, California, Part III - Orange County*, 1994.



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5.13 NOISE

<i>Would the project result in:</i>	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant With Project-Level Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		✓			
b. Generation of excessive groundborne vibration or groundborne noise levels?		✓			
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?					✓

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air and is characterized by both its amplitude and frequency (or pitch). The human ear does not hear all frequencies equally. In particular, the ear de-emphasizes low and very high frequencies. To better approximate the sensitivity of human hearing, the A-weighted decibel scale (dBA) has been developed. On this scale, the human range of hearing extends from approximately three dBA to around 140 dBA.

Noise is generally defined as unwanted or excessive sound, which can vary in intensity by over one million times within the range of human hearing; therefore, a logarithmic scale, known as the decibel scale (dB), is used to quantify sound intensity. Noise can be generated by a number of sources, including mobile sources such as automobiles, trucks, and airplanes, and stationary sources such as construction sites, machinery, and industrial operations. Noise generated by mobile sources typically attenuates (is reduced) at a rate between 3 dBA and 4.5 dBA per doubling of distance. The rate depends on the ground surface and the number or type of objects between the noise source and the receiver. Hard and flat surfaces, such as concrete or asphalt, have an attenuation rate of 3 dBA per doubling of distance. Soft surfaces, such as uneven or vegetated terrain, have an attenuation rate of about 4.5 dBA per doubling of distance. Noise generated by stationary sources typically attenuates at a rate between 6 dBA and about 7.5 dBA per doubling of distance.

There are a number of metrics used to characterize community noise exposure, which fluctuate constantly over time. One such metric, the equivalent sound level (L_{eq}), represents a constant sound that, over the specified period, has the same sound energy as the time-varying sound. Noise exposure over a longer period of time is often evaluated based on the Day-Night Sound Level (L_{dn}). This is a measure of 24-hour noise levels that incorporates a 10-dBA penalty for sounds occurring between 10 p.m. and 7 a.m. The penalty is intended to reflect the increased human sensitivity to noises occurring during nighttime hours, particularly at times when people are sleeping and there are lower ambient noise conditions. Typical L_{dn} noise levels for light and medium density residential areas range from 55 dBA to 65 dBA.

Two of the primary factors that reduce levels of environmental sounds are increasing the distance between the sound source to the receiver and having intervening obstacles such as walls, buildings, or terrain features between the sound source and the receiver. Factors that act to increase the loudness of environmental sounds include moving the sound



source closer to the receiver, sound enhancements caused by reflections, and focusing caused by various meteorological conditions.

REGULATORY FRAMEWORK

Although UCI is not subject to municipal regulations, since the campus is located in the City of Irvine, the City's noise standards are relevant to the proposed project in establishing guidelines and evaluating impacts, given the site's adjacency to the City's jurisdiction. UCI typically pursues consistency with local plans and policies where feasible. Furthermore, City regulations are relevant for addressing UCI development projects that would affect adjacent noise-sensitive land uses in the City of Irvine.

City of Irvine General Plan

The City of Irvine General Plan Element F, *Noise*, identifies sources of noise and provide objectives and policies that ensure that noise from various sources does not create an unacceptable noise environment. The City of Irvine Exterior and Interior Noise Levels are shown in Table 5.13-1, Interior and Exterior Noise Standards Energy Average (CNEL). These standards are for assessment of long-term vehicular traffic noise impacts. The City has exterior noise criteria for outdoor living areas associated with residential uses and requires that interior areas of new residential homes not exceed 45 dBA CNEL and that exterior active use areas not exceed 65 dBA CNEL. Other short-term noise impacts (e.g., construction activities or on-site stationary sources) are regulated by the noise ordinance.

**Table 5.13-1
Interior and Exterior Noise Standards Energy Average (CNEL)**

Land Use Category	Uses	Energy Average (CNEL)	
		Interior ¹	Exterior ²
Residential ³	Single-Family, Multiple-Family	45 ³ , 55 ⁴	65 ⁷
	Mobile Home	-	65 ⁵
Commercial Regional Family	Hotel, Motel, Transient Lodging	45	65 ⁶
	Commercial retail, Bank, Restaurant, Movie theater	55	-
	Office building, Research & development	50	-
	Professional office, City office building		
	Amphitheater, Concert Hall, Auditorium, Meeting Hall	45	-
	Gymnasium (Multipurpose)	50	-
	Health Clubs	55	-
Manufacturing, Warehousing, Wholesale, Utilities	65	-	
Institutional	Hospital, School classrooms	45	65
	Church, Library,	45	-
Open Space	Parks	-	65
Note: 1. Interior environment excludes bathrooms, toilets, closets, and corridors. 2. Outdoor environment limited to private yard of single-family or multi-family residences private patio which is accessed by a means of exit from inside the unit; mobile home park; hospital patio; park picnic area; school playground; and hotel and motel recreation area. 3. Noise level requirement with closed windows. Mechanical ventilating system or other means of natural ventilation shall be provided pursuant to Appendix Chapter 12, Section 1208 of UBC. 4. Noise level requirement with open windows, if they are used to meet natural ventilation requirement. 5. Exterior noise level shall be such that interior noise level will not exceed 45 CNEL. 6. Except those areas affected by aircraft noise. 7. Multi-family developments with balconies that do not meet the 65 CNEL are required to provide occupancy disclosure notices to all future tenants regarding potential noise impacts.			
Source: City of Irvine, <i>City of Irvine General Plan</i> , Supp. No. 9, July 2015.			



City of Irvine Municipal Code

The City of Irvine Municipal Code Noise Ordinance (Title 6, Division 8, Chapter 2, Section 6-8-204 of the Irvine Municipal Code [IMC]) also provides exterior and interior noise limit thresholds for certain periods of time. Table 5.13-2, City of Irvine Noise Ordinance Levels presents noise standards published in Section 6-8-204 of the City of Irvine Noise Ordinance.

**Table 5.13-2
City of Irvine Noise Ordinance Levels**

Noise Zone	Exterior or Interior	Time Period	Noise Levels (dBA) for a Period Not Exceeding				
			30 min	15 min	5 min	1 min	0 (anytime)
I: All hospitals, libraries, churches, schools, and residential properties	Exterior	7:00 a.m. – 10:00 p.m.	55	60	65 ¹	70	75
		10:00 p.m. – 7:00 a.m.	50	55	60	65 ¹	70
	Interior	7:00 a.m. – 10:00 p.m.			55	60	65
		10:00 p.m. – 7:00 a.m.	-	-	45	50	55
II: All professional office and public institutional properties.	Exterior	Any time	55	60	65	70	75
	Interior	Any time	-	-	55	60	65
III: All commercial properties excluding professional office properties.	Exterior	Any time	60	65	70	75	80
	Interior	Any time	-	-	55	60	65
IV: All industrial properties.	Exterior	Any time	70	75	80	85	90
	Interior	Any time	-	-	55	60	65

Notes:
1. This standard does not apply to multi-family residence private balconies. Multi-family developments with balconies that do not meet the 65 CNEL are required to provide occupancy disclosure notice to all future tenants regarding potential noise impacts.
2. It shall be unlawful for any person at any location within the City to create any noise or to 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 property within designated noise zones either within or without the City to exceed the applicable noise standard.
3. Each of the noise standards specified above shall be reduced by five dBA for impact, or predominant tone noise or for noises consisting of speech or music.
4. In the event that the noise source and the affected property are within different noise zones, the noise standards of the affected property shall apply.
Source: City of Irvine, *City of Irvine Municipal Code, Title 6, Division 8, Chapter 2, Section 6-8-204*, codified through Ordinance No. 20-02, enacted February 11, 2020.

Construction Noise

IMC Section 6-8-205(A) indicates that construction activities may occur between 7:00 a.m. and 7:00 p.m. Mondays through Fridays, and 9:00 a.m. and 6:00 p.m. on Saturdays. No construction activities shall be permitted outside of these hours or on Sundays and federal holidays unless a temporary waiver is granted by the Chief Building Official or his or her authorized representative. Trucks, vehicles, and equipment that are making, or are involved with, material deliveries, loading, transfer of materials, equipment service, maintenance of any devices or appurtenances for (or within) any construction project in the City, shall not be operated or driven on City streets outside of these hours or on Sundays and federal holidays unless a temporary waiver is granted by the City. Any waiver granted shall take into consideration the potential impact upon the community. No construction activity would be permitted outside of these hours, except in emergencies including maintenance work on the City rights-of-way that might be required.

Exemptions

The following activities shall be exempted from the provision of this chapter:

1. School bands, school athletic and school entertainment events, provided said events are conducted on school property or authorized by special permit from the City.
2. Activities otherwise lawfully conducted on public parks, public playgrounds and public or private school grounds.



EXISTING CONDITIONS

Stationary Sources

The project site is located within an urbanized area. Primary sources of stationary noise in the project vicinity are urban-related residential activities (e.g., mechanical equipment and parking areas). The noise associated with these sources may represent a single-event noise occurrence, short-term, or long-term/continuous noise.

Mobile Sources

The majority of the existing noise near the project area is generated from vehicular sources traveling along Campus Drive and University Drive.

Noise Measurements

Two short-term noise measurements were taken on October 24, 2022, between the hours of 2:30 p.m. and 3:30 p.m. The noise measurement sites were representative of typical existing noise exposure at the nearest sensitive receptors to the project site. Short-term (L_{eq}) measurements are considered representative of the noise levels in the project vicinity. As shown in Table 5.13-3, Short-Term Noise Measurements, short-term noise levels during the daytime ranged from 49.7 to 50.9 dBA L_{eq} .

**Table 5.13-3
Short-Term Noise Measurements**

Site No.	Location	L_{eq} (dBA)	L_{min} (dBA)	L_{max} (dBA)	Peak (dBC)	Date	Time
ST1	Stanford Court Apartment Complex (adjacent to 575 Stanford Court)	49.7	43.1	61.2	72.5	10/24/22	2:47 p.m.
ST2	Mesa Court Complex (adjacent to Barranca Building)	50.9	43.9	67.1	71.1	10/24/22	3:05 p.m.

Notes: L_{eq} = Equivalent Sound Level; L_{min} = Minimum Noise Level; L_{max} = Maximum Noise Level
Source: Michael Baker International, 2022; refer to Appendix D.

Meteorological conditions consisted of clear skies, warm temperatures, with light wind speeds (<5 miles per hour), and low humidity. Noise monitoring equipment used for the ambient noise survey consisted of a Brüel & Kjær Hand-held Analyzer Type 2250 equipped with a Type 4189 pre-polarized microphone. The monitoring equipment complies with applicable requirements of the American National Standards Institute for Type I (precision) sound level meters. The results of the field measurements are included in Appendix D, Noise Data.

SENSITIVE RECEPTORS

Sensitive populations are more susceptible to the effects of noise than are the general population. Land uses considered sensitive by the State of California include schools, playgrounds, athletic facilities, hospitals, rest homes, rehabilitation centers, long-term care and mental care facilities. Generally, a sensitive receptor is identified as a location where human populations (especially children, senior citizens, and sick persons) are present.

Land uses less sensitive to noise are business, commercial, and professional developments. Noise receptors categorized as being least sensitive to noise include industrial, manufacturing, utilities, agriculture, natural open space, undeveloped land, parking lots, warehousing, and transit terminals. These types of land use often generate high noise levels. Moderately sensitive land uses typically include multi-family dwellings, hotels, motels, dormitories, and outpatient clinics. The closest sensitive receptors are existing on-site student housing residents associated with the Mesa Court Residence Hall adjoining the project site to the west.



- 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?**

Project Impact Adequately Addressed in LRDP EIR. The LRDP EIR determined that construction activities associated with implementation of the 2007 LRDP would result in substantial temporary increases in ambient noise levels affecting noise-sensitive land uses on campus. Also, development of the 2007 LRDP would expose persons within future Student Housing to significant direct traffic noise levels, and would expose persons within future Housing Reserve to significant cumulative traffic noise levels. The LRDP EIR also determined that development of the 2007 LRDP would expose persons to significant direct noise impacts from operation of new stationary noise sources, including a satellite utilities plant in the Health Sciences Complex, major HVAC systems, and parking structures. However, with compliance with LRDP EIR Mitigation Measures, the permanent (direct) noise impacts to noise-sensitive land uses on and off campus from vehicular and new stationary noise sources would be reduced to a level of less than significant.

It is difficult to specify noise levels that are generally acceptable to everyone; noise that is considered a nuisance to one person may be unnoticed by another. Standards may be based on documented complaints in response to documented noise levels or based on studies of the ability of people to sleep, talk, or work under various noise conditions. However, all such studies recognize that individual responses vary considerably. Standards usually address the needs of the majority of the general population.

SHORT-TERM NOISE IMPACTS

Construction activities generally are temporary and have a short duration, resulting in periodic increases in the ambient noise environment. Construction activities would occur over approximately 24 months and would include the following phases: demolition, grading, building construction, paving, and architectural coating. Ground-borne noise and other types of construction-related noise impacts typically occur during the initial demolition and grading phase. This phase of construction has the potential to create the highest levels of noise. Typical noise levels generated by construction equipment are shown in Table 5.13-4, *Maximum Noise Levels Generated by Construction Equipment*. It should be noted that the noise levels identified in Table 5.13-4 are maximum sound levels (L_{max}), which are the highest individual sound occurring at an individual time period. Operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Other primary sources of acoustical disturbance would be due to random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts).

Construction noise levels in the project vicinity would fluctuate depending on the particular type, number, and duration of usage for the varying equipment. The effects of construction noise largely depend on the type of construction activities occurring on any given day, noise levels generated by those activities, distances to noise-sensitive receptors, and the existing ambient noise environment in the receptor's vicinity. Construction generally occurs in several discrete phases, with each phase requiring different equipment with varying noise characteristics. These phases alter the characteristics of the noise environment generated on the proposed project site and in the surrounding community for the duration of the construction process.



**Table 5.13-4
Maximum Noise Levels Generated by Construction Equipment**

Type of Equipment	Acoustical Use Factor ¹	L _{max} at 50 Feet (dBA)
Backhoe	40	78
Concrete Mixer Truck	40	79
Concrete Saw	20	90
Crane	16	81
Dozer	40	82
Excavator	40	81
Forklift	20	75
Grader	40	85
Paver	50	77
Roller	20	80
Tractor	40	84
Water Truck	40	75
General Industrial Equipment	50	85

Note:
1. Acoustical Use Factor (percent): Estimates the fraction of time each piece of construction equipment is operating at full power (i.e., its loudest condition) during a construction operation.

Source: Federal Highway Administration, *Roadway Construction Noise Model (FHWA-HEP-05-054)*, January 2006.

Construction noise impacts generally happen when construction activities occur in areas immediately adjoining noise sensitive land uses, during noise sensitive times of the day, or when construction durations last over extended periods of time. As indicated in Table 5.13-4, typical construction noise levels would range from approximately 75 to 90 dBA at 50 feet and propagates as a point source that decays at a rate of 6 dB per doubling of distance from the source. The closest sensitive receptors are existing student housing residences associated with the Mesa Court Residence Hall adjoining the project site to the west. Therefore, as identified in LRDP EIR, project construction noise would be expected to be audible in the immediate area. Therefore, LRDP EIR Mitigation Measure Noi-2A would apply. Pursuant to LRDP EIR Mitigation Measure Noi-2A, construction activities occurring Monday through Friday are limited to the hours of 7:00 a.m. to 7:00 p.m., except during summer, winter, or spring break at which construction may occur at the times approved by UCI. Construction noise occurring on weekends that can be heard from off-campus land uses and on-campus residential housing are limited to the hours of 9:00 a.m. to 6:00 p.m. on Saturdays, with no construction occurring on Sundays or holidays. However, as determined by UCI, if on-campus residential housing is unoccupied (during summer, winter, or spring break, for example), or would otherwise be unaffected by construction noise, construction may occur at any time. With the implementation of LRDP EIR Mitigation Measure Noi-2A, impacts would be less than significant. As such, the proposed project's impacts in this regard would be considered adequately addressed in LRDP EIR.

OPERATIONS

Mobile Noise

Future development generated by the proposed project would result in additional traffic on adjacent roadways, thereby increasing vehicular noise in the vicinity of existing and proposed land uses. According to the *Highway Traffic Noise Analysis and Abatement Policy and Guidance*, a doubling of traffic volumes would result in a 3 dBA increase in traffic noise levels, which is barely detectable by the human ear.¹ According to the *Draft UCI Mesa Court Residence Hall*

¹ U.S. Department of Transportation, *Highway Traffic Noise Analysis and Abatement Policy and Guidance*, August 2017, https://www.fhwa.dot.gov/Environment/noise/regulations_and_guidance/polguide/polguide02.cfm, accessed October 18, 2022.



Expansion Project Transportation Analysis (Transportation Analysis) prepared by Stantec (dated November 18, 2022), the proposed project would generate approximately 113 average daily trips, including 106 on-campus vehicle trips and 7 off-campus vehicle trips. According to the Orange County Transportation Authority (OCTA), Campus Drive experiences approximately 20,000 average daily trips near the project site.² As such, the project's minimal trip generation (approximately 113 average trips per day) would not double existing traffic volumes along Campus Drive and the increase in traffic noise generated by the project along the roadway would be imperceptible. Therefore, project-related traffic noise would be less than significant.

Stationary Noise

The project proposes to replace the existing parking lot on-site with a new student housing development that would serve as an expansion to the existing Mesa Court Residence Hall. Stationary noise sources associated with the proposed project would include those typical of suburban areas (e.g., mechanical equipment and outdoor gathering area) and would be compatible with the adjacent residential land uses. These noise sources are typically intermittent and short in duration and would be comparable to existing sources of noise experienced at surrounding residential uses. Further, all stationary noise activities would be required to comply with the Municipal Code and the California Building Code requirements pertaining to noise attenuation.

Mechanical Equipment

Heating Ventilation and Air Conditioning (HVAC) units typically generate noise levels of approximately 60 dBA L_{eq} at 20 feet from the source.³ The closest sensitive receptor to a proposed HVAC unit is the Mesa Court Residence Hall, located approximately 50 feet west from the proposed building. At this distance, HVAC noise levels would attenuate to approximately 42 dBA, which is below City's exterior daytime and nighttime standards of 55 dBA and 50 dBA, respectively. Therefore, the nearest sensitive receptors would not be directly exposed to substantial noise from on-site mechanical equipment and impacts would be less than significant.

Outdoor Gathering Areas

Noise generated by groups of people (i.e., crowds) is dependent on several factors including vocal effort, impulsiveness, and the random orientation of the crowd members. According to the U.S. Environmental Protection Agency, crowd noise is approximately 60 dBA at one meter (i.e., 3.28 feet) from the source.⁴ Noise has a decay rate due to distance attenuation, which is calculated based on the Inverse Square Law. Based upon the Inverse Square Law, sound levels decrease by 6 dBA for each doubling of distance from the source. Within the proposed project boundaries, crowds have the potential to gather at proposed outdoor areas near the northeast project boundary, including the multi-purpose event area and outdoor gathering area. The nearest sensitive receptor is the existing Mesa Court Residence Hall located approximately 100 feet west of the proposed outdoor gathering area. At this distance, crowd noise to the residences would be approximately 30 dBA and would not exceed the City's exterior daytime and nighttime noise standards of 55 dBA and 50 dBA, respectively. Impacts would be less than significant in this regard.

IMPACTS TO THE NATURAL HABITAT

As previously mentioned, the project site is located within a built out, urbanized area of the UCI campus and is currently a fully paved parking lot occupied by a temporary trailer. According to the LRDP EIR, implementation of the 2007 LRDP could result in indirect impacts to existing or potentially occurring candidate, sensitive, or special status plant species within the campus Planning Areas or in adjacent areas within 150 feet of the approved limits of disturbance. However, the project site is not located within any portions of the Natural Communities Conservation Program (NCCP) Reserve

² Orange County Transportation Authority, *2021 Traffic Flow Map, Orange County, California*, September 23, 2021, <https://www.octa.net/Projects-and-Programs/All-Projects/Streets-Projects/Master-Road-Plan/Annual-Traffic-Volume-Maps/>, accessed October 18, 2022.

³ Berger, Elliott H., et al., *Noise Navigator Sound Level Database with Over 1700 Measurement Values*, June 26, 2015.

⁴ U.S. Environmental Protection Agency, *Community Noise*, 1971.



Area in the UCI campus, and the nearest San Joaquin Freshwater Marsh Reserve (SJFMR) habitat areas identified as suitable for sensitive wildlife species is situated approximately 0.24 miles (1,267 feet) to the north. The project's construction and operational activities would occur within the campus boundaries and at this distance, the nearest natural habitat would not be directly exposed to substantial noise from on-site construction and operational activities. Furthermore, implementation of LRDP EIR Mitigation Measure Noi-2A would restrict construction hours and reduce construction noise impacts to less than significant levels. As such, the proposed project's impacts in this regard would be considered adequately addressed in LRDP EIR.

LRDP EIR Mitigation Measures:

LRDP EIR Noi-2A: Prior to initiating on-site construction for future projects that implement the 2007 LRDP, UCI shall approve contractor specifications that include measures to reduce construction/demolition noise to the maximum extent feasible. These measures shall include, but are not limited to, the following:

- i. Noise-generating construction activities occurring Monday through Friday shall be limited to the hours of 7:00 am to 7:00 pm, except during summer, winter, or spring break at which construction may occur at the times approved by UCI.
- ii. Noise-generating construction activities occurring on weekends in the vicinity of (can be heard from) off-campus land uses shall be limited to the hours of 9:00 am to 6:00 pm on Saturdays, with no construction occurring on Sundays or holidays.
- iii. Noise-generating construction activities occurring on weekends in the vicinity of (can be heard from) on-campus residential housing shall be limited to the hours of 9:00 am to 6:00 pm on Saturdays, with no construction on Sundays or holidays. However, as determined by UCI, if on-campus residential housing is unoccupied (during summer, winter, or spring break, for example), or would otherwise be unaffected by construction noise, construction may occur at any time.
- iv. Construction equipment shall be properly outfitted and maintained with manufacturer recommended noise-reduction devices to minimize construction-generated noise.
- v. Stationary construction noise sources such as generators, pumps or compressors shall be located at least 100 feet from noise-sensitive land uses (i.e., campus housing, classrooms, libraries, and clinical facilities), as feasible.
- vi. Laydown and construction vehicle staging areas shall be located at least 100 feet from noise-sensitive land uses (i.e., campus housing, classrooms, libraries, and clinical facilities), as feasible.
- vii. All neighboring land uses that would be subject to construction noise shall be informed at least two weeks prior to the start of each construction project, except in an emergency situation.
- viii. Loud construction activity such as jackhammering, concrete sawing, asphalt removal, pile driving, and large-scale grading operations occurring within 600 feet of a residence, or an academic building shall not be scheduled during any finals week of classes. A finals schedule shall be provided to the construction contractor.

Project-Level Mitigation Measures: No project-level mitigation measures are required.



b) Generation of excessive groundborne vibration or groundborne noise levels?

Project Impact Adequately Addressed in LRDP EIR. The LRDP EIR determined that construction activities associated with implementation of the 2007 LRDP could result in the exposure of persons and vibration-sensitive instruments, operations, and buildings on campus to, or generation of, excessive ground-borne vibration or ground-borne noise levels. However, with compliance with recommended mitigation, impacts would be reduced to a less than significant level.

Project construction can generate varying degrees of groundborne vibration, depending on the construction procedure and the construction equipment used. Operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of the construction site often varies depending on soil type, ground strata, and construction characteristics of the receiver building(s). The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, to slight damage at the highest levels. Groundborne vibrations from construction activities rarely reach levels that damage structures. Ordinary buildings that are not particularly fragile would not experience any cosmetic damage (e.g., plaster cracks) at distances beyond 30 feet. This distance can vary substantially depending on the soil composition and underground geological layer between vibration source and receiver. In addition, not all buildings respond similarly to vibration generated by construction equipment.

The types of construction vibration impacts include human annoyance and building damage. Human annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time. Building damage can be cosmetic or structural. The Federal Transit Administration (FTA) guidelines are used to evaluate potential impacts related to construction vibration for both potential building damage and human annoyance. The FTA has identified an architectural damage criterion for continuous vibrations of 0.20 inch/second PPV. Further, as the nearest sensitive receptors to project construction are Mesa Court Residence Hall buildings, the criterion for human annoyance of 0.20 inch/second PPV is utilized. Typical vibration produced by construction equipment is illustrated in Table 5.13-5, Typical Vibration Levels for Construction Equipment.

**Table 5.13-5
Typical Vibration Levels for Construction Equipment**

Equipment	Approximate peak particle velocity at 25 feet (inches/second)
Loaded Trucks	0.076
Large Bulldozers	0.089
Small Bulldozer/Tractors	0.002
Notes: Calculated using the following formula: $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$ where: PPV (equip) = the peak particle velocity in in/sec of the equipment adjusted for the distance PPV (ref) = the reference vibration level in in/sec from Table 12-2 of the FTA <i>Transit Noise and Vibration Impact Assessment Guidelines</i> D = the distance from the equipment to the receiver	
Source: Federal Transit Administration, <i>Transit Noise and Vibration Impact Assessment Manual</i> , Table 7-4 Vibration Source Levels for Construction Equipment, September 2018.	

The nearest structures to the project site are located immediately to the west portions of the project site. Construction activities are anticipated to occur up to the project boundary line. Groundborne vibration decreases rapidly with distance. As indicated in Table 5.13-5, based on the FTA data, vibration velocities from typical heavy construction equipment operation at the proposed project construction area would range from 0.002 to 0.089 inch/second PPV at 25 feet from the source of activity. As identified in 2007 LRDP EIR, vibration sensitive instruments, operations and buildings at UCI may require special consideration during nearby construction activities. Therefore, LRDP EIR Mitigation Measure Noi-4A would apply. Pursuant to LRDP EIR Mitigation Measure Noi-4A, for on-site construction of



future projects that are located within 100 feet of vibration-sensitive uses, UCI shall approve a construction vibration mitigation program as part of the contractor specifications that includes measures to reduce vibration resulting from construction activities. As such, with the implementation of LRDP EIR Mitigation Measure Noi-4A, impacts would be less than significant level.

LRDP EIR Mitigation Measures:

LRDP EIR Noi-4A: Prior to initiating on-site construction for future projects that implement the 2007 LRDP and are located within 100 feet of vibration-sensitive uses (i.e., buildings containing vibration sensitive instruments or operations, or buildings that are considered vibration sensitive due to their age, construction type and/or fragile condition), UCI shall approve a construction vibration mitigation program as part of the contractor specifications that includes measures to reduce vibration resulting from construction activities to the maximum extent practicable. The program shall include measures to establish baseline vibration conditions, vibration monitoring, work methods or equipment necessary to reduce vibration, and a pre-construction notification process for impacted building occupants (six-month and one-month interval prior to construction).

If pile driving is proposed, building occupants within 600 feet of the pile-driving site shall be notified of construction at six-month and one-month intervals prior to the start of construction.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

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?***

No Impact. The LRDP EIR determined that implementation of the 2007 LRDP would not expose new noise-sensitive land uses on campus to excessive noise levels resulting from aircraft. No impacts would result in this regard.

The nearest airport to the project site is the John Wayne Airport in the City of Santa Ana, approximately 1.75 miles to the northwest. According to the *Airport Environs Land Use Plan for John Wayne Airport (AELUP)*, the project site is located outside of the Airport Impact Zones, AELUP Notification Area, Federal Aviation Regulation Part 77 Notification Area, and Airport Safety Zones.⁵ Additionally, the project site is not located within the vicinity of a private airstrip or related facilities. Therefore, project implementation would not expose people residing or working in the project area to excessive airport noise levels or safety hazards. No impacts would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

⁵ Orange County Airport Land Use Commission, *Airport Environs Land Use Plan for John Wayne Airport*, April 17, 2008.



5.14 POPULATION AND HOUSING

<i>Would the project:</i>	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant Impact With Project-Level Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Induce substantial unplanned 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)?				✓	
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?					✓

- a) ***Induce substantial unplanned 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. According to the LRDP EIR, because the growth in UCI's population would account for a small proportion of the planned growth of the region and a small proportion of the construction of new housing, implementation of the 2007 LRDP would not directly induce substantial population growth which would adversely affect the physical environment. In addition, implementation of the 2007 LRDP is not expected to indirectly induce population growth by expanding infrastructure, removing an obstacle to growth, or encouraging the growth of industry. Impacts would be less than significant.

The proposed project would replace the existing parking lot on-site with a new student housing development that would serve as an expansion to the existing Mesa Court Residence Hall. The proposed (up to) 450 beds would serve the existing first-year students on campus, as envisioned by the 2007 LRDP; it is assumed that up to 450 students would be chosen from the existing on-campus student housing waitlist. As such, the new housing development would not generate population growth and instead serve the planned student population on campus (which would occur with or without the project). The proposed project would not increase student enrollment beyond what was planned for in the 2007 LRDP and analyzed in the LRDP EIR. Therefore, the project would not directly or indirectly induce substantial unplanned population growth, and impacts would be less than significant in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

- b) ***Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?***

No Impact. According to the LRDP EIR, implementation of the 2007 LRDP would result in in-fill development within UCI-owned property, resulting in an increase in student and faculty and associated staff housing. However, no displacement of existing housing would result because development under the 2007 LRDP is limited to UCI-owned property and would not interfere with the number of existing housing units on campus. The LRDP EIR concluded that impacts would be less than significant.



The existing project site is a fully paved parking lot and is currently occupied by a temporary trailer used for student service, administrative offices, and food pantry storage. The proposed project would replace the existing parking lot and trailer with a new student housing building, expanding the existing Mesa Court Residence Hall. There are no people or housing currently associated with the project site. Therefore, the proposed project would not displace any existing people or housing, necessitating the construction of replacement housing elsewhere. No impact would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.



5.15 PUBLIC SERVICES

	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant Impact With Project-Level Mitigation Incorporated	Less Than Significant Impact	No Impact
a. 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:					
1) Fire protection?				✓	
2) Police protection?				✓	
3) Schools?					✓
4) Parks?				✓	
5) Other public facilities?				✓	

a) ***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:***

1) ***Fire protection?***

Less Than Significant Impact. The Orange County Fire Authority (OCFA) provides fire protection and emergency medical services to the UCI campus and project site. The primary responder serving the campus, OCFA Fire Station #4, is located north of the campus on the corner of California and Harvard Avenue.¹ According to the LRDP EIR, implementation of the 2007 LRDP would not impact the service capacity of Fire Station #4, but would increase demand at Fire Station #28, along with other regional growth in the vicinity, to a level that would require new facilities or substantial alterations to existing facilities. The LRDP EIR concluded that with compliance to applicable safety and fire protection regulations, California building and fire codes, and the UCI Emergency Management Plan, impacts would be less than significant. Additionally, the LRDP EIR considered impacts to fire protection as a cumulative impact and concluded that as a result of the increase in regional demand for fire protection services, a new OCFA fire station may be constructed which could result in adverse physical impacts to the environment. As with other development projects and public service improvements in the region, the construction of a new fire station would be subject to CEQA review and compliance with local, State, and federal environmental requirements. OCFA would conduct an environmental analysis and require appropriate mitigation measures to reduce impacts to the physical environment. The LRDP EIR

¹ Orange County Fire Authority, *Fire Stations*, <https://ocfa.org/AboutUs/FireStations.aspx>, accessed October 20, 2022.



concluded the adverse physical impacts resulting from construction and operation of a new fire station to serve cumulative regional demand would be less than significant.

OCFA would continue to provide fire protection services to the project site. The proposed project would include all necessary ingress and egress for traffic circulation and emergency response and would comply with all applicable requirements for construction, access, water mains, fire flows, and life safety requirements. In addition, the proposed project would be required to comply with applicable safety and fire protection regulations, California building and fire codes, and the UCI Emergency Management Plan. The project would not result in population growth within the area. The proposed (up to) 450 beds would serve existing first-year students on campus currently enrolled and on the student housing waitlist. Based on the *Amended Land Use Map for the 2007 LRDP*, the project site is designated Student Housing, and the 2007 LRDP includes a key planning objective of providing sufficient student housing on the campus to accommodate 50 percent of UCI's on-campus enrollment. As such, the project would not increase student enrollment beyond what was planned for in the 2007 LRDP and analyzed in the LRDP EIR. Therefore, the proposed project would not result in the need for new fire protection facilities, the construction of which would result in significant adverse effects, in order to maintain acceptable response times, service ratios, or other performance objectives. Impacts would be less than significant in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

2) **Police protection?**

Less Than Significant Impact. The UCI Police Department (UCIPD) is located in the Public Services building on the East Campus. The UCIPD provides all police services including patrol, traffic, investigations, community engagement, crime prevention and suppression, and security services for the campus. According to the LRDP EIR, as campus population increases as a result of implementation of the 2007 LRDP, UCI would increase the number of officers within the UCI Police Department, which may require the construction of additional police service facilities, which would undergo environmental review. The LRDP EIR concluded that impacts would be less than significant.

The proposed project would implement security features in continued collaboration with the UCIPD, such as blue phone locations and additional security systems. The proposed project would include all necessary ingress and egress for traffic circulation and emergency response. As discussed, the proposed project would not increase student enrollment beyond what was planned for in the 2007 LRDP and analyzed in the LRDP EIR and would not result in population growth demanding a significant increase for police services, compared to that analyzed in the LRDP EIR. As such, the project would not result in the need to expand or construct additional police facilities on the campus. Impacts to police services would be less than significant.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

3) **Schools?**

No Impact. The Irvine Unified School District (IUSD) provides kindergarten through grade 12 public education services for school age children residing on or near the UCI campus. According to the LRDP EIR, the increase of school-age children living on-campus as a result of implementation of the 2007 LRDP would not require the construction of additional schools because the increase attributable to the 2007 LRDP would be a small proportion to the number of children enrolled in the (IUSD). The LRDP EIR concluded that impacts would be less than significant.

The project would not result in new faculty housing, or new employment opportunities on campus. As such, the proposed project would not increase student enrollment for kindergarten through 12th grade beyond what was planned



for in the 2007 LRDP and analyzed in the LRDP EIR. Therefore, the demand for schools would not increase, and no impacts are anticipated in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

4) **Parks?**

Less Than Significant Impact. According to the LRDP EIR, implementation of the 2007 LRDP would include construction and expansion of recreational facilities (including park facilities) that may have an adverse physical effect on the environment. The LRDP EIR concluded that impacts would be less than significant with the implementation of recommended LRDP mitigation measures.

The proposed project would not increase student enrollment nor generate new employment beyond what was planned for in the 2007 LRDP and analyzed in the LRDP EIR. Existing on-campus recreational facilities located throughout the campus, including Aldrich Park, Crawford Athletics Complex, and the Anteater Recreation Center would have sufficient capacity to support the proposed project and would not require the construction of new park facilities elsewhere. Therefore, impacts would be less than significant in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

5) **Other public facilities?**

Less Than Significant Impact. According to the LRDP EIR, no other public services were identified in the 2007 LRDP. The LRDP EIR concluded no impacts would result in this regard.

The proposed project would not increase student enrollment nor generate new employment beyond what was planned for in the 2007 LRDP and analyzed in the LRDP EIR. Furthermore, public facilities, such as libraries, exist on-campus and would not result in the need for the construction of new facilities within the surrounding community. Therefore, impacts to other public facilities would be less than significant.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.



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5.16 RECREATION

	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant Impact With Project-Level Mitigation Incorporated	Less Than Significant Impact	No Impact
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?				✓	
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?					✓

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. According to the LRDP EIR, while implementation of the 2007 LRDP would increase the campus population and the use of on-campus recreational facilities, good management and active maintenance would minimize deterioration of such facilities. A significant increase in use of off-campus facilities is not expected and the LRDP EIR concluded that impacts would be less than significant.

As discussed in [Section 5.14, *Population and Housing*](#), the proposed expansion of student housing on campus would not generate population growth and would instead serve the planned student population that would occur with or without the project. The proposed project would not increase student enrollment nor employment opportunities beyond what was planned for in the 2007 LRDP and analyzed in the LRDP EIR. Therefore, the proposed project would not substantially increase staff populations or result in an increase in any other populations on the campus, such as student, faculty, or off-campus users, and construction of the proposed project would not result in accelerated deterioration of recreational uses on or off-campus. In addition, campus and community populations have access to on-campus recreational facilities, including the Anteater Recreation Center, Aldrich Park, and Crawford Athletics Complex. As discussed above, the 2007 LRDP EIR assumed that the current level of maintenance of campus recreational facilities would continue, and that substantial facility deterioration would not occur. Therefore, impacts to existing recreational facilities would be less than significant.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are 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?*

No Impact. According to the LRDP EIR, implementation of the 2007 LRDP would include construction and expansion of recreational facilities that may have an adverse physical effect on the environment. The LRDP EIR concluded that impacts would be less than significant with the implementation of recommended LRDP mitigation measures.

The proposed project would include expansion of existing student housing, including appropriate common open space areas to support student housing activities. The proposed project would not include any new recreational facilities and would not result in population growth that could increase the use of existing and planned recreational facilities on



campus, such that the construction or expansion of recreational facilities would be required. Therefore, no impact would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.



5.17 TRANSPORTATION

<i>Would the project:</i>	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant With Project-Level Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?				✓	
b. Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?				✓	
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?					✓
d. Result in inadequate emergency access?				✓	

This section is primarily based upon the *Draft UCI Mesa Court Residence Hall Expansion Project Transportation Analysis* (Transportation Analysis), prepared by Stantec and dated November 18, 2022; refer to [Appendix D, Transportation Analysis](#).

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Less Than Significant Impact. This CEQA impact threshold was modified since the LRDP EIR was prepared. The impact threshold discussed in the LRDP EIR involved traffic volumes and level of service (LOS). As discussed on page 4.13-49 of the LRDP EIR, implementation of the 2007 LRDP Circulation Element would include traffic signal improvements, roadway median modifications, intersection improvements, additional turning lanes, and roadway widening involving modifications to curb and gutter, sidewalks, parkway and median landscaping, streetlights and the installation or relocation of underground utilities. These improvements would occur within or directly adjacent to existing campus roadways, and the scope of environmental impacts resulting from these improvements and enhancements are addressed within the environmental analysis throughout the LRDP EIR. Consistent with 2007 LRDP Circulation Element goals to enhance vehicle access and campus mobility while retaining a pedestrian-friendly campus environment, UCI would continue to pursue TDM measures including restrictive parking policies; promoting bicycling, walking, shuttles, and other alternative transportation modes; and signal and intersection enhancements to improve on-campus circulation system LOS prior to adding travel lanes to existing campus roadways. Furthermore, the LRDP EIR included mitigation measures that address transit, roadway, bicycle, and pedestrian facilities. LRDP EIR Mitigation Measures Tra-1A and Tra-1I would require the continued operation and expansion of alternative transportation program, ensuring that individual projects are consistent with UC alternative transportation policies and goals; and LRDP EIR Mitigation Measure Tra-1C would encourage the enhancement of transit service. Overall, the LRDP EIR concluded that impacts pertaining to the circulation system would be less than significant with mitigation incorporated.

ROADWAY FACILITIES

Refer to Response 4.17(b) below regarding project impacts on roadway facilities.



TRANSIT, BICYCLE, AND PEDESTRIAN FACILITIES

Transit Facilities

Existing bus transit around the project site include UCI's Anteater Express bus routes, Orange County Transportation Authority (OCTA) bus routes, and the City of Irvine's iShuttle routes.

Anteater Express is UCI's bus transit system that provides transportation to various areas on and off the UCI Campus. According to the Transportation Analysis, Anteater Express is an attractive mode of transportation because of the short distance between stops and reasonable fares. UCI also provides enhanced services that increase the ease of using the shuttle service such as the on-line Live Bus Tracking system that give real time data of the buses in service, and an application that allow users to view the shuttle's location. UCI also offers a Medical Center shuttle that is available to students, faculty, and staff. For Fall 2022, three routes are in operation: A Line, M Line, and N Line, running from 7:30 am to 10:30 pm; refer to Figure 2-2, *Anteater Express Routes and Stops*, of the Transportation Analysis for a map showing these routes within the UCI campus. A Line's headways are approximately 8 minutes in the morning and 13 minutes in the afternoon and evening service. N Line's headways are approximately every 7 minutes in the morning service, 9 minutes in the afternoon service, and 13 minutes in the evening service. M Line has headways of every 13 minutes in the morning service, 13 minutes in the afternoon service, and every 25 minutes in the evening service.

OCTA provides bus transit services all throughout Orange County. OCTA has partnered with UCI's Parking and Transportation Services Office to offer UCI students the University Pass, which allows the students to enjoy unlimited regular OCTA bus transit service throughout Orange County. OCTA bus routes around the UCI campus include routes 59, 79, 167, 178, 213, and 473.

The iShuttle is operated and managed by OCTA and provides a first and last mile transportation option in the City of Irvine. iShuttle routes start at the Tustin and Irvine Metrolink stations (times to meet the train schedule) and stop at places near major employment, retail, and residential areas such as the Irvine Business Complex area, John Wayne Airport, and Irvine Spectrum. While the iShuttle does not directly stop at the UCI campus, students can take an OCTA bus stop to transfer to an iShuttle stop, if needed.

According to the Transportation Analysis, four Anteater Express stops are located within a half-mile walk of the project site, as shown on Figure 2-2 of the Transportation Analysis. One stop is approximately 0.40-mile walking distance at the Humanities and Fine Arts Building on West Peltason Drive and provides access to the M line. Three additional stops are approximately 0.40-mile walking distance at the University Center on Campus Drive and provides access to the A Line, M Line, and N Line.

Bicycle and Pedestrian Facilities

Active transportation is well supported in the project vicinity, with "pedestrian/bike shared pathways" and "bicycle access roadways" surrounding the project site and connecting to the campus active transportation network, as well as the City's local and regional bike trails and sidewalks; refer to the Transportation Analysis Figure 1-3, *Site Access*, and Figure 2-1, *UCI Bike Map*. The following describes major roadways and their associated bicycle facilities as described on Section 2.1, Existing Roadway System, of the Transportation Analysis.

- University Drive: There is a dedicated bike path and Class II on-street bikes on University Drive near the project site.
- Pereira Drive: There are Class III "sharrows" bicycle markings on the pavement, and the speed limit is 15 mph.
- Peltason Drive: An on-street bike lane is provided.



- Mesa Road: Class II on-street bike lanes are provided.

Multimodal Transportation Analysis

The project is evaluated qualitatively with consideration to the multimodal transportation network. A multimodal transportation network provides opportunities for people to safely get to their destinations by means other than a single occupancy vehicle. Multimodal networks are a component of a "Complete Street" that address the needs of pedestrians, bicyclists, transit riders and motorists. The development of multimodal features within a development project would reduce VMT and GHG emissions. Projects that block access, remove, or interfere with pedestrian paths, bicycle paths, or transit stops would have a significant impact on VMT.

The development of the project would not remove any pedestrian or bicycle facilities or transit stops. As discussed in Section 2.3, *Background and History*, the project location was selected for its connection to the existing Mesa Court Residence Hall and the ability to create clearly defined zones for student housing and campus parking. The site also supports student pedestrian circulation through the Mesa Court Residence Hall complex. The project would include shared pedestrian/bicycle pathways and on-site amenities for pedestrian/bicyclists that would allow for choosing walking and biking as a comfortable and a low-stress option. As detailed in Section 2.4, *Project Characteristics*, accessible pedestrian pathways, per California Building Code (CBC) Title 24, would be provided linking the proposed project with existing campus pedestrian pathways at the perimeters of the site. As currently proposed, a primary pedestrian path on-site would be provided along the western perimeter of the site, between the proposed structure and the existing Mesa Court residence hall to the west, and along the southern perimeter of the structure. Pedestrian connections to existing Mesa Court Residence Hall ancillary structures would be provided. All on-site pedestrian pathways would be a minimum of six feet in width to accommodate carts. Additionally, Transportation Analysis Figure 1-3 shows the various pedestrian pathways connecting the entire Mesa Court internally as well as with the rest of the campus.

In regard to bicycle accessibility, the project is accessible by bike lanes on University Drive, Mesa Road, West Peltason Drive, Pereira Drive, and Alumni Court. Additionally, UCI has a robust bicycle program that promotes bicycle transportation. In addition to bicycle infrastructure, UCI has BikeUCI Ambassadors, a Bicycle Advisory Group, and Bicycle Education and Enforcement (B.E.E.P). Generally, all campus facilities are easily accessible by bicycle due to the comprehensive network of pathways throughout the campus.

In regard to transit, four Anteater Express stops are located within a half-mile walk of the project site as described above.

Overall, since the project is not removing any pedestrian, bicycle or transit facilities, the project would not conflict with a program plan, ordinance or policy addressing the circulation system, including transit, bicycle, and pedestrian facilities. Additionally, as discussed in Section 2.4, *Transportation Demand Management (TDM)*, of the Transportation Analysis, UCI proactively utilizes TDM measures through UCI's Sustainable Transportation Program, which complies with the UC's Sustainable Transportation Policy Goals. As such, impacts in this regard would be less than significant.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

b) *Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?*

Less Than Significant Impact. This impact threshold was modified since the LRDP EIR were prepared. As such, this impact threshold was not discussed in the LRDP EIR.

The State of California Governor's Office of Planning and Research (OPR), in implementing Senate Bill (SB) 743, issued proposed updates to the CEQA guidelines in November 2017 that amends the Appendix G question for transportation impacts to delete reference to vehicle delay and level of service (LOS) and instead refer to Section



15064.3, subdivision (b)(1) of the CEQA Guidelines asking if the project would result in a substantial increase in vehicle miles traveled (VMT). The California Natural Resources Agency certified and adopted the revisions to the CEQA Guidelines in December of 2018, and as of July 1, 2020, the provisions of the new section are in effect Statewide. Concurrently, OPR developed the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (OPR’s Technical Advisory), dated December 2018, which provides non-binding recommendations on the implementation of VMT methodology which has significantly informed how VMT analyses are conducted in the State. The University of California has adopted the CEQA guidelines making VMT the primary metric for evaluating transportation impacts.

To evaluate the project’s potential transportation impact, this analysis uses recommendations from the Technical Advisory and the City of Irvine’s VMT Guidelines. Prior to conducting a full VMT analysis, a screening evaluation is carried out to determine if the project may be assumed to cause a less-than-significant transportation impact. If the project does not meet one of the screening criteria, a VMT analysis is carried out where the project VMT rate is compared to the applicable threshold of significance. Feasible mitigation measures are identified if the project is found to cause a significant transportation impact.

As discussed in Section 4.1.1, *Trip Generation Screening*, of the Transportation Analysis, OPR’s Technical Advisory recommends that small projects that generate less than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact. The City of Irvine VMT Guidelines uses a threshold of 250 daily trips based on latest edition of the Institute of Transportation Engineers (ITE) Trip Generation Handbook. The 11th Edition ITE Trip Generation Handbook does not have trip rates for a dormitory use. Therefore, project trips are estimated using trip rates from the *UCI Main Campus Traffic Model for Trip Rate*. Table 4-2, *Project Vehicle Trip Generation Summary*, of the Transportation Analysis summarizes the trip rates and the project’s estimated trip generation; refer to [Table 4.17-1, Project Trip Generation](#).

**Table 4.17-1
Project Trip Generation**

Land Use	Amount	Unit	Rate 1 Off-Campus Vehicle trips	Rate 2 On-Campus Vehicle trips	Total ADT
Undergrad Dorm	450	bed	106	7	113
Source: Stantec, <i>Draft UCI Mesa Court Residence Hall Expansion Project Transportation Analysis</i> , November 18, 2022.					

As shown in [Table 4.17-1](#), the proposed project is anticipated to generate approximately 113 average weekday daily trips. Given that the project’s net daily trips of 113 is below the 250-trip threshold used by the City of Irvine, the Transportation Analysis determined that the project meets the screening criteria and would result in a less than significant VMT impact.

Although the project only needs to meet one screening criteria, the project also meets the Proximity to High Quality Transit criteria. OPR’s Technical Advisory suggests that a project would have a less-than-significant transportation impact if the project is within a half-mile of an “existing major transit stop or an existing stop along a high-quality transit corridor”. A major transit stop is defined as “the intersection of two or more major bus routes with a frequency service interval of 15 minutes or less during the morning and afternoon peak commute periods”. A high-quality transit corridor is defined as an existing corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours. Based on this definition, the proposed project would meet this screening criteria and would not require a quantitative VMT analysis.

Further, as discussed in the Transportation Analysis, Section 4.2, *Impact Analysis*, the project has a floor area ratio greater than 0.75, includes less parking than required by the jurisdiction, does not replace affordable housing units, and is consistent with the SCAG RTP/SCS. Overall, as concluded on the Transportation Analysis, the proposed project would have a less than significant impact in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.



Project-Level Mitigation Measures: No project-level mitigation measures are required.

c) *Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*

No Impact. The LRDP EIR determined that implementation of the 2007 LRDP is anticipated to increase vehicular traffic on-and off-campus. However, design features would be compatible with existing campus transportation plans and adjacent land uses. Therefore, no impacts would occur from hazards due to design features or incompatible land uses.

The project would not introduce any hazards to the existing circulation system, such as sharp curves or dangerous intersections, and would not introduce any incompatible uses. The project would be an expansion of the existing Mesa Court Residence Hall with existing vehicular and emergency access routes. As discussed in Section 2.4, Project Characteristics, all proposed elements of vehicle access and roadway improvement, including size, configuration, vertical and horizontal alignment, lane widths, striping, signage, lighting, and traffic control measures (i.e., stop signs and speed humps) would be designed and constructed in compliance with the UCI Master Specification and Campus Standards and Design Criteria (CS&DC). The aesthetics of the vehicle access points would be integrated with the pedestrian pathways, landscape design, and potential storm water quality treatment areas. Vehicle access would include fire department access in compliance with CS&DC, Designated Campus Fire Marshal (DCFM), and Orange County Fire Authority (OCFA) requirements and standards. With compliance with existing requirements and standards, to the project would be compatible with existing campus transportation plans and adjacent uses. No impacts would occur from hazards due to geometric design features or incompatible uses.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

d) *Result in inadequate emergency access?*

Less Than Significant Impact. Refer to Response 5.9(f).

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.



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5.18 TRIBAL CULTURAL RESOURCES

	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant With Project-Level Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:					
1) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or					✓
2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.			✓		

As of July 1, 2015, California Assembly Bill 52 (AB 52) was enacted and expanded CEQA by establishing a formal consultation process for California tribes within the CEQA process. The bill specifies that any project may affect or cause a substantial adverse change in the significance of a tribal cultural resource would require a lead agency to “begin consultation with a California Native American tribe that is traditional and culturally affiliated with the geographic area of the proposed project.” Section 21074 of AB 52 also defines a new category of resources under CEQA called “tribal cultural resources.” Tribal cultural resources are defined as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe” and is either listed on or eligible for the California Register of Historical Resources (CRHR) or a local historic register, or if the lead agency chooses to treat the resource as a tribal cultural resource.

On February 19, 2016, the California Natural Resources Agency proposed to adopt and amend regulations as part of AB 52 implementing Title 14, Division 6, Chapter 3 of the California Code of Regulations, CEQA Guidelines, to include consideration of impacts to tribal cultural resources pursuant to Government Code Section 11346.6. On September 27, 2016, the California Office of Administrative Law approved the amendments to Appendix G of the CEQA Guidelines, and these amendments are addressed within this Initial Study.



In compliance with AB 52, UCI distributed letters notifying each Native American tribe that requested to be on UCI's list for the purposes of AB 52 of the opportunity to consult with UCI regarding the proposed project. The letters were distributed by certified mail on November 23, 2022.

- a) ***Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:***
- 1) ***Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?***

No Impact. As detailed in Response 5.5(a), no historic resources listed or eligible for listing in a State or local register of historic resources are located on-site. Therefore, no impacts related to historic tribal cultural resources defined in Public Resources Code Section 5020.1(k) would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

- 2) ***A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.***

Less Than Significant With Project-Level Mitigation Incorporated. As discussed above, Tribal Cultural Resources was added as an environmental factor in a subsequent CEQA Guidelines update. As noted above, UCI distributed letters notifying each Native American tribes that requested to be on UCI's list for the purposes of AB 52 of the opportunity to consult with UCI regarding the proposed project. The letters were distributed by certified mail on November 23, 2022. The 30-day response period for AB 52 consultation concluded on December 27, 2022. UCI did not receive any communications or requests for consultation. However, as is the standard practice for all major capital projects within the University, UCI would continue to work with the tribes at their request.

As discussed in Section 5.5, Cultural Resources, and Section 5.7, Geology and Soils, potential impacts in regard to cultural and paleontological resources would be mitigated to less than significant levels through implementation of LRDP EIR Mitigation Measures Cul-1C, which would require UCI to retain a qualified archaeologist (and, if necessary, a culturally-affiliated Native American) to monitor any ground-disturbing activities in areas of identified archaeological sensitivity, and Cul-4A, which would require a qualified paleontologist to monitor any ground-disturbing activities. Additionally, the project would implement project-level Mitigation Measure TCR-1, which would require archaeological monitoring during ground-disturbing activities, and provide specific procedures to be taken if human remains and/or tribal cultural resources are discovered. With the implementation of LRDP EIR Mitigation Measures Cul-1C and Cul-4A as well as project-level Mitigation Measure TCR-1, potential impacts to tribal cultural resources would be reduced to a less than significant level.

LRDP EIR Mitigation Measures: Refer to Section 5.5, Cultural Resources, and Section 5.7, Geology and Soils, for LRDP EIR Mitigation Measures Cul-1C and Cul-4A, respectively.

Project-Level Mitigation Measures:

TCR-1: If subsurface deposits believed to be cultural or human in origin, or tribal cultural resources, are discovered during construction all work shall halt within a 50-foot radius of the discovery, the Construction Manager shall immediately notify UCI Physical and Environmental Planning. The Construction Manager shall also immediately coordinate with the tribal monitor and an



archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archaeology and subject to approval by UCI to evaluate the significance of the find and develop appropriate management recommendations. All management recommendations shall be provided to UCI in writing for UCI's review and approval. If recommended by the qualified professional and consulting tribes, and approved by UCI, this may include modification of the no-work radius.

The professional archaeologist must make a determination, based on professional judgement and supported by substantial evidence, within one business day of being notified, as to whether or not the find represents a cultural resource or has the potential to be a tribal cultural resource. The subsequent actions will be determined by the type of discovery, as described below. These include: 1) a work pause that, upon further investigation, is not actually a discovery and the work pause was simply needed in order to allow for closer examination of soil (a "false alarm"); 2) a work pause and subsequent action for discoveries that are clearly not related to tribal cultural resources, such as can and bottle dumps, artifacts of European origin, and remnants of built environment features; and 3) a work pause and subsequent action for discoveries that are likely related to tribal cultural resources, such as midden soil, bedrock mortars, groundstone, or other similar expressions.

Whenever there is question as to whether or not the discovery represents a tribal resource, culturally affiliated tribes shall be consulted in making the determination. The following processes shall apply, depending on the nature of the find, subject to the review and approval of UCI:

- **Response to False Alarms:** If the professional archaeologist in consultation with the tribal representative determines that the find is negative for any cultural indicators, then work may resume immediately upon notice to proceed from UCI's representative. No further notifications or tribal consultation is necessary, because the discovery is not a cultural resource of any kind. The professional archaeologist shall provide written documentation of this finding to UCI.
- **Response to Non-Tribal Discoveries:** If at the time of discovery a professional archaeologist and tribal representative determines that the find represents a non-tribal cultural resource from any time period or cultural affiliation, UCI shall be notified immediately, to consult on a finding of eligibility and implementation of appropriate treatment measures.
- **Response to Tribal Discoveries:** If the find represents a tribal or potentially tribal cultural resource that does not include human remains, the tribe and UCI shall be notified. UCI will consult with the tribe on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be either a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines, or a Tribal Cultural Resource, as defined in Section 21074 of the Public Resources Code. Preservation in place is the preferred treatment, if feasible. Work shall not resume within a 50-foot radius until UCI, through consultation as appropriate, determines that the site either: 1) is not a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines; or 2) not a Tribal Cultural Resource, as defined in Section 21074 of the Public Resources Code; or 3) that the treatment measures have been completed to its satisfaction.
- **Response to Human Remains:** If the find includes human remains, or remains that are potentially human, the construction supervisor or on-site archaeologist shall ensure reasonable protection measures are taken to protect the discovery from disturbance



(AB 2641) and shall notify UCI and the Orange County Coroner (per § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 5097.98 of the California Public Resources Code, and Assembly Bill 2641 shall be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner will notify the Native American Heritage Commission (NAHC), which then will designate a Native American Most Likely Descendant (MLD) for the Project (§ 5097.98 of the Public Resources Code). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. Public Resources Code § 5097.94 provides structure for mediation through the NAHC if necessary. If no agreement is reached, UCI shall rebury the remains in a respectful manner where they will not be further disturbed (§ 5097.98 of the Public Resources Code). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the Orange County Clerk's Office (AB 2641). Work shall not resume within the no-work radius until UCI, through consultation as appropriate, determines that the treatment measures have been completed to its satisfaction.



5.19 UTILITIES AND SERVICE SYSTEMS

<i>Would the project:</i>	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant Impact With Project-Level Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Require or result in the relocation or construction of new or expanded water, or wastewater treatment or storm water 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?				✓	
c. 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?				✓	
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?				✓	
e. Comply with federal, State, and local management and reduction statutes and regulations related to solid waste?				✓	

- a) ***Require or result in the relocation or construction of new or expanded water, or wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?***

Less Than Significant Impact. According to the LRDP EIR, the 2007 LRDP would increase the demand for water and wastewater, thus requiring the construction of additional water and wastewater facilities, which could impact the physical environment. In addition, the 2007 LRDP would increase the amount of impervious surface, which would require the construction of additional storm water facilities. As for energy consumption, compliance with the *University of California Policy on Sustainable Practices* would increase energy efficiency and reduce inefficient consumption of energy. However, the development of additional electricity and natural gas facilities, which would undergo additional environmental review, would result in impacts to the physical environment. The LRDP EIR concluded that impacts would be less than significant with the implementation of recommended LRDP EIR Mitigation Measures.

Implementation of the proposed project would result in the increased need for water, wastewater treatment, storm water drainage, electrical, natural gas, and telecommunications facilities at the project site, given the project site currently consists of a surface parking lot and temporary trailer. The following analysis considers the project impacts on such infrastructure.



WATER

The UCI campus, including the project site, is served by the Irvine Ranch Water District (IRWD). UCI uses potable water for drinking, sanitation, fire protection, heating, cooling, air conditioning, and research. Potable water is distributed to UCI from the IRWD potable water transmission system. The existing water distribution system serving the campus operates as a combined system for both domestic and fire water use.

The proposed project would construct necessary water infrastructure at the project site, which would connect to the existing UCI-owned 8-inch water pipeline that runs east-west directly south of the proposed building. In addition, the project would install and relocate fire hydrants, as necessary, within the project site in accordance with the Campus Standards and Design Criteria (CS&DC), Designated Campus Fire Marshal (DCFM), and Orange County Fire Authority requirements and standards. The proposed project would maintain and/or provide fire hydrant spacing, hydrant types, and flow rates or residual pressures consistent with the provisions set forth by the DCFM and California Fire Code. Furthermore, the fire hydrants, fire department connections, domestic water laterals, backflow devices, and isolation and shut off valves would be provided for connection to the project as required by UCI and the Orange County Fire Authority. With compliance with these standards and codes, the project would not require or result in the relocation or construction of new or expanded water facilities which could cause significant environmental effects. A less than significant impact would occur in this regard.

WASTEWATER

IRWD would also provide wastewater treatment services to the proposed project. The IRWD provides sewage collection and treatment and produces tertiary-treated recycled water. Wastewater is treated at the Michelson Water Reclamation Plant (MWRP) and at the Los Alisos Water Reclamation Plant. Wastewater from UCI, except for North Campus, is conveyed via pipelines to the MWRP.

The proposed project would construct necessary sanitary sewer utilities on-site, connecting to the existing sewer pipeline to the south in the existing Mesa Court Residence Hall. The proposed sanitary sewer facilities would conform with the UCI CS&DC. Further, the proposed project would not increase the LRDP projections for growth and population. As such, the proposed project's impacts in this regard would be considered adequately addressed in LRDP EIR. No new wastewater treatment facilities or expansion of existing facilities would be necessary.

STORMWATER

The proposed project would construct a new on-site storm drain system that would direct storm water runoff to surface drains and catch basins with associated rip rap. On-site storm drain pipes would connect the catch basins to the existing 18-inch storm drain located in the western portion of the project site. Proposed storm water would then discharge off-site at this location, similar to the existing condition. The stormwater system would incorporate Low Impact Development strategies and Best Management Practices (BMPs) for treatment of all impervious area runoff, such as energy dissipators to reduce erosion, bioswales, flow-through planters, and modular wetlands. Peak flows during operation of the project would not exceed existing conditions and the drainage system would be designed to carry rainfall, including rainfall discharges from the buildings and roadways, from a 25-year storm per Orange County Flood Control District. Additionally, the storm drainage system would conform to the project-specific requirements and UCI CS&DC. Therefore, implementation of the proposed storm drain improvements and BMPs would not require new or expanded storm water drainage facilities, other than those proposed on-site to support the proposed development. Impacts in this regard would be less than significant.

DRY UTILITIES

According to the LRDP EIR, the UCI campus, including the project site, is served by the Southern California Gas Company for natural gas; Southern California Edison for electricity; UCI's own data network for telecommunications; and Cox Communications and AT&T for internet service.



The project would construct an electrical system that would provide service to the proposed building, interior and exterior lighting, and power distribution systems. The electrical system would be designed with a focus on energy efficient systems to outperform the latest version of the California Building Energy Efficiency Standards and to achieve a Leadership in Energy and Environmental Design (LEED) Gold certification at a minimum. In addition, the project would install technology infrastructure to provide reliable access to the University's Information Technology resources including voice, data network, administrative computing, and student services. As discussed above, the proposed project would install connections to existing infrastructure, which has sufficient capacity to support the project. As such, the project would not require new or expanded electric power, natural gas, or telecommunications facilities, other than those proposed on-site to support the project. Impacts in this regard would be less than significant.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

b) *Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?*

Less Than Significant Impact. According to the LRDP EIR, projected water demands as a result of implementation of the 2007 LRDP are consistent with IRWD's Urban Water Management Plan and would not change the Plan's conclusions with respect to water supply reliability. The IRWD would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years. The LRDP EIR concluded that impacts would be less than significant.

The 2015 IRWD Urban Water Management Plan projects district-wide water supply availability and demand through 2035, which included the 2007 LRDP buildout. Under normal, dry, and multiple dry year scenarios, IRWD has sufficient supplies to buffer against inaccuracies in demand projections, future changed in land use, or alterations in supply availability. The project would implement the *University of California Policy on Sustainable Practices*, including compliance with the Green Building Design section. The project would also be required to comply with water efficiency and water conservation standards in the current *California Building Energy Efficiency Standards for Residential and Nonresidential Buildings* (California Code of Regulations, Title 24, Part 6) and current California Green Building Standards Code.^{1,2} Furthermore, the proposed project would include water-efficient features, such as low flow plumbing fixtures, irrigation to reduce water consumption, and low-water use vegetation for landscaping. The irrigation system would meet or exceed the State's Model Efficient Landscape Ordinance and UCI requirements for water-efficient landscapes, as well as LEED standards. UCI continues to work with IRWD to reduce domestic water demand on campus consistent with UCI sustainability goals. In addition, as discussed in [Section 5.14, *Population and Housing*](#), the new housing development would serve the existing student population and would not increase student enrollment or employment opportunities beyond what was planned for in the 2007 LRDP and analyzed in the LRDP EIR. Therefore, the proposed project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years. Project impacts would be less than significant in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

¹ California Energy Commission, *2022 Building Energy Efficiency Standards for Residential and Nonresidential Buildings: For the 2022 Building Energy Efficiency Standards Title 24, Part 6, and Associated Administrative Regulations in Part 1*, updated December 23, 2022.

² California Building Standards Commission, *2022 California Green Building Standards Code, Title 24, Part 11 (CALGreen)*, effective January 1, 2023.



- c) **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. According to the LRDP EIR, the planned expansion of the MWRP, which would undergo additional environmental review and continue to abide Industrial User Discharge Permit regulations, would have sufficient capacity to accommodate increases in wastewater generation as a result of implementation of the 2007 LRDP. The LRDP EIR concluded that impacts would be less than significant.

The MWRP currently treats up to 28 million gallons per day (mgd) of wastewater, and an additional upgrade to 33 mgd is scheduled to be completed in 2025. IRWD forecasts a total service area demand for wastewater treatment of 26.11 mgd by 2025, including the projected increase associated with full implementation of the 2007 LRDP. Because the proposed project is consistent with the 2007 LRDP and would not increase the anticipated wastewater generated at the campus, the MWRP would have sufficient capacity to accommodate the anticipated wastewater generation throughout the IRWD service area, including the proposed project. Therefore, impacts would be less than significant in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

- 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?**

Less Than Significant Impact. According to the LRDP EIR, since UCI would continue to administer its recycling and waste diversion program and an expansion of the Frank R. Bowman Landfill is likely, the landfill would have sufficient permitted capacity to accommodate the increase in solid waste generation as a result of implementation of the 2007 LRDP. Therefore, the LRDP EIR concluded that impacts pertaining to the generation of solid waste would be less than significant.

The Frank R. Bowerman Landfill is permitted to receive a daily maximum of 11,500 tons per day and has enough projected capacity to serve residents and businesses until approximately 2053.³ The Olinda Alpha Landfill and Prima Deshecha Landfill also serve the County of Orange, which are utilized if the Frank R. Bowerman Landfill reaches its daily capacity. Olinda Alpha Landfill permits 8,000 tons daily with an expected closure in 2030 and Prima Deshecha Landfill is scheduled to close in 2067 and permits 4,000 tons daily. Orange County Waste & Recycling and the three landfills are in compliance with the California Integrated Waste Management Act of 1989 (Assembly Bill 939), which requires each jurisdiction to maintain 15 years of solid waste disposal capacity. As stated, the project is not anticipated to result in increases to solid waste generation in addition to that already considered as part of buildout of the 2007 LRDP. Based on this and the availability of disposal capacity for the area, the project would not 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. Impacts in this regard would be less than significant.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

- e) **Comply with federal, State, and local management and reduction statutes and regulations related to solid waste?**

Less Than Significant Impact. According to the LRDP EIR, since UCI would continue to adhere to the *University of California Policy on Sustainable Practices* which requires waste diversion and recycling on all UC Campuses,

³ County of Orange, *Frank R. Bowerman Landfill*, <https://oclandfills.com/landfills/frank-r-bowerman-landfill>, accessed November 17, 2022.



implementation of the 2007 LRDP would comply with applicable laws and regulation related to solid waste. The LRDP EIR concluded that impacts would be less than significant.

The University of California is not subject to Assembly Bill 939 or other local agency regulations pertaining to solid waste management. Nonetheless, the University of California has adopted the *University of California Policy on Sustainable Practices* that requires campuses to undertake aggressive programs to reduce solid waste generation and disposal. As discussed above, the proposed project would meet the requirements of the *University of California Policy on Sustainable Practices*, including compliance with the Green Building Design section. Therefore, the proposed project and would not violate solid waste regulations and impacts would be less than significant in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.



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5.20 WILDFIRE

<i>If located in or near State responsibility areas or lands classified as very high fire hazard severity zones, would the project:</i>	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant Impact With Project-Level Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?					✓
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?					✓
c. Require the installation 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?					✓
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?					✓

Wildfire thresholds were added in the 2018 CEQA Guidelines Update, which came into effect on December 28, 2018. As such, a Wildfire section was not specifically included in the LRDP EIR. However, wildfire-related issues are discussed in Section 4.6, *Hazards and Hazardous Materials* of the LRDP EIR, which addresses wildfire hazards.

a) *Substantially impair an adopted emergency response plan or emergency evacuation plan?*

No Impact. According to the California Department of Forestry and Fire's FHSZ Viewer, the project site is not located in or near a State responsibility area or lands classified as a Very High Fire Hazard Severity Zone (VHFHSZ).¹ No impact would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

b) *Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*

No Impact. The project site is not located in a State responsibility area or lands classified as VHFHSZ. Therefore, the proposed project would not exacerbate wildland fires risks, thereby exposing project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. No impact would occur in this regard.

¹ California Department of Forestry and Fire Protection, *FHSZ Viewer*, <https://egis.fire.ca.gov/FHSZ/>, accessed October 24, 2022.



LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

- 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?***

No Impact. The project site is not located in a State responsibility area or lands classified as VHFHSZ. Therefore, the proposed project would not install or maintain infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. No impact would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.

- 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?***

No Impact. The project site is not located in a State responsibility area or lands classified as VHFHSZ, nor is it located in an exceptionally hilly area. Therefore, the proposed project would not 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. No impact would occur in this regard.

LRDP EIR Mitigation Measures: No LRDP EIR mitigation measures apply.

Project-Level Mitigation Measures: No project-level mitigation measures are required.



5.21 MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant With Project-Level Mitigation Incorporated	Less Than Significant Impact	No Impact
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?			✓		
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?		✓			

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?***

Less Than Significant With Project-Level Mitigation Incorporated. As detailed in Section 5.4, *Biological Resources*, no impacts would occur to any special-status plant or wildlife species known to occur in the project area. However, due to the potential removal of ornamental trees in the parking lot which may provide suitable nesting habitat for birds protected under the Migratory Bird Treaty Act (MBTA), direct impacts to suitable nesting habitat could occur. Additionally, noise and dust generated during construction could indirectly impact nesting birds by causing them to avoid the area during construction. Such impacts due to construction activities occurring during the nesting bird season, generally considered to extend from February 15 through September 15, would be avoided by complying with the MBTA, which protects nesting birds. Since entirely avoiding the nesting bird season is not possible due to the nature of the project, compliance with the MBTA would be achieved through the implementation of the LRDP EIR Mitigation Measure Bio-2B. With implementation of LRDP EIR Mitigation Measure Bio-2B, any direct or indirect impacts of construction on nesting birds would be reduced to less than significant. As such, the project would not 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, or reduce the number or restrict the range of a rare or endangered plant or animal.



As detailed in [Section 5.5, *Cultural Resources*](#), the project site is located in an area known to be highly sensitive for prehistoric resources based on the proximity of previously recorded resources to the project site. Further, as detailed in [Section 5.7, *Geology and Soils*](#), sediments in the project site are considered to have paleontological sensitivity, increasing with depth. As the project proposes to excavate up to eight feet below ground surface, the Cultural/Paleo Report determined that the project carries the potential to disturb previously undiscovered paleontological resources and/or subsurface archaeological sites. As detailed in [Section 5.5](#), potential impacts pertaining to previously undiscovered subsurface archaeological sites would be mitigated to less than significant levels through implementation of LRDP EIR Mitigation Measure Cul-1C. LRDP EIR Mitigation Measure Cul-1C requires projects located in areas of identified archaeological sensitivity to retain a qualified archaeologist (and, if necessary, a culturally affiliated Native American) to monitor any land clearing, grading, or similar land development activities. In the event of an unexpected archaeological discovery during grading, the on-site construction supervisor would redirect work away from the location of the archaeological find, and a qualified archaeologist would oversee the evaluation and recovery of said archaeological resource. As detailed in [Section 5.7](#), potential impacts pertaining to previously undiscovered paleontological resources would be mitigated to less than significant levels through implementation of LRDP EIR Mitigation Measures Cul-4A through Cul-4C. LRDP EIR Mitigation Measure Cul-4A requires projects that would excavate sedimentary rock material other than topsoil, to retain a qualified paleontologist to monitor any ground-disturbing activities. In the event fossils are discovered during grading, the on-site construction supervisor would be notified and would redirect work away from the location of the discovery. The recommendations of the paleontologist would be implemented with respect to the evaluation and recovery of fossils, in accordance with LRDP EIR Mitigation Measures Cul-4B and Cul-4C, after which the on-site construction supervisor would be notified and would direct work to continue in the location of the fossil discovery. A record of monitoring activity would be submitted to UCI each month and at the end of monitoring. LRDP EIR Mitigation Measure Cul-4B mandates the implementation of LRDP EIR Mitigation Measure Cul-4C in the event that the uncovered fossils are determined to be significant by a qualified paleontologist, while LRDP Mitigation Measure Cul-4C requires a data recovery plan to be prepared for significant fossils by a qualified paleontologist, which may require the paleontologist to clean, identify, catalogue, and curate all significant fossils collected with an appropriate repository for curation; that specialty studies are completed, as appropriate, for any significant fossil collected; and that curation of fossils are completed in consultation with UCI. Further, as discussed in [Section 5.18, *Tribal Cultural Resources*](#), no requests for consultation were received upon conclusion of the 30-day response period for AB 52 consultation. Nonetheless, as is the standard practice for all major capital projects within the University, UCI would continue to work with the tribes at their request. As such, the project would implement project-level Mitigation Measure TCR-1, which would require archaeological monitoring during ground-disturbing activities, and provide specific procedures to be taken if human remains and/or tribal cultural resources are discovered. Therefore, the proposed project would not eliminate important examples of the major periods of California history or prehistory with implementation of LRDP EIR Mitigation Measures Cul-1C and Cul-4A through Cul-4C as well as project-level Mitigation Measure TCR-1. Impacts in this regard would be reduced to less than significant levels.

- 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)?***

Project Impact Adequately Addressed in LRDP EIR. A significant impact may occur if a proposed project, in conjunction with related projects, would result in impacts that are less than significant when viewed separately, but would be significant when viewed together. As concluded in [Sections 5.1 through 5.20](#), the proposed project would not result in any significant and unavoidable impacts in any environmental categories with implementation of existing regulatory requirements and/or project-specific mitigation measures. Implementation of the LRDP EIR mitigation measures at the project-level would reduce the potential for the incremental effects of the proposed project to be considerable when viewed in connection with the effects of past projects, current projects, or probable future projects



under the 2007 LRDP. Thus, potential impacts in this regard would be considered adequately addressed in the LRDP EIR.

c) *Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?*

Project Impact Adequately Addressed in LRDP EIR. Previous sections of this Initial Study reviewed the proposed project's potential impacts related to aesthetics, air quality, noise, hazards and hazardous materials, transportation, and other issues. As concluded in these previous discussions, the proposed project would not have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly, following conformance with the existing regulatory framework, and mitigation measures. Further, as a residential development, project features would be designed to meet the needs of humans and are not anticipated to result in direct or indirect adverse effects. Impacts would be less than significant upon implementation of all applicable LRDP EIR mitigation measures detailed throughout.



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5.22 REFERENCES

The following references were utilized during preparation of this Initial Study/Mitigated Negative Declaration.

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6.0 CONSULTANT RECOMMENDATION

Based on the information and environmental analysis contained in the Initial Study, we recommend that UCI prepare a subsequent mitigated negative declaration for the Mesa Court Residence Hall Expansion (project). We find that the proposed project could have a significant effect on several environmental issues, but that the potential impacts of the proposed project were adequately addressed in the LRDP EIR and its associated mitigation measures would mitigate any impacts of the proposed project to the extent feasible. All applicable LRDP EIR mitigation measures should be incorporated into the project as proposed. We recommend that the second category be selected for the UCI's determination (see Section 3.0, Lead Agency Determination).

1/24/23

Date



Kristen Bogue, Project Manager
Michael Baker International



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APPENDIX A

Air Quality/Greenhouse Gas/Energy Data

Mesa Court Housing Community - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

**Mesa Court Housing Community
Orange County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Health Club	19.03	1000sqft	0.44	19,030.00	0
Apartments Mid Rise	115.00	Dwelling Unit	2.06	115,000.00	329

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	30
Climate Zone	8			Operational Year	2025
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Up to 450 beds of quadruple occupancy is ~115 units. Health club = residential resources + building resources + operations. Site is 2.5 acres in total.

Construction Phase - per construction questionnaire

Grading - per construction questionnaire

Architectural Coating - SCAQMD Rule 1113

Vehicle Trips - per trip gen table

Woodstoves - dorms do not have woodstoves or fireplaces

Construction Off-road Equipment Mitigation - SCAQMD Rule 403

Area Mitigation - per operational questionnaire

Energy Mitigation - per operational questionnaire

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Water Mitigation - per operational questionnaire

Waste Mitigation -

Area Coating - SCAQMD Rule 1113

Energy Use - No natural gas use per applicant

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Parking	100	50
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	55.00
tblConstructionPhase	NumDays	6.00	43.00
tblConstructionPhase	NumDays	10.00	43.00
tblConstructionPhase	NumDays	220.00	325.00
tblConstructionPhase	NumDays	10.00	66.00
tblConstructionPhase	PhaseEndDate	12/28/2023	2/29/2024
tblConstructionPhase	PhaseEndDate	1/5/2024	4/30/2024
tblConstructionPhase	PhaseEndDate	11/22/2024	6/30/2024
tblConstructionPhase	PhaseEndDate	11/8/2024	8/31/2025
tblConstructionPhase	PhaseEndDate	12/6/2024	7/31/2025
tblConstructionPhase	PhaseStartDate	12/1/2023	12/15/2023
tblConstructionPhase	PhaseStartDate	12/29/2023	3/1/2024
tblConstructionPhase	PhaseStartDate	11/9/2024	5/1/2024
tblConstructionPhase	PhaseStartDate	1/6/2024	6/1/2024
tblConstructionPhase	PhaseStartDate	11/23/2024	5/1/2025
tblEnergyUse	NT24NG	5,516.00	0.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblEnergyUse	NT24NG	6.86	0.00
tblEnergyUse	T24NG	5,633.62	0.00
tblEnergyUse	T24NG	13.90	0.00
tblFireplaces	NumberGas	97.75	0.00
tblFireplaces	NumberNoFireplace	11.50	0.00
tblFireplaces	NumberWood	5.75	0.00
tblGrading	MaterialImported	0.00	3,000.00
tblLandUse	LotAcreage	3.03	2.06
tblVehicleTrips	ST_TR	4.91	0.98
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	SU_TR	4.09	0.98
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	WD_TR	5.44	0.98
tblVehicleTrips	WD_TR	32.93	0.00
tblWoodstoves	NumberCatalytic	5.75	0.00
tblWoodstoves	NumberNoncatalytic	5.75	0.00

2.0 Emissions Summary

Mesa Court Housing Community - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	tons/yr										MT/yr					
2023	8.3000e-003	0.0789	0.0761	1.4000e-004	7.8000e-004	3.7300e-003	4.5100e-003	2.1000e-004	3.4800e-003	3.6900e-003	0.0000	12.1944	12.1944	2.9500e-003	1.0000e-005	12.2726
2024	0.2212	1.8305	2.0413	4.2500e-003	0.2478	0.0764	0.3242	0.0992	0.0720	0.1712	0.0000	369.9454	369.9454	0.0680	6.0800e-003	373.4581
2025	0.5609	1.1390	1.5057	3.2100e-003	0.1011	0.0430	0.1441	0.0270	0.0413	0.0683	0.0000	276.6791	276.6791	0.0362	4.7500e-003	279.0003
Maximum	0.5609	1.8305	2.0413	4.2500e-003	0.2478	0.0764	0.3242	0.0992	0.0720	0.1712	0.0000	369.9454	369.9454	0.0680	6.0800e-003	373.4581

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	tons/yr										MT/yr					
2023	8.3000e-003	0.0789	0.0761	1.4000e-004	7.8000e-004	3.7300e-003	4.5100e-003	2.1000e-004	3.4800e-003	3.6900e-003	0.0000	12.1944	12.1944	2.9500e-003	1.0000e-005	12.2725
2024	0.2212	1.8305	2.0413	4.2500e-003	0.1519	0.0764	0.2282	0.0528	0.0720	0.1248	0.0000	369.9450	369.9450	0.0680	6.0800e-003	373.4578
2025	0.5609	1.1390	1.5057	3.2100e-003	0.1011	0.0430	0.1441	0.0270	0.0413	0.0683	0.0000	276.6789	276.6789	0.0362	4.7500e-003	279.0001
Maximum	0.5609	1.8305	2.0413	4.2500e-003	0.1519	0.0764	0.2282	0.0528	0.0720	0.1248	0.0000	369.9450	369.9450	0.0680	6.0800e-003	373.4578

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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
Percent Reduction	0.00	0.00	0.00	0.00	27.44	0.00	20.29	36.68	0.00	19.07	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	12-1-2023	2-29-2024	0.4260	0.4260
2	3-1-2024	5-31-2024	0.4535	0.4535
3	6-1-2024	8-31-2024	0.6008	0.6008
4	9-1-2024	11-30-2024	0.5001	0.5001
5	12-1-2024	2-28-2025	0.4755	0.4755
6	3-1-2025	5-31-2025	0.6250	0.6250
7	6-1-2025	8-31-2025	0.7703	0.7703
		Highest	0.7703	0.7703

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	tons/yr										MT/yr					
Area	0.5603	0.0137	1.1851	6.0000e-005		6.5800e-003	6.5800e-003		6.5800e-003	6.5800e-003	0.0000	1.9377	1.9377	1.8600e-003	0.0000	1.9841
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	106.1003	106.1003	8.9600e-003	1.0900e-003	106.6476
Mobile	0.0526	0.0586	0.5409	1.2700e-003	0.1455	8.7000e-004	0.1463	0.0388	8.1000e-004	0.0396	0.0000	117.5256	117.5256	7.1500e-003	4.9300e-003	119.1743
Waste						0.0000	0.0000		0.0000	0.0000	32.7567	0.0000	32.7567	1.9359	0.0000	81.1532
Water						0.0000	0.0000		0.0000	0.0000	2.7342	30.5675	33.3017	0.2834	6.9400e-003	42.4560
Total	0.6129	0.0722	1.7260	1.3300e-003	0.1455	7.4500e-003	0.1529	0.0388	7.3900e-003	0.0462	35.4908	256.1312	291.6220	2.2372	0.0130	351.4153

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

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	tons/yr										MT/yr					
Area	0.5436	0.0108	0.9006	4.0000e-005		4.9000e-003	4.9000e-003		4.9000e-003	4.9000e-003	0.0000	1.3558	1.3558	9.7000e-004	0.0000	1.3801
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	102.8003	102.8003	8.6800e-003	1.0500e-003	103.3306
Mobile	0.0526	0.0586	0.5409	1.2700e-003	0.1455	8.7000e-004	0.1463	0.0388	8.1000e-004	0.0396	0.0000	117.5256	117.5256	7.1500e-003	4.9300e-003	119.1743
Waste						0.0000	0.0000		0.0000	0.0000	6.5513	0.0000	6.5513	0.3872	0.0000	16.2306
Water						0.0000	0.0000		0.0000	0.0000	2.1873	25.9366	28.1240	0.2269	5.5700e-003	35.4551
Total	0.5962	0.0694	1.4415	1.3100e-003	0.1455	5.7700e-003	0.1512	0.0388	5.7100e-003	0.0445	8.7387	247.6184	256.3571	0.6308	0.0116	275.5708

	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
Percent Reduction	2.73	3.90	16.48	1.50	0.00	22.55	1.10	0.00	22.73	3.63	75.38	3.32	12.09	71.80	10.88	21.58

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	12/15/2023	2/29/2024	5	55	
2	Grading	Grading	3/1/2024	4/30/2024	5	43	
3	Building Construction	Building Construction	6/1/2024	8/31/2025	5	325	

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4	Paving	Paving	5/1/2024	6/30/2024	5	43
5	Architectural Coating	Architectural Coating	5/1/2025	7/31/2025	5	66

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 43

Acres of Paving: 0

Residential Indoor: 232,875; Residential Outdoor: 77,625; Non-Residential Indoor: 28,545; Non-Residential Outdoor: 9,515; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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
Demolition	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	375.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	91.00	15.00	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	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

- Replace Ground Cover
- Water Exposed Area
- Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 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	tons/yr										MT/yr					
Off-Road	8.1000e-003	0.0788	0.0740	1.3000e-004		3.7200e-003	3.7200e-003		3.4800e-003	3.4800e-003	0.0000	11.5976	11.5976	2.9400e-003	0.0000	11.6711
Total	8.1000e-003	0.0788	0.0740	1.3000e-004		3.7200e-003	3.7200e-003		3.4800e-003	3.4800e-003	0.0000	11.5976	11.5976	2.9400e-003	0.0000	11.6711

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 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	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	2.0000e-004	1.4000e-004	2.0800e-003	1.0000e-005	7.8000e-004	0.0000	7.9000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.5968	0.5968	1.0000e-005	1.0000e-005	0.6014
Total	2.0000e-004	1.4000e-004	2.0800e-003	1.0000e-005	7.8000e-004	0.0000	7.9000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.5968	0.5968	1.0000e-005	1.0000e-005	0.6014

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	tons/yr										MT/yr					
Off-Road	8.1000e-003	0.0788	0.0740	1.3000e-004		3.7200e-003	3.7200e-003		3.4800e-003	3.4800e-003	0.0000	11.5976	11.5976	2.9400e-003	0.0000	11.6711
Total	8.1000e-003	0.0788	0.0740	1.3000e-004		3.7200e-003	3.7200e-003		3.4800e-003	3.4800e-003	0.0000	11.5976	11.5976	2.9400e-003	0.0000	11.6711

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 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	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	2.0000e-004	1.4000e-004	2.0800e-003	1.0000e-005	7.8000e-004	0.0000	7.9000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.5968	0.5968	1.0000e-005	1.0000e-005	0.6014
Total	2.0000e-004	1.4000e-004	2.0800e-003	1.0000e-005	7.8000e-004	0.0000	7.9000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.5968	0.5968	1.0000e-005	1.0000e-005	0.6014

3.2 Demolition - 2024

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	tons/yr										MT/yr					
Off-Road	0.0317	0.3055	0.2967	5.3000e-004		0.0139	0.0139		0.0130	0.0130	0.0000	46.4014	46.4014	0.0117	0.0000	46.6950
Total	0.0317	0.3055	0.2967	5.3000e-004		0.0139	0.0139		0.0130	0.0130	0.0000	46.4014	46.4014	0.0117	0.0000	46.6950

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2024

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	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	7.6000e-004	5.2000e-004	7.7500e-003	3.0000e-005	3.1400e-003	2.0000e-005	3.1600e-003	8.3000e-004	1.0000e-005	8.5000e-004	0.0000	2.3115	2.3115	5.0000e-005	5.0000e-005	2.3288
Total	7.6000e-004	5.2000e-004	7.7500e-003	3.0000e-005	3.1400e-003	2.0000e-005	3.1600e-003	8.3000e-004	1.0000e-005	8.5000e-004	0.0000	2.3115	2.3115	5.0000e-005	5.0000e-005	2.3288

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	tons/yr										MT/yr					
Off-Road	0.0317	0.3055	0.2967	5.3000e-004		0.0139	0.0139		0.0130	0.0130	0.0000	46.4014	46.4014	0.0117	0.0000	46.6950
Total	0.0317	0.3055	0.2967	5.3000e-004		0.0139	0.0139		0.0130	0.0130	0.0000	46.4014	46.4014	0.0117	0.0000	46.6950

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2024

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	7.6000e-004	5.2000e-004	7.7500e-003	3.0000e-005	3.1400e-003	2.0000e-005	3.1600e-003	8.3000e-004	1.0000e-005	8.5000e-004	0.0000	2.3115	2.3115	5.0000e-005	5.0000e-005	2.3288
Total	7.6000e-004	5.2000e-004	7.7500e-003	3.0000e-005	3.1400e-003	2.0000e-005	3.1600e-003	8.3000e-004	1.0000e-005	8.5000e-004	0.0000	2.3115	2.3115	5.0000e-005	5.0000e-005	2.3288

3.3 Grading - 2024

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	tons/yr										MT/yr					
Fugitive Dust					0.1525	0.0000	0.1525	0.0737	0.0000	0.0737	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0280	0.2971	0.1871	4.4000e-004		0.0123	0.0123		0.0113	0.0113	0.0000	38.9227	38.9227	0.0126	0.0000	39.2375
Total	0.0280	0.2971	0.1871	4.4000e-004	0.1525	0.0123	0.1648	0.0737	0.0113	0.0850	0.0000	38.9227	38.9227	0.0126	0.0000	39.2375

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2024

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	tons/yr										MT/yr					
Hauling	3.8000e-004	0.0233	7.8600e-003	1.0000e-004	3.2200e-003	1.5000e-004	3.3700e-003	8.8000e-004	1.4000e-004	1.0300e-003	0.0000	10.7336	10.7336	1.1100e-003	1.7200e-003	11.2749
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	5.7000e-004	3.9000e-004	5.8300e-003	2.0000e-005	2.3600e-003	1.0000e-005	2.3700e-003	6.3000e-004	1.0000e-005	6.4000e-004	0.0000	1.7377	1.7377	4.0000e-005	4.0000e-005	1.7507
Total	9.5000e-004	0.0237	0.0137	1.2000e-004	5.5800e-003	1.6000e-004	5.7400e-003	1.5100e-003	1.5000e-004	1.6700e-003	0.0000	12.4713	12.4713	1.1500e-003	1.7600e-003	13.0256

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	tons/yr										MT/yr					
Fugitive Dust					0.0565	0.0000	0.0565	0.0273	0.0000	0.0273	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0280	0.2971	0.1871	4.4000e-004		0.0123	0.0123		0.0113	0.0113	0.0000	38.9227	38.9227	0.0126	0.0000	39.2374
Total	0.0280	0.2971	0.1871	4.4000e-004	0.0565	0.0123	0.0688	0.0273	0.0113	0.0386	0.0000	38.9227	38.9227	0.0126	0.0000	39.2374

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2024

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	3.8000e-004	0.0233	7.8600e-003	1.0000e-004	3.2200e-003	1.5000e-004	3.3700e-003	8.8000e-004	1.4000e-004	1.0300e-003	0.0000	10.7336	10.7336	1.1100e-003	1.7200e-003	11.2749
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	5.7000e-004	3.9000e-004	5.8300e-003	2.0000e-005	2.3600e-003	1.0000e-005	2.3700e-003	6.3000e-004	1.0000e-005	6.4000e-004	0.0000	1.7377	1.7377	4.0000e-005	4.0000e-005	1.7507
Total	9.5000e-004	0.0237	0.0137	1.2000e-004	5.5800e-003	1.6000e-004	5.7400e-003	1.5100e-003	1.5000e-004	1.6700e-003	0.0000	12.4713	12.4713	1.1500e-003	1.7600e-003	13.0256

3.4 Building Construction - 2024

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	tons/yr										MT/yr					
Off-Road	0.1214	0.9746	1.0716	1.9000e-003		0.0409	0.0409		0.0392	0.0392	0.0000	157.8626	157.8626	0.0294	0.0000	158.5976
Total	0.1214	0.9746	1.0716	1.9000e-003		0.0409	0.0409		0.0392	0.0392	0.0000	157.8626	157.8626	0.0294	0.0000	158.5976

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2024

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	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	1.1100e-003	0.0417	0.0167	2.0000e-004	7.1800e-003	2.2000e-004	7.4000e-003	2.0700e-003	2.1000e-004	2.2800e-003	0.0000	20.1160	20.1160	1.2300e-003	2.9000e-003	21.0111
Worker	0.0184	0.0125	0.1874	6.1000e-004	0.0759	3.7000e-004	0.0763	0.0202	3.4000e-004	0.0205	0.0000	55.8967	55.8967	1.2200e-003	1.3000e-003	56.3156
Total	0.0195	0.0543	0.2041	8.1000e-004	0.0831	5.9000e-004	0.0837	0.0222	5.5000e-004	0.0228	0.0000	76.0127	76.0127	2.4500e-003	4.2000e-003	77.3267

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	tons/yr										MT/yr					
Off-Road	0.1214	0.9746	1.0716	1.9000e-003		0.0409	0.0409		0.0392	0.0392	0.0000	157.8624	157.8624	0.0294	0.0000	158.5975
Total	0.1214	0.9746	1.0716	1.9000e-003		0.0409	0.0409		0.0392	0.0392	0.0000	157.8624	157.8624	0.0294	0.0000	158.5975

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2024

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	1.1100e-003	0.0417	0.0167	2.0000e-004	7.1800e-003	2.2000e-004	7.4000e-003	2.0700e-003	2.1000e-004	2.2800e-003	0.0000	20.1160	20.1160	1.2300e-003	2.9000e-003	21.0111
Worker	0.0184	0.0125	0.1874	6.1000e-004	0.0759	3.7000e-004	0.0763	0.0202	3.4000e-004	0.0205	0.0000	55.8967	55.8967	1.2200e-003	1.3000e-003	56.3156
Total	0.0195	0.0543	0.2041	8.1000e-004	0.0831	5.9000e-004	0.0837	0.0222	5.5000e-004	0.0228	0.0000	76.0127	76.0127	2.4500e-003	4.2000e-003	77.3267

3.4 Building Construction - 2025

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	tons/yr										MT/yr					
Off-Road	0.1289	1.0400	1.2116	2.1700e-003		0.0407	0.0407		0.0389	0.0389	0.0000	179.6910	179.6910	0.0330	0.0000	180.5149
Total	0.1289	1.0400	1.2116	2.1700e-003		0.0407	0.0407		0.0389	0.0389	0.0000	179.6910	179.6910	0.0330	0.0000	180.5149

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2025

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	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	1.2500e-003	0.0473	0.0189	2.2000e-004	8.1700e-003	2.5000e-004	8.4200e-003	2.3600e-003	2.4000e-004	2.5900e-003	0.0000	22.4669	22.4669	1.4100e-003	3.2500e-003	23.4717
Worker	0.0198	0.0129	0.2003	6.7000e-004	0.0864	4.1000e-004	0.0868	0.0230	3.7000e-004	0.0233	0.0000	61.4577	61.4577	1.2600e-003	1.4000e-003	61.9050
Total	0.0210	0.0602	0.2192	8.9000e-004	0.0946	6.6000e-004	0.0952	0.0253	6.1000e-004	0.0259	0.0000	83.9246	83.9246	2.6700e-003	4.6500e-003	85.3767

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	tons/yr										MT/yr					
Off-Road	0.1289	1.0400	1.2116	2.1700e-003		0.0407	0.0407		0.0389	0.0389	0.0000	179.6908	179.6908	0.0330	0.0000	180.5147
Total	0.1289	1.0400	1.2116	2.1700e-003		0.0407	0.0407		0.0389	0.0389	0.0000	179.6908	179.6908	0.0330	0.0000	180.5147

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3.4 Building Construction - 2025

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	1.2500e-003	0.0473	0.0189	2.2000e-004	8.1700e-003	2.5000e-004	8.4200e-003	2.3600e-003	2.4000e-004	2.5900e-003	0.0000	22.4669	22.4669	1.4100e-003	3.2500e-003	23.4717
Worker	0.0198	0.0129	0.2003	6.7000e-004	0.0864	4.1000e-004	0.0868	0.0230	3.7000e-004	0.0233	0.0000	61.4577	61.4577	1.2600e-003	1.4000e-003	61.9050
Total	0.0210	0.0602	0.2192	8.9000e-004	0.0946	6.6000e-004	0.0952	0.0253	6.1000e-004	0.0259	0.0000	83.9246	83.9246	2.6700e-003	4.6500e-003	85.3767

3.5 Paving - 2024

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	tons/yr										MT/yr					
Off-Road	0.0181	0.1742	0.2517	3.8000e-004		8.5100e-003	8.5100e-003		7.8500e-003	7.8500e-003	0.0000	33.3566	33.3566	0.0106	0.0000	33.6209
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0181	0.1742	0.2517	3.8000e-004		8.5100e-003	8.5100e-003		7.8500e-003	7.8500e-003	0.0000	33.3566	33.3566	0.0106	0.0000	33.6209

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2024

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	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	8.6000e-004	5.8000e-004	8.7400e-003	3.0000e-005	3.5400e-003	2.0000e-005	3.5600e-003	9.4000e-004	2.0000e-005	9.6000e-004	0.0000	2.6065	2.6065	6.0000e-005	6.0000e-005	2.6261
Total	8.6000e-004	5.8000e-004	8.7400e-003	3.0000e-005	3.5400e-003	2.0000e-005	3.5600e-003	9.4000e-004	2.0000e-005	9.6000e-004	0.0000	2.6065	2.6065	6.0000e-005	6.0000e-005	2.6261

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	tons/yr										MT/yr					
Off-Road	0.0181	0.1742	0.2517	3.8000e-004		8.5100e-003	8.5100e-003		7.8500e-003	7.8500e-003	0.0000	33.3566	33.3566	0.0106	0.0000	33.6209
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0181	0.1742	0.2517	3.8000e-004		8.5100e-003	8.5100e-003		7.8500e-003	7.8500e-003	0.0000	33.3566	33.3566	0.0106	0.0000	33.6209

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2024

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	8.6000e-004	5.8000e-004	8.7400e-003	3.0000e-005	3.5400e-003	2.0000e-005	3.5600e-003	9.4000e-004	2.0000e-005	9.6000e-004	0.0000	2.6065	2.6065	6.0000e-005	6.0000e-005	2.6261
Total	8.6000e-004	5.8000e-004	8.7400e-003	3.0000e-005	3.5400e-003	2.0000e-005	3.5600e-003	9.4000e-004	2.0000e-005	9.6000e-004	0.0000	2.6065	2.6065	6.0000e-005	6.0000e-005	2.6261

3.6 Architectural Coating - 2025

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	tons/yr										MT/yr					
Archit. Coating	0.4039					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.6400e-003	0.0378	0.0597	1.0000e-004		1.7000e-003	1.7000e-003		1.7000e-003	1.7000e-003	0.0000	8.4257	8.4257	4.6000e-004	0.0000	8.4372
Total	0.4095	0.0378	0.0597	1.0000e-004		1.7000e-003	1.7000e-003		1.7000e-003	1.7000e-003	0.0000	8.4257	8.4257	4.6000e-004	0.0000	8.4372

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3.6 Architectural Coating - 2025

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	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	1.4900e-003	9.7000e-004	0.0151	5.0000e-005	6.5200e-003	3.0000e-005	6.5500e-003	1.7300e-003	3.0000e-005	1.7600e-003	0.0000	4.6377	4.6377	1.0000e-004	1.1000e-004	4.6715
Total	1.4900e-003	9.7000e-004	0.0151	5.0000e-005	6.5200e-003	3.0000e-005	6.5500e-003	1.7300e-003	3.0000e-005	1.7600e-003	0.0000	4.6377	4.6377	1.0000e-004	1.1000e-004	4.6715

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	tons/yr										MT/yr					
Archit. Coating	0.4039					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.6400e-003	0.0378	0.0597	1.0000e-004		1.7000e-003	1.7000e-003		1.7000e-003	1.7000e-003	0.0000	8.4257	8.4257	4.6000e-004	0.0000	8.4372
Total	0.4095	0.0378	0.0597	1.0000e-004		1.7000e-003	1.7000e-003		1.7000e-003	1.7000e-003	0.0000	8.4257	8.4257	4.6000e-004	0.0000	8.4372

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2025

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	1.4900e-003	9.7000e-004	0.0151	5.0000e-005	6.5200e-003	3.0000e-005	6.5500e-003	1.7300e-003	3.0000e-005	1.7600e-003	0.0000	4.6377	4.6377	1.0000e-004	1.1000e-004	4.6715
Total	1.4900e-003	9.7000e-004	0.0151	5.0000e-005	6.5200e-003	3.0000e-005	6.5500e-003	1.7300e-003	3.0000e-005	1.7600e-003	0.0000	4.6377	4.6377	1.0000e-004	1.1000e-004	4.6715

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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					
Mitigated	0.0526	0.0586	0.5409	1.2700e-003	0.1455	8.7000e-004	0.1463	0.0388	8.1000e-004	0.0396	0.0000	117.5256	117.5256	7.1500e-003	4.9300e-003	119.1743
Unmitigated	0.0526	0.0586	0.5409	1.2700e-003	0.1455	8.7000e-004	0.1463	0.0388	8.1000e-004	0.0396	0.0000	117.5256	117.5256	7.1500e-003	4.9300e-003	119.1743

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	113.00	113.00	113.00	386,135	386,135
Health Club	0.00	0.00	0.00		
Total	113.00	113.00	113.00	386,135	386,135

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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 Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Health Club	16.60	8.40	6.90	16.90	64.10	19.00	52	39	9

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.547453	0.060181	0.185039	0.126487	0.024236	0.006679	0.014707	0.004926	0.000662	0.000378	0.024745	0.000705	0.003801
Health Club	0.547453	0.060181	0.185039	0.126487	0.024236	0.006679	0.014707	0.004926	0.000662	0.000378	0.024745	0.000705	0.003801

5.0 Energy Detail

Mesa Court Housing Community - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	440890	78.1900	6.6000e-003	8.0000e-004	78.5933
Health Club	157378	27.9103	2.3600e-003	2.9000e-004	28.0543
Total		106.1003	8.9600e-003	1.0900e-003	106.6476

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	427802	75.8687	6.4000e-003	7.8000e-004	76.2601
Health Club	151859	26.9316	2.2700e-003	2.8000e-004	27.0705
Total		102.8003	8.6700e-003	1.0600e-003	103.3306

6.0 Area Detail

Mesa Court Housing Community - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

	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					
Mitigated	0.5436	0.0108	0.9006	4.0000e-005		4.9000e-003	4.9000e-003		4.9000e-003	4.9000e-003	0.0000	1.3558	1.3558	9.7000e-004	0.0000	1.3801
Unmitigated	0.5603	0.0137	1.1851	6.0000e-005		6.5800e-003	6.5800e-003		6.5800e-003	6.5800e-003	0.0000	1.9377	1.9377	1.8600e-003	0.0000	1.9841

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Unmitigated

	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	tons/yr										MT/yr					
Architectural Coating	0.0404					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4843					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	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
Landscaping	0.0356	0.0137	1.1851	6.0000e-005		6.5800e-003	6.5800e-003		6.5800e-003	6.5800e-003	0.0000	1.9377	1.9377	1.8600e-003	0.0000	1.9841
Total	0.5603	0.0137	1.1851	6.0000e-005		6.5800e-003	6.5800e-003		6.5800e-003	6.5800e-003	0.0000	1.9377	1.9377	1.8600e-003	0.0000	1.9841

Mesa Court Housing Community - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	tons/yr										MT/yr					
Architectural Coating	0.0404					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4843					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	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
Landscaping	0.0189	0.0108	0.9006	4.0000e-005		4.9000e-003	4.9000e-003		4.9000e-003	4.9000e-003	0.0000	1.3558	1.3558	9.7000e-004	0.0000	1.3801
Total	0.5436	0.0108	0.9006	4.0000e-005		4.9000e-003	4.9000e-003		4.9000e-003	4.9000e-003	0.0000	1.3558	1.3558	9.7000e-004	0.0000	1.3801

7.0 Water Detail

7.1 Mitigation Measures Water

- Install Low Flow Bathroom Faucet
- Install Low Flow Kitchen Faucet
- Install Low Flow Toilet
- Install Low Flow Shower
- Use Water Efficient Irrigation System

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	28.1240	0.2269	5.5700e-003	35.4551
Unmitigated	33.3017	0.2834	6.9400e-003	42.4560

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	7.49271 / 4.72367	28.9865	0.2464	6.0400e-003	36.9454
Health Club	1.12549 / 0.689819	4.3152	0.0370	9.1000e-004	5.5106
Total		33.3017	0.2834	6.9500e-003	42.4560

Mesa Court Housing Community - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	5.99417 / 4.43552	24.4829	0.1972	4.8400e-003	30.8567
Health Club	0.900395 / 0.64774	3.6411	0.0296	7.3000e-004	4.5984
Total		28.1240	0.2269	5.5700e-003	35.4551

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Mesa Court Housing Community - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	6.5513	0.3872	0.0000	16.2306
Unmitigated	32.7567	1.9359	0.0000	81.1532

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	52.9	10.7382	0.6346	0.0000	26.6035
Health Club	108.47	22.0184	1.3013	0.0000	54.5497
Total		32.7567	1.9359	0.0000	81.1532

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	10.58	2.1476	0.1269	0.0000	5.3207
Health Club	21.694	4.4037	0.2603	0.0000	10.9100
Total		6.5513	0.3872	0.0000	16.2307

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

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
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Mesa Court Housing Community - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mesa Court Housing Community - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

**Mesa Court Housing Community
Orange County, Summer**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Health Club	19.03	1000sqft	0.44	19,030.00	0
Apartments Mid Rise	115.00	Dwelling Unit	2.06	115,000.00	329

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	30
Climate Zone	8			Operational Year	2025
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Up to 450 beds of quadruple occupancy is ~115 units. Health club = residential resources + building resources + operations. Site is 2.5 acres in total.

Construction Phase - per construction questionnaire

Grading - per construction questionnaire

Architectural Coating - SCAQMD Rule 1113

Vehicle Trips - per trip gen table

Woodstoves - dorms do not have woodstoves or fireplaces

Construction Off-road Equipment Mitigation - SCAQMD Rule 403

Area Mitigation - per operational questionnaire

Energy Mitigation - per operational questionnaire

Mesa Court Housing Community - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Water Mitigation - per operational questionnaire

Waste Mitigation -

Area Coating - SCAQMD Rule 1113

Energy Use - No natural gas use per applicant

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Parking	100	50
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	55.00
tblConstructionPhase	NumDays	6.00	43.00
tblConstructionPhase	NumDays	10.00	43.00
tblConstructionPhase	NumDays	220.00	325.00
tblConstructionPhase	NumDays	10.00	66.00
tblConstructionPhase	PhaseEndDate	12/28/2023	2/29/2024
tblConstructionPhase	PhaseEndDate	1/5/2024	4/30/2024
tblConstructionPhase	PhaseEndDate	11/22/2024	6/30/2024
tblConstructionPhase	PhaseEndDate	11/8/2024	8/31/2025
tblConstructionPhase	PhaseEndDate	12/6/2024	7/31/2025
tblConstructionPhase	PhaseStartDate	12/1/2023	12/15/2023
tblConstructionPhase	PhaseStartDate	12/29/2023	3/1/2024
tblConstructionPhase	PhaseStartDate	11/9/2024	5/1/2024
tblConstructionPhase	PhaseStartDate	1/6/2024	6/1/2024
tblConstructionPhase	PhaseStartDate	11/23/2024	5/1/2025
tblEnergyUse	NT24NG	5,516.00	0.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblEnergyUse	NT24NG	6.86	0.00
tblEnergyUse	T24NG	5,633.62	0.00
tblEnergyUse	T24NG	13.90	0.00
tblFireplaces	NumberGas	97.75	0.00
tblFireplaces	NumberNoFireplace	11.50	0.00
tblFireplaces	NumberWood	5.75	0.00
tblGrading	MaterialImported	0.00	3,000.00
tblLandUse	LotAcreage	3.03	2.06
tblVehicleTrips	ST_TR	4.91	0.98
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	SU_TR	4.09	0.98
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	WD_TR	5.44	0.98
tblVehicleTrips	WD_TR	32.93	0.00
tblWoodstoves	NumberCatalytic	5.75	0.00
tblWoodstoves	NumberNoncatalytic	5.75	0.00

2.0 Emissions Summary

Mesa Court Housing Community - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
2023	1.5091	14.3419	13.8547	0.0254	0.1453	0.6774	0.8227	0.0385	0.6335	0.6720	0.0000	2,448.3329	2,448.3329	0.5920	2.6800e-003	2,463.9308
2024	2.7350	21.6221	29.0355	0.0552	7.3543	0.9423	7.9341	3.4972	0.8884	4.0309	0.0000	5,269.9060	5,269.9060	1.0064	0.0902	5,313.6711
2025	14.1867	13.8501	18.9393	0.0402	1.3143	0.5300	1.8442	0.3507	0.5092	0.8600	0.0000	3,829.3623	3,829.3623	0.4721	0.0612	3,859.3898
Maximum	14.1867	21.6221	29.0355	0.0552	7.3543	0.9423	7.9341	3.4972	0.8884	4.0309	0.0000	5,269.9060	5,269.9060	1.0064	0.0902	5,313.6711

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	lb/day										lb/day					
2023	1.5091	14.3419	13.8547	0.0254	0.1453	0.6774	0.8227	0.0385	0.6335	0.6720	0.0000	2,448.3329	2,448.3329	0.5920	2.6800e-003	2,463.9308
2024	2.7350	21.6221	29.0355	0.0552	2.8909	0.9423	3.4706	1.3406	0.8884	1.8742	0.0000	5,269.9060	5,269.9060	1.0064	0.0902	5,313.6711
2025	14.1867	13.8501	18.9393	0.0402	1.3143	0.5300	1.8442	0.3507	0.5092	0.8600	0.0000	3,829.3623	3,829.3623	0.4721	0.0612	3,859.3898
Maximum	14.1867	21.6221	29.0355	0.0552	2.8909	0.9423	3.4706	1.3406	0.8884	1.8742	0.0000	5,269.9060	5,269.9060	1.0064	0.0902	5,313.6711

Mesa Court Housing Community - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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/day					
Area	3.1599	0.1092	9.4806	5.0000e-004		0.0526	0.0526		0.0526	0.0526	0.0000	17.0877	17.0877	0.0164	0.0000	17.4969
Energy	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
Mobile	0.2971	0.2956	2.9849	7.1900e-003	0.8136	4.7800e-003	0.8184	0.2169	4.4500e-003	0.2213		732.9050	732.9050	0.0423	0.0286	742.4689
Total	3.4570	0.4048	12.4655	7.6900e-003	0.8136	0.0574	0.8710	0.2169	0.0571	0.2739	0.0000	749.9927	749.9927	0.0587	0.0286	759.9658

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/day					
Area	3.0262	0.0867	7.2047	3.3000e-004		0.0392	0.0392		0.0392	0.0392	0.0000	11.9565	11.9565	8.5700e-003	0.0000	12.1708
Energy	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
Mobile	0.2971	0.2956	2.9849	7.1900e-003	0.8136	4.7800e-003	0.8184	0.2169	4.4500e-003	0.2213		732.9050	732.9050	0.0423	0.0286	742.4689
Total	3.3233	0.3822	10.1896	7.5200e-003	0.8136	0.0440	0.8576	0.2169	0.0437	0.2605	0.0000	744.8615	744.8615	0.0509	0.0286	754.6397

Mesa Court Housing Community - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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
Percent Reduction	3.87	5.56	18.26	2.21	0.00	23.32	1.54	0.00	23.45	4.88	0.00	0.68	0.68	13.30	0.00	0.70

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	12/15/2023	2/29/2024	5	55	
2	Grading	Grading	3/1/2024	4/30/2024	5	43	
3	Building Construction	Building Construction	6/1/2024	8/31/2025	5	325	
4	Paving	Paving	5/1/2024	6/30/2024	5	43	
5	Architectural Coating	Architectural Coating	5/1/2025	7/31/2025	5	66	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 43

Acres of Paving: 0

Residential Indoor: 232,875; Residential Outdoor: 77,625; Non-Residential Indoor: 28,545; Non-Residential Outdoor: 9,515; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37

Mesa Court Housing Community - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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
Demolition	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	375.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	91.00	15.00	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	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Mesa Court Housing Community - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 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	lb/day										lb/day					
Off-Road	1.4725	14.3184	13.4577	0.0241		0.6766	0.6766		0.6328	0.6328		2,324.3959	2,324.3959	0.5893		2,339.1278
Total	1.4725	14.3184	13.4577	0.0241		0.6766	0.6766		0.6328	0.6328		2,324.3959	2,324.3959	0.5893		2,339.1278

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/day										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	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
Worker	0.0366	0.0234	0.3970	1.2300e-003	0.1453	7.4000e-004	0.1461	0.0385	6.8000e-004	0.0392		123.9370	123.9370	2.7200e-003	2.6800e-003	124.8030
Total	0.0366	0.0234	0.3970	1.2300e-003	0.1453	7.4000e-004	0.1461	0.0385	6.8000e-004	0.0392		123.9370	123.9370	2.7200e-003	2.6800e-003	124.8030

Mesa Court Housing Community - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2023

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	lb/day										lb/day					
Off-Road	1.4725	14.3184	13.4577	0.0241		0.6766	0.6766		0.6328	0.6328	0.0000	2,324.3959	2,324.3959	0.5893		2,339.1278
Total	1.4725	14.3184	13.4577	0.0241		0.6766	0.6766		0.6328	0.6328	0.0000	2,324.3959	2,324.3959	0.5893		2,339.1278

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/day										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	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
Worker	0.0366	0.0234	0.3970	1.2300e-003	0.1453	7.4000e-004	0.1461	0.0385	6.8000e-004	0.0392		123.9370	123.9370	2.7200e-003	2.6800e-003	124.8030
Total	0.0366	0.0234	0.3970	1.2300e-003	0.1453	7.4000e-004	0.1461	0.0385	6.8000e-004	0.0392		123.9370	123.9370	2.7200e-003	2.6800e-003	124.8030

Mesa Court Housing Community - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2024

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	lb/day										lb/day					
Off-Road	1.4397	13.8867	13.4879	0.0241		0.6311	0.6311		0.5895	0.5895		2,324.9459	2,324.9459	0.5884		2,339.6562
Total	1.4397	13.8867	13.4879	0.0241		0.6311	0.6311		0.5895	0.5895		2,324.9459	2,324.9459	0.5884		2,339.6562

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/day										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	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
Worker	0.0344	0.0210	0.3694	1.1900e-003	0.1453	7.0000e-004	0.1460	0.0385	6.5000e-004	0.0392		120.0010	120.0010	2.4700e-003	2.5000e-003	120.8090
Total	0.0344	0.0210	0.3694	1.1900e-003	0.1453	7.0000e-004	0.1460	0.0385	6.5000e-004	0.0392		120.0010	120.0010	2.4700e-003	2.5000e-003	120.8090

Mesa Court Housing Community - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2024

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	lb/day										lb/day					
Off-Road	1.4397	13.8867	13.4879	0.0241		0.6311	0.6311		0.5895	0.5895	0.0000	2,324.9459	2,324.9459	0.5884		2,339.6562
Total	1.4397	13.8867	13.4879	0.0241		0.6311	0.6311		0.5895	0.5895	0.0000	2,324.9459	2,324.9459	0.5884		2,339.6562

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/day										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	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
Worker	0.0344	0.0210	0.3694	1.1900e-003	0.1453	7.0000e-004	0.1460	0.0385	6.5000e-004	0.0392		120.0010	120.0010	2.4700e-003	2.5000e-003	120.8090
Total	0.0344	0.0210	0.3694	1.1900e-003	0.1453	7.0000e-004	0.1460	0.0385	6.5000e-004	0.0392		120.0010	120.0010	2.4700e-003	2.5000e-003	120.8090

Mesa Court Housing Community - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2024

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	lb/day										lb/day					
Fugitive Dust					7.0905	0.0000	7.0905	3.4259	0.0000	3.4259			0.0000			0.0000
Off-Road	1.3015	13.8178	8.6998	0.0206		0.5722	0.5722		0.5265	0.5265		1,995.5803	1,995.5803	0.6454		2,011.7155
Total	1.3015	13.8178	8.6998	0.0206	7.0905	0.5722	7.6627	3.4259	0.5265	3.9524		1,995.5803	1,995.5803	0.6454		2,011.7155

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/day										lb/day					
Hauling	0.0180	1.0318	0.3641	4.8100e-003	0.1521	6.9800e-003	0.1591	0.0417	6.6800e-003	0.0483		550.1042	550.1042	0.0570	0.0883	577.8422
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
Worker	0.0265	0.0162	0.2842	9.1000e-004	0.1118	5.4000e-004	0.1123	0.0296	5.0000e-004	0.0301		92.3085	92.3085	1.9000e-003	1.9300e-003	92.9300
Total	0.0444	1.0480	0.6483	5.7200e-003	0.2639	7.5200e-003	0.2714	0.0713	7.1800e-003	0.0785		642.4127	642.4127	0.0589	0.0902	670.7722

Mesa Court Housing Community - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2024

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	lb/day										lb/day					
Fugitive Dust					2.6270	0.0000	2.6270	1.2693	0.0000	1.2693			0.0000			0.0000
Off-Road	1.3015	13.8178	8.6998	0.0206		0.5722	0.5722		0.5265	0.5265	0.0000	1,995.580 3	1,995.580 3	0.6454		2,011.715 5
Total	1.3015	13.8178	8.6998	0.0206	2.6270	0.5722	3.1993	1.2693	0.5265	1.7958	0.0000	1,995.580 3	1,995.580 3	0.6454		2,011.715 5

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/day										lb/day					
Hauling	0.0180	1.0318	0.3641	4.8100e-003	0.1521	6.9800e-003	0.1591	0.0417	6.6800e-003	0.0483		550.1042	550.1042	0.0570	0.0883	577.8422
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
Worker	0.0265	0.0162	0.2842	9.1000e-004	0.1118	5.4000e-004	0.1123	0.0296	5.0000e-004	0.0301		92.3085	92.3085	1.9000e-003	1.9300e-003	92.9300
Total	0.0444	1.0480	0.6483	5.7200e-003	0.2639	7.5200e-003	0.2714	0.0713	7.1800e-003	0.0785		642.4127	642.4127	0.0589	0.0902	670.7722

Mesa Court Housing Community - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2024

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	lb/day										lb/day					
Off-Road	1.5971	12.8235	14.1002	0.0250		0.5381	0.5381		0.5153	0.5153		2,289.654 1	2,289.654 1	0.4265		2,300.315 4
Total	1.5971	12.8235	14.1002	0.0250		0.5381	0.5381		0.5153	0.5153		2,289.654 1	2,289.654 1	0.4265		2,300.315 4

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/day										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	0.0000
Vendor	0.0149	0.5242	0.2163	2.6500e-003	0.0959	2.8200e-003	0.0987	0.0276	2.7000e-003	0.0303		291.5795	291.5795	0.0178	0.0420	304.5450
Worker	0.2408	0.1472	2.5858	8.3100e-003	1.0172	4.9300e-003	1.0221	0.2698	4.5300e-003	0.2743		840.0073	840.0073	0.0173	0.0175	845.6629
Total	0.2557	0.6714	2.8022	0.0110	1.1131	7.7500e-003	1.1208	0.2974	7.2300e-003	0.3046		1,131.586 8	1,131.586 8	0.0351	0.0596	1,150.207 9

Mesa Court Housing Community - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2024

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	lb/day										lb/day					
Off-Road	1.5971	12.8235	14.1002	0.0250		0.5381	0.5381		0.5153	0.5153	0.0000	2,289.654 1	2,289.654 1	0.4265		2,300.315 4
Total	1.5971	12.8235	14.1002	0.0250		0.5381	0.5381		0.5153	0.5153	0.0000	2,289.654 1	2,289.654 1	0.4265		2,300.315 4

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/day										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	0.0000
Vendor	0.0149	0.5242	0.2163	2.6500e-003	0.0959	2.8200e-003	0.0987	0.0276	2.7000e-003	0.0303		291.5795	291.5795	0.0178	0.0420	304.5450
Worker	0.2408	0.1472	2.5858	8.3100e-003	1.0172	4.9300e-003	1.0221	0.2698	4.5300e-003	0.2743		840.0073	840.0073	0.0173	0.0175	845.6629
Total	0.2557	0.6714	2.8022	0.0110	1.1131	7.7500e-003	1.1208	0.2974	7.2300e-003	0.3046		1,131.586 8	1,131.586 8	0.0351	0.0596	1,150.207 9

Mesa Court Housing Community - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2025

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	lb/day										lb/day					
Off-Road	1.4897	12.0233	14.0072	0.0250		0.4700	0.4700		0.4498	0.4498		2,289.8898	2,289.8898	0.4200		2,300.3887
Total	1.4897	12.0233	14.0072	0.0250		0.4700	0.4700		0.4498	0.4498		2,289.8898	2,289.8898	0.4200		2,300.3887

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/day										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	0.0000
Vendor	0.0147	0.5216	0.2155	2.6000e-003	0.0959	2.8400e-003	0.0988	0.0276	2.7100e-003	0.0303		286.1209	286.1209	0.0180	0.0414	298.9096
Worker	0.2273	0.1333	2.4274	8.0300e-003	1.0172	4.7100e-003	1.0219	0.2698	4.3300e-003	0.2741		811.4057	811.4057	0.0157	0.0165	816.7122
Total	0.2420	0.6549	2.6428	0.0106	1.1131	7.5500e-003	1.1206	0.2974	7.0400e-003	0.3044		1,097.5266	1,097.5266	0.0337	0.0579	1,115.6218

Mesa Court Housing Community - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2025

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	lb/day										lb/day					
Off-Road	1.4897	12.0233	14.0072	0.0250		0.4700	0.4700		0.4498	0.4498	0.0000	2,289.8898	2,289.8898	0.4200		2,300.3887
Total	1.4897	12.0233	14.0072	0.0250		0.4700	0.4700		0.4498	0.4498	0.0000	2,289.8898	2,289.8898	0.4200		2,300.3887

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/day										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	0.0000
Vendor	0.0147	0.5216	0.2155	2.6000e-003	0.0959	2.8400e-003	0.0988	0.0276	2.7100e-003	0.0303		286.1209	286.1209	0.0180	0.0414	298.9096
Worker	0.2273	0.1333	2.4274	8.0300e-003	1.0172	4.7100e-003	1.0219	0.2698	4.3300e-003	0.2741		811.4057	811.4057	0.0157	0.0165	816.7122
Total	0.2420	0.6549	2.6428	0.0106	1.1131	7.5500e-003	1.1206	0.2974	7.0400e-003	0.3044		1,097.5266	1,097.5266	0.0337	0.0579	1,115.6218

Mesa Court Housing Community - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2024

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	lb/day										lb/day					
Off-Road	0.8425	8.1030	11.7069	0.0179		0.3957	0.3957		0.3652	0.3652		1,710.2024	1,710.2024	0.5420		1,723.7529
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.8425	8.1030	11.7069	0.0179		0.3957	0.3957		0.3652	0.3652		1,710.2024	1,710.2024	0.5420		1,723.7529

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/day										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	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
Worker	0.0397	0.0243	0.4262	1.3700e-003	0.1677	8.1000e-004	0.1685	0.0445	7.5000e-004	0.0452		138.4627	138.4627	2.8500e-003	2.8900e-003	139.3950
Total	0.0397	0.0243	0.4262	1.3700e-003	0.1677	8.1000e-004	0.1685	0.0445	7.5000e-004	0.0452		138.4627	138.4627	2.8500e-003	2.8900e-003	139.3950

Mesa Court Housing Community - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2024

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	lb/day										lb/day					
Off-Road	0.8425	8.1030	11.7069	0.0179		0.3957	0.3957		0.3652	0.3652	0.0000	1,710.2024	1,710.2024	0.5420		1,723.7529
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.8425	8.1030	11.7069	0.0179		0.3957	0.3957		0.3652	0.3652	0.0000	1,710.2024	1,710.2024	0.5420		1,723.7529

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/day										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	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
Worker	0.0397	0.0243	0.4262	1.3700e-003	0.1677	8.1000e-004	0.1685	0.0445	7.5000e-004	0.0452		138.4627	138.4627	2.8500e-003	2.8900e-003	139.3950
Total	0.0397	0.0243	0.4262	1.3700e-003	0.1677	8.1000e-004	0.1685	0.0445	7.5000e-004	0.0452		138.4627	138.4627	2.8500e-003	2.8900e-003	139.3950

Mesa Court Housing Community - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2025

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	lb/day										lb/day					
Archit. Coating	12.2392					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	12.4101	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319

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/day										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	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
Worker	0.0450	0.0264	0.4801	1.5900e-003	0.2012	9.3000e-004	0.2021	0.0534	8.6000e-004	0.0542		160.4978	160.4978	3.1100e-003	3.2600e-003	161.5475
Total	0.0450	0.0264	0.4801	1.5900e-003	0.2012	9.3000e-004	0.2021	0.0534	8.6000e-004	0.0542		160.4978	160.4978	3.1100e-003	3.2600e-003	161.5475

Mesa Court Housing Community - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2025

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	lb/day										lb/day					
Archit. Coating	12.2392					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	12.4101	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319

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/day										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	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
Worker	0.0450	0.0264	0.4801	1.5900e-003	0.2012	9.3000e-004	0.2021	0.0534	8.6000e-004	0.0542		160.4978	160.4978	3.1100e-003	3.2600e-003	161.5475
Total	0.0450	0.0264	0.4801	1.5900e-003	0.2012	9.3000e-004	0.2021	0.0534	8.6000e-004	0.0542		160.4978	160.4978	3.1100e-003	3.2600e-003	161.5475

Mesa Court Housing Community - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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/day										lb/day					
Mitigated	0.2971	0.2956	2.9849	7.1900e-003	0.8136	4.7800e-003	0.8184	0.2169	4.4500e-003	0.2213		732.9050	732.9050	0.0423	0.0286	742.4689
Unmitigated	0.2971	0.2956	2.9849	7.1900e-003	0.8136	4.7800e-003	0.8184	0.2169	4.4500e-003	0.2213		732.9050	732.9050	0.0423	0.0286	742.4689

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	113.00	113.00	113.00	386,135	386,135
Health Club	0.00	0.00	0.00		
Total	113.00	113.00	113.00	386,135	386,135

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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 Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Health Club	16.60	8.40	6.90	16.90	64.10	19.00	52	39	9

4.4 Fleet Mix

Mesa Court Housing Community - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.547453	0.060181	0.185039	0.126487	0.024236	0.006679	0.014707	0.004926	0.000662	0.000378	0.024745	0.000705	0.003801
Health Club	0.547453	0.060181	0.185039	0.126487	0.024236	0.006679	0.014707	0.004926	0.000662	0.000378	0.024745	0.000705	0.003801

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	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/day					
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

Mesa Court Housing Community - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas 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/day					
Apartments Mid Rise	0	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
Health Club	0	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
Total		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

Mitigated

	NaturalGas 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/day					
Apartments Mid Rise	0	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
Health Club	0	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
Total		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

6.0 Area Detail

Mesa Court Housing Community - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

	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/day					
Mitigated	3.0262	0.0867	7.2047	3.3000e-004		0.0392	0.0392		0.0392	0.0392	0.0000	11.9565	11.9565	8.5700e-003	0.0000	12.1708
Unmitigated	3.1599	0.1092	9.4806	5.0000e-004		0.0526	0.0526		0.0526	0.0526	0.0000	17.0877	17.0877	0.0164	0.0000	17.4969

Mesa Court Housing Community - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Unmitigated

	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/day										lb/day					
Architectural Coating	0.2213					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.6538					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	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
Landscaping	0.2848	0.1092	9.4806	5.0000e-004		0.0526	0.0526		0.0526	0.0526		17.0877	17.0877	0.0164		17.4969
Total	3.1599	0.1092	9.4806	5.0000e-004		0.0526	0.0526		0.0526	0.0526	0.0000	17.0877	17.0877	0.0164	0.0000	17.4969

Mesa Court Housing Community - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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/day										lb/day					
Architectural Coating	0.2213					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.6538					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	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
Landscaping	0.1511	0.0867	7.2047	3.3000e-004		0.0392	0.0392		0.0392	0.0392		11.9565	11.9565	8.5700e-003		12.1708
Total	3.0262	0.0867	7.2047	3.3000e-004		0.0392	0.0392		0.0392	0.0392	0.0000	11.9565	11.9565	8.5700e-003	0.0000	12.1708

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

Mesa Court Housing Community - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

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

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

**Mesa Court Housing Community
Orange County, Winter**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Health Club	19.03	1000sqft	0.44	19,030.00	0
Apartments Mid Rise	115.00	Dwelling Unit	2.06	115,000.00	329

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	30
Climate Zone	8			Operational Year	2025
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Up to 450 beds of quadruple occupancy is ~115 units. Health club = residential resources + building resources + operations. Site is 2.5 acres in total.

Construction Phase - per construction questionnaire

Grading - per construction questionnaire

Architectural Coating - SCAQMD Rule 1113

Vehicle Trips - per trip gen table

Woodstoves - dorms do not have woodstoves or fireplaces

Construction Off-road Equipment Mitigation - SCAQMD Rule 403

Area Mitigation - per operational questionnaire

Energy Mitigation - per operational questionnaire

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Water Mitigation - per operational questionnaire

Waste Mitigation -

Area Coating - SCAQMD Rule 1113

Energy Use - No natural gas use per applicant

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Parking	100	50
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	55.00
tblConstructionPhase	NumDays	6.00	43.00
tblConstructionPhase	NumDays	10.00	43.00
tblConstructionPhase	NumDays	220.00	325.00
tblConstructionPhase	NumDays	10.00	66.00
tblConstructionPhase	PhaseEndDate	12/28/2023	2/29/2024
tblConstructionPhase	PhaseEndDate	1/5/2024	4/30/2024
tblConstructionPhase	PhaseEndDate	11/22/2024	6/30/2024
tblConstructionPhase	PhaseEndDate	11/8/2024	8/31/2025
tblConstructionPhase	PhaseEndDate	12/6/2024	7/31/2025
tblConstructionPhase	PhaseStartDate	12/1/2023	12/15/2023
tblConstructionPhase	PhaseStartDate	12/29/2023	3/1/2024
tblConstructionPhase	PhaseStartDate	11/9/2024	5/1/2024
tblConstructionPhase	PhaseStartDate	1/6/2024	6/1/2024
tblConstructionPhase	PhaseStartDate	11/23/2024	5/1/2025
tblEnergyUse	NT24NG	5,516.00	0.00

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblEnergyUse	NT24NG	6.86	0.00
tblEnergyUse	T24NG	5,633.62	0.00
tblEnergyUse	T24NG	13.90	0.00
tblFireplaces	NumberGas	97.75	0.00
tblFireplaces	NumberNoFireplace	11.50	0.00
tblFireplaces	NumberWood	5.75	0.00
tblGrading	MaterialImported	0.00	3,000.00
tblLandUse	LotAcreage	3.03	2.06
tblVehicleTrips	ST_TR	4.91	0.98
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	SU_TR	4.09	0.98
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	WD_TR	5.44	0.98
tblVehicleTrips	WD_TR	32.93	0.00
tblWoodstoves	NumberCatalytic	5.75	0.00
tblWoodstoves	NumberNoncatalytic	5.75	0.00

2.0 Emissions Summary

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
2023	1.5125	14.3442	13.8275	0.0253	0.1453	0.6774	0.8227	0.0385	0.6335	0.6720	0.0000	2,442.407 5	2,442.407 5	0.5921	2.8500e-003	2,458.058 1
2024	2.7615	21.6623	28.8393	0.0548	7.3543	0.9423	7.9341	3.4972	0.8885	4.0309	0.0000	5,223.641 2	5,223.641 2	1.0069	0.0904	5,267.833 4
2025	14.2134	13.8890	18.7518	0.0398	1.3143	0.5300	1.8442	0.3507	0.5092	0.8600	0.0000	3,783.509 5	3,783.509 5	0.4726	0.0625	3,813.949 2
Maximum	14.2134	21.6623	28.8393	0.0548	7.3543	0.9423	7.9341	3.4972	0.8885	4.0309	0.0000	5,223.641 2	5,223.641 2	1.0069	0.0904	5,267.833 4

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	lb/day										lb/day					
2023	1.5125	14.3442	13.8275	0.0253	0.1453	0.6774	0.8227	0.0385	0.6335	0.6720	0.0000	2,442.407 5	2,442.407 5	0.5921	2.8500e-003	2,458.058 1
2024	2.7615	21.6623	28.8393	0.0548	2.8909	0.9423	3.4707	1.3406	0.8885	1.8743	0.0000	5,223.641 2	5,223.641 2	1.0069	0.0904	5,267.833 4
2025	14.2134	13.8890	18.7518	0.0398	1.3143	0.5300	1.8442	0.3507	0.5092	0.8600	0.0000	3,783.509 5	3,783.509 5	0.4726	0.0625	3,813.949 2
Maximum	14.2134	21.6623	28.8393	0.0548	2.8909	0.9423	3.4707	1.3406	0.8885	1.8743	0.0000	5,223.641 2	5,223.641 2	1.0069	0.0904	5,267.833 4

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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/day					
Area	3.1599	0.1092	9.4806	5.0000e-004		0.0526	0.0526		0.0526	0.0526	0.0000	17.0877	17.0877	0.0164	0.0000	17.4969
Energy	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
Mobile	0.2951	0.3173	2.9532	6.9200e-003	0.8136	4.7800e-003	0.8184	0.2169	4.4500e-003	0.2213		705.1685	705.1685	0.0436	0.0297	715.1110
Total	3.4549	0.4265	12.4338	7.4200e-003	0.8136	0.0574	0.8710	0.2169	0.0571	0.2739	0.0000	722.2561	722.2561	0.0600	0.0297	732.6080

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/day					
Area	3.0262	0.0867	7.2047	3.3000e-004		0.0392	0.0392		0.0392	0.0392	0.0000	11.9565	11.9565	8.5700e-003	0.0000	12.1708
Energy	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
Mobile	0.2951	0.3173	2.9532	6.9200e-003	0.8136	4.7800e-003	0.8184	0.2169	4.4500e-003	0.2213		705.1685	705.1685	0.0436	0.0297	715.1110
Total	3.3213	0.4040	10.1579	7.2500e-003	0.8136	0.0440	0.8577	0.2169	0.0437	0.2605	0.0000	717.1249	717.1249	0.0522	0.0297	727.2818

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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
Percent Reduction	3.87	5.28	18.30	2.29	0.00	23.32	1.54	0.00	23.45	4.88	0.00	0.71	0.71	13.01	0.00	0.73

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	12/15/2023	2/29/2024	5	55	
2	Grading	Grading	3/1/2024	4/30/2024	5	43	
3	Building Construction	Building Construction	6/1/2024	8/31/2025	5	325	
4	Paving	Paving	5/1/2024	6/30/2024	5	43	
5	Architectural Coating	Architectural Coating	5/1/2025	7/31/2025	5	66	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 43

Acres of Paving: 0

Residential Indoor: 232,875; Residential Outdoor: 77,625; Non-Residential Indoor: 28,545; Non-Residential Outdoor: 9,515; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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
Demolition	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	375.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	91.00	15.00	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	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 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	lb/day										lb/day					
Off-Road	1.4725	14.3184	13.4577	0.0241		0.6766	0.6766		0.6328	0.6328		2,324.3959	2,324.3959	0.5893		2,339.1278
Total	1.4725	14.3184	13.4577	0.0241		0.6766	0.6766		0.6328	0.6328		2,324.3959	2,324.3959	0.5893		2,339.1278

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/day										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	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
Worker	0.0400	0.0257	0.3698	1.1700e-003	0.1453	7.4000e-004	0.1461	0.0385	6.8000e-004	0.0392		118.0117	118.0117	2.7900e-003	2.8500e-003	118.9303
Total	0.0400	0.0257	0.3698	1.1700e-003	0.1453	7.4000e-004	0.1461	0.0385	6.8000e-004	0.0392		118.0117	118.0117	2.7900e-003	2.8500e-003	118.9303

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2023

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	lb/day										lb/day					
Off-Road	1.4725	14.3184	13.4577	0.0241		0.6766	0.6766		0.6328	0.6328	0.0000	2,324.3959	2,324.3959	0.5893		2,339.1278
Total	1.4725	14.3184	13.4577	0.0241		0.6766	0.6766		0.6328	0.6328	0.0000	2,324.3959	2,324.3959	0.5893		2,339.1278

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/day										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	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
Worker	0.0400	0.0257	0.3698	1.1700e-003	0.1453	7.4000e-004	0.1461	0.0385	6.8000e-004	0.0392		118.0117	118.0117	2.7900e-003	2.8500e-003	118.9303
Total	0.0400	0.0257	0.3698	1.1700e-003	0.1453	7.4000e-004	0.1461	0.0385	6.8000e-004	0.0392		118.0117	118.0117	2.7900e-003	2.8500e-003	118.9303

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2024

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	lb/day										lb/day					
Off-Road	1.4397	13.8867	13.4879	0.0241		0.6311	0.6311		0.5895	0.5895		2,324.9459	2,324.9459	0.5884		2,339.6562
Total	1.4397	13.8867	13.4879	0.0241		0.6311	0.6311		0.5895	0.5895		2,324.9459	2,324.9459	0.5884		2,339.6562

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/day										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	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
Worker	0.0377	0.0231	0.3445	1.1300e-003	0.1453	7.0000e-004	0.1460	0.0385	6.5000e-004	0.0392		114.2732	114.2732	2.5300e-003	2.6600e-003	115.1302
Total	0.0377	0.0231	0.3445	1.1300e-003	0.1453	7.0000e-004	0.1460	0.0385	6.5000e-004	0.0392		114.2732	114.2732	2.5300e-003	2.6600e-003	115.1302

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2024

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	lb/day										lb/day					
Off-Road	1.4397	13.8867	13.4879	0.0241		0.6311	0.6311		0.5895	0.5895	0.0000	2,324.9459	2,324.9459	0.5884		2,339.6562
Total	1.4397	13.8867	13.4879	0.0241		0.6311	0.6311		0.5895	0.5895	0.0000	2,324.9459	2,324.9459	0.5884		2,339.6562

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/day										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	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
Worker	0.0377	0.0231	0.3445	1.1300e-003	0.1453	7.0000e-004	0.1460	0.0385	6.5000e-004	0.0392		114.2732	114.2732	2.5300e-003	2.6600e-003	115.1302
Total	0.0377	0.0231	0.3445	1.1300e-003	0.1453	7.0000e-004	0.1460	0.0385	6.5000e-004	0.0392		114.2732	114.2732	2.5300e-003	2.6600e-003	115.1302

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2024

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	lb/day										lb/day					
Fugitive Dust					7.0905	0.0000	7.0905	3.4259	0.0000	3.4259			0.0000			0.0000
Off-Road	1.3015	13.8178	8.6998	0.0206		0.5722	0.5722		0.5265	0.5265		1,995.5803	1,995.5803	0.6454		2,011.7155
Total	1.3015	13.8178	8.6998	0.0206	7.0905	0.5722	7.6627	3.4259	0.5265	3.9524		1,995.5803	1,995.5803	0.6454		2,011.7155

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/day										lb/day					
Hauling	0.0169	1.0758	0.3680	4.8200e-003	0.1521	7.0000e-003	0.1591	0.0417	6.6900e-003	0.0483		550.6106	550.6106	0.0569	0.0884	578.3717
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
Worker	0.0290	0.0178	0.2650	8.7000e-004	0.1118	5.4000e-004	0.1123	0.0296	5.0000e-004	0.0301		87.9024	87.9024	1.9500e-003	2.0500e-003	88.5617
Total	0.0459	1.0936	0.6330	5.6900e-003	0.2639	7.5400e-003	0.2714	0.0713	7.1900e-003	0.0785		638.5131	638.5131	0.0589	0.0904	666.9333

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2024

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	lb/day										lb/day					
Fugitive Dust					2.6270	0.0000	2.6270	1.2693	0.0000	1.2693			0.0000			0.0000
Off-Road	1.3015	13.8178	8.6998	0.0206		0.5722	0.5722		0.5265	0.5265	0.0000	1,995.580 3	1,995.580 3	0.6454		2,011.715 5
Total	1.3015	13.8178	8.6998	0.0206	2.6270	0.5722	3.1993	1.2693	0.5265	1.7958	0.0000	1,995.580 3	1,995.580 3	0.6454		2,011.715 5

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/day										lb/day					
Hauling	0.0169	1.0758	0.3680	4.8200e-003	0.1521	7.0000e-003	0.1591	0.0417	6.6900e-003	0.0483		550.6106	550.6106	0.0569	0.0884	578.3717
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
Worker	0.0290	0.0178	0.2650	8.7000e-004	0.1118	5.4000e-004	0.1123	0.0296	5.0000e-004	0.0301		87.9024	87.9024	1.9500e-003	2.0500e-003	88.5617
Total	0.0459	1.0936	0.6330	5.6900e-003	0.2639	7.5400e-003	0.2714	0.0713	7.1900e-003	0.0785		638.5131	638.5131	0.0589	0.0904	666.9333

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2024

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	lb/day										lb/day					
Off-Road	1.5971	12.8235	14.1002	0.0250		0.5381	0.5381		0.5153	0.5153		2,289.654 1	2,289.654 1	0.4265		2,300.315 4
Total	1.5971	12.8235	14.1002	0.0250		0.5381	0.5381		0.5153	0.5153		2,289.654 1	2,289.654 1	0.4265		2,300.315 4

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/day										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	0.0000
Vendor	0.0144	0.5476	0.2232	2.6500e-003	0.0959	2.8400e-003	0.0988	0.0276	2.7100e-003	0.0303		292.0190	292.0190	0.0178	0.0421	305.0114
Worker	0.2640	0.1616	2.4116	7.9100e-003	1.0172	4.9300e-003	1.0221	0.2698	4.5300e-003	0.2743		799.9121	799.9121	0.0177	0.0186	805.9112
Total	0.2784	0.7092	2.6347	0.0106	1.1131	7.7700e-003	1.1208	0.2974	7.2400e-003	0.3046		1,091.931 1	1,091.931 1	0.0355	0.0608	1,110.922 6

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2024

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	lb/day										lb/day					
Off-Road	1.5971	12.8235	14.1002	0.0250		0.5381	0.5381		0.5153	0.5153	0.0000	2,289.654 1	2,289.654 1	0.4265		2,300.315 4
Total	1.5971	12.8235	14.1002	0.0250		0.5381	0.5381		0.5153	0.5153	0.0000	2,289.654 1	2,289.654 1	0.4265		2,300.315 4

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/day										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	0.0000
Vendor	0.0144	0.5476	0.2232	2.6500e-003	0.0959	2.8400e-003	0.0988	0.0276	2.7100e-003	0.0303		292.0190	292.0190	0.0178	0.0421	305.0114
Worker	0.2640	0.1616	2.4116	7.9100e-003	1.0172	4.9300e-003	1.0221	0.2698	4.5300e-003	0.2743		799.9121	799.9121	0.0177	0.0186	805.9112
Total	0.2784	0.7092	2.6347	0.0106	1.1131	7.7700e-003	1.1208	0.2974	7.2400e-003	0.3046		1,091.931 1	1,091.931 1	0.0355	0.0608	1,110.922 6

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2025

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	lb/day										lb/day					
Off-Road	1.4897	12.0233	14.0072	0.0250		0.4700	0.4700		0.4498	0.4498		2,289.8898	2,289.8898	0.4200		2,300.3887
Total	1.4897	12.0233	14.0072	0.0250		0.4700	0.4700		0.4498	0.4498		2,289.8898	2,289.8898	0.4200		2,300.3887

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/day										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	0.0000
Vendor	0.0142	0.5449	0.2221	2.6000e-003	0.0959	2.8500e-003	0.0988	0.0276	2.7300e-003	0.0303		286.5614	286.5614	0.0180	0.0415	299.3765
Worker	0.2500	0.1464	2.2652	7.6500e-003	1.0172	4.7100e-003	1.0219	0.2698	4.3300e-003	0.2741		772.7572	772.7572	0.0161	0.0175	778.3857
Total	0.2641	0.6913	2.4874	0.0103	1.1131	7.5600e-003	1.1206	0.2974	7.0600e-003	0.3044		1,059.3185	1,059.3185	0.0341	0.0590	1,077.7622

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2025

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	lb/day										lb/day					
Off-Road	1.4897	12.0233	14.0072	0.0250		0.4700	0.4700		0.4498	0.4498	0.0000	2,289.8898	2,289.8898	0.4200		2,300.3887
Total	1.4897	12.0233	14.0072	0.0250		0.4700	0.4700		0.4498	0.4498	0.0000	2,289.8898	2,289.8898	0.4200		2,300.3887

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/day										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	0.0000
Vendor	0.0142	0.5449	0.2221	2.6000e-003	0.0959	2.8500e-003	0.0988	0.0276	2.7300e-003	0.0303		286.5614	286.5614	0.0180	0.0415	299.3765
Worker	0.2500	0.1464	2.2652	7.6500e-003	1.0172	4.7100e-003	1.0219	0.2698	4.3300e-003	0.2741		772.7572	772.7572	0.0161	0.0175	778.3857
Total	0.2641	0.6913	2.4874	0.0103	1.1131	7.5600e-003	1.1206	0.2974	7.0600e-003	0.3044		1,059.3185	1,059.3185	0.0341	0.0590	1,077.7622

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2024

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	lb/day										lb/day					
Off-Road	0.8425	8.1030	11.7069	0.0179		0.3957	0.3957		0.3652	0.3652		1,710.2024	1,710.2024	0.5420		1,723.7529
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.8425	8.1030	11.7069	0.0179		0.3957	0.3957		0.3652	0.3652		1,710.2024	1,710.2024	0.5420		1,723.7529

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/day										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	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
Worker	0.0435	0.0266	0.3975	1.3000e-003	0.1677	8.1000e-004	0.1685	0.0445	7.5000e-004	0.0452		131.8537	131.8537	2.9200e-003	3.0700e-003	132.8425
Total	0.0435	0.0266	0.3975	1.3000e-003	0.1677	8.1000e-004	0.1685	0.0445	7.5000e-004	0.0452		131.8537	131.8537	2.9200e-003	3.0700e-003	132.8425

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2024

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	lb/day										lb/day					
Off-Road	0.8425	8.1030	11.7069	0.0179		0.3957	0.3957		0.3652	0.3652	0.0000	1,710.2024	1,710.2024	0.5420		1,723.7529
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.8425	8.1030	11.7069	0.0179		0.3957	0.3957		0.3652	0.3652	0.0000	1,710.2024	1,710.2024	0.5420		1,723.7529

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/day										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	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
Worker	0.0435	0.0266	0.3975	1.3000e-003	0.1677	8.1000e-004	0.1685	0.0445	7.5000e-004	0.0452		131.8537	131.8537	2.9200e-003	3.0700e-003	132.8425
Total	0.0435	0.0266	0.3975	1.3000e-003	0.1677	8.1000e-004	0.1685	0.0445	7.5000e-004	0.0452		131.8537	131.8537	2.9200e-003	3.0700e-003	132.8425

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2025

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	lb/day										lb/day					
Archit. Coating	12.2392					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	12.4101	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319

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/day										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	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
Worker	0.0494	0.0290	0.4481	1.5100e-003	0.2012	9.3000e-004	0.2021	0.0534	8.6000e-004	0.0542		152.8531	152.8531	3.1900e-003	3.4700e-003	153.9664
Total	0.0494	0.0290	0.4481	1.5100e-003	0.2012	9.3000e-004	0.2021	0.0534	8.6000e-004	0.0542		152.8531	152.8531	3.1900e-003	3.4700e-003	153.9664

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2025

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	lb/day										lb/day					
Archit. Coating	12.2392					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	12.4101	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319

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/day										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	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
Worker	0.0494	0.0290	0.4481	1.5100e-003	0.2012	9.3000e-004	0.2021	0.0534	8.6000e-004	0.0542		152.8531	152.8531	3.1900e-003	3.4700e-003	153.9664
Total	0.0494	0.0290	0.4481	1.5100e-003	0.2012	9.3000e-004	0.2021	0.0534	8.6000e-004	0.0542		152.8531	152.8531	3.1900e-003	3.4700e-003	153.9664

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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/day										lb/day					
Mitigated	0.2951	0.3173	2.9532	6.9200e-003	0.8136	4.7800e-003	0.8184	0.2169	4.4500e-003	0.2213		705.1685	705.1685	0.0436	0.0297	715.1110
Unmitigated	0.2951	0.3173	2.9532	6.9200e-003	0.8136	4.7800e-003	0.8184	0.2169	4.4500e-003	0.2213		705.1685	705.1685	0.0436	0.0297	715.1110

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	113.00	113.00	113.00	386,135	386,135
Health Club	0.00	0.00	0.00		
Total	113.00	113.00	113.00	386,135	386,135

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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 Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Health Club	16.60	8.40	6.90	16.90	64.10	19.00	52	39	9

4.4 Fleet Mix

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.547453	0.060181	0.185039	0.126487	0.024236	0.006679	0.014707	0.004926	0.000662	0.000378	0.024745	0.000705	0.003801
Health Club	0.547453	0.060181	0.185039	0.126487	0.024236	0.006679	0.014707	0.004926	0.000662	0.000378	0.024745	0.000705	0.003801

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	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/day					
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas 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/day					
Apartments Mid Rise	0	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
Health Club	0	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
Total		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

Mitigated

	NaturalGas 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/day					
Apartments Mid Rise	0	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
Health Club	0	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
Total		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

6.0 Area Detail

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

	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/day					
Mitigated	3.0262	0.0867	7.2047	3.3000e-004		0.0392	0.0392		0.0392	0.0392	0.0000	11.9565	11.9565	8.5700e-003	0.0000	12.1708
Unmitigated	3.1599	0.1092	9.4806	5.0000e-004		0.0526	0.0526		0.0526	0.0526	0.0000	17.0877	17.0877	0.0164	0.0000	17.4969

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Unmitigated

	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/day										lb/day					
Architectural Coating	0.2213					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.6538					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	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
Landscaping	0.2848	0.1092	9.4806	5.0000e-004		0.0526	0.0526		0.0526	0.0526		17.0877	17.0877	0.0164		17.4969
Total	3.1599	0.1092	9.4806	5.0000e-004		0.0526	0.0526		0.0526	0.0526	0.0000	17.0877	17.0877	0.0164	0.0000	17.4969

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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/day										lb/day					
Architectural Coating	0.2213					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.6538					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	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
Landscaping	0.1511	0.0867	7.2047	3.3000e-004		0.0392	0.0392		0.0392	0.0392		11.9565	11.9565	8.5700e-003		12.1708
Total	3.0262	0.0867	7.2047	3.3000e-004		0.0392	0.0392		0.0392	0.0392	0.0000	11.9565	11.9565	8.5700e-003	0.0000	12.1708

7.0 Water Detail

7.1 Mitigation Measures Water

- Install Low Flow Bathroom Faucet
- Install Low Flow Kitchen Faucet
- Install Low Flow Toilet
- Install Low Flow Shower
- Use Water Efficient Irrigation System

Mesa Court Housing Community - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

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

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

**Mesa Court Housing Community
Energy Calculations**

Land Use	Natural Gas Use		Electricity Use	
	(kBTU/yr)	(Therms)	(kWh/yr)	(MWh/yr)
Apartments Mid Rise		0	427,802	428
Health Club		0	151,859	152
Totals	0	0	579,661	580

1 kBTU = 0.01 therms

Energy Type	Project Annual Energy Consumption	Orange County Annual Energy Consumption (2021)	Percentage Increase Countywide
Electricity (MWh)	580	18,931,839	0.0031%

Source: Refer to CalEEMod outputs for assumptions used in this analysis.

Mesa Court Housing Community Energy Calculations

Vehicle Type	Percent of Vehicle Trips ¹	Daily Trips ²	Annual Vehicle Miles Traveled	Average Fuel Economy (miles per gallon) ³	Total Annual Fuel Consumption (gallons) ⁴
Passenger Cars	0.55	62	211,391	22	9,609
Light/Medium Trucks	0.37	42	143,529	17.3	8,296
Heavy Trucks/Other	0.08	9	31,215	6.4	4,877
TOTAL⁶	1.00	113	386,135	--	22,782
Notes:					
1. Percent of Vehicle Trip distribution based on trip characteristics within the CalEEMod model.					
2. Daily Trips taken from ITE manual.					
3. Average fuel economy derived from the Department of Transportation.					
4. Total Daily Fuel Consumption calculated by dividing the daily VMT by the average fuel economy (i.e., VMT/Average Fuel Economy).					
5. Values may be slightly off due to rounding.					
Source: Refer to CalEEMod outputs for assumptions used in this analysis.					

County On-Road
2025
1,199,092,373
0.0019%

**Mesa Court Housing Community
Energy Calculations**

WORKER TRIPS						
Phase	Phase Length (# days)	# Worker Trips	Worker Trip Length	Total VMT	Fuel Consumption Factor (Miles/Gallon/Day)	Total Fuel Consumption
Demolition	55	13	14.7	10511		422.06
Grading	43	10	14.7	6321		253.83
Building Construction	325	91	14.7	434753	24.90284233	17457.95
Paving	43	15	14.7	9482		380.74
Architectural Coating	66	18	14.7	17464		701.27
						19215.84
VENDOR TRIPS						
Phase	Phase Length (# days)	# Vendor Trips	Vendor Trip Length	Total VMT	Fuel Consumption Factor (Miles/Gallon/Day)	Total Fuel Consumption
Demolition	55	0	6.9	0		0.00
Grading	43	0	6.9	0		0.00
Building Construction	325	15	6.9	104	8.343886151	12.40
Paving	43	0	6.9	0		0.00
Architectural Coating	66	0	6.9	0		0.00
						12.40
HAULING TRIPS						
Phase	Phase Length (# days)	# Hauling Trips	Hauling Trip Length	Total VMT	Fuel Consumption Factor (Miles/Gallon/Day) ¹	Total Fuel Consumption
Demolition	55	0	20	0		0.00
Grading	43	375	20	7500		898.86
Building Construction	325	0	20	0	8.343886151	0.00
Paving	43	0	20	0		0.00
Architectural Coating	66	0	20	0		0.00
						898.86
TOTAL OFF-SITE MOBILE GALLONS CONSUMED DURING CONSTRUCTION						20,127.11

**Mesa Court Housing Community
Energy Calculations**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Fuel Consumption Rate (gallons per hour)	Duration (total hours/day)	# days	Total Fuel Consumption (gallons)
Demolition	Concrete/Industrial Saws	1	8	81	0.73	2.3652	8	55	1040.69
Demolition	Rubber Tired Dozers	1	8	247	0.4	98.8	8	55	43472.00
Demolition	Tractors/Loaders/Backhoes	3	8	97	0.37	35.89	24	55	47374.80
Grading	Graders	1	8	187	0.41	3.0668	8	43	1054.98
Grading	Rubber Tired Dozers	1	8	247	0.4	3.952	8	43	1359.49
Grading	Tractors/Loaders/Backhoes	2	7	97	0.37	1.4356	14	43	864.23
Building Construction	Cranes	1	8	231	0.29	2.6796	8	325	6966.96
Building Construction	Forklifts	2	7	89	0.20	0.712	14	325	3239.60
Building Construction	Generator Sets	1	8	84	0.74	2.4864	8	325	6464.64
Building Construction	Tractors/Loaders/Backhoes	1	6	97	0.37	1.4356	6	325	2799.42
Building Construction	Welders	3	8	46	0.45	0.828	24	325	6458.40
Paving	Cement and Mortar Mixers	1	8	9	0.56	0.2016	8	43	69.35
Paving	Pavers	1	8	130	0.42	2.184	8	43	751.30
Paving	Paving Equipment	1	8	132	0.36	1.9008	8	43	653.88
Paving	Rollers	2	8	80	0.38	1.216	16	43	836.61
Paving	Tractors/Loaders/Backhoes	1	8	97	0.37	1.4356	8	43	493.85
Architectural Coating	Air Compressors	1	6	78	0.48	1.4976	6	66	593.05
Total:									124,493
Off-Site Mobile Construction Total:									20,127
TOTAL:									144,620
Notes: Fuel Consumption Rate = Horsepower x Load Factor x Fuel Consumption Factor Where: Fuel Consumption Factor for a diesel engine is 0.04 gallons per horsepower per hour (gal/hp/hr) and a gasoline engine is 0.06 gal/hp/hr.									
Source: Refer to CalEEMod outputs for assumptions used in this analysis.									

APPENDIX B

Cultural/Paleontological Resources Assessment

November 16, 2022

Lindsey Hashimoto
Senior Planner
Physical & Environmental Planning
University Of California, Irvine
4199 Campus Drive, Suite 380
Irvine, California 92697

RE: CULTURAL AND PALEONTOLOGICAL RESOURCES IDENTIFICATION REPORT FOR THE MESA COURT RESIDENCE HALL EXPANSION PROJECT, CITY OF IRVINE, ORANGE COUNTY, CALIFORNIA

Dear Ms. Hashimoto:

In support of the Mesa Court Residence Hall Expansion Project (project), Michael Baker International staff completed a South Central Coastal Information Center (SCCIC) records search; literature review, historical map, and aerial photo review; local historical group consultation; an archaeological field survey; and a buried site sensitivity analysis to determine whether the project could result in a significant adverse change to historical resources in accordance with the California Environmental Quality Act (CEQA). Additionally, a search of the Natural History Museum of Los Angeles County (NHMLAC) paleontological records and other online and published databases was completed to assess the paleontological sensitivity of the project area. Methods, results, and recommendations are summarized below.

PROJECT DESCRIPTION

The project proposes to replace the existing parking lot (Parking Lot # 5) with a new student housing development that would serve as an expansion to the existing Mesa Court Residence Hall. The new housing development would consist of multistory building(s) up to five stories in height to house up to 450 beds. Site work and development would include clearing of the existing parking lot; site grading; connection to campus utility and drainage systems; construction of the building(s), pathways, ramps, and sidewalks; installation of site lighting and landscape improvements; and construction of outdoor gathering spaces with wireless connectivity. The estimated depth of ground disturbance for the project construction is approximately 8 feet below the ground surface.

PROJECT AREA

The proposed project area is located in the northern portion of the UCI campus at the existing Mesa Court Residence Hall (southwest of the intersection of Campus Drive and University Drive).

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The project area, identified as the maximum extent of ground disturbance, is identified as a 2.5-acre fully paved portion of the parking lot located at the northwest corner of the existing surface Mesa Court Residence Hall Parking Lot 5 (**Attachment 1**).

GEOLOGICAL SETTING

The project area lies approximately 2 miles northwest of the San Joaquin Hills. Orange County is part of the coastal section of the Peninsular Ranges Geomorphic Province, which extends from Mount San Jacinto in the north to Cabo San Lucas in the south and includes the Inland Empire, Los Angeles, Orange County, and San Diego areas of Southern California. The province topography is due to the numerous faults that parallel the Salton Trough section of the San Andreas Fault Zone (SAFZ). Strain caused by the east-west "bend" in the SAFZ between Palm Springs and Cajon Pass in San Bernardino has been transferred westward off the Salton Trough section of the SAFZ. Motion along these paralleling faults has resulted in elongated northwest-trending mountain ridges separated by sediment-floored valleys. The San Jacinto Fault Zone and the Elsinore Fault Zone are the two major fault zones taking up the strain of the SAFZ. The project is mapped as the Pliocene-to-Holocene alluvium (29,000 years ago to present) and old paralic and alluvial fan deposits dating from middle to late Pleistocene (770,000 to 11,700 years ago) (Morton and Miller 2006). Topography of the project area gently slopes downwards to the west. On-site elevations range from 26 feet to 31 feet above mean sea level.

Soils in the project area, as mapped by the US Department of Agriculture Natural Resources Conservation Service (NRCS), include two soil series: Corralitos, loamy sand (47 percent), and Myford sandy loam (53 percent) (NRCS 2022). Corralitos loamy sand consists of deep, somewhat excessively drained soils that formed in recent sandy alluvium derived from acid sandstone and related rocks. Corralitos series are located on alluvial fans and in small valleys and have slopes of 0 to 15 percent (USDA 1993). The Myford soils consist of deep, moderately well drained soils formed on terraces (USDA 1997). Natural soils including the Corralitos and Myford soil series may extend down 72–79 inches below the ground surface (USDA 1993, 1997).

The project area is within the Santa Ana River Basin and is approximately 11.2 miles from the Pacific Ocean. The Santa Ana River is the largest stream system in Southern California, extending southwesterly from the San Bernardino Mountains to the Pacific Ocean. The river drains approximately 2,670 square miles, including portions of Orange, San Bernardino, Riverside, and Los Angeles Counties. Locally, the combination of the freshwater water sources now channelized as San Diego Creek and the salt water from the Newport Bay make the wetlands adjacent to the project area an estuary. Due to the diversity and richness of biotic resources that typify these environments, these locales can be excellent for prehistoric habitation (Homberg, Douglass, and Reddy 2014).

CULTURAL RESOURCES IDENTIFICATION METHODS

The results of the SCCIC records search, literature review, field survey, historical society consultation, historical map review, and sensitivity analysis are presented below.

SOUTH CENTRAL COASTAL INFORMATION CENTER

Michael Baker International staff conducted the records search on October 6, 2022. The SCCIC, as part of the California Historical Resources Information System, California State University, Fullerton, an affiliate of the California Office of Historic Preservation (OHP), is the official state repository of cultural resources records and reports for Orange County. As part of the records search, the following federal and California inventories were reviewed:

- California Inventory of Historic Resources (OHP 2022a).
- California Points of Historical Interest (OHP 2022b).
- California Historical Landmarks (OHP 2022c).
- Archaeological Determinations of Eligibility (OHP 2022d). The directory includes determinations for eligibility for archaeological resources in Orange County.
- Built Environment Resource Directory (OHP 2022e). The directory includes resources evaluated for listing and listed in the National Register of Historical Places (National Register), National Historic Landmarks, California Register of Historical Resources (California Register), California Historical Landmarks, and California Points of Historical Interest in Orange County.

Results

Previously Identified Resources

No cultural resources were identified within the project area; four cultural resources were identified within the half-mile search radius, summarized below (**Table 1**). Of these, three are prehistoric sites and one is a multicomponent site.

Table 1: Previously Documented Cultural Resources Within Half-Mile of the Project Area

Resource Name/#	Description	OHP Status Code	Distance from Project
San Joaquin Gun Club P-30-000057/CA-ORA-000057	Semi-permanent village or central base habitation site with a large shell midden, pestle, manos, flaked stone tools and debitage, clam shell ornaments, shell beads, arrow shaft straighteners, incised stone, shell bracelet, projectile points, cores, hammerstones, cogstones, and bone awls. Also contains the remains of a late nineteenth to mid-twentieth century gun club.	Unevaluated	0.25 miles

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Resource Name/#	Description	OHP Status Code	Distance from Project
P-30-000117/ CA-ORA-000117	Prehistoric small artifact scatter with possible shell midden.	Unevaluated	0.43 miles
P-30-000118/ CA-ORA-000118	Prehistoric shell midden and occupational site distributed over three separate loci with probable subsurface depth.	Unevaluated	Adjacent
P-30-000119/ CA-ORA-000119	Prehistoric shell midden and milling stone artifact scatter on the edge of the former lagoon.	Unevaluated	Adjacent

Previous Studies

Four studies have been previously completed within the project area resulting in previous survey coverage of 100 percent. Twenty-seven cultural resource studies have been previously conducted within a half-mile radius search. The studies are summarized below (**Table 2**).

Table 2: Previous Cultural Resource Studies Within Half-Mile of the Project Area

Report Number	Author	Date	Title	In Project?	Resources Identified in the Project Area?
OR-00003	King, Thomas F.	1973	An Archaeological Reconnaissance of the Irvine Town Center Project, Orange County, California	No	No
OR-00251	Desautels, Roger J. and Paul G. Chace	1976	Archaeological Report on an Archaeological Survey, Inventory, and Analysis of Alternate Realignment of El Toro Road Between 2.6 Miles Northerly of Trabuco Road and Live Oak Canyon Road in Orange County, California	No	No
OR-00252	Desautels, Roger J.	1978	Cultural Resources Report-Preliminary Assessment on the Proposed San Diego Creek Watershed Erosion and Sedimentary Control System in Hicks Canyon, Hicks Canyon Wash, Rattlesnake Creek Wash, San Diego Creek, and the San Joaquin Marsh Located in Orange County	No	No

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Report Number	Author	Date	Title	In Project?	Resources Identified in the Project Area?
OR-00409	Rice, Glen E.	1976	Test Investigations at ORA-119, Locus B	No	No
OR-00440	Mabry, Theo N.	1979	Records Search and Reconnaissance Harvard Avenue Extension City of Irvine, California	No	No
OR-00532	Hurd, Gary S.	1980	Cultural Resources of the Irvine Campus	Yes	No
OR-00574	Stickel, Gary E. and Jerry B. Howard	1976	Final Report of a Cultural Resource Survey of the University of California, Irvine	Yes	No
OR-00764	Padon, Beth	1983	Archaeological Records Search for the Commercial Core Area of University Town Center	No	No
OR-00933	Bissell, Ronald M.	1988	Cultural and Paleontological Resources Reconnaissance of the Long Range Development Plan Study Area, University of California, Irvine, Orange County, California	Yes	No
OR-00939	Bissell, Ronald M.	1988	Archaeological Resources Reconnaissance of the Long Range Development Plan Study Area, University of California, Irvine, Orange County, California	Yes	No
OR-01016	Leonard, Nelson N. III	1975	Environmental Impact Evaluation: Route Alternates Between the Michelson Treatment Plant and Plants on the Santa Ana River, Orange County, California	No	No
OR-01046	Jertberg, Patricia R.	1990	Archaeological Monitoring Results - Amherst Court Project	No	No
OR-01125	Koerper, Henry C. and Christopher E. Drover	1983	Chronology Building for Coastal Orange County: the Case From CA-ORA-119-a.	No	No

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Report Number	Author	Date	Title	In Project?	Resources Identified in the Project Area?
OR-01131	Follett, W. I.	1966	Fish Remains From Archaeological Sites at Irvine Orange County California	No	No
OR-01591	Breece, Bill and Beth Padon	1986	Archaeological and Paleontological Assessment of the Habitat Enhancement Project	No	No
OR-01730	Chapman, Phillips, Brandt, Reddick	1975	Draft Environmental Impact Report Rancho San Joaquin Planned Community Irvine, California	No	No
OR-01883	Getchell, Barbie Stevenson and John E. Atwood	1998	Cultural Resources Survey of a 46 Acre Portion of the San Joaquin Freshwater Marsh Reserve, Irvine, Orange County, California	No	No
OR-02352	Unknown	1979	Records Search and Reconnaissance Harvard Avenue Extension City of Irvine, California	No	No
OR-02475	Duke, Curt	2001	Cultural Resource Assessment Cingular Wireless Facility No. Sc 025-01 Orange County, California	No	No
OR-02597	Duke, Curt	2002	Cultural Resource Assessment Cingular Wireless Facility No. Sc 113-02 Orange County, California	No	No
OR-02600	Cottrell, Marie G.	1975	Archaeological Research, Inc. Quarterly Report	No	No
OR-02636	Brown, Joan C.	2003	A Cultural Resources Literature Study and Field Reconnaissance for the Natural Treatment System Master Plan Facilities, Orange County, California	No	No

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Report Number	Author	Date	Title	In Project?	Resources Identified in the Project Area?
OR-03185	Bonner, Wayne H.	2004	Records Search Results and Site Visit for Cingular Wireless Facility Candidate Sc-472-01 (William R. Mason Regional Park) 18712 University Drive, Irvine, Orange County, California	No	No
OR-03254	Shepard, Richard S.	2003	Cultural Constraints Assessment: Modifications to San Diego Creek Channel (f05), Irvine and Newport Beach, Orange County, California	No	No
OR-03264	Peterson, Patricia A. and Roger D. Mason	2002	Cultural Resources Monitoring Report for the Riparian View and Duck Club Road Improvements Project, San Joaquin March Area, Orange County, California	No	No
OR-03502	Wood, Catherine M.	2007	Archaeological Survey Report San Diego Creek (facility F05) Upper Newport Bay to I-405 Freeway Programmatic Maintenance Project, Orange County, California	No	No
OR-03674	Bonner, Wayne H.	2007	Cultural Resources Records Search and Site Visit Results for T-Mobile Candidate LA02927C (RSJ Golf Course), 1 San Joaquin, Irvine, Orange County, California	No	No
OR-03705	Getchel, Barbie and John E. Atwood	2007	Cultural Resources Inventory of the San Joaquin Freshwater March Reserve Phase II Enhancement Plan Project Area In the City of Irvine, Orange County, California	No	No
OR-03946	Bedell, Joan and Ed Moore	1984	ORA 119 (Town Center Site)	No	No
OR-04031	Padon, Beth	2011	Subject: Phase I Archaeological Study Report for Alumni Center at the University of California Irvine Campus	No	No

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Report Number	Author	Date	Title	In Project?	Resources Identified in the Project Area?
OR-04574	Brunzell, David	2011	Cultural Resources Assessment of the Crown Castle USA Southern California Metro PCS DAS Project, Orange and Los Angeles Counties, California (BCR Consulting Project No. SYN1007)	No	No

LITERATURE AND HISTORICAL MAP REVIEW

Michael Baker International staff reviewed literature and historical maps for historical information regarding the project area and the vicinity. Below is a list of resources reviewed, followed by a narrative description of the results for the project area.

Historical Maps and Aerial Images

- Township 3 South, Range 9 West, San Bernardino Base Line Meridian (BLM 1868)
- Santa Ana, Calif. 1:62,500 scale topographic quadrangle (USGS 1896)
- Tustin, Calif. 1:31,680 scale topographic quadrangle (USGS 1932)
- Tustin, Calif. 1:24,000 scale topographic quadrangle (USGS 1948)
- Tustin, Calif. 1:24,000 scale topographic quadrangle (USGS 1962)
- Tustin, Calif. 1:24,000 scale topographic quadrangle (USGS 1974)
- Single-frame aerial photograph: C-113, Frame 1091 (UCSB 1927)
- Single-frame aerial photograph: C-1590, Frame 95 (UCSB 1931)
- Single-frame aerial photograph: GS-CP, Frame 8-5 (UCSB 1946)
- National Environmental Title Research (NETR 2022)

Historical Databases

- Online Archive of California (OAC 2022).

Literature

- "Subsistence Remains and Intensification of the Newport Coast, Orange County, California" (Mason and Peterson 2014)
- *Handbook of the Indians of California* (Kroeber [1925] 1976)
- "Gabrielino" (Bean and Smith 1978)
- *The First Angelinos: The Gabrielino Indians of Los Angeles* (McCawley 1996)
- "Notes on Historical Juaneño Villages and Geographical Features" (O'Neil and Evans 1980)
- "Their Mark Upon the Land: Native American Place Names in Orange County and Adjacent Areas" (O'Neil 1988)
- "People and Language, Defining the Takic Expansion into Southern California" (Sutton 2009)

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- *Phase II Testing Plan for Site P-30-000115/CA-ORA-115 (Locus A)* (Hearth and Abdo 2021).

Results

Mason and Peterson (2014) divide the Milling Stone period into three subdivisions: Milling Stone (8,000-5,800 before present [BP]), Milling Stone 2 (5,800-4,650 BP), and Milling Stone 3 (4,650-3,000 BP). At 5,000 BP on the southern California mainland, there was an increase in the quantity of ground stone tools (e.g., manos, metates, mortars, pestles) suggesting an intensification of the use of plant and marine resources. Toward the end of the Milling Stone period, the use of manos and metates subsided while the number of mortars and pestles grew. This switch may indicate that acorns started to make up a larger portion of the diet. During the Intermediate period, utilization of near-shore fish, sea mammal resources, and deep-water resources on the islands increased. Sedentism increased in the Intermediate period, with villages being permanent or semi-permanent. Population growth resulted in intensive resource collection and the decline of local resources. During the Late Prehistoric period, the cultural manifestations observed in the ethnohistoric period begin to emerge. This includes a change in interment practices from burial to cremation, dog burials, and a switch from z-twining to s-twining in basketry. Between AD 500–600 BC, the bow and arrow comes into the area and as a result projectile points get smaller, although large points are still evident on the Channel Islands due to the continued use of spears on large marine mammals (Hearth and Abdo 2021).

Ethnographic records identify the lands surrounding the project area as being inhabited by the Gabrieleño (Stickel 2016). The Gabrieleño territory included all of the Los Angeles Basin, parts of the Santa Ana and Santa Monica Mountains, along the coast from Aliso Creek by Rancho Santa Margarita in the south to Topanga Canyon in the north, and the Southern Channel Islands of San Clemente, San Nicolas, and Santa Catalina Islands. Villages had 50-100 people. Each community included one or more patrilineal extended families or lineal kinship groups (clans) (Kroeber [1925] 1976: 633; Bean and Smith 1978: 547; McCawley 1996: 89). The Gabrieleño spoke a dialect of the Cupan group of the Takic language family. This language was part of the larger Uto-Aztecan language stock which migrated west from the Great Basin. The Gabrieleño shared this language with their neighboring groups (Cahuilla, Juaneño, Luiseño, and Serrano) to the north, south, and east (Bean and Smith 1978: 538). The closest Gabrieleño village to the project was *Kengaa*, which was likely located at the mouth of San Diego Creek. Archaeological sites that likely correspond to this village are CA-ORA-119a and ORA-111 (McCawley 1996: 72, citing O'Neil 1988). An unnamed village is marked in the approximate location of the San Joaquin marsh (Kirkman 1938), which may also be *Kengaa*.

The Acjachemen (Juaneño) spoke a language that is part of the Takic language family. Their traditional cultural territory, as identified by a tribal representative, is an area that stretches from coastal Long Beach to the north to Camp Pendleton to the south and includes all of Orange County as well as parts of western Riverside County (Perry 2021). In prehistory, the Juaneño had a patrilineal society and lived in groups with other relatives. These groups had established claims

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to places including the sites of their villages and resource areas. The drainages of San Juan Creek, Trabuco Creek, and San Mateo Creek all contained villages (O'Neil and Evans 1980).

Historic Map Review

The project area is within the boundaries of the nineteenth-century land grant Rancho San Joaquin (BLM 1868; USGS 1896; OAC 2022). Aerial imagery from 1927 and 1931 shows no development within the project area (UCSB 1927, 1931). The 1932 Tustin, CA 1:31,680 topographic map provides greater detail of the project area's environmental setting, as well as the construction of trails, roads, and the location of the San Joaquin Gun Club within 1 mile of the project area (USGS 1932). Aerial imagery reveals the appearance of a trail constructed between 1932 and 1946 and located immediately adjacent to the undeveloped project area (NETR 2022). Additionally, improvements to the land such as a plowed field, possibly related to agriculture, appear visible immediately east of the project area in 1946 (NETR 2022; UCSB 1946). A 1948 USGS map shows the nearby marsh having been altered by the construction of a dike and the San Joaquin Dam within a half-mile of the project area, and the trail is depicted within 500 feet of the project area (USGS 1948). By 1962, the previously unnamed trail has been named University Drive, and the nearby construction of the University of California, Irvine is shown (USGS 1962). However, the project area remained vacant. Aerial imagery from 1974 depicts the project area as an undeveloped field (USGS 1974). Between 1980 and 1985, significant development occurred within the project area, including the construction of roads, structures, and parks (NETR 2022). According to aerial imagery, few changes have occurred within the project area between 1985 and 2020 (NETR 2022).

LOCAL HISTORICAL GROUP CONSULTATION

On October 11, 2022, Michael Baker International staff emailed a letter and figures depicting the project area to the Irvine Historical Society. The correspondence requested any information or concerns regarding historical resources within the project area. No response was received (see **Attachment 2**).

ARCHAEOLOGICAL FIELD SURVEY

On September 25 2022, Michael Baker International Archaeologist Alexandra Navarro conducted an archaeological field survey of the project area. The entirety of the project area was inspected via pedestrian survey in transects spaces less than 5 meters apart. Ground surface visibility was less than 5 percent. Non-native soils were observed in raised planters within the parking lot. Observed soils consisted of sandy clay loam fill with inclusions of imported gravel and wood chips. No native soils were identified within the project area. Photographs were taken and location information for each photograph was recorded. No cultural resources were identified.

BURIED SITE SENSITIVITY ANALYSIS

Subsurface site and artifact preservation is dependent on factors including slope, erosion and flood potential, proximity to water, and soil type (Nayyar 2020). In areas where slope gradient is decreased, erosion is less likely, leading to increased soil deposition and a greater chance for buried deposits. Additionally, clay rich soils are more likely to preserve artifacts poorly (Nayyar

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2020). Younger soils with a higher potential for preservation, such as soils lacking a B horizon, are more likely to contain archaeological sites and artifacts than older soils containing clay rich horizons.

The nearest source of permanent freshwater is the Santa Ana River, located approximately 6 miles northwest of the project, which was an important natural feature for the Gabrieleño living along its banks (Masters 2012). Additionally, San Diego Creek is located approximately one-quarter mile north of the project area. While most of San Diego Creek has been channelized, historically the waterway consisted of extensive grasslands and seasonal wetlands that supported a variety of native plants and animals (Nelson 2009). Because San Diego Creek represented a widespread and important resource prehistorically, its proximity to the project area increases the archaeological sensitivity of the project.

The Myford series consists of several clay B horizons between 12 and 71 inches below ground surface, which formed on relatively steep slopes (NRCS 2022; USDA 1997). While both of these factors decrease the chance of buried archaeological deposits, the archaeological sensitivity is heightened within the Corralitos soil unit, representing approximately 47 percent of the project area. The Corralitos series formed in recent sandy alluvium on relatively level slopes, and lacks a clay rich B horizon, factors that significantly increase the potential for archaeological resource preservation. Therefore, areas of the project site mapped within the Corralitos series have a higher sensitivity for buried archaeological sites.

While the project area has been previously developed, presently consisting of a paved parking lot, the project area is located in an area known to be highly sensitive for prehistoric resources. Four prehistoric archaeological resources were previously identified within a half-mile of the project area, including two prehistoric archaeological sites that were identified immediately adjacent to the project area (P-30-000118 and P-30-000119). While the surficial expressions of these sites have been reportedly destroyed by grading and road construction, the boundaries of the sites were not accurately mapped according to maps associated with the archaeological site records. No subsurface testing or evaluation was recorded, so subsurface components of these sites may extend into the project area. Considering the depth of ground disturbance may extend 8 feet below surface level, the project carries the potential to impact previously undiscovered subsurface archaeological sites. Overall, the project area retains a high archaeological sensitivity.

PALEONTOLOGICAL RESOURCES IDENTIFICATION METHODS

The records search results, literature review, and sensitivity analysis are presented below.

RECORDS SEARCHES AND LITERATURE REVIEW

Deposits from the Holocene epoch (less than 11,700 years ago) can contain remains of animals and plants; however, only those from the early to middle Holocene (older than about 5,000 radiocarbon years) are considered scientifically important or significant (Society of Vertebrate Paleontology 2010). Holocene-age deposits may overlie older alluvium of Pleistocene age at

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unknown but potentially shallow depths. Pleistocene-age alluvial deposits are also potentially present in the project area and have yielded scientifically important fossils elsewhere in the region, including mammoths, mastodons, and fish at various depths below current ground surface (**Tables 3** and **4**).

The NHMLAC completed a paleontology collection records search for locality and specimen data on October 9, 2022 (see **Attachment 3**). The records search did not find any previously known fossil localities within the project area. However, NHMLAC staff identified eight localities bearing invertebrate and vertebrate fossils within 3 miles of the project area from similar sedimentary deposits as those found on the project (**Table 3**).

Table 3: Previously Recorded Paleontological Resources from NHMLA Records Search

Collection Number	Taxa	Formation	Intervals	Depth	Distance to Project Site
LACM VP 3977, 3978, 3986: LACM IP 5867	Turkeys, even-toed ungulates, fishes, sharks, hakes (fish), brachiopods, molluscs	Fernando Formation (flay-lying, fine-grained silty sand)	Pliocene to Pleistocene	11–25 feet bgs	<1 mile W
LACM VP 3877	Toads, frogs, snakes, salamanders, quails, blackbirds, crows, hawks, ducks, bats, shrews, rabbits, gophers, mice, rodents, voles, skunks, horses, mastodons	Palos Verdes Sand (silts and sand)	Pleistocene	Unknown	~3 miles SW
LACM VP 3980	Baleen whales	Fernando Formation	Pliocene to Pleistocene	Surface	~2 miles SW
LACM VP 4426	Birds, fishes, mammals, invertebrates	Palos Verdes Sand	Unknown	Unknown	~1.5 miles SW
LACM VP 3407	Mammoths, invertebrates	Palos Verdes Sand	Pleistocene	Surface	~1 miles SW

VP, Vertebrate Paleontology; IP, Invertebrate Paleontology; bgs, below ground surface

Michael Baker International conducted supplemental paleontological records searches within 5 miles of the project area using the following databases:

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- University of California Museum of Paleontology Locality Search (UCMP 2022)
- San Diego Natural History Museum Collection Database (SDNHM 2022)
- The Paleobiology Database (PBDB 2022)
- FAUNMAP (FAUNMAP 2022)

While these databases showed no previously identified fossil-bearing localities within the project area, several localities have been reported within 5 miles of the project area containing several groups of vertebrate and invertebrate fossils (**Table 4**).

Table 4: Previously Recorded Paleontological Resources from Online Databases

Collection	Taxa	Formation	Intervals	Distance to Project Site
PBDB	Crabs	Palos Verdes Sand	Late Pleistocene	~2 miles W
PBDB	Lanternfish	Unknown Formation	Pleistocene	~2 miles W
PBDB	Seals	Unknown Formation	Holocene	~2 miles S
PBDB	Bivalves, gastropods, barnacles, seastars	Unknown Formation	Late Pleistocene	~2.5 miles SW
PBDB	Crabs, bivalves, gastropods, chitons, bryozoans, sharks	Palos Verdes Sand	Middle to late Pleistocene	~3.5 miles SW
PBDB	Rabbits, squirrels, dogs, horses, tapirs, camels, deer, bison, ground sloths, mice, dolphins, seals, baleen whales, otters, carnivores, frogs, toads, salamanders, reptiles, turtles, cormorants, ducks, gannets, auks, gulls, loons, eagles, birds, sand dollars	Palos Verdes Sand	Late Pleistocene	~3.5 miles E
PBDB	Turtles, loons, auks, albatrosses, shearwaters, otters, seals, horses, camels, bison, sharks, rays, fishes	Palos Verdes Sand	Late Pleistocene	~4 miles W

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Collection	Taxa	Formation	Intervals	Distance to Project Site
PBDB	Gastropods, bivalves, chitons, crabs, barnacles, polychaetes, brachiopods, bryozoans, seastars, sharks, rays, fishes	Palos Verdes Sand	Late Pleistocene	~4 miles SW
PBDB	Seals	Unknown Formation	Holocene	~4 miles S
PBDB	Seals	Unknown Formation	Holocene	~5 miles S
SDNHM	Bivalves, gastropods, sand dollars, sea urchins, crabs, barnacles, bryozoans, rays, unspecified vertebrates	Palos Verdes Sand	Pleistocene	~5 miles SW
FAUNMAP	Unspecified assemblage	Palos Verdes Formation	Pleistocene	~5 miles SW
FAUNMAP	2 unspecified assemblages	Unknown Formation	Pleistocene	~5 miles S
UCMP	Unspecified invertebrates	Palos Verdes Formation	Pleistocene	~3 miles W

SENSITIVITY ANALYSIS

The NHMLAC records search results indicate that potentially fossil-bearing units are present in the project area since the same Pleistocene-age deposits outside of the project area have contained fossils. The Holocene-age deposits in the project area have a low sensitivity, but Pleistocene-age alluvial sediments may underlie these younger sediments at a relatively shallow depth. Therefore, sediments in the project area are considered to have paleontological sensitivity increasing with depth.

FINDINGS AND RECOMMENDATIONS

The SCCIC records search, literature review, historical society consultation, and archaeological field survey identified no historical resources, as defined by CEQA Section 15064.5(a), within the project area. However, because of the proximity of previously recorded resources to the project area, sensitivity for buried archaeological resources is high. Therefore, there is a potential for disturbing previously unknown archaeological resources during excavation into native soil materials. Additionally, the proposed depth of ground-disturbing activities has potential to disturb paleontological resources, due to the presence of potentially fossil-bearing units within

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Pleistocene-age sediments located within the project area. The potential for encountering paleontological resources increases with depth.

Impacts will be avoided through implementation of the UCI Long Range Development Plan Student Housing Amendment (UCI 2019) Mitigation Measures for inadvertent discovery of archaeological or paleontological resources during earth-moving activities, as follows:

LRDP EIR Cul-1C Prior to land clearing, grading, or similar land development activities for future projects that implement the 2007 LRDP in areas of identified archaeological sensitivity, UCI shall retain a qualified archaeologist (and, if necessary, a culturally affiliated Native American) to monitor these activities. In the event of an unexpected archaeological discovery during grading, the on-site construction supervisor shall redirect work away from the location of the archaeological find. A qualified archaeologist shall oversee the evaluation and recovery of archaeological resources, in accordance with the procedures listed below, after which the on-site construction supervisor shall be notified and shall work to continue in the location of the archaeological find. A record of monitoring activity shall be submitted to UCI each month and at the end of monitoring. In an archaeological discovery is determined to be significant, the archaeologist shall prepare and implement a data recovery plan. The plan shall include, but not be limited to, the following measures:

- a. Perform appropriate technical analyses;
- b. File resulting reports with South Central Coastal Information Center; and
- c. Provide the recovered materials to an appropriate repository for curation, in consultation with a culturally-affiliated Native American.

LRDP EIR Cul-4A Prior to grading or excavation for future projects that implement the 2007 LRDP and would excavate sedimentary rock material other than topsoil, UCI shall retain a qualified paleontologist to monitor these activities. In the event fossils are discovered during grading, the on-site construction supervisor shall be notified and shall redirect work away from the location of the discovery. The recommendations of the paleontologist shall be implemented with respect to the evaluation and recovery of fossils, in accordance with mitigation measures Cul-4B and Cul-4C, after which the on-site construction supervisor shall be notified and shall direct work to continue in the location of the fossil discovery. A record of monitoring activity shall be submitted to UCI each month and at the end of monitoring.

LRDP EIR Cul-4B If the fossils are determined to be significant, then mitigation measure Cul-4C shall be implemented.

LRDP EIR Cul-4C For significant fossils as determined by mitigation measure Cul-4B, the paleontologist shall prepare and implement a data recovery plan. The plan shall include, but not be limited to, the following measures: a. The paleontologist shall ensure

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that all significant fossils collected are cleaned, identified, catalogued, and permanently curated with an appropriate institution with a research interest in the materials (which may include UCI); b. The paleontologist shall ensure that specialty studies are completed, as appropriate, for any significant fossil collected; and c. The paleontologist shall ensure that curation of fossils are completed in consultation with UCI. A letter of acceptance from the curation institution shall be submitted to UCI.

PREPARER QUALIFICATIONS

This report was prepared by Michael Baker International Archaeologist Maximilian van Rensselaer and Senior Archaeologist Kholood Abdo. The paleontological record search and sensitivity was prepared by Senior Paleontologist/Principal Investigator Peter Kloess. It was reviewed by Senior Cultural Resources Manager Margo Nayyar.

MAXIMILIAN VAN RENSSELAER, RA, ARCHAEOLOGIST

Maximilian has worked as an archaeologist in cultural resource management since 2013. He has more than 9 years of experience recording, excavating, and evaluating historic properties. He has worked in Nevada, California, Arizona, Texas, Louisiana, Oklahoma, Indiana, and Kentucky. Maximilian specializes in applying Section 106 of the National Historic Preservation Act (NHPA). His other skills include geographic information systems (GIS) and National Environmental Policy Act (NEPA) desktop analysis. He is currently pursuing a master of professional studies degree in cultural and heritage resource management and a GIS graduate certificate at the University of Maryland.

KHOLOOD ABDO, MA, RPA, SENIOR ARCHAEOLOGIST

Kholood has worked as an archaeologist in cultural resource management since 1999. She meets the Secretary of the Interior's Professional Qualification Standards for historical archaeology. She has completed projects in all phases of archaeology: Phase I pedestrian and shovel test surveys, extended Phase I survey, buried site testing, archaeological sensitivity assessments, Phase II testing and evaluations, Phase III data recovery, and Phase IV monitoring in California. Kholood has written and contributed to scores of technical reports, including NEPA, NHPA, and CEQA compliance documents. In her current capacity as senior archaeologist and archaeological laboratory director, Kholood oversees the processing, analysis, and curation of artifact collections from both prehistoric and historical sites. Her cultural material analysis experience includes flaked and ground stone lithics, shell and glass bead analysis, and historical artifact analysis. Her project responsibilities include the oversight of archaeological historical studies and phases of archaeological fieldwork, oversight of field laboratory work, laboratory processing, artifact database, and collection management. Kholood works to ensure that the quality of analysis and reporting meets or exceeds appropriate local, state, and federal standards.

PETER KLOESS, SENIOR PALEONTOLOGIST/PRINCIPAL INVESTIGATOR

Peter is a principal investigator and paleontologist with over 20 years of experience in paleontology, with seven years in paleontology mitigation. His experience includes private and

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public consultation, field monitoring, excavation, and laboratory research on projects across the western United States, predominantly in California. He has consulting experience with a range of projects, including construction, transportation, utility, transmission, monitoring, and surveys, as well as expertise recovering a diversity of fossils from project sites, such as marine invertebrates, microfossils, plants, small mammals, and birds, large marine and terrestrial mammals, and dinosaurs. He also has extensive experience in paleontological museum collections and lab settings. He has worked on and co-led scientific excavations of large mammals and dinosaurs in California, Utah, New Mexico, and Montana. Peter has served as a lab preparator and assistant curator for paleontology museums in California and Montana, where his duties included manual preparation of specimens, casting, jacketing, public outreach, cataloging, and curation. He meets the Society of Vertebrate Paleontology's standards for paleontological Principal Investigator.

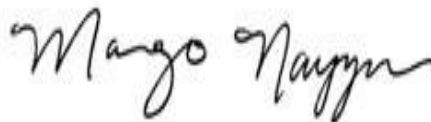
MARGO NAYYAR, SENIOR CULTURAL RESOURCES MANAGER

Senior Cultural Resources Manager Margo Nayyar provided QA/QC review of this report and evaluation. Margo is an architectural historian with 12 years of cultural management experience in California, Nevada, Arizona, Texas, Idaho, and Mississippi. Her experience includes built environment surveys, evaluation of historic-era resources using guidelines outlined in the National and California Registers, and preparation of cultural resources technical studies pursuant to CEQA and Section 106 of the NHPA, including identification studies, finding of effect documents, memorandum of agreements, programmatic agreements, and Historic American Buildings Survey/Historic American Engineering Record/Historic American Landscapes Survey mitigation documentation. She prepares cultural resources environmental document sections for CEQA environmental documents including infill checklists, initial studies, and environmental impact reports, as well as NEPA environmental documents, including environmental impact statements and environmental assessments. She also specializes in municipal preservation planning, historic preservation ordinance updates, Native American consultation, and provision of Certified Local Government training to interested local governments. She develops Survey 123 and Esri Collector applications for large-scale historic resources surveys, and authors National Register nomination packets. Margo meets the Secretary of the Interior's Professional Qualification Standards for history and architectural history.

Sincerely,



Kholood Abdo, MA, RPA
Senior Archaeologist



Margo Nayyar
Senior Cultural Resources Manager

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Maximilian van Rensselaer, RA
Archaeologist



Peter Kloess
Senior Paleontologist

Attachments:

Attachment 1 – Figures

Attachment 2 – Historical Society Consultation

Attachment 3 – Paleontological Record Search Results

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_____. 1948. Tustin, Calif. 1:24,000 scale topographic quadrangle. Electronic resource. Accessed October 17, 2022. <https://ngmdb.usgs.gov/topoview/viewer/#15/33.6554/-117.8412>.

_____. 1962. Tustin, Calif. 1:24,000 scale topographic quadrangle. Electronic resource. Accessed October 17, 2022. <https://ngmdb.usgs.gov/topoview/viewer/#15/33.6554/-117.8412>.

_____. 1974. Tustin, Calif. 1:24,000 scale topographic quadrangle. Electronic resource. Accessed October 17, 2022. <https://ngmdb.usgs.gov/topoview/viewer/#15/33.6554/-117.8412>.

Attachment 1

Figures

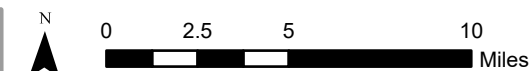


PN: 191870



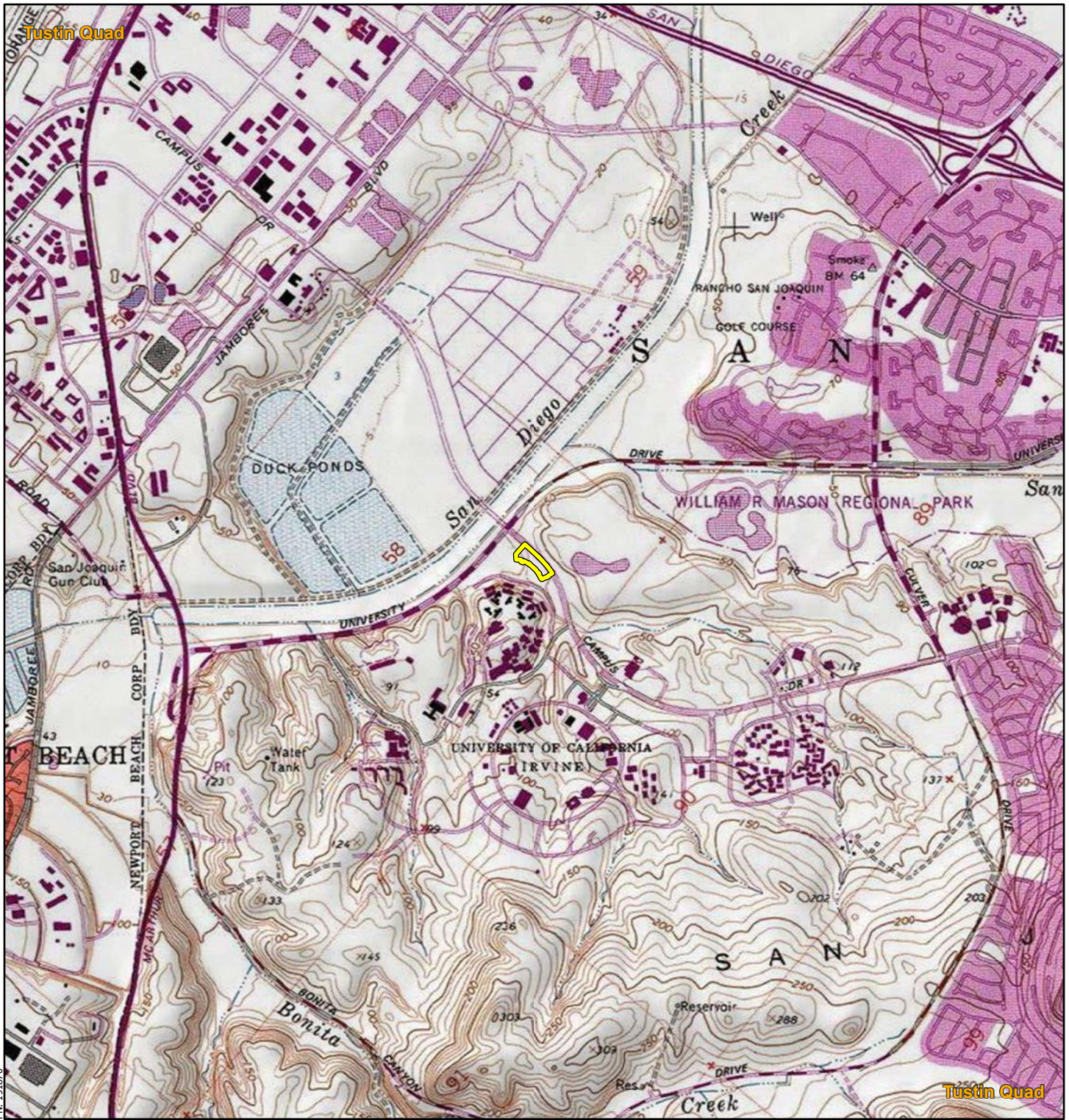
MESA COURT RESIDENCE HALL EXPANSION PROJECT
IRVINE, CA

Regional Vicinity



Source: Esri, ArcGIS Online, National Geographic World Map: Irvine, California

Figure 1



PN: 191870

 Project Area

MESA COURT RESIDENCE HALL EXPANSION PROJECT
IRVINE, CA

Project Vicinity

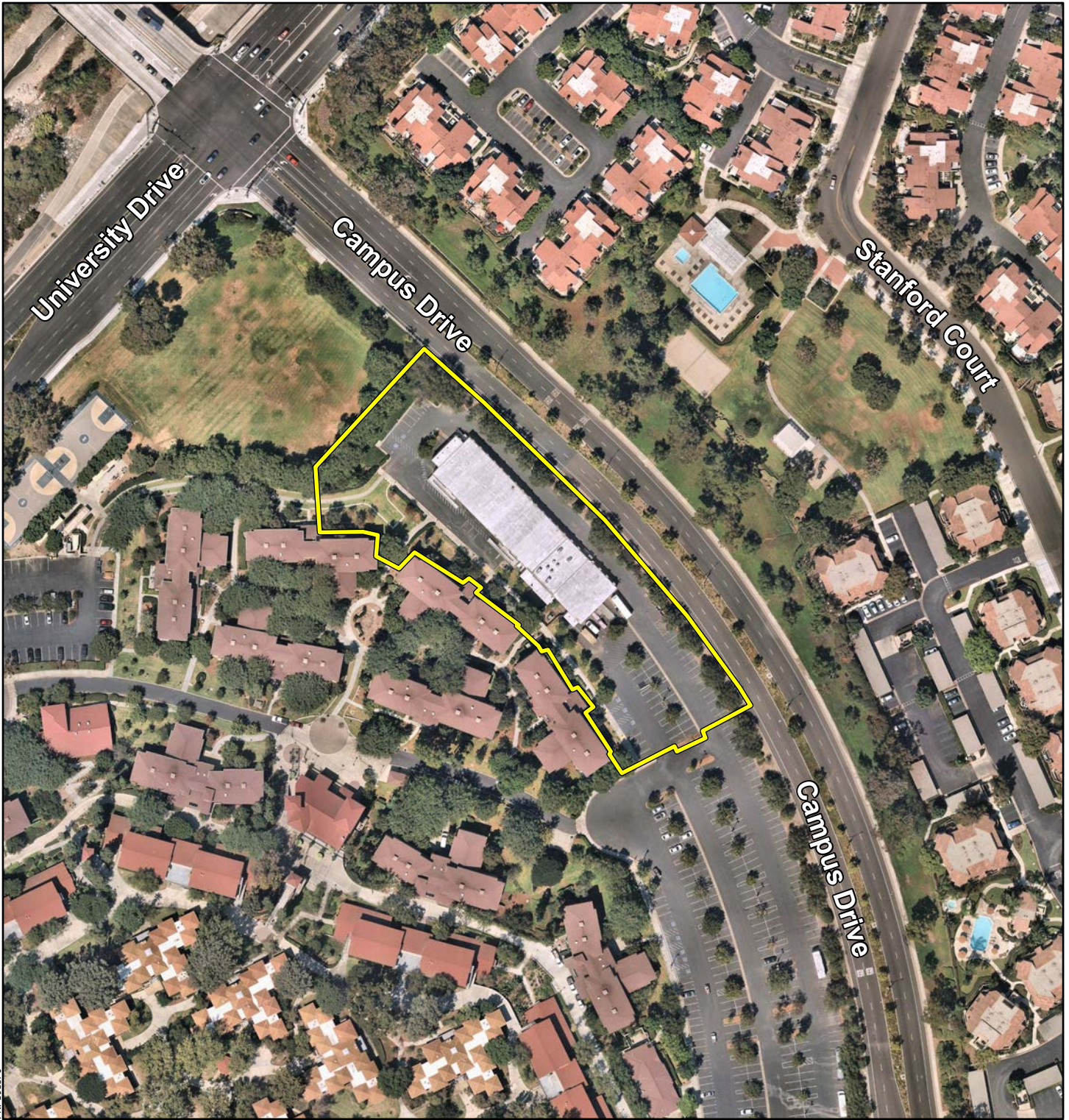
Michael Baker
INTERNATIONAL



0 0.13 0.25 0.5
Miles

Source: Esri, ArcGIS Online, USGS 7.5-Minute topographic quadrangle maps: Irvine, California

Figure 2



PN: 191870

 Project Area

MESA COURT RESIDENCE HALL EXPANSION PROJECT
IRVINE, CA

Project Area

Michael Baker
INTERNATIONAL



0 50 100 200
Feet

Source: Esri, ArcGIS Online, 2021 Nearmap Imagery: Irvine, California

Figure 3

Attachment 2

Historical Society Consultation

October 11, 2022

IRVINE HISTORICAL SOCIETY

5 San Joaquin

Irvine, CA 92612

Via email: info@irvinehistory.org

RE: Local Historical Group Consultation For The Mesa Court Residence Hall Expansion Project, City of Irvine, Orange County, California

To Whom It May Concern:

The University of California, Irvine (UCI) is proposing the Mesa Court Residence Hall Expansion Project (project) in Irvine, Orange County, California. Michael Baker International is conducting a study to determine whether the project might affect historic properties. The project is located in the northern portion of the UCI campus at the existing Mesa Court Residence Hall southwest of the intersection of Campus Drive and University Drive as depicted in **Attachment 1**.

Please notify us if your organization has any information or concerns about historic properties in the project area. This is not a request for research; it is solely a request for public input for any concerns that the Historical Society may have. If you have any questions, please contact me at Kholood.Abdo@mbakerintl.com or at (909) 974-4975.

Sincerely,



Kholood Abdo, M.A., RPA

Attachment: Project Location Figures



 Project Area

UCI MESA COURT EXPANSION PROJECT
IRVINE, CA

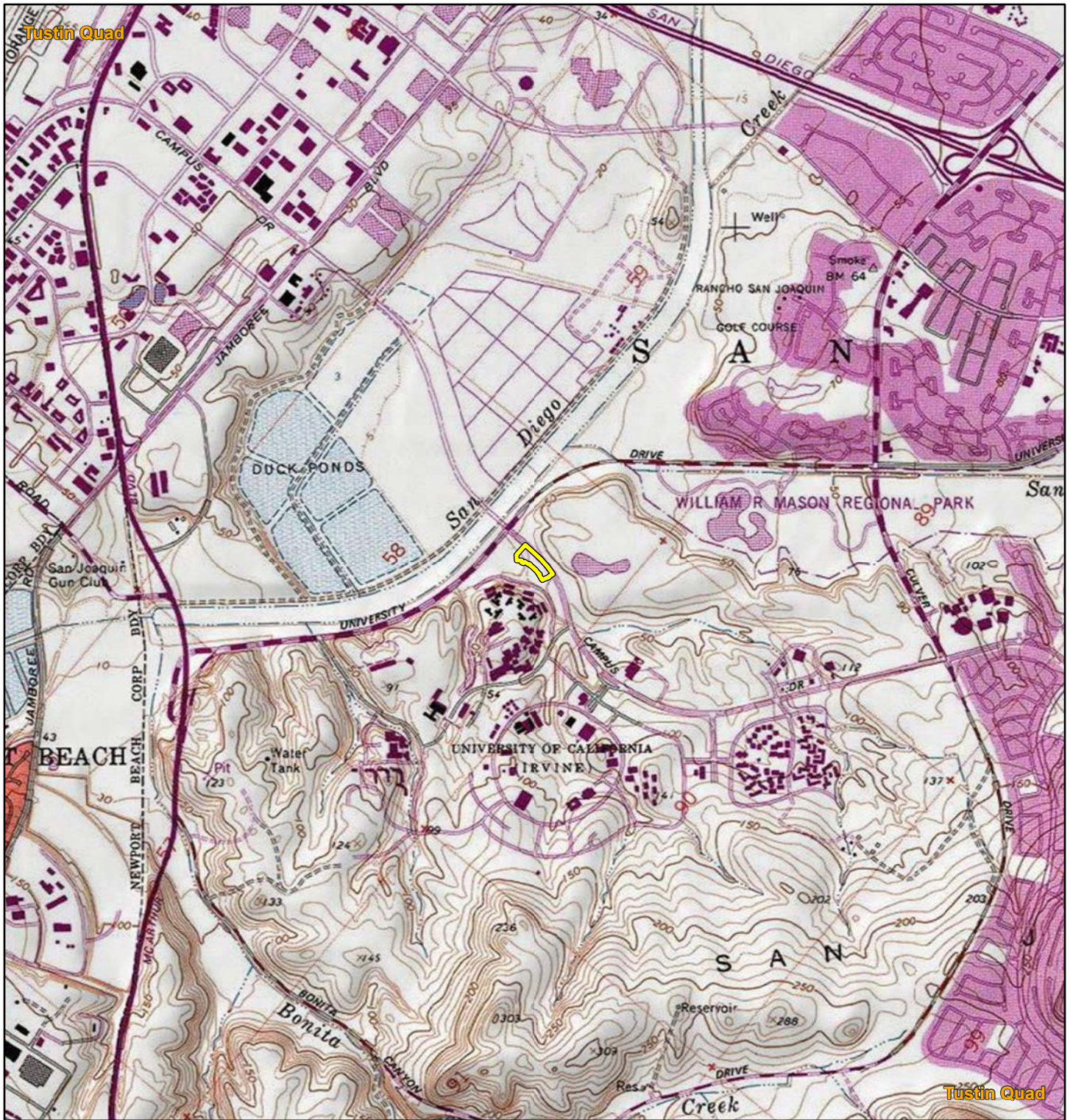
Regional Vicinity

Michael Baker
INTERNATIONAL



Source: Esri, ArcGIS Online, National Geographic World Map: Irvine, California

Figure 1



 Project Area

UCI MESA COURT EXPANSION PROJECT
 IRVINE, CA
Project Vicinity

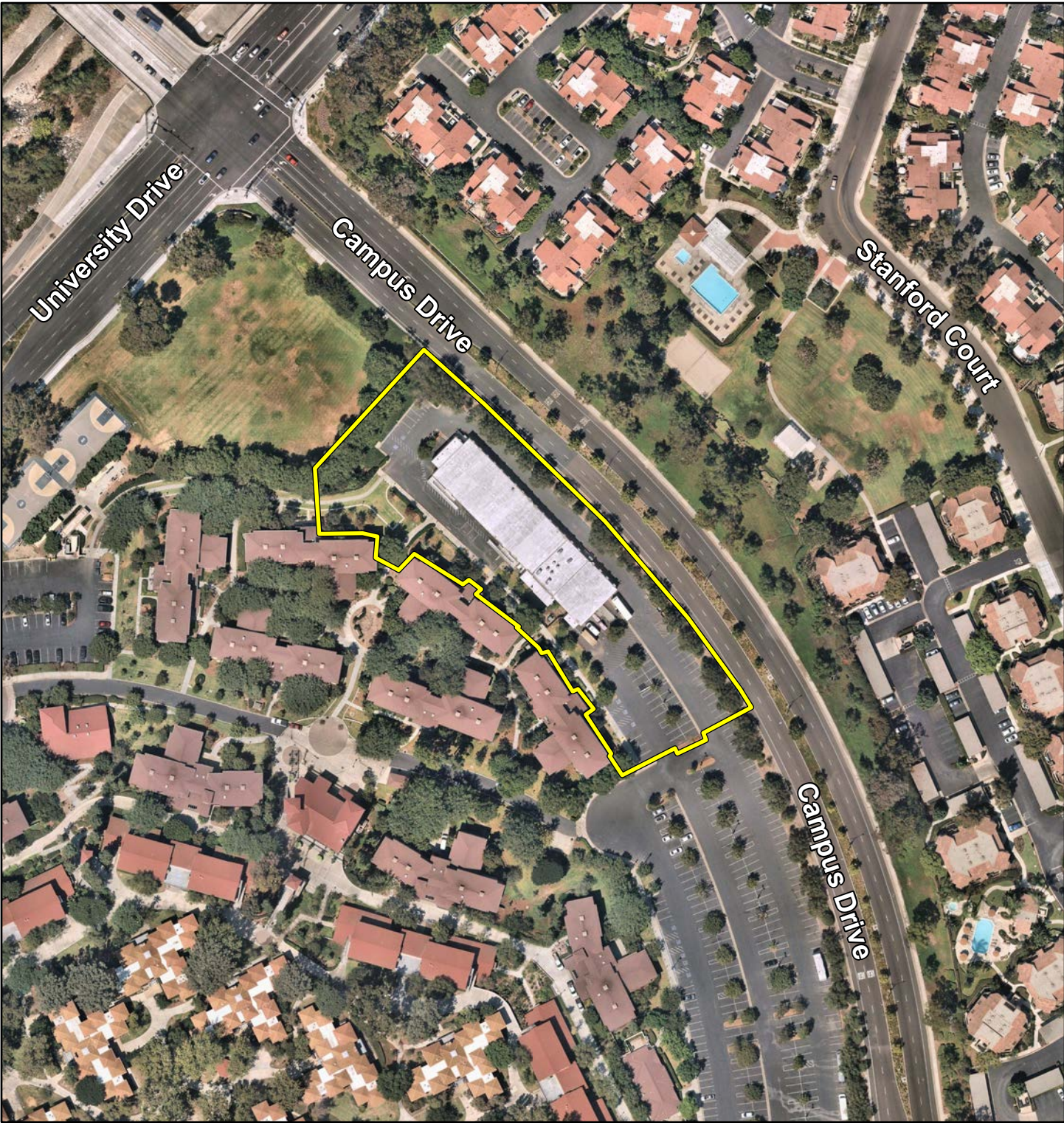
Michael Baker
 INTERNATIONAL



0 0.13 0.25 0.5
 Miles

Source: Esri, ArcGIS Online, USGS 7.5-Minute topographic quadrangle maps: Irvine, California

Figure 2



 Project Area

Michael Baker
INTERNATIONAL



0 50 100 200
Feet

Source: Esri, ArcGIS Online, 2021 Nearmap Imagery: Irvine, California

UCI MESA COURT EXPANSION PROJECT
IRVINE, CA

Project Area

Figure 3

Attachment 3

Paleontological Record Search Results

Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007

tel 213.763.DINO
www.nhm.org

Research & Collections

e-mail: paleorecords@nhm.org

October 9, 2022

Michael Baker International

Attn: Kholood Abdo

re: Paleontological resources for the UCI Mesa Court Expansion Project

Dear Kholood:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for proposed development at the UCI Mesa Court Expansion Project area as outlined on the portion of the TustinUSGS topographic quadrangle map that you sent to me via e-mail on September 27, 2022. We do not have any fossil localities that lie directly within the proposed project area, but we do have fossil localities nearby from the same sedimentary deposits that occur in the proposed project area, either at the surface or at depth.

The following table shows the closest known localities in the collection of the Natural History Museum of Los Angeles County (NHMLA).

Locality Number	Location	Formation	Taxa	Depth
LACM VP 3977, 3978, 3986; LACM IP 5867	Southeast of the intersection of University Drive & MacArthur Boulevard	Fernando Formation (flat-lying; fine grained silty sand)	Turkey family (Meleagridae); Artiodactyla; Fish (<i>Seriphus</i> , <i>Squalus</i> , <i>Merluccius</i> , Cottidae, Moridae), Invertebrates (brachiopods, molluscs)	Roadcut 11-25 feet above roadbed
LACM VP 3877	Road cut on the east side of MacArthur Boulevard 1.25 miles east of the upper end of Newport Bay	Palos Verdes Sand (silts and sands)	Toad (<i>Bufo</i>), pond frogs (<i>Rana</i>), tree frog (<i>Hyla</i>), whip snake (<i>Masticophis</i>), garter snake (<i>Thamnophis</i>), rattlesnake (<i>Crotalus</i>), kingsnake (<i>Lampropeltis</i>), salamander (<i>Aneides</i>), quail (<i>Lophortyx</i>), red-winged blackbird (<i>Agelaius</i>), crow (<i>Corvus</i>), hawk (<i>Accipiter</i>), duck (<i>Aythya</i>), bat (<i>Antrozous</i>), shrew (<i>Notiosorex</i> , <i>Sorex</i>), rabbit (<i>Sylvilagus</i>), pocket gopher (<i>Thomomys</i>), mice (<i>Perognathus</i> , <i>Peromyscus</i> , <i>Reithrodontomys</i>), kangaroo rat (<i>Dipodomys</i>),	Unknown

			woodrat (<i>Neotoma</i>), vole (<i>Microtus</i>), skunk (<i>Spilogale</i>), horse (<i>Equus</i>), mastodon (<i>Mammutidae</i>)	
LACM VP 3980	East side of MacArthur Boulevard, south of Bonita Canyon Road	Fernando Formation	Baleen whale (<i>Mysticeti</i>)	Surface
LACM VP 4426	Between MacArthur Boulevard & the end of Bison Avenue	Palos Verdes Sand	Uncatalogued birds, fish, mammals, and invertebrates	Unknown
LACM VP 3407	Top of roadcut E. side of McArthur Blvd. approx. 1/2 mile S. of Bonita Canyon intersection.	Palos Verdes Sand	Mammoth (<i>Mammuthus</i>); invertebrates (uncatalogued)	Surface

VP, Vertebrate Paleontology; IP, Invertebrate Paleontology; bgs, below ground surface

Additionally, a number of invertebrate, vertebrate, and plant fossils were recovered from mitigation work during housing development construction on the southern side of UC Irvine campus by SWCA Environmental Consultants; however, that material is not yet catalogued into our collection.

This records search covers only the records of the NHMLA. It is not intended as a paleontological assessment of the project area for the purposes of CEQA or NEPA. Potentially fossil-bearing units are present in the project area, either at the surface or in the subsurface. As such, NHMLA recommends that a full paleontological assessment of the project area be conducted by a paleontologist meeting Bureau of Land Management or Society of Vertebrate Paleontology standards.

Sincerely,



Alyssa Bell, Ph.D.
Natural History Museum of Los Angeles County

enclosure: invoice

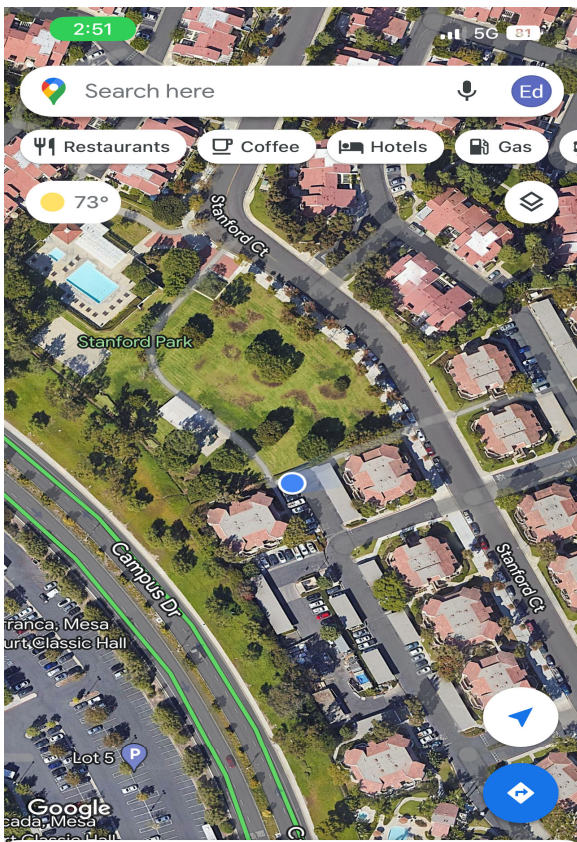
APPENDIX C

Noise Data

Site Number: NM-1			
Recorded By: Eddie Torres			
Job Number: 191870			
Date: 10/24/22			
Time: 2:47 pm			
Location: Stanford Court Apartment Complex (adjacent to 575 Stanford Court)			
Source of Peak Noise: Car door slamming			
Noise Data			
Leq (dB)	Lmax(dB)	Lmin (dB)	Peak (dB)
49.7	61.2	43.1	72.5

Equipment						
Category	Type	Vendor	Model	Serial No.	Cert. Date	Note
Sound	Sound Level Meter	Brüel & Kjær	2250	3011133	03/10/2022	
	Microphone	Brüel & Kjær	4189	3086765	03/10/2022	
	Preamp	Brüel & Kjær	ZC 0032	25380	03/10/2022	
	Calibrator	Brüel & Kjær	4231	2545667	03/10/2022	
Weather Data						
Est.	Duration: 10 minutes			Sky: Clear		
	Note: dBA Offset =			Sensor Height (ft): 5 ft		
	Wind Ave Speed (mph / m/s)		Temperature (degrees Fahrenheit)		Barometer Pressure (inches)	
	1.8 mph		79		31.3	

Photo of Measurement Location





2250

Instrument:		2250
Application:		BZ7225 Version 4.7.6
Start Time:		10/24/2022 14:45:27
End Time:		10/24/2022 14:55:27
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		142.18

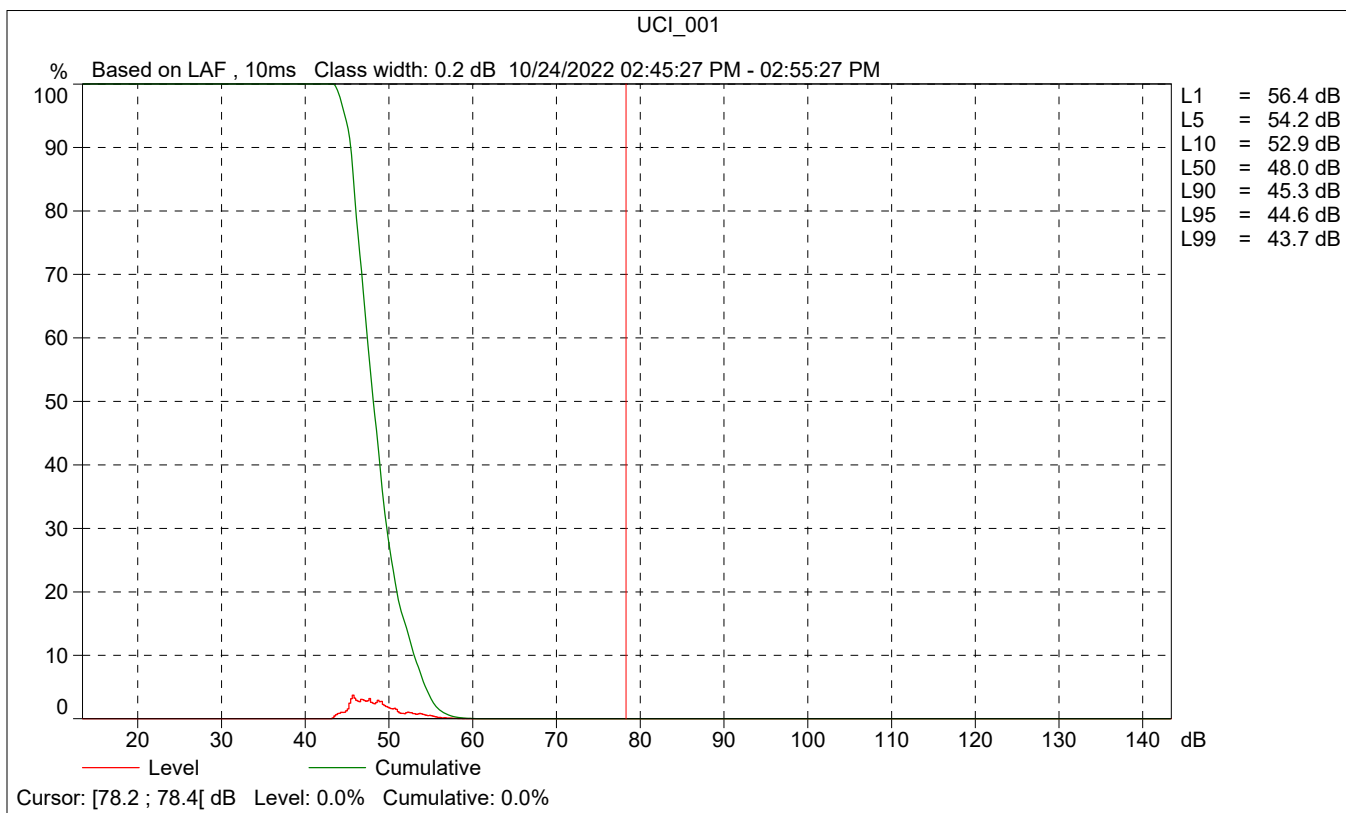
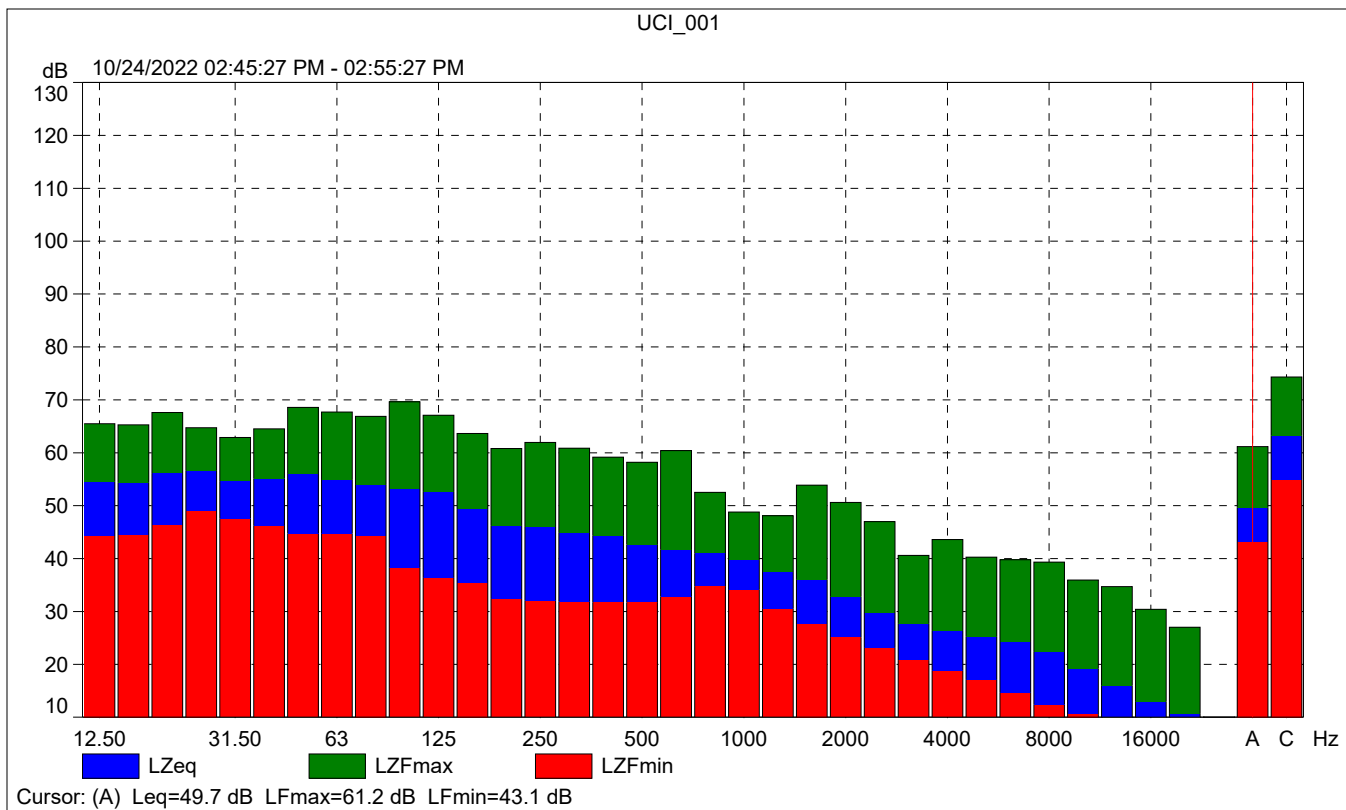
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

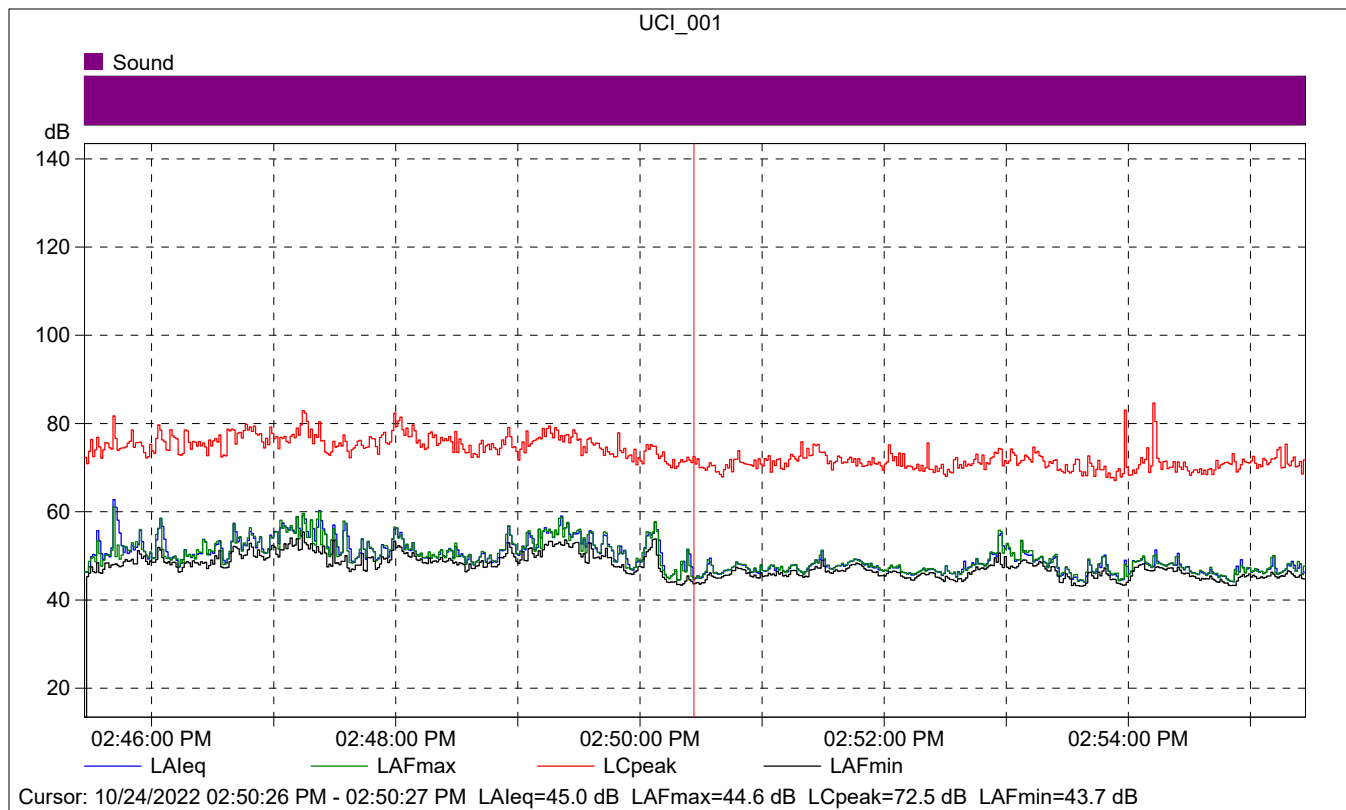
Instrument Serial Number:		3011133
Microphone Serial Number:		3086765
Input:		Top Socket
Windscreen Correction:		UA-1650
Sound Field Correction:		Free-field

Calibration Time:		10/19/2022 07:11:45
Calibration Type:		External reference
Sensitivity:		43.3151684701443 mV/Pa

UCI_001

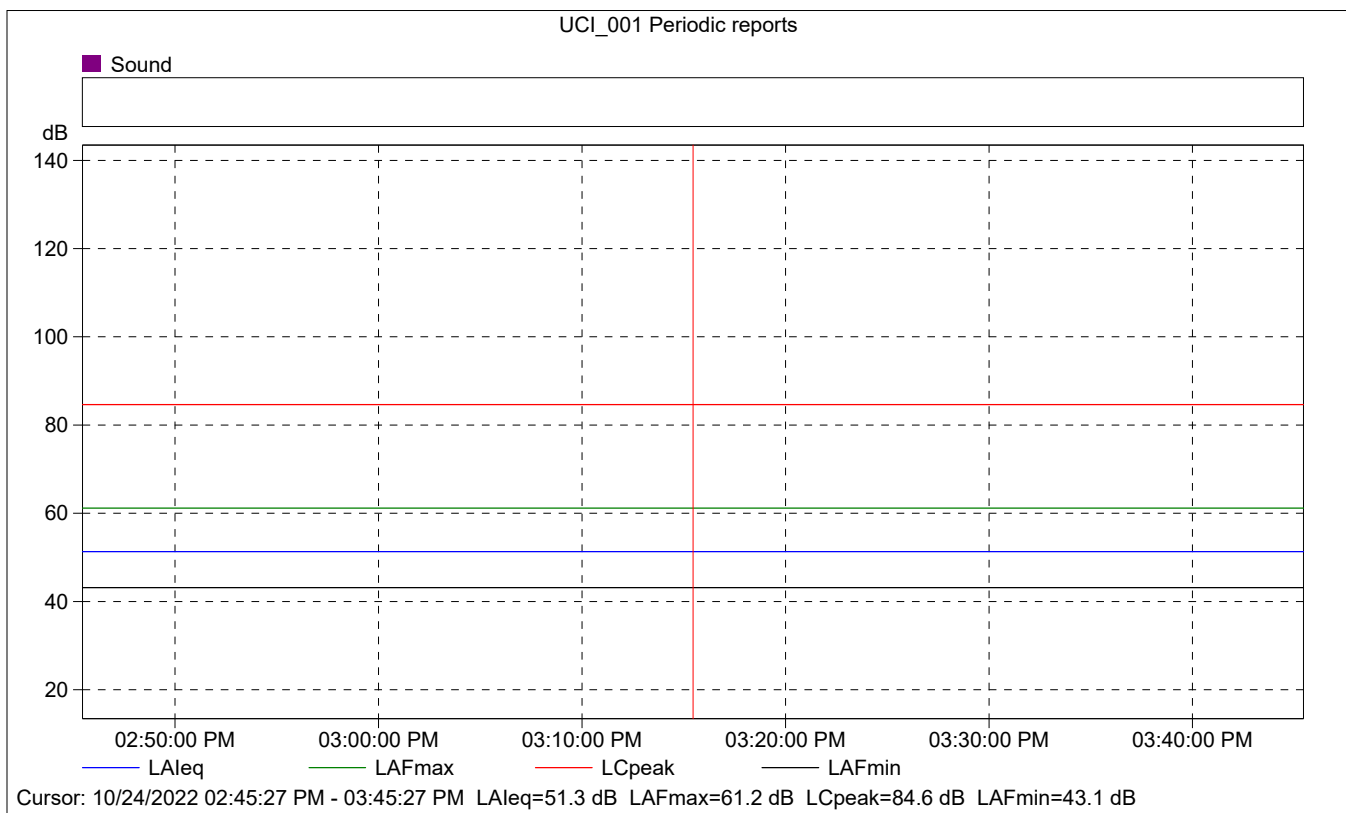
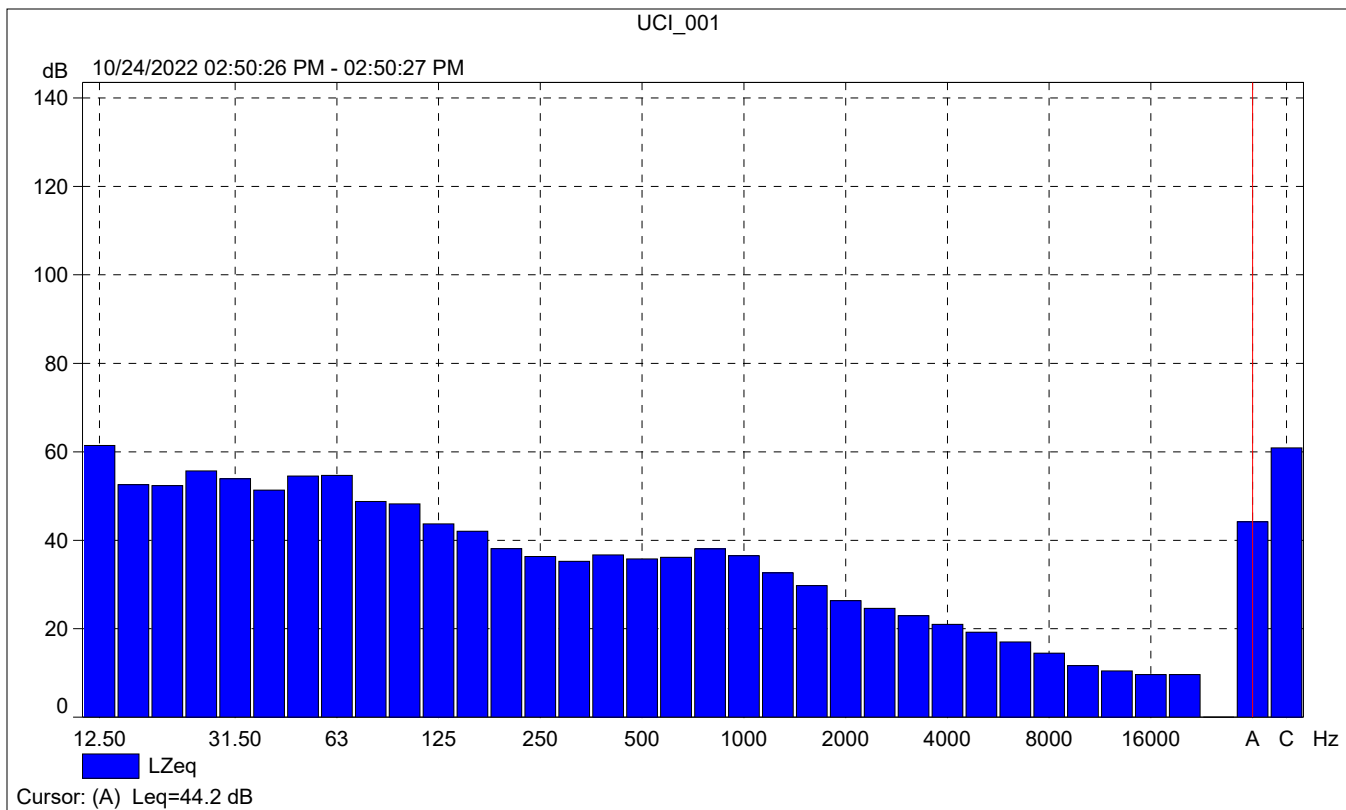
	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	49.7	61.2	43.1
Time	02:45:27 PM	02:55:27 PM	0:10:00				
Date	10/24/2022	10/24/2022					





UCI_001

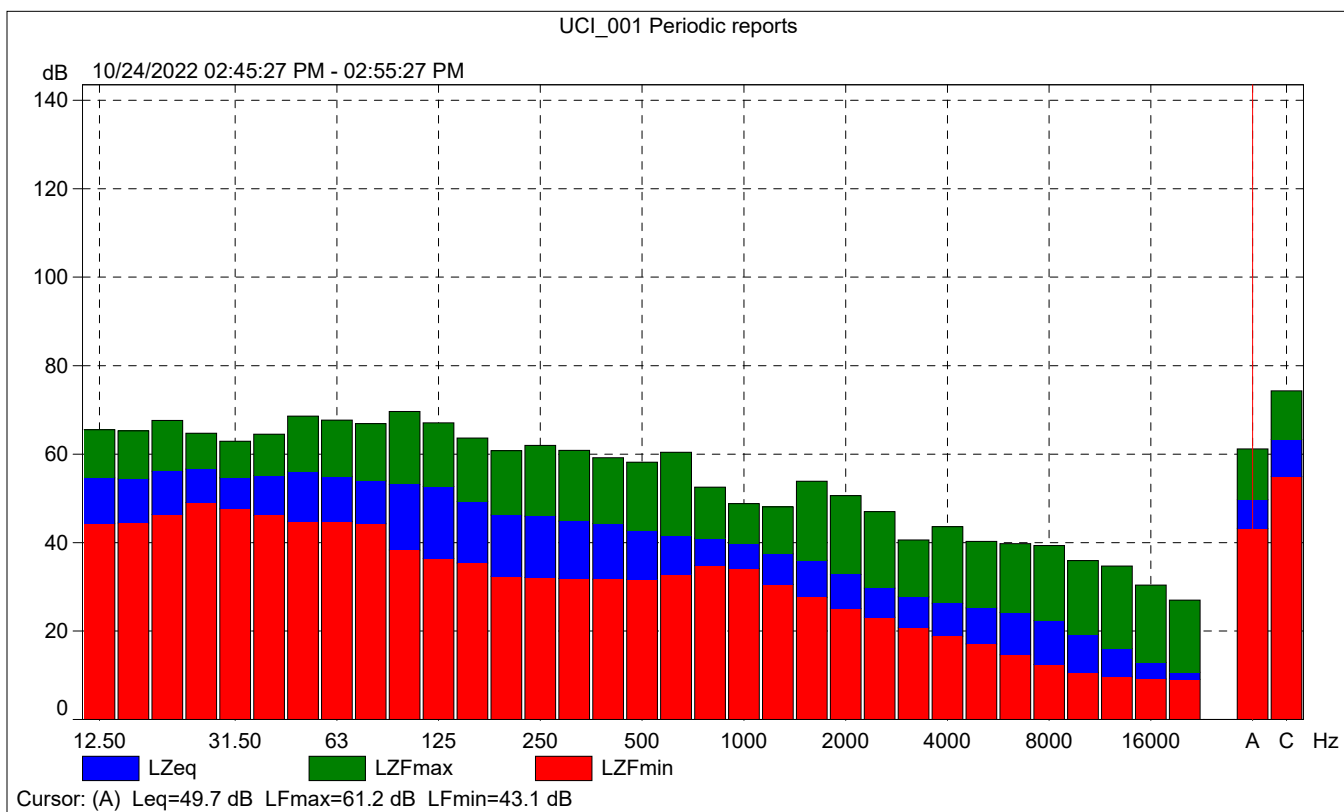
	Start time	Elapsed time	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			45.0	44.6	43.7
Time	02:50:26 PM	0:00:01			
Date	10/24/2022				





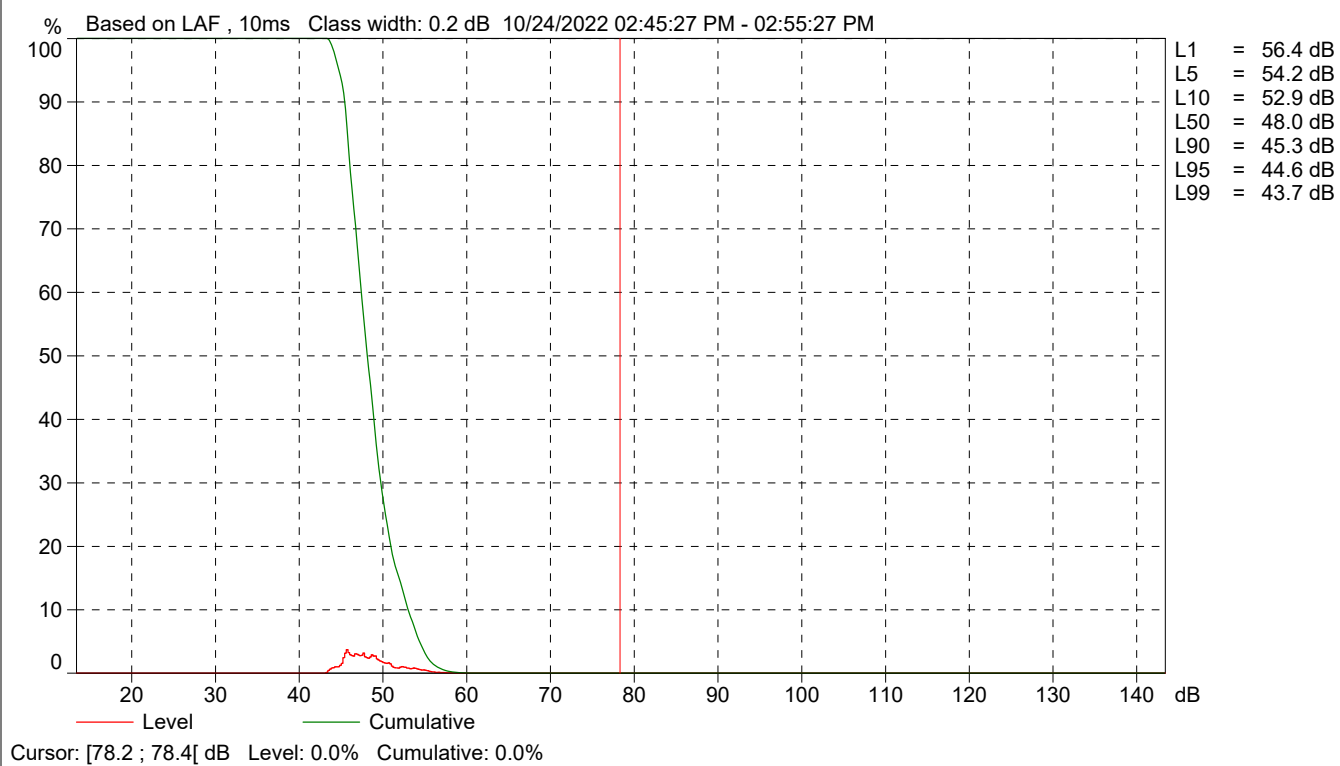
UCI_001 Periodic reports

	Start time	Elapsed time	Overload [%]	LAFeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	51.3	61.2	43.1
Time	02:45:27 PM	0:10:00				
Date	10/24/2022					





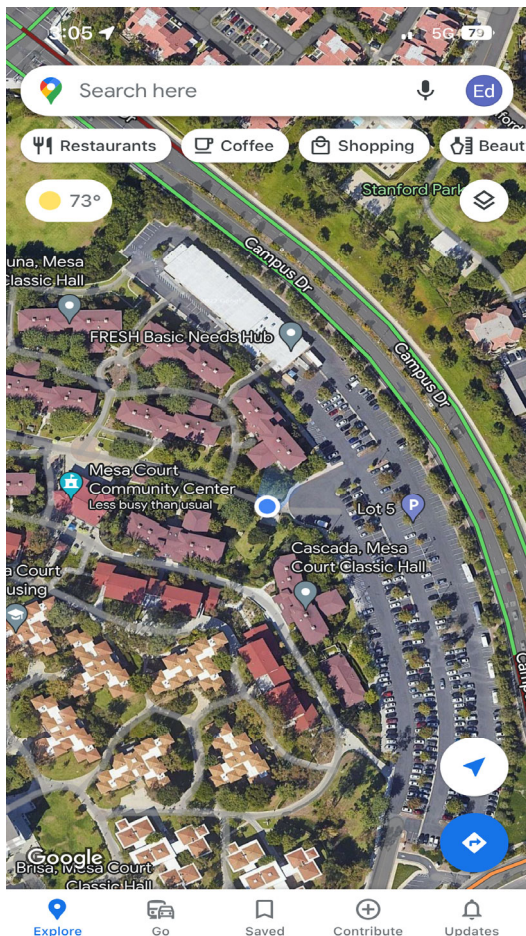
UCI_001 Periodic reports



Site Number: NM-2			
Recorded By: Eddie Torres			
Job Number: 191870			
Date: 10/24/22			
Time: 3:05 pm			
Location: Mesa Court Complex (adjacent to Barranca Building)			
Source of Peak Noise: Car door slamming			
Noise Data			
Leq (dB)	Lmax(dB)	Lmin (dB)	Peak (dB)
50.9	67.1	43.9	71.1

Equipment						
Category	Type	Vendor	Model	Serial No.	Cert. Date	Note
Sound	Sound Level Meter	Brüel & Kjær	2250	3011133	03/10/2022	
	Microphone	Brüel & Kjær	4189	3086765	03/10/2022	
	Preamp	Brüel & Kjær	ZC 0032	25380	03/10/2022	
	Calibrator	Brüel & Kjær	4231	2545667	03/10/2022	
Weather Data						
Est.	Duration: 10 minutes			Sky: Clear		
	Note: dBA Offset =			Sensor Height (ft): 5 ft		
	Wind Ave Speed (mph / m/s)		Temperature (degrees Fahrenheit)		Barometer Pressure (inches)	
	2.1 mph		79		31.2	

Photo of Measurement Location





2250

Instrument:		2250
Application:		BZ7225 Version 4.7.6
Start Time:		10/24/2022 15:04:16
End Time:		10/24/2022 15:14:16
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		142.18

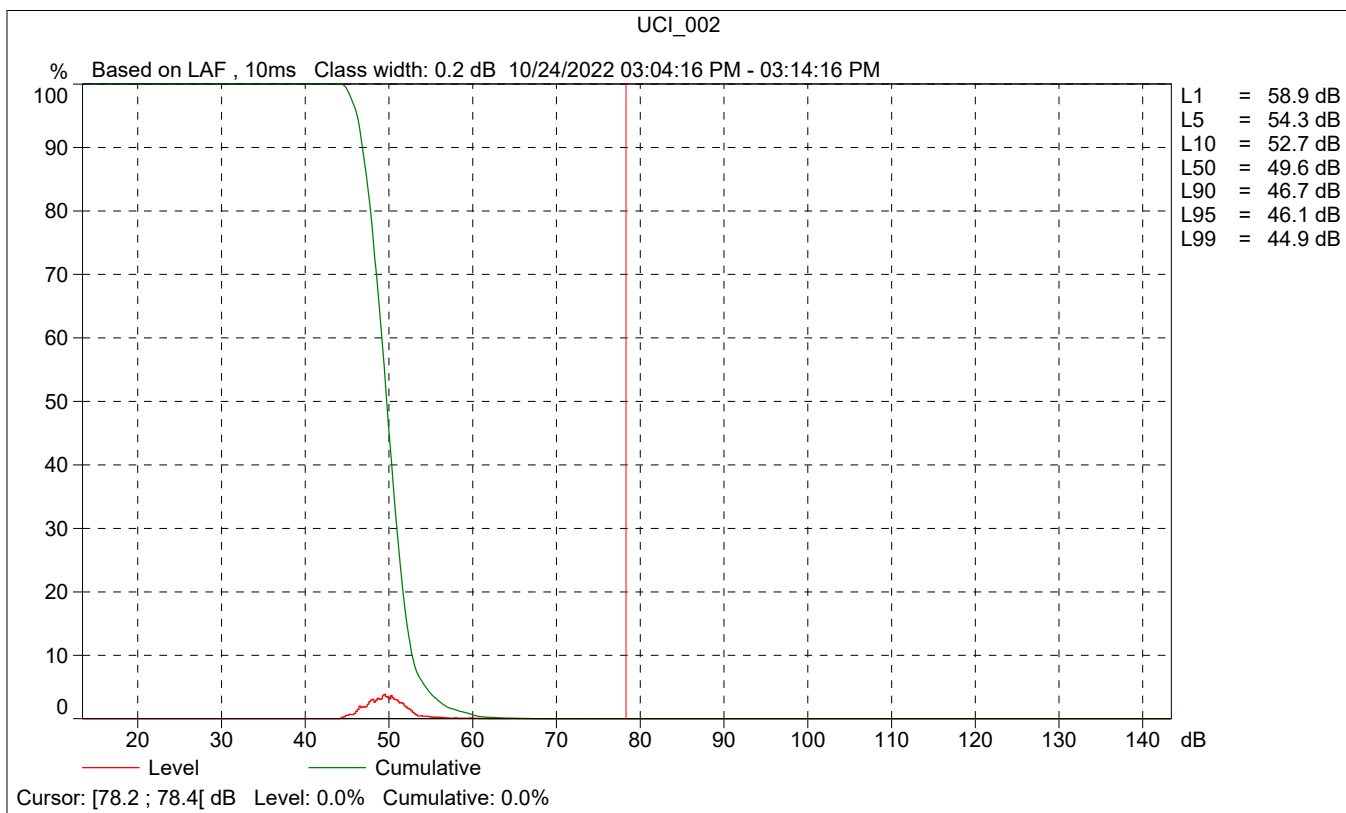
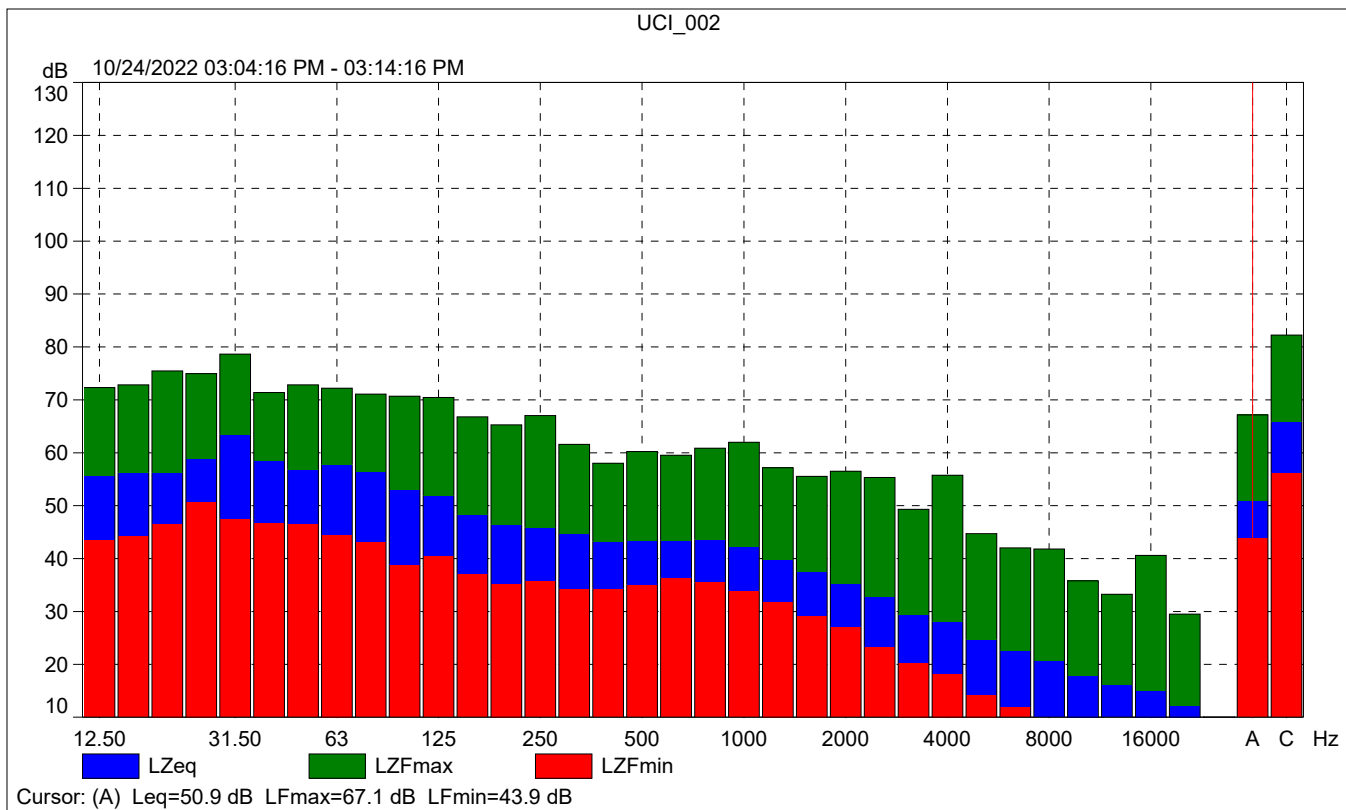
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

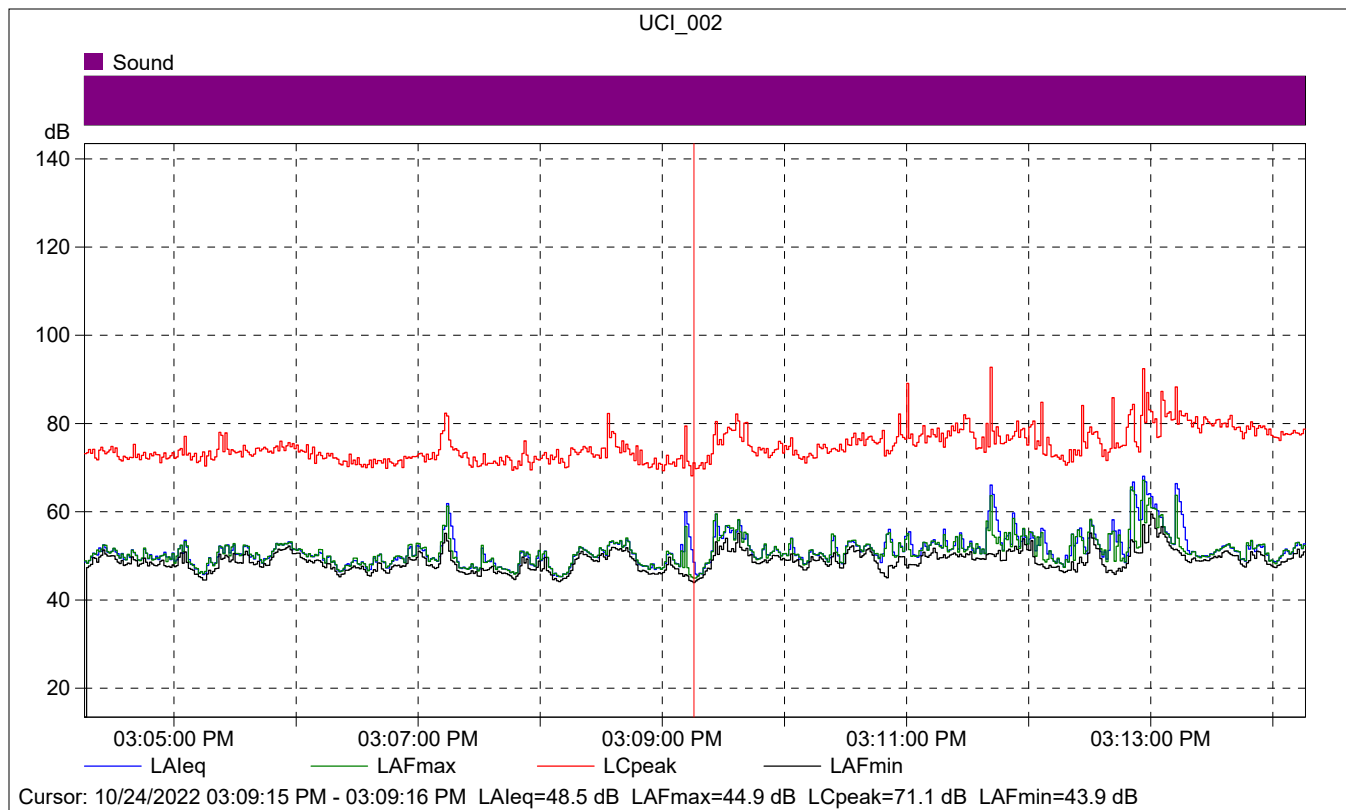
Instrument Serial Number:		3011133
Microphone Serial Number:		3086765
Input:		Top Socket
Windscreen Correction:		UA-1650
Sound Field Correction:		Free-field

Calibration Time:		10/19/2022 07:11:45
Calibration Type:		External reference
Sensitivity:		43.3151684701443 mV/Pa

UCI_002

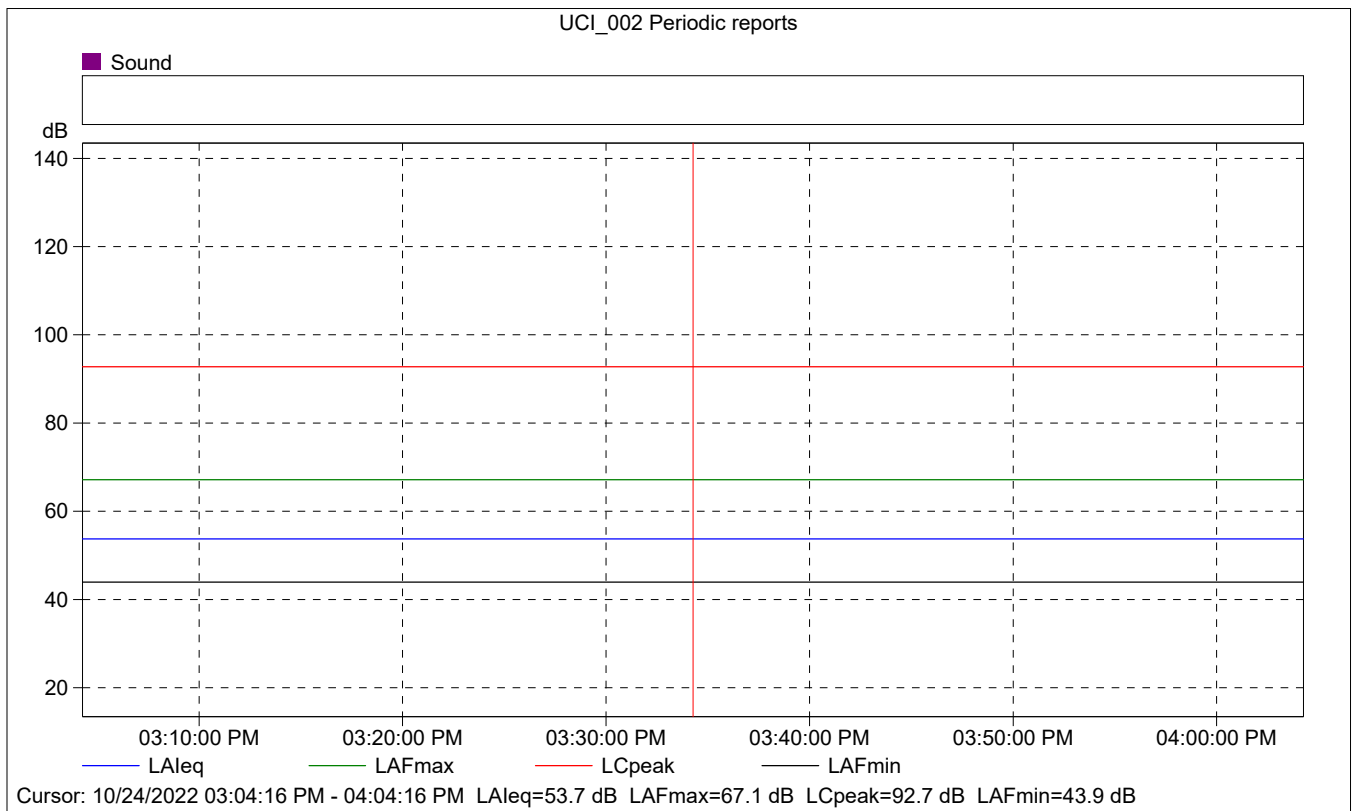
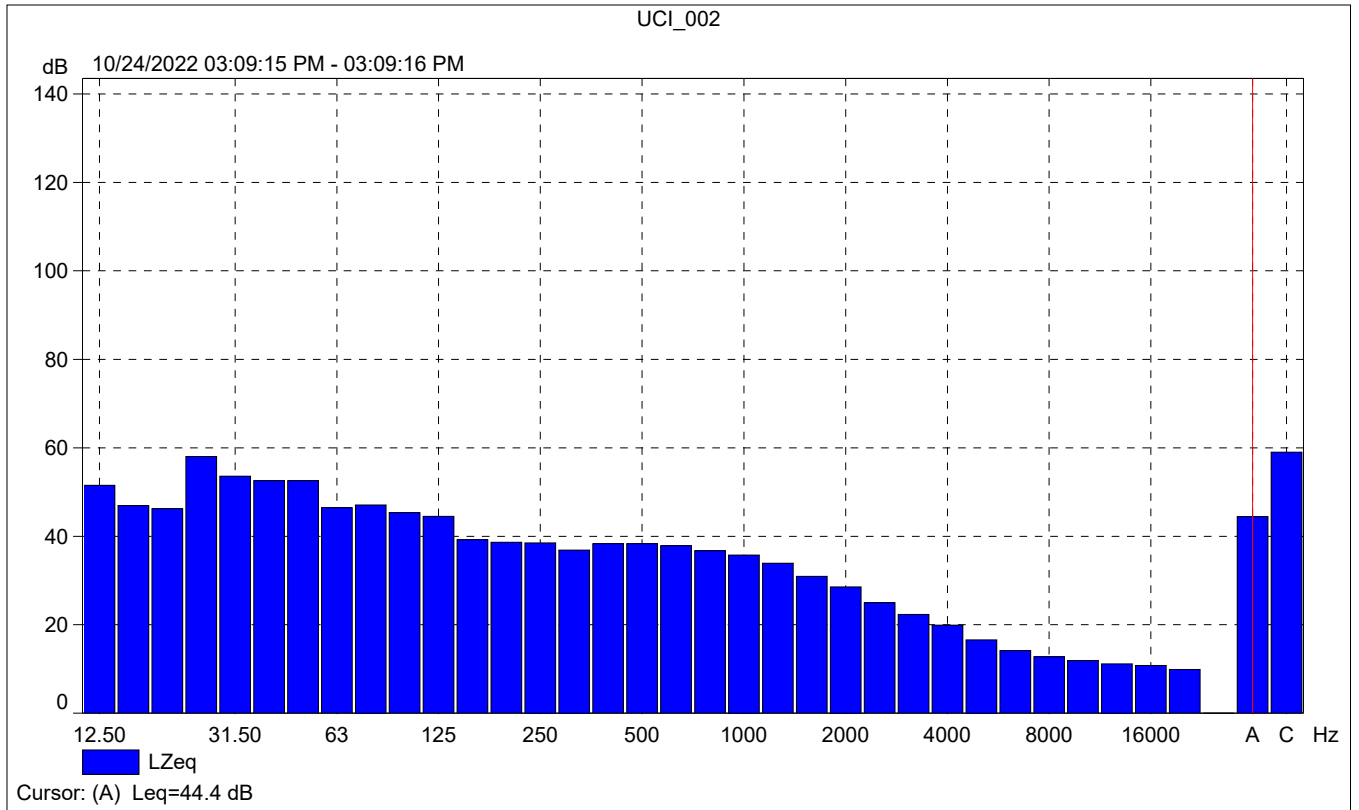
	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	50.9	67.1	43.9
Time	03:04:16 PM	03:14:16 PM	0:10:00				
Date	10/24/2022	10/24/2022					





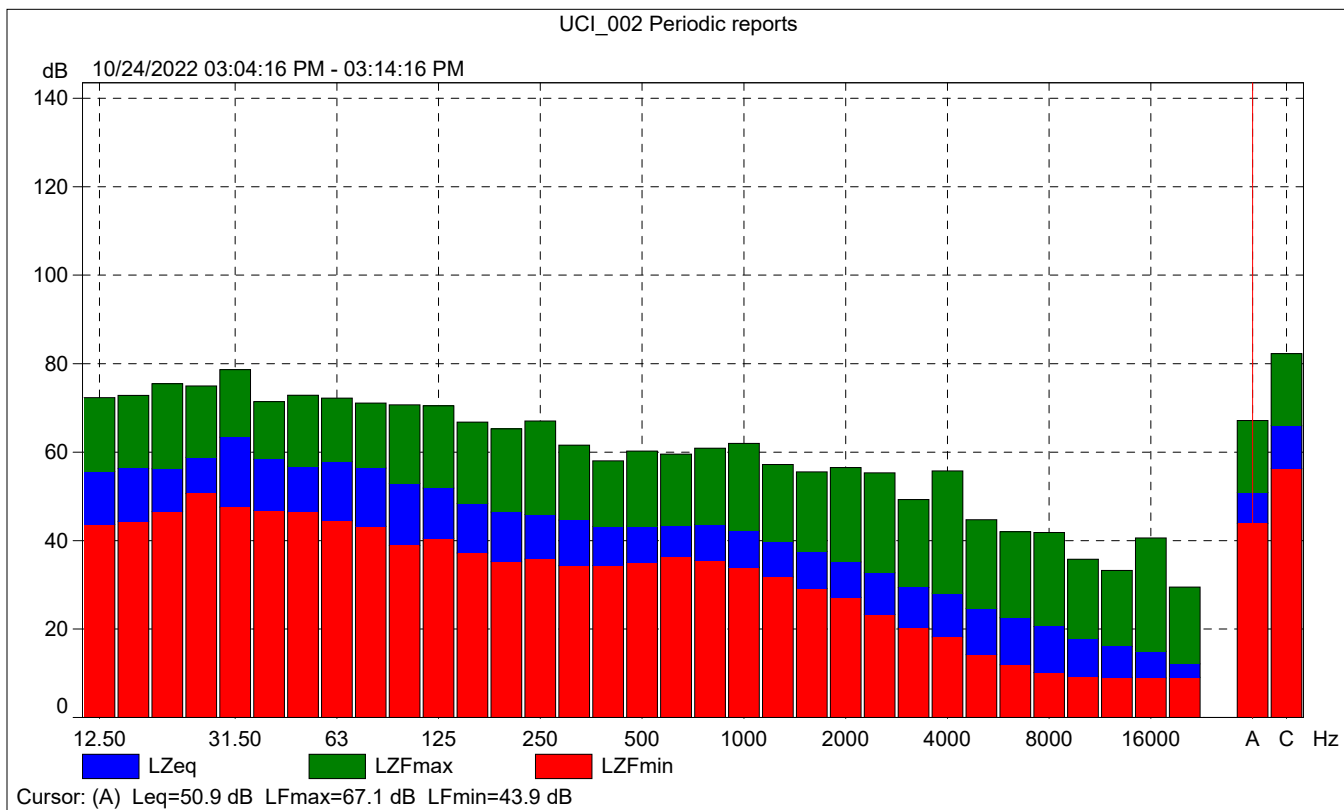
UCI_002

	Start time	Elapsed time	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			48.5	44.9	43.9
Time	03:09:15 PM	0:00:01			
Date	10/24/2022				



UCI_002 Periodic reports

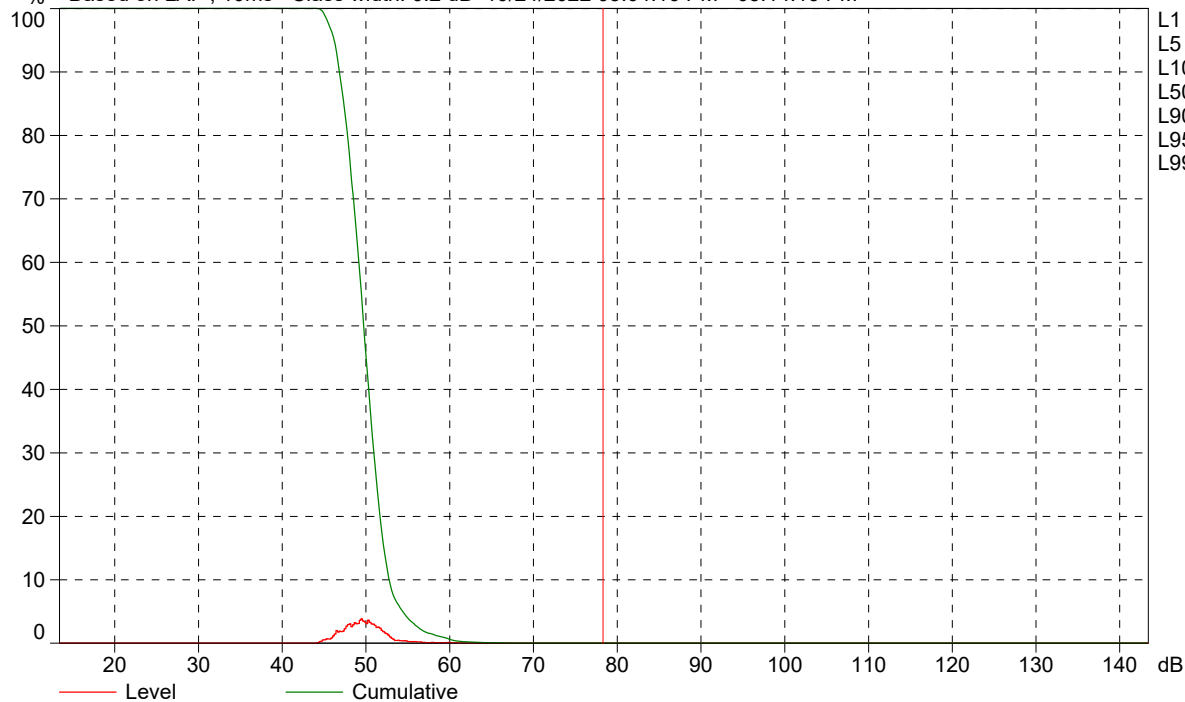
	Start time	Elapsed time	Overload [%]	LAFeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	53.7	67.1	43.9
Time	03:04:16 PM	0:10:00				
Date	10/24/2022					





UCI_002 Periodic reports

% Based on LAF, 10ms Class width: 0.2 dB 10/24/2022 03:04:16 PM - 03:14:16 PM



L1 = 58.9 dB
L5 = 54.3 dB
L10 = 52.7 dB
L50 = 49.6 dB
L90 = 46.7 dB
L95 = 46.1 dB
L99 = 44.9 dB

Cursor: [78.2 ; 78.4] dB Level: 0.0% Cumulative: 0.0%

APPENDIX D
Transportation Analysis



**UCI MESA COURT RESIDENCE HALL
EXPANSION PROJECT TRANSPORTATION
ANALYSIS**

November 18, 2022

Prepared for:
UC Irvine

Prepared by:
Stantec

Project Number:
2042590010

UCI MESA COURT RESIDENCE HALL EXPANSION PROJECT TRANSPORTATION ANALYSIS

The conclusions in the Report titled UCI Mesa Court Housing Expansion Transportation Analysis are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from UC Irvine (the "Client") and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

This Report is intended solely for use by the Client in accordance with Stantec's contract with the Client. While the Report may be provided to applicable authorities having jurisdiction and others for whom the Client is responsible, Stantec does not warrant the services to any third party. The report may not be relied upon by any other party without the express written consent of Stantec, which may be withheld at Stantec's discretion.

Prepared by:



Maria Morris

Reviewed by:



Daryl Zerfass

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UCI MESA COURT RESIDENCE HALL EXPANSION PROJECT TRANSPORTATION ANALYSIS

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LIST OF APPENDICES

APPENDIX A ANTEATER EXPRESS ROUTES AND SERVICE SCHEDULE A.1

Executive Summary

Stantec Consulting Services Inc. (Stantec) has performed a transportation analysis for the proposed University of California Irvine (UCI) Mesa Court Residence Hall Expansion Project (Project). The purpose of this study is to determine transportation impacts on the surrounding transportation system with the implementation of the proposed Project. This analysis was prepared in support of the Project's Initial Study/Mitigated Negative Declaration (IS/MND) in accordance with the California Environmental Quality Act (CEQA).

Project Description

The Project proposes to construct a residence hall in Mesa Court that would provide 450 new residence hall beds for undergraduate students in quad-occupancy rooms. The Project includes common areas distributed throughout the building including Zoom rooms, study rooms, shared kitchens, and laundry facilities. The Project is an infill development and would include demolition of existing parking lot to provide a site for the building.

Mesa Court is located in the northwest area of the main campus with parking lot access via the West Peltason Drive and Pereira Drive intersection to the east and the Mesa Road and University Drive intersection to the west. There are various ways to access the Project by bicycle and by walking as the UCI campus has an extensive network of pedestrian paths and bicycle facilities.

First-year housing community Mesa Court residents are encouraged not to bring a car onto campus and to take advantage of UCI's alternative transportation options. According to the UCI Transportation and Distribution Services Department, the take rate (parking permits sold in relation to residents) for Mesa Court residents is relatively low, approximately 14.7% percent. Therefore, it is estimated that around 15% of the students who would occupy the new Project units would purchase a parking permit.

The current UCI Long Range Development Plan (LRDP) was adopted in 2007 and established a land use plan and physical planning framework to accommodate projected enrollment levels, additional academic facilities and housing, and the on-campus circulation system through the 2025-2026 horizon year. The Project site's land use is designated in the LRDP and the LRDP Traffic Study as Student Housing and Single Undergrad Housing, respectively. The Project site is located in the UCI Main Campus Traffic Model (UCIMCTM) in traffic analysis zones (TAZ) 52 and 53. The Project does not result in an increase to enrollment levels.

Analysis Methodology

To evaluate the Project's potential transportation impact, this analysis uses recommendations from the Governor's Office of Planning and Research Technical Advisory (OPR's Technical Advisory) and the City of Irvine VMT Guidelines. Prior to conducting a full VMT analysis, a screening evaluation is carried out to determine if the Project may be assumed to cause a less-than-significant transportation impact. If the Project does not meet one of the screening criteria, a VMT analysis is carried out where the Project VMT



UCI MESA COURT RESIDENCE HALL EXPANSION PROJECT TRANSPORTATION ANALYSIS

Executive Summary
November 2022

rate is compared to the applicable threshold of significance. Feasible mitigation measures are identified if the Project is found to cause a transportation impact.

Additional qualitative analyses are also presented in this transportation analysis that evaluates the Project’s potential impacts on the multi-modal network, surrounding land uses, and consistency with the Southern California Association of Governments Regional Transportation Plan/Sustainable Communities Strategy (SCAG RTP/SCS).

Transportation Impact Analysis Summary

Table ES-1 summarizes the VMT screening evaluation. The Project would meet the Trip Generation (Small Project) screening criteria and the Proximity to High Quality Transit screening criteria as discussed below.

Table ES-1 VMT Screening Evaluation Summary

Category	Description	Project	Meets Criteria?
Trip Generation (Small Project)	Does the Project generate less than 250 trips per day?	The Project would result in an increase of approximately 113 trips per day.	Yes
Proximity to High Quality Transit (Transit Priority Area)	Is the Project within a half-mile of high-quality transit stops or corridor and meet the other four requirements: has a Floor Area Ratio of greater than 0.75, includes less parking than required by the jurisdiction, is consistent with the RTP/SCS, and does not replace affordable housing units with a smaller number of moderate, or high-income residential units. Is the Project in one of the two TPAs identified by the City of Irvine VMT Guidelines?	Yes, the Project is within a half mile from a high-quality corridor. The Project is approximately 0.40 mile from high-quality transit stops and corridor, Anteater Express A Line, N Line, and M Lines. All routes have headways of less than 15 minutes in the morning (7am to 11am) and in the afternoon service (11am to 7pm). The Project is not in one of the two TPAs identified by the City of Irvine.	Yes
Locally Serving Use	Is the Project 100,000 square feet or less of retail? Is the Project a daycare or K-12 local serving public school?	The Project is a University use and is not considered a local-serving use per the City of Irvine VMT Guidelines.	No
Affordable Housing	Does the Project consist of 100% affordable units?	The Project is not affordable housing.	No
Map-Based (Low-VMT Area)	Is the Project in a low-VMT Area?	The City of Irvine does not use the map-based screening criteria; therefore, no maps are available for the area.	No

Trip Generation Screening: OPR’s Technical Advisory recommends that small projects that generate less than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact. The City of Irvine Guidelines uses a threshold of 250 daily trips based on latest edition of the Institute of Transportation Engineers (ITE) Trip Generation Handbook. The 11th Edition ITE Trip Generation Handbook does not have trip rates for a dormitory use. Therefore, Project trips are estimated using trip



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rates from the UCI MCTM, which shows the Project would generate approximately 113 daily trips, 7 trips during the AM peak hour, and 8 trips during the PM peak hour. The Project’s net daily trips of 113 is below the 250-trip threshold used by the City of Irvine. Therefore, the Project meets the screening criteria and would have a less-than-significant transportation impact. The trip generation is summarized in **Table ES-2**.

Table ES-2 Project Vehicle Trip Generation Estimates

Land Use	Amount/ Units	AM Peak Hour		PM Peak Hour		Daily
		Inbound	Outbound	Inbound	Outbound	
Off-Campus Vehicle Trips						
Undergraduate Housing	450 Beds	1	6	5	3	106
On-Campus Vehicle Trips						
Undergraduate Housing	450 Beds	0	0	0	0	7
Total		1	6	5	3	113

Proximity to High-Quality Transit: OPR’s Technical Advisory suggests that a Project would have a less-than-significant transportation impact if the Project is within a half-mile of an “existing major transit stop or an existing stop along a high-quality transit corridor”. A major transit stop is defined as “the intersection of two or more major bus routes with a frequency service interval of 15 minutes or less during the morning and afternoon peak commute periods”. A high-quality transit corridor is defined as an existing corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours. Based on this definition, the proposed Project would meet this screening criteria.

Anteater Express is UCI’s bus transit system that provides transportation to various areas on and off the UCI Campus. Four Anteater Express stops are located within a half-mile walk of the Project site. One stop is approximately 0.40-mile walking distance at the Humanities and Fine Arts Building on West Peltason Drive and provides access to the M line. Three additional stops are approximately 0.40-mile walking distance at the University Center on Campus Drive and provides access to the M Line, N Line, and A Line. Headways for these lines are summarized in **Table ES-3**. Since all three Anteater Express routes have headways less than 15 minutes during the peak commute times, all three routes are high-quality corridors. In addition, the Project meets the remaining criteria, the Project has a floor area ratio greater than 0.75, includes less parking than required by the jurisdiction, does not replace affordable housing units, and consistent with the Southern California Association of Governments Regional Transportation/Sustainable Communities Strategy (SCAG RTP/SCS) since it is within the planned growth in the LRDP. As demonstrated here, the Project meets the Proximity to High-Quality Transit criteria and would have a less-than-significant transportation impact.



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Table ES-3 Anteatr Express Headways

Line	Service/Headway Times		
	Morning 7:00 AM – 11:00 AM	Afternoon 11:00 AM – 7:00 PM	Evening 7:00 PM – 10:30 PM
A Line	Every 8 minutes	Every 13 minutes	Every 13 minutes
N Line	Every 7 minutes	Every 9 minutes	Every 13 minutes
M Line	Every 13 minutes	Every 13 minutes	Every 25 minutes

The Project meets two screening criteria (only needs to meet one), therefore a quantitative VMT analysis is not needed. However, additional qualitative analyses have been carried out and the findings are summarized in **Table ES-4**.

Table ES-4 Additional Transportation Impact Analysis Overview

Category	Description	Threshold	Project Finding
VMT Impact Analysis	If the Project does not meet on of the screening criteria, Project generated VMT is evaluated. The Project's VMT per capita is compared to the applicable threshold of significance. For residential projects, OPR's Technical Advisory and the City of Irvine's VMT Guidelines recommends using VMT per capita. The City of Irvine's impact analysis methodology and significance thresholds are used in this analysis.	If the Project's VMT per capita is less than the threshold of significance, the Project would have a less-than-significant impact. The threshold of significance is 15% less than existing countywide average VMT per capita.	Not required. The Project meets two screening criteria and would have a less-than-significant transportation impact.
Multi-modal transportation Impact Analysis	Identify existing pedestrian, bicycle, and transit facilities that provide alternative modes of transportation in place of a single-occupancy vehicle around the Project site. Evaluate the accessibility and connectivity of pedestrian, bicyclist, and transit facilities around the Project site.	If the Project does not restrict or eliminate access to the active transportation network than the Project would have a less-than-significant impact.	The Project would not block or remove pedestrian, bicyclists, or transit facilities and would have a less-than-significant transportation impact.
Land Use Impact Analysis	Interactions between different land uses and interactions between land use and transportation have the potential to reduce VMT. Evaluate the surrounding uses of the Project and the interaction between land use and transportation.	If the Project is consistent with the existing land use patterns, or is part of an approved plan, then the Project would have a less-than-significant impact.	The Project is consistent with the LRDP and would have less-than-significant transportation impact.
RTP/SCS Consistency (Cumulative Impact Analysis)	The purpose of the RTP/SCS is to evaluate regional land use patterns and transportation systems to achieve the State's target GHG emissions reduction goals. Evaluate if the Project is consistent with the RTP/SCS.	If the Project is consistent with the RTP/SCS, then the Project would have a less-than-significant cumulative impact.	The Project is consistent with the SCAG RTP/SCS, (Connect SoCal) and would have a less-than-significant cumulative transportation impact.

Conclusion

The Project's impact on transportation is shown to be less-than-significant.



1 Introduction

Stantec Consulting Services Inc. (Stantec) has performed a transportation analysis for the proposed University of California Irvine (UCI) Mesa Court Residence Hall Expansion Project (Project). The purpose of this study is to determine significant impacts on the surrounding transportation system with the implementation of the proposed Project. This analysis was prepared in support of the Project's Initial Study/Mitigated Negative Declaration (IS/MND) in accordance with the California Environmental Quality Act (CEQA) and focuses on vehicle miles traveled (VMT) as the primary metric for identifying significant impacts.

1.1 Project Description

Mesa Court is a first-year (freshman) housing community with residence halls ranging in size and number of dormitory rooms in each hall. The community is located in the northwest area of the main campus with parking lot access points at the West Peltason Drive and Pereira Drive intersection to the east and Mesa Road and University Drive intersection to the west.

The Project proposes to construct a residence hall in Mesa Court that would provide 450 new residence hall beds for undergraduate students in quad-occupancy rooms. The Project includes common areas distributed throughout the building including Zoom rooms, study rooms, shared kitchens, and laundry facilities. The Project is an infill development and would include demolition of existing parking lot improvements to provide a site for the building. The Project's location is shown in **Figure 1-1** and the site plan is shown in **Figure 1-2**.

As a first-year housing community Mesa Court residents are encouraged not to bring a car onto campus and to take advantage of UCI's alternative transportation options such as bicycle, transit, and car-share programs instead. Thus, according to the UCI Transportation and Distribution Services Department, the take rate (permits sold in relation to residents) for permits purchased by Mesa Court residents is relatively low, approximately 14.7% percent. Therefore, it is estimated that around 15% of the students who would occupy the new Project units would purchase a parking permit.

1.2 UCI Long Range Development Plan (LRDP)

The current UCI Long Range Development Plan (LRDP) was adopted in 2007 and established a land use plan and physical planning framework to accommodate projected enrollment levels, additional academic facilities and housing, and the on-campus circulation system through the 2025-2026 horizon year. The Project site's land use is designated in the LRDP and the LRDP Traffic Study as Student Housing and Single Undergrad Housing, respectively. The Project site is located in the UCI Main Campus Traffic Model (UCIMCTM) in traffic analysis zones (TAZ) 52 and 53. The Project does not result in an increase to enrollment levels.



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N

Figure 1-1
Project Location Map
1.2



- SITE OPPORTUNITIES**
- BIKE PATH CONNECTION TO BUS STOP
 - EXISTING TREES
 - SWALE/STORMWATER
 - PASSIVE BUFFER ZONE
 - FIRE LANE/PROMENADE
 - WALKING PATH
 - 150 BIKE PARKING SPACES
 - ENHANCED DINING PATH CONNECTIONS
- OUTDOOR SPACE**
- HANG-OUT SPACE
 - OUTDOOR LIVING ROOM
 - STUDY LEDGES
 - RESTIVE HAMMOCKS
 - ACTIVE GAMES
 - WAITING SPOTS
 - COVERED FAMILY ROOM
 - COMMUNITY TABLES
- PARKING LOTS**
- ACCESSIBLE PARKING
 - DROP-OFF
 - GRAVEL COVERED/GRASSCRETE FIRELANE
 - SHADED PARKING

CONCEPTUAL LANDSCAPE PLAN

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Figure 1-2
Site Plan
1.3

UCI MESA COURT RESIDENCE HALL EXPANSION PROJECT TRANSPORTATION ANALYSIS

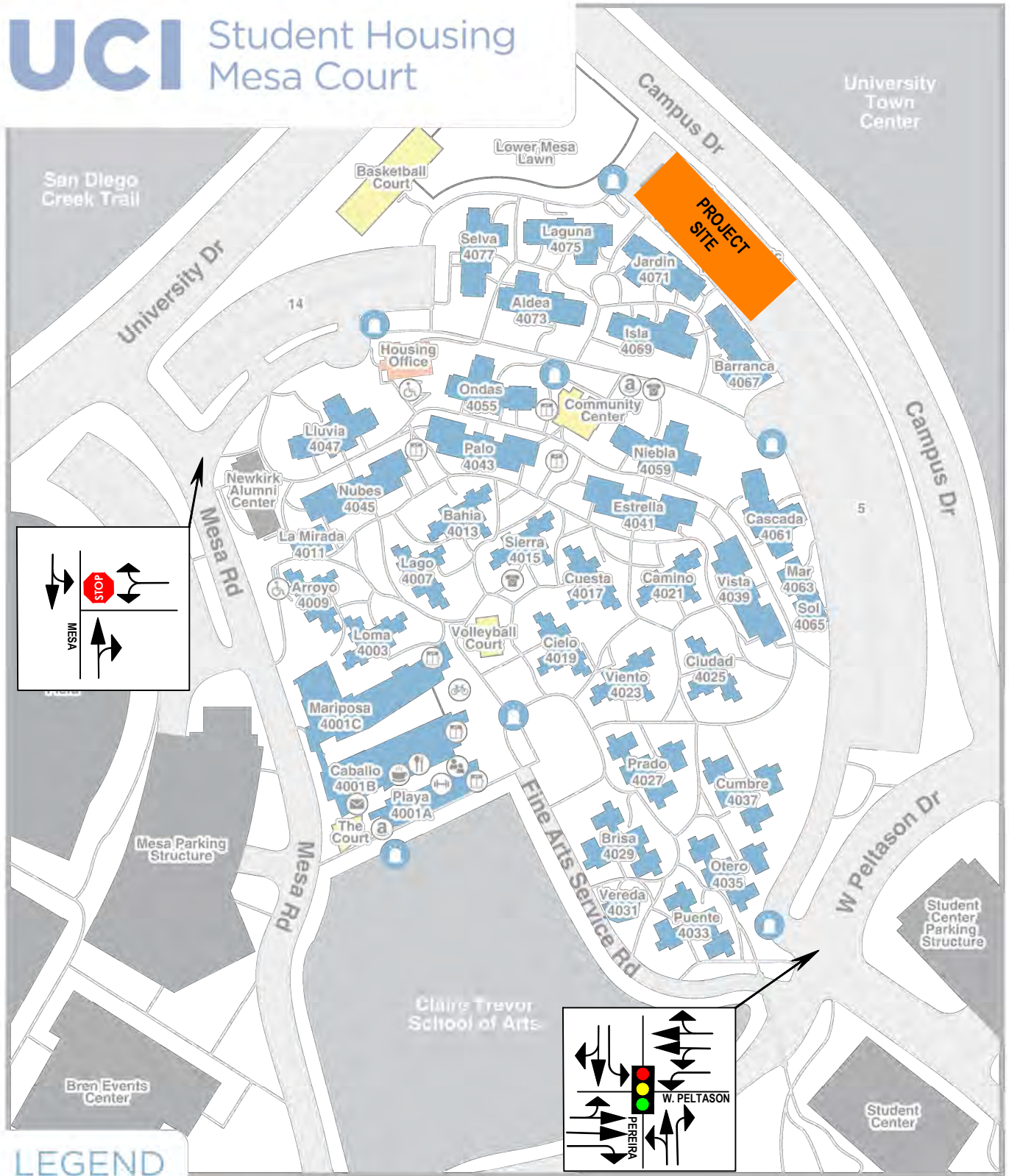
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1.1 Project Access

Vehicle access to the Project can be made via parking lot access points at West Peltason Drive and Pereira Drive to the east and Mesa Road and University Drive to the west. There are various ways to access the Project by bicycle and by walking as the UCI campus has an extensive network of pedestrian paths and bicycle facilities. Site access is shown in **Figure 1-3**.



UCI Student Housing Mesa Court



LEGEND

- | | | | |
|---------------|----------------|----------------------|-----------|
| ADA Pathway | Mailroom | Coffee Shop | Elevator |
| Amazon Locker | Fitness Center | Recreational Center | Bike Rack |
| Donation Bin | Dining Hall | Emergency Blue Light | |

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Figure 1-3

Site Access

2 Existing Conditions

This chapter describes the existing transportation setting in the vicinity of the Project site.

2.1 Existing Roadway System

The UCI campus is located in the southwest portion of the City of Irvine and is adjacent to the City of Newport Beach.

Peltason Drive begins opposite Bridge Road at Campus Drive/West Peltason Drive intersection and becomes East Peltason Drive at the Bison Avenue intersection. Peltason Drive loops through the UCI campus to opposite Berkeley Avenue at Campus Drive. Peltason Drive is a two-lane local street through most of the campus with a raised median east of Bison Avenue, and a four-lane local street with a raised median from Pereira Drive to Berkeley Avenue. The speed limit is 30 mph and on-street parking is not allowed. An on-street bike lane is provided.

Pereira Drive is a two-lane roadway that starts at Mesa Court, runs through the campus, and terminates at Adobe Circle Road, however, a portion of the roadway is restricted access. The roadway is primarily used to access parking for on-campus activities. The roadway has Class III “sharrows” bicycle markings on the pavement, and the speed limit is 15 mph.

Mesa Road is a two-lane roadway that extends from University Drive to Lot 7 surface parking lot and is primarily used to access the campus. The speed limit is 30 mph, Class II on-street bike lanes are provided, and on-street parking is not allowed.

University Drive is a 6-lane major arterial that extends from the I-405 to Jamboree Road. The speed limit is 50 mph near the Project site and on-street parking is not allowed. There is a dedicated bike path and Class II on-street bikes on University Drive near the Project site.

2.2 Active Transportation

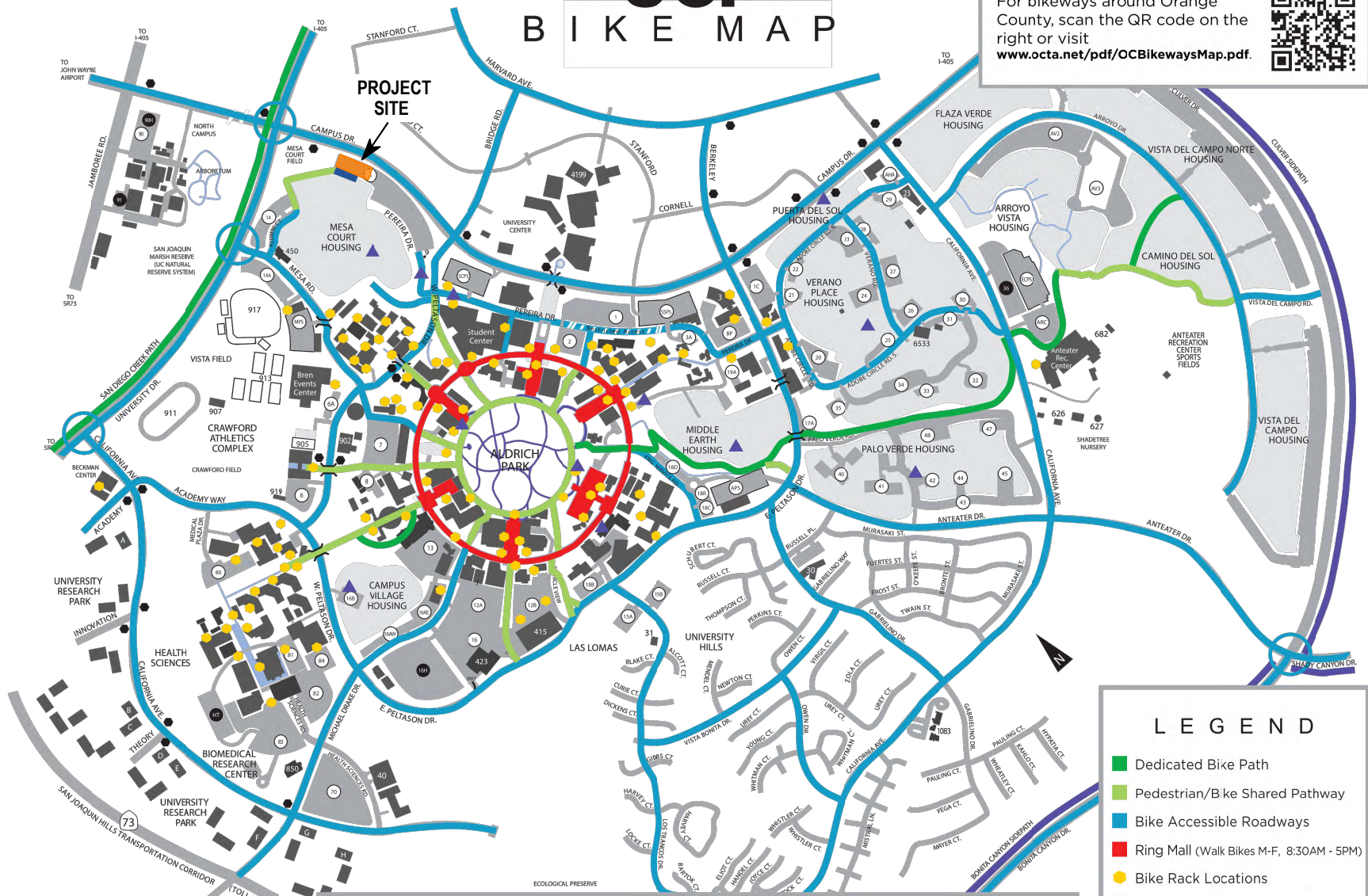
Active transportation is well supported in the Project vicinity, with “pedestrian/bike shared pathways” and “bicycle access roadways” surrounding the Project site and connecting to the campus active transportation network, as well as the City’s local and regional bike trails and sidewalks (see **Figure 2-1**).

UCI has a robust bicycle program that promotes bicycle transportation. In addition to bicycle infrastructure, UCI has BikeUCI Ambassadors, a Bicycle Advisory Group, and Bicycle Education and Enforcement (B.E.E.P). Generally, all campus facilities are easily accessible by bicycle due to the comprehensive network of pathways throughout the campus.



UCI BIKE MAP

For bikeways around Orange County, scan the QR code on the right or visit www.octa.net/pdf/OCBikewaysMap.pdf.

LEGEND

- Dedicated Bike Path
- Pedestrian/Bike Shared Pathway
- Bike Accessible Roadways
- Ring Mall (Walk Bikes M-F, 8:30AM - 5PM)
- Bike Rack Locations
- Links to City/County Bike Paths
- ▲ Bicycle Repair Station and Air
- ⌋ Footbridges

UCI BIKE POLICY

- Bicycle riding is prohibited on Ring Mall Monday through Friday, 8:30 am to 5:00 pm.
- Park all bicycles at designated bike racks only.

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Figure 2-1
UCI Bike Map
2.2

UCI MESA COURT RESIDENCE HALL EXPANSION PROJECT TRANSPORTATION ANALYSIS

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There are existing bike lanes on Campus Drive, East Peltason Drive, Arroyo Drive, Adobe Circle South, Verano Road, Anteater Drive, Academy Way, and Bridge Road that creates a bicycle network to get in and around campus. The bike lanes on the streets noted above connect to the City of Irvine's bicycle network. The City of Irvine's 2020 Strategic Active Transportation Plan shows that the existing on-street bicycle facilities on University Drive and Campus Drive are high stress, meaning they may not be suitable for all bike riders. However, there are alternative on-street and off-street bicycle facilities maintained by the campus that are low stress and would be more pleasurable and appealing to ride upon, encouraging students to ride their bike to get around campus.

In addition, UCI is a gold level "Bicycle Friendly University" and offers bicycle facilities, education, and amenities such as bike registration, parking racks, bike festival, low-cost bike sales, self-service bike repair stands and air pumping stations, and bike shops.

2.3 Existing Transit

Existing bus transit around the Project site include UCI's Anteater Express bus routes, Orange County Transportation Authority (OCTA) bus routes, and the City's iShuttle routes.

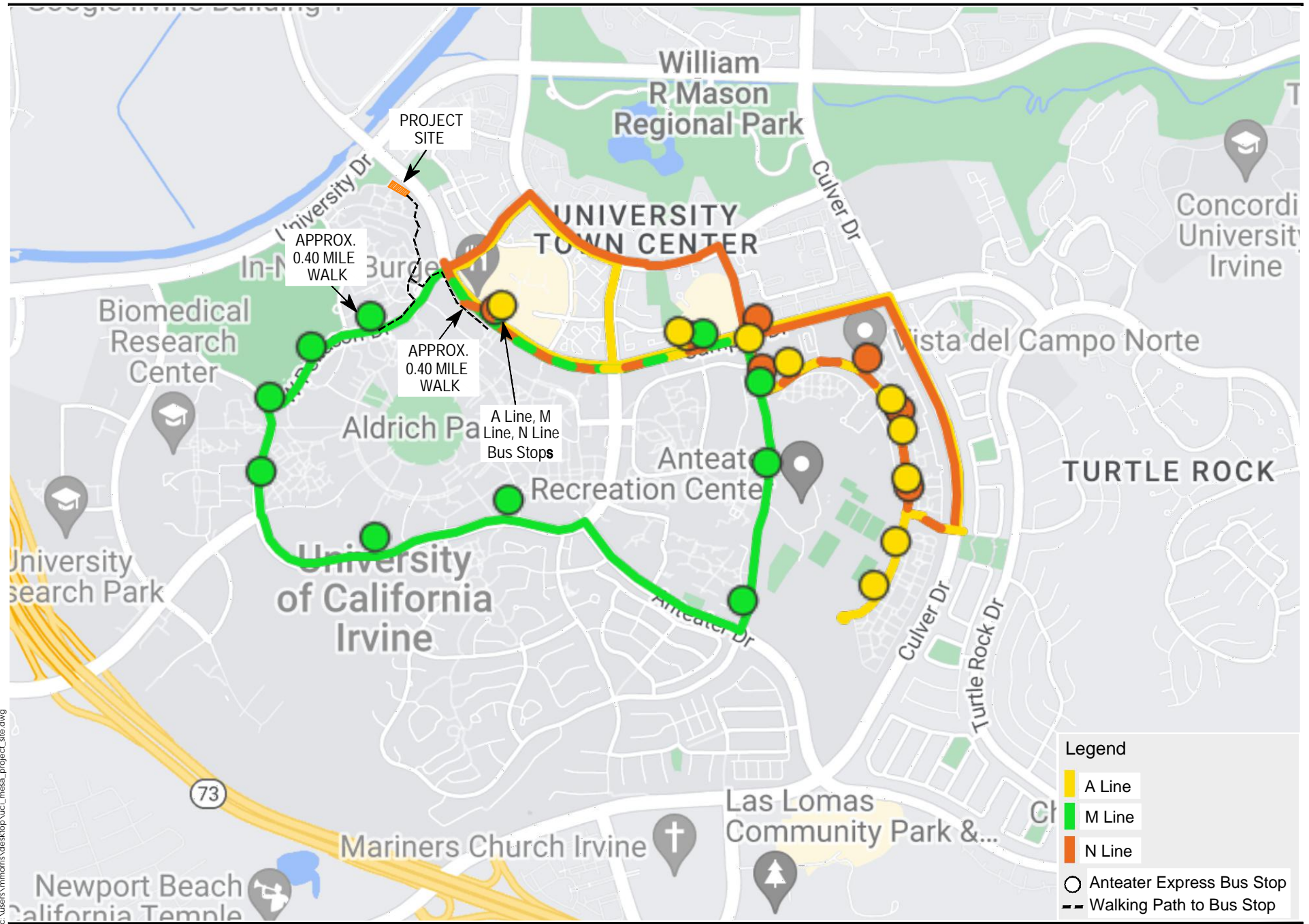
Anteater Express is UCI's bus transit system that provides transportation to various areas on and off the UCI Campus. Anteater Express is an attractive mode of transportation because of the short distance between stops and reasonable fares. UCI also provides enhanced services that increases the ease of using the shuttle service such as the on-line Live Bus Tracking system that give real time data of the buses in service. An application is also available for download that allow users to view the shuttle's location. UCI also offers a Medical Center shuttle that is available to students, faculty, and staff.

For Fall 2022, three routes are in operation, A Line, M line, and N Line, running from 7:30 am to 10:30 pm. A Line's headways are approximately 8 minutes in the morning and 13 minutes in the afternoon and evening service. N Line's headways are approximately every 7 minutes in the morning service, 9 minutes in the afternoon service, and 13 minutes in the evening service. M Line has headways of every 13 minutes in the morning service, 13 minutes in the afternoon service, and every 25 minutes in the evening service. The Project site is approximately 0.40 miles from the Anteater Express M Line bus stop at the Humanities and Fine Arts Building and approximately 0.40 miles from the University Center transit hub that has access the A line, M Line, and N line (see detailed discussion in Section 4.1.2).

OCTA provides bus transit services all throughout Orange County. OCTA has partnered with UCI's Parking and Transportation Services Office to offer the University Pass (U-Pass) for UCI students. After purchase the U-Pass provides unlimited regular service throughout Orange County. OCTA bus routes around the UCI campus include routes 59, 79, 167, 178, 213, and 473.

The iShuttle is operated and managed by OCTA and provides a first and last mile transportation option in the City of Irvine. iShuttle routes start at the Tustin and Irvine Metrolink stations (times to meet the train schedule) and stop at places near major employment, retail, and residential areas such as the Irvine Business Complex area, John Wayne Airport, and Irvine Spectrum. While the iShuttle does not directly stop at the UCI campus, students can take an OCTA bus stop to transfer to an iShuttle stop, if needed.





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Figure 2-2
 Anteater Express Routes and Stops
 2.4

2.4 Existing Transportation Demand Management (TDM)

Transportation Demand Management (TDM) measures are important and effective tools to reduce greenhouse gas emissions (GHG), increase vehicle efficiency, and reduce VMT. Co-benefits to reducing VMT include fewer vehicle crashes, improved air quality and improved physical and mental health. UCI proactively utilizes TDM measures through UCI's Sustainable Transportation Program, which complies with the UC's Sustainable Transportation Policy Goals.

2.4.1 UCI SUSTAINABLE TRANSPORTATION PROGRAM

UCI's Sustainable Transportation Program utilizes various TDM measures and was created with the goal to "reduce the total number of vehicle trips made to the campus by faculty, staff and students and reduce commute emissions". Since 2007 UCI has implemented a comprehensive program of TDM measures resulting in an average vehicle ridership of 2.11 (based on 2019 survey), the highest of any employer greater than 3,000 in the Orange, Los Angeles, and Riverside County SCAQMD. UCI's annual investment in TDM measures is approximately \$5 million.

TDM measures result in a reduction of VMT. UCI's Transportation and Distribution Services offers several sustainable commuting options as listed below:

- Carpool matching through WAZEpool (an on-demand carpool matching service).
- Carpool incentive program for employees and graduate students (free parking for carpools),
- Ride-share through Zimride (a private ride-sharing network for UCI),
- OC Vanpools (also known as "super carpools" subsidized in part by OCTA and operated through a third-party provider),
- Guaranteed Ride Home Program,
- "University Pass" transit program with 80% subsidy for unlimited OCTA ridership and coordination OCTA of routes,
- 20% rebate on commuter Metrolink and Amtrak train passes,
- Convenient cost-effective options to reduce monthly transportation expenses for University students and employees,
- UCI – OC University Bus Program (provides unlimited access to the OCTA bus system),
- Zipcar car sharing program with 16 cars and over 6,000 on campus members (the University's carshare),
- UCI Zotwheels bike ridesharing service (currently offline due to expansion),
- Anteater Express (UCI's campus shuttle service with live bus tracking), in 2019 UCI shuttle system ridership was 2.2 million passengers at a cost of \$2.8 million,
- UCI Medical Campus shuttle route (provides rides to UCI Medical Hospital located outside of the campus),
- Bicycle program highlights include BikeUCI Ambassadors, the most comprehensive peer-to-peer outreach program for biking in the country; over 3,000 bike parking spaces; significant investment in bikeway infrastructure; bicycle education for campus affiliates of all bicycling levels offered quarterly; and major bi-annual bike education festivals to encourage safe and legal riding.



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The TDM strategies listed above are consistent with California Air Pollution Control Officers Association's (CAPCOA's) comprehensive list of TDM mitigation measures that reduce GHG emissions. The Sustainability Tracking, Assessment & Rating System (STARS) website summarizes the results of a survey of UCI students and employees conducted in 2017. The purpose of the survey was to evaluate student and employee commute habits. The survey concludes that 33 percent of employee survey respondents commute with only the driver in the vehicle (single occupancy vehicle), 18 percent vanpool or carpool, 4 percent take the campus shuttle or public transportation, less than one percent use a motorcycle or scooter, 5 percent telecommute, and 40 percent walk, bicycle, or use other non-motorized means. Overall, this shows that approximately 67 percent of employees use more sustainable commuting options. This can be attributed to the several TDM measures listed above.

All staff and faculty of the Project are eligible and will be encouraged to participate in UCI's TDM programs.

2.4.2 UC SUSTAINABLE TRANSPORTATION POLICY

UCI's Sustainable Transportation Program is used to achieve the UC's Sustainable Transportation Policy Goals. Specific to commute trips, the UC Sustainable Transportation Policy is as follows:

- By 2025, each location shall strive to reduce its percentage of employees and students commuting by single-occupancy vehicles (SOV) by 10 percent relative to its 2015 SOV commute rates. By 2050, each location shall strive to have no more than 40 percent of its employees and not more than 30 percent of all employees and students commuting to the location by SOV.
- By 2025, each location shall strive to have at least 4.5 percent of commuter vehicles by zero-emission vehicles (ZEV). By 2050, each location shall strive to have at least 30 percent of commuter vehicles by ZEV.

The progress of each UC campus towards the goals stated above is continuously monitored. The policy goals above are a part of UCI's LRDP EIR mitigation measures and have been implemented through UCI Sustainable Transportation Program and are continuously monitored for progress to achieve the goals by 2025 and 2050. The current TDM programs that are in place have reduced SOV commute and would be extended to the Project.



3 Transportation Analysis Methodology

This chapter describes the analysis methodology and significance thresholds utilized in this analysis.

3.1 Methodology

Under CEQA, administrative regulations and guidelines are set forth that explain how to determine whether an activity (i.e., proposed Project) is subject to environmental review, the steps to undertake the review, and the required content of the review. Since the original CEQA, subsequent legislations have updated the CEQA guidelines to better achieve the State's efforts to improve air quality and reduce GHG through transportation planning. Updated CEQA guidelines include sections created by Senate Bill 743 (SB 743). The University of California has adopted the CEQA guidelines making VMT the primary metric for evaluating transportation impacts.

To evaluate the Project's potential transportation impact, this analysis uses recommendations from the Governor's Office of Planning and Research Technical Advisory (OPR's Technical Advisory) and the City of Irvine VMT Guidelines. Prior to conducting a full VMT analysis, a screening evaluation is carried out to determine if the Project may be assumed to cause a less-than-significant transportation impact. If the Project does not meet one of the screening criteria, a VMT analysis is carried out where the Project VMT rate is compared to the applicable threshold of significance. Feasible mitigation measures are identified if the Project is found to cause a significant transportation impact.

Additional qualitative analyses are also presented in this transportation analysis that evaluates the Project's potential impacts on the multi-modal network, surrounding land uses, and consistency with the Southern California Association of Governments Regional Transportation Plan/Sustainable Communities Strategy (SCAG RTP/SCS).

3.2 Screening Evaluation Criteria and Impact Analyses

The screening evaluation and thresholds of significance used in this transportation analysis are summarized in **Table 3-1**.

3.2.1 SCREENING EVALUATION CRITERIA

Prior to undertaking a detailed VMT study, OPR's Technical Advisory advises that lead agencies conduct a screening process "to quickly identify when a project should be expected to cause a less-than-significant impact without conducting a detailed study". OPR suggests that lead agencies may presume a project has a less-than-significant transportation impact using project size, maps, transit availability and provision of affordable housing. The City of Irvine Guidelines utilizes a similar screening criteria.



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Transportation Analysis Methodology
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Table 3-1 Analysis Overview

Category	Description	Threshold
1. Screening Evaluation	<p>OPR's Technical Advisory and the City of Irvine's VMT Guidelines provides screening categories for land use projects.</p> <p>These screening categories include: Trip generation screening (Small Project) Proximity to transit (Transit Priority Area) Locally serving uses Affordable residential development Map-based screening (Low VMT Areas)</p>	<p>If the Project meets one of the screening criteria, the Project would have a less-than-significant impact and no further evaluation is needed.</p> <p>Refer to Table 3-2 for individual screening categories and thresholds.</p>
2. VMT Impact Analysis	<p>If the Project does not meet on of the screening criteria, Project generated VMT is evaluated. The Project's VMT per capita is compared to the applicable threshold of significance. For residential projects, OPR's Technical Advisory and the City of Irvine's VMT Guidelines recommends using VMT per capita. The City of Irvine's impact analysis methodology and significance thresholds are used in this analysis.</p>	<p>If the Project's VMT per capita is less than the threshold of significance, the Project would have a less-than-significant impact. The threshold of significance is 15% less than existing countywide average VMT per capita.</p>
3. Multi-modal transportation Impact Analysis	<p>Identify existing pedestrian, bicycle, and transit facilities that provide alternative modes of transportation in place of a single-occupancy vehicle around the Project site. Evaluate the accessibility and connectivity of pedestrian, bicyclist, and transit facilities around the Project site.</p>	<p>If the Project does not restrict or eliminate access to the active transportation network than the Project would have a less-than-significant impact.</p>
4. Land Use Impact Analysis	<p>Interactions between different land uses and interactions between land use and transportation have the potential to reduce VMT. Evaluate the surrounding uses of the Project and the interaction between land use and transportation.</p>	<p>If the Project is consistent with the existing land use patterns, or is part of an approved plan, then the Project would have a less-than-significant impact.</p>
5. RTP/SCS Consistency (Cumulative Impact Analysis)	<p>The purpose of the RTP/SCS is to evaluate regional land use patterns and transportation systems to achieve the State's target GHG emissions reduction goals. Evaluate if the Project is consistent with the RTP/SCS.</p>	<p>If the Project is consistent with the RTP/SCS, then the Project would have a less-than-significant cumulative impact.</p>



UCI MESA COURT RESIDENCE HALL EXPANSION PROJECT TRANSPORTATION ANALYSIS

Transportation Analysis Methodology
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This analysis uses both OPR's Technical Advisory recommendations and the City of Irvine's screening criteria. The screening criteria is summarized in **Table 3-2**. The Project would meet two screening criteria (the Project only needs to meet one), the Trip Generation screening (small project) and Proximately to High Quality Transit screening. Both are discussed in detail in Chapter 4.0.

3.2.2 IMPACT ANALYSES

As shown in the previously referenced **Table 3-1**, a VMT impact analysis is carried out only if the Project does not meet at least one of the screening criteria described above. In addition, qualitative analyses regarding the multimodal transportation network, diversity of surrounding land uses, and consistency with the SCAG RTP/SCS is carried out to evaluate the Project's compatibility with the statutory goals of the VMT metric.

The multimodal transportation network is evaluated by identifying existing pedestrian, bicycle and transit facilities that provide alternative modes of transportation in place of a single-occupancy vehicle. If the Project does not restrict or eliminates access the Project has a less-than-significant impact.

Land use impacts are typically addressed in area plans, specific plans, long range development plans or General Plans. If the Project is part of an existing plan and if the Project is complementary with the existing land use patterns, then the Project is assumed to have a less-than-significant impact.

Cumulative impacts are evaluated by demonstrating the Project's consistency with the RTP/SCS. If the Project is consistent with the RTP/SCS, then the Project would have a less-than-significant cumulative impact.



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Transportation Analysis Methodology
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Table 3-2 Screening Evaluation Criteria

Category	Description	Criteria/Threshold
Trip Generation Screening (Small Project)	Trip generation is used to define a small project. Small projects can be screened out from additional VMT analysis.	Per OPR Technical Advisory, if the Project generates less than 110 trips per day, the Project would have a less-than-significant impact. The City of Irvine uses a threshold of 250 trips per day.
Proximity to High Quality Transit (Transit Priority Area)	Projects within ½ mile of a major transit stop or a stop located along a high-quality transit corridor reduces VMT and can be screened out from additional VMT analysis. The Project must also meet additional criteria regarding Floor Area Ratio, parking, affordable housing units, and consistency with the applicable Sustainable Communities Strategy.	Per OPR Technical Advisory, If the Project is within ½ mile of a high-quality transit stop/corridor, and meet the other four requirements, the Project would have a less-than-significant impact. The City of Irvine has identified two Transit Priority Areas (TPA) in the City.
Locally Serving Use Screening	Retail that is 50,000 square feet or smaller are generally considered local serving and can be screened out from additional VMT analysis. In addition to retail, the City of Irvine includes local-serving uses such as a daycare or a K-12 local serving public school.	Per OPR Technical Advisory, retail component of a Project that is less than 50,000 square feet then the retail component would have a less-than-significant impact. The City of Irvine use 100,000 square feet or smaller to define local serving retail.
Affordable Housing Screening	100% affordable housing in infill locations can be screened out from additional VMT analysis.	Per OPR Technical Advisory and the City of Irvine, if the Project consists of all affordable units and is located in an infill location, then the Project would have a less-than-significant impact.
Map-Based Screening (Low-VMT Area Screening)	Projects that are located in areas with low VMT can be screened out from additional VMT analysis.	Per OPR Technical Advisory, VMT maps can be used to identify areas within a jurisdiction where VMT is lower than the threshold. Those areas would generally have a less-than-significant impact. The City of Irvine does not use the map-based screening criteria



4 Transportation Impact Analysis

The following summarizes the findings of the screening evaluation and transportation impact analysis.

4.1 Screening Evaluation

Table 4-1 summarizes the screening evaluation. The Project would meet the Trip Generation (Small Project) screening criteria and the Proximity to High Quality Transit screening criteria.

Table 4-1 Screening Summary

Category	Description	Project	Meets Criteria?
Trip Generation (Small Project)	Does the Project generate less than 250 trips per day?	The Project would result in an increase of approximately 113 trips per day.	Yes
Proximity to High Quality Transit (Transit Priority Area)	Is the Project within a half-mile of high-quality transit stops or corridor and meet the other four requirements: has a Floor Area Ratio of greater than 0.75, includes less parking than required by the jurisdiction, is consistent with the RTP/SCS, and does not replace affordable housing units with a smaller number of moderate, or high-income residential units. Is the Project in one of the two TPAs identified by the City of Irvine VMT Guidelines?	Yes, the Project is within a half mile from a high-quality corridor. The Project is approximately 0.40 mile from high-quality transit stops and corridor, Anteater Express A Line, N Line, and M Lines. All routes have headways of less than 15 minutes in the morning (7am to 11am) and in the afternoon service (11am to 7pm). The Project is not in one of the two TPAs identified by the City of Irvine.	Yes
Locally Serving Use	Is the Project 100,000 square feet or less of retail? Is the Project a daycare or K-12 local serving public school?	The Project is a University use and is not considered a local-serving use per the City of Irvine VMT Guidelines.	No
Affordable Housing	Does the Project consist of 100% affordable units?	The Project is not affordable housing.	No
Map-Based (Low-VMT Area)	Is the Project in a low-VMT Area?	The City of Irvine does not use the map-based screening criteria; therefore, no maps are available for the area.	No

4.1.1 TRIP GENERATION SCREENING

OPR’s Technical Advisory recommends that small projects that generate less than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact. The City of Irvine Guidelines uses a threshold of 250 daily trips based on latest edition of the Institute of Transportation Engineers (ITE) Trip Generation Handbook.



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The 11th Edition ITE Trip Generation Handbook does not have trip rates for a dormitory use. Therefore, Project trips are estimated using trip rates from the UCI MCTM. **Table 4-2** summarizes the trip rates and the Project's estimated trip generation.

Table 4-2 Project Vehicle Trip Generation Summary

ADT Trip Rate for Undergrad Dormitory					
Land Use	Unit	Rate 1	Rate 2	Rate 1 Description	Rate 2 Description
Undergrad Dorm	BED	0.235	0.015	Non-academic vehicle trips (Off-Campus)	Internal academic vehicle trips (On-Campus)
Source: UCI Main Campus Traffic Model for Trip Rate, and UCI Staff for Mesa Court Permit Take Rate of 14.7% (see note below)					
Note: The ADT trip rate for Single Undergrad Housing category in the Long Range Development Plan (LRDP) is 1.6 per unit (BED) with a car for Rate 1 and .10 for Rate 2. A vehicle ownership factor of .147 was applied to 1.6 (Rate 1) and .01 (Rate 2) to derive the trip rates shown in the table.					
Peak Hour Trip Rates (Percent of ADT)					
Category	AM Peak Hour		PM Peak Hour		
	Inbound	Outbound	Inbound	Outbound	
Residence	0.5%	5.3%	4.6%	2.8%	
The trip distribution derived is for average weekday vehicle trips.					
Project ADT Trip Generation					
Land Use	Amount	Unit	Rate 1 Off-Campus vehicle trips	Rate 2 On-Campus vehicle trips	
Undergrad Dorm	450	BED	106	7	
Project Peak Hour Vehicle Trip Generation					
Land Use	AM Peak Hour		PM Peak Hour		
	Inbound	Outbound	Inbound	Outbound	
Off-Campus Vehicle Trips					
Undergrad Housing	1	6	5	3	
On-Campus Vehicle Trips					
Undergrad Housing	0	0	0	0	
Total	1	6	5	3	



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As shown in **Table 4-2** the Project would generate approximately 113 daily vehicle trips, 7 trips during the AM peak hour and 8 trips during the PM peak hour. The Project’s net daily trips of 113 is below the 250-trip threshold used by the City of Irvine. Therefore, the Project meets the screening criteria and would have a less-than-significant transportation impact. Although the Project only needs to meet one screening criteria, the Project also meets the Proximity to High Quality Transit criteria as described below.

4.1.2 PROXIMITY TO HIGH QUALITY TRANSIT

OPR’s Technical Advisory suggests that a project would have a less-than-significant transportation impact if the project is within a half-mile of an “existing major transit stop or an existing stop along a high-quality transit corridor”. A major transit stop is defined as “the intersection of two or more major bus routes with a frequency service interval of 15 minutes or less during the morning and afternoon peak commute periods”. A high-quality transit corridor is defined as an existing corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours. Based on this definition, the proposed Project would meet this screening criteria.

As previously described in Section 2.3, Anteater Express is UCI’s bus transit system that provides transportation to various areas on and off the UCI Campus. Four Anteater Express stops are located within a half-mile walk of the Project site. One stop is approximately 0.40-mile walking distance at the Humanities and Fine Arts Building on West Peltason Drive and provides access to the M line. Three additional stops are approximately 0.40-mile walking distance at the University Center on Campus Drive and provides access to the M Line, N Line, and A Line. The previously referenced **Figure 2-2** illustrates the Project site and location of the routes and stops discussed here. Headways for these lines are summarized in **Table 4-3**.

Table 4-3 Anteater Express Headways

Line	Service/Headway Times		
	Morning 7:00 AM – 11:00 AM	Afternoon 11:00 AM – 7:00 PM	Evening 7:00 PM – 10:30 PM
A Line	Every 8 minutes	Every 13 minutes	Every 13 minutes
N Line	Every 7 minutes	Every 9 minutes	Every 13 minutes
M Line	Every 13 minutes	Every 13 minutes	Every 25 minutes

Since all three Anteater Express routes have headways less than 15 minutes during the peak commute times, all three routes are high-quality transit corridors. In addition, the Project meets the remaining criteria. The Project has a floor area ratio greater than 0.75, includes less parking than required by the jurisdiction, does not replace affordable housing units, and is consistent with the Southern California Association of Governments Regional Transportation/Sustainable Communities Strategy (SCAG RTP/SCS) since it is within the planned growth in the LRDP.

As demonstrated here, the Project meets the Proximity to High-Quality Transit and would have a less-than-significant transportation impact.



4.2 Impact Analysis

The Project meets two screening criteria (only needs to meet one), therefore a quantitative VMT analysis is not needed. However, provided in this Section are additional qualitative analyses as previously described in Section 3.2.2.

4.2.1 MULTIMODAL TRANSPORTATION ANALYSIS

The Project is evaluated qualitatively with consideration to the multimodal transportation network. A goal of using the VMT metric for evaluation of transportation impacts is to facilitate the “development of multimodal transportation networks”. A multimodal transportation network provides opportunities for people to safely get to their destinations by means other than a single occupancy vehicle. Multimodal networks are a component of a “Complete Street” that address the needs of pedestrians, bicyclists, transit riders and motorists. The development of multimodal features within a development project is a TDM strategy listed by CAPCOA that would reduce VMT and GHG emissions. OPR also notes that the increase in transit ridership “should not be considered an adverse impact”, noting that while the increase in ridership may slow transit service, it adds accessibility, destinations and proximity. When choices in transportation are available, single occupancy vehicle VMT is reduced. Projects that block access, remove, or interfere with pedestrian paths, bicycle paths, or transit stops would have a significant impact on VMT.

Existing active transportation and transit around the Project site is described in Sections 2.2, Section 2.3, and Section 4.1.2, respectively. The previously referenced **Figure 1-3** shows the various pedestrian pathways connecting Mesa Court internally as well as with the rest of the campus. In regard to bicycle accessibility, the Project is accessible by bike lanes on University Drive, Mesa Road, West Peltason Drive, Pereira Drive, and Alumni Court. In regard to transit, the previously referenced **Figure 2-2** shows the Anteater Express shuttle services stops near the Project site. Anteater Express timetables are provided in Appendix A.

The development of the Project would not remove any pedestrian or bicycle facilities or transit stops. The Project’s design features include shared pedestrian/bicycle pathways and pedestrian/bicyclists’ amenities that would be on-site making walking and biking a comfortable and a low-stress option. Since the Project is not removing any pedestrian, bicycle or transit facilities, the Project would have a less-than-significant impact.

4.2.2 LAND USE IMPACT ANALYSIS

Another goal of the VMT metric is the development of “a diversity of land uses”. OPR’s Technical Advisory notes that new land use projects alone will not reduce VMT, however “interactions between land use projects, and also between land use and transportation projects, existing and future, together affect VMT”.



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The Project is part of a larger plan, specifically, UCI's LRDP. The 2007 LRDP identified general land use developments to support future campus growth. Development of the LRDP and the resulting mix of land use contained in the 2007 LRDP follow planning principles that reflect the desired character for the campus. The principles are as follows ¹:

1. Accommodate the physical resources needed to support strategic academic goals
2. Provide access while maintaining environmental quality
3. Build a cohesive academic community
4. Build and maintain quality residential neighborhoods
5. Establish centers of activity to promote campus life
6. Maintain human scale
7. Maintain planning discipline to optimize valuable land resources
8. Manage transportation needs proactively
9. Unify the campus with linkages
10. Preserve and enhance open space corridors to balance campus development
11. Develop high-quality edges with neighboring communities
12. Promote sustainable development practices

Application of such principles has created a campus with a diversity of land uses and a complimentary transportation network that has VMT reducing outcomes. This is reflected in the 2017 student survey that indicated 79 percent of students are using sustainable transportation methods such as walking, biking, transit, carpooling, or vanpooling. Similarly, 67 percent of employees are using the sustainable commuting options as their primary method of transportation. If a future project is contained within the LRDP or is consistent with the land use patterns of the LRDP, then the project would have less than significant impact on VMT.

The Project is consistent with the 2007 LRDP, meaning this Project was strategically planned to balance the Academic, Support, Research and Development, and recreational uses of the campus. Therefore, since the Project is consistent with the LRDP, and the LRDP was developed with sustainable development practices that balance land use, the environment and transportation, the Project would have less-than-significant transportation impact.

4.2.3 SCAG RTP/SCS CONSISTENCY (CUMULATIVE IMPACT ANALYSIS)

The Project is evaluated with consideration to consistency with SCAG's Regional RTP/SCS. Projects that are consistent with the RTP/SCS would have less than significant cumulative impact on VMT.

Metropolitan Planning Organizations (MPOs) are required to develop an RTP/SCS. The purpose of the RTP/SCS is to evaluate regional land use patterns and transportation systems to achieve the State's target GHG emissions reduction goals. For this analysis, if the proposed Project is inconsistent with the RTP/SCS, then the inconsistency should be evaluated for a significant impact on transportation.

The UCI campus is located within the SCAG MPO region. In 2020 SCAG's Regional Council adopted Connect SoCal. According to the SCAG website, for the Connect SoCal effort SCAG utilized a "Bottom-

¹ 2007 Long Range Development Plan, A Framework to Guide Physical Development at the University of California, Irvine, Through 2025-2026, November 2007.



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Up Local Input and Envisioning Process” where feedback is solicited from local jurisdictions on localized information such as base land use and anticipated socio-economic growth (populations, employment, household). This information is typically a component of the City’s General Plan, and if available, the City’s traffic analysis model.

The City of Irvine initially adopted its General Plan in December 1973 with a comprehensive update in 2000. Since then, the City has approved a number of amendments focused on development of vacant areas in the City. The City maintains the Irvine Transportation Analysis Model TransCAD version (ITAM TC) which incorporates buildout conditions (per the City General Plan) for the City and is frequently updated as projects go through entitlements. ITAM TC houses the type of information solicited by SCAG for use in the RTP/SCS.

The latest version of the City of Irvine zoning map shows that the Project site is zoned for Institutional uses, which is defined in the City of Irvine General Plan as “a variety of publicly or privately owned and operated facilities (hospitals, schools, religious facilities) and other nonprofit land uses.” The City of Irvine and UCI have a long-standing history of cooperation in regard to campus planning, and future growth and coordination has been made between UCI’s LRDP and the City’s General Plan. Therefore, growth assumed in UCI’s LRDP is reflected in the City’s General Plan as well as ITAM TC and this type of information is supplied to SCAG during their Bottom-Up Local Input and Envisioning process. The Project is consistent with the land use designation in the 2007 LRDP. As mentioned above, coordination has been made between the land use assumptions used in the 2007 LRDP and City of Irvine.

Therefore, since the Project was accounted for in the City’s growth forecast and is consistent with the current zoning map, the Project would be consistent with the latest RTP/SCS, Connect SoCal, and would have a less-than-significant cumulative transportation impact.



5 Conclusion

This transportation analysis was conducted to determine if the Project would have transportation impacts. Project screening and a qualitative impact analysis was conducted.

Screening Evaluation – The Project meets two of the screening criteria. The Project would generate approximately 113 net new trips a day, which is below the City of Irvine’s 250 daily trip threshold for a Small Project. Therefore, the Project would have a less-than-significant transportation impact.

The Project is also located near high-quality transit stops and high-quality transit corridor, serviced by UCI’s Anteater Express. A Line, M Line, and N Line, all have service headways less than 15 minutes during peak commute times and the Project site is within a half-mile walking distance to those stops. The Project has a floor area ratio greater than 0.75, includes less parking than required by the jurisdiction, does not replace affordable housing units, and is consistent with the SCAG RTP/SCS. Therefore, the Project would have a less than significant transportation impact.

Multimodal Transportation Analysis – The Project would not remove any pedestrian facilities, bicycle facilities, or transit stops. Rather, the Project would enhance such facilities through the site development design features such as pedestrian pathways to facilitate walking, and bike amenities to encouraging biking. Since the Project is enhancing the multimodal transportation network, the Project would have a less-than-significant transportation impact.

Land Use Impact Analysis – The Project land use is consistent with the LRDP that was developed with sustainable development practices that balance land use, the environment and transportation. Therefore, the Project would have a less-than-significant transportation impact.

RTP/SCS Consistency (Cumulative Impact Analysis) – The Project land use is consistent with UCI’s 2007 LRDP and the City of Irvine’s General Plan Zoning Map. Through SCAG’s Bottom-Up Local Input and Envisioning Process, there has been coordination between the City of Irvine and SCAG regarding land use assumptions used in the 2007 LRDP and the City of Irvine General Plan. Therefore, the Project would be consistent with the adopted Connect SoCal and the Project would have-a-less than significant transportation impact.

In summary, the Project’s impact on transportation is shown to be less-than-significant.



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6 References

1. University of California Irvine Long Range Development Plan 2007 Update Traffic Study, Austin-Foust Associates, Inc., May 2007.
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4. Sustainable Transportation Webpage, UCI transportation and Distribution Services, <https://www.parking.uci.edu/AT/incentives/> , last accessed June 2019.
5. Technical Advisory on Evaluating Transportation Impacts on CEQA, California's Office of Planning and Research, December 2018.
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8. City of Irvine's Strategic Active Transportation Plan, City of Irvine, May 2020.
9. CEQA Manual Volume III. Technical Appendices, City of Irvine, April 2020
10. CEQA VMT Impact Analysis Guidelines, City of Irvine, April 2020
11. SB 743 Implementation VMT Technical Appendix Version 1.4, City of Irvine, May 2020.
12. Sustainable Transportation Policy Goals, University of California Office of the President, <https://www.ucop.edu/sustainability/policy-areas/sustainable-transportation/index.html>
13. Traffic Study Guidelines Adopted by City Council on June 23, 2020 Technical Update approved on November 2, 2021 by the Transportation Commission, City of Irvine Department of Public Works and Transportation.



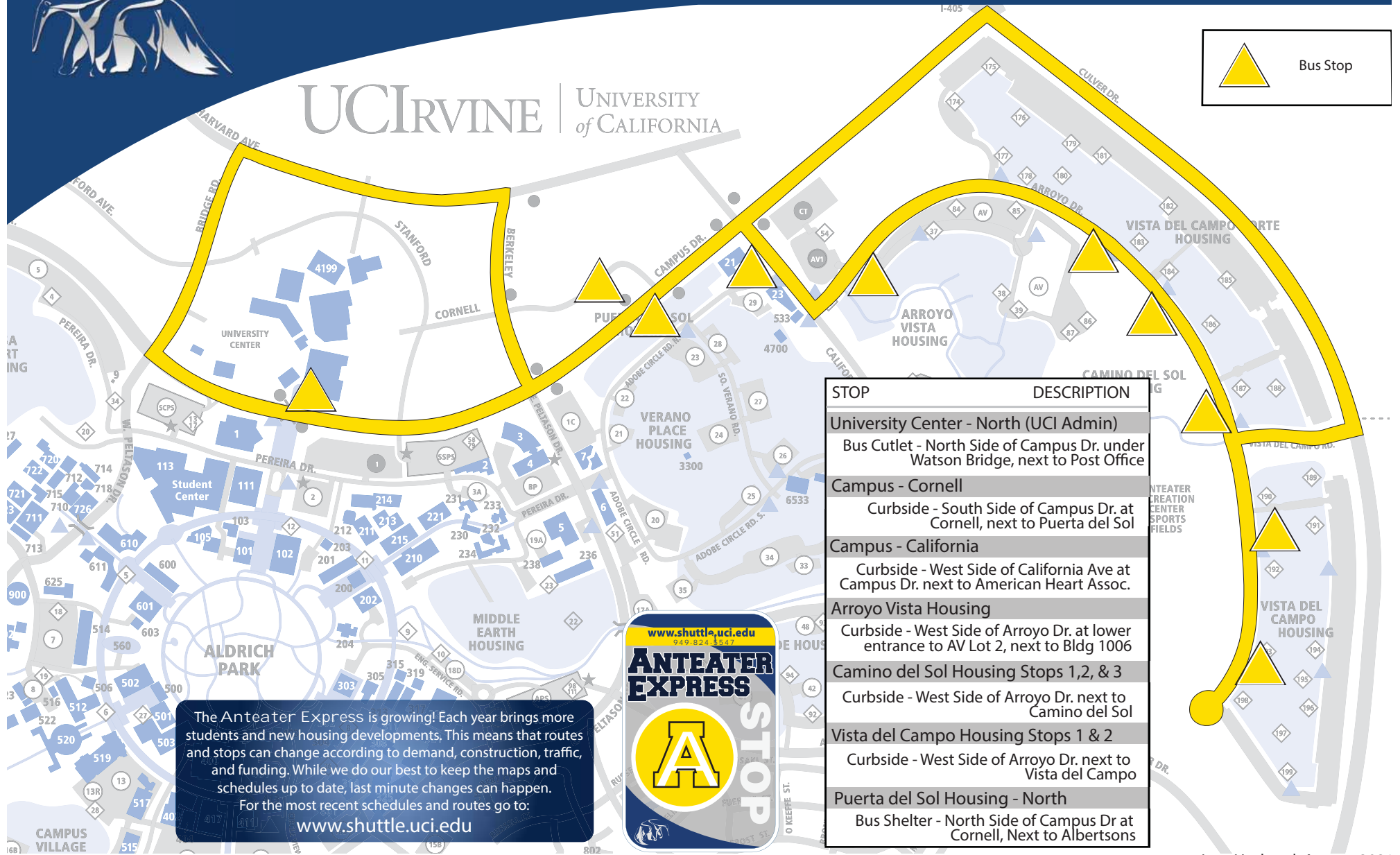
Appendix A Anteater Express Routes and Service Schedule



ANTEATER EXPRESS



A LINE: Arroyo-Admin



STOP	DESCRIPTION
University Center - North (UCI Admin)	Bus Cutlet - North Side of Campus Dr. under Watson Bridge, next to Post Office
Campus - Cornell	Curbside - South Side of Campus Dr. at Cornell, next to Puerta del Sol
Campus - California	Curbside - West Side of California Ave at Campus Dr. next to American Heart Assoc.
Arroyo Vista Housing	Curbside - West Side of Arroyo Dr. at lower entrance to AV Lot 2, next to Bldg 1006
Camino del Sol Housing Stops 1, 2, & 3	Curbside - West Side of Arroyo Dr. next to Camino del Sol
Vista del Campo Housing Stops 1 & 2	Curbside - West Side of Arroyo Dr. next to Vista del Campo
Puerta del Sol Housing - North	Bus Shelter - North Side of Campus Dr at Cornell, Next to Albertsons

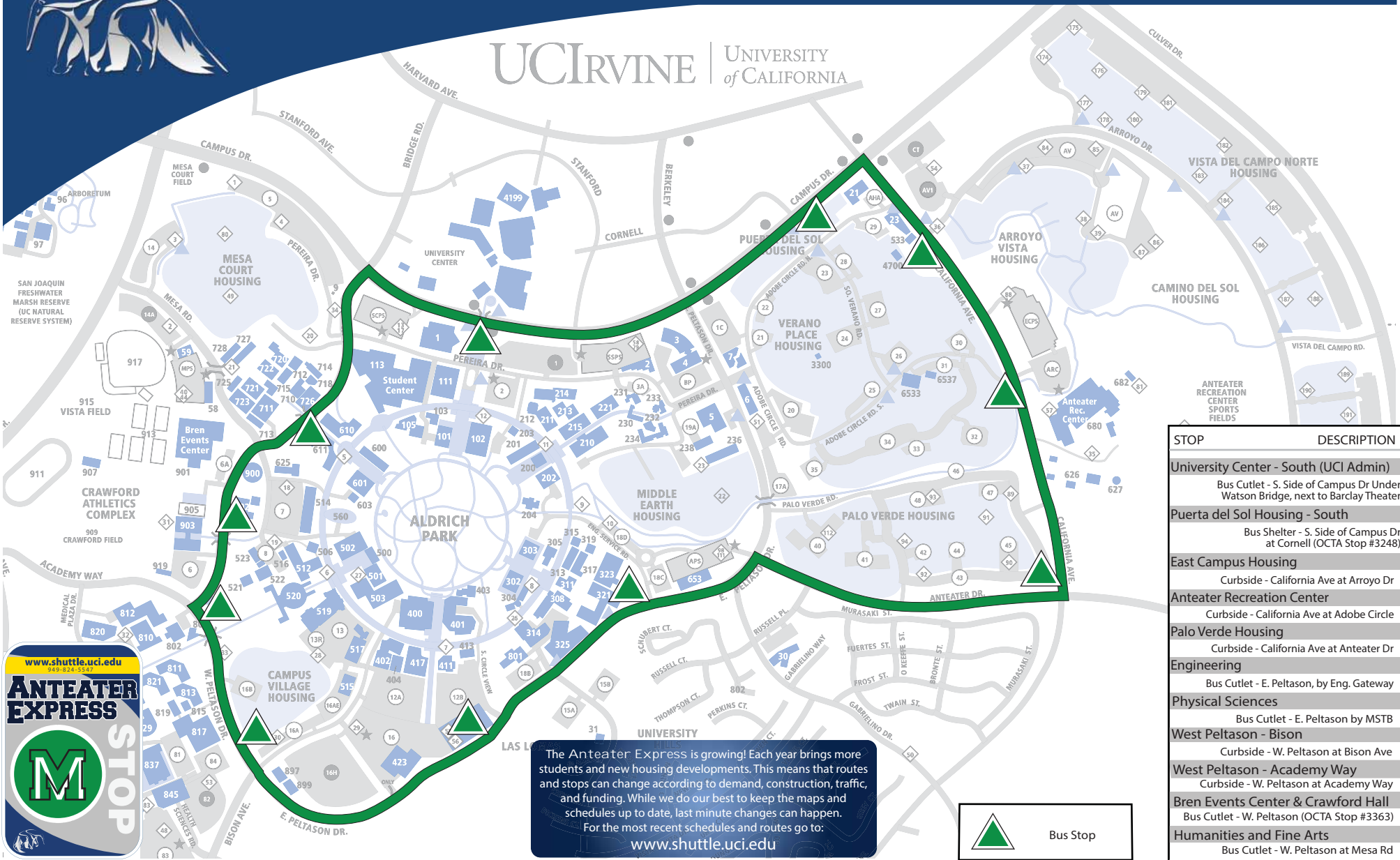
The Anteater Express is growing! Each year brings more students and new housing developments. This means that routes and stops can change according to demand, construction, traffic, and funding. While we do our best to keep the maps and schedules up to date, last minute changes can happen. For the most recent schedules and routes go to: www.shuttle.uci.edu



ANTEATER EXPRESS



M LINE: MAIN CAMPUS



www.shuttle.uci.edu
949-824-5547

ANTEATER EXPRESS

M STOP

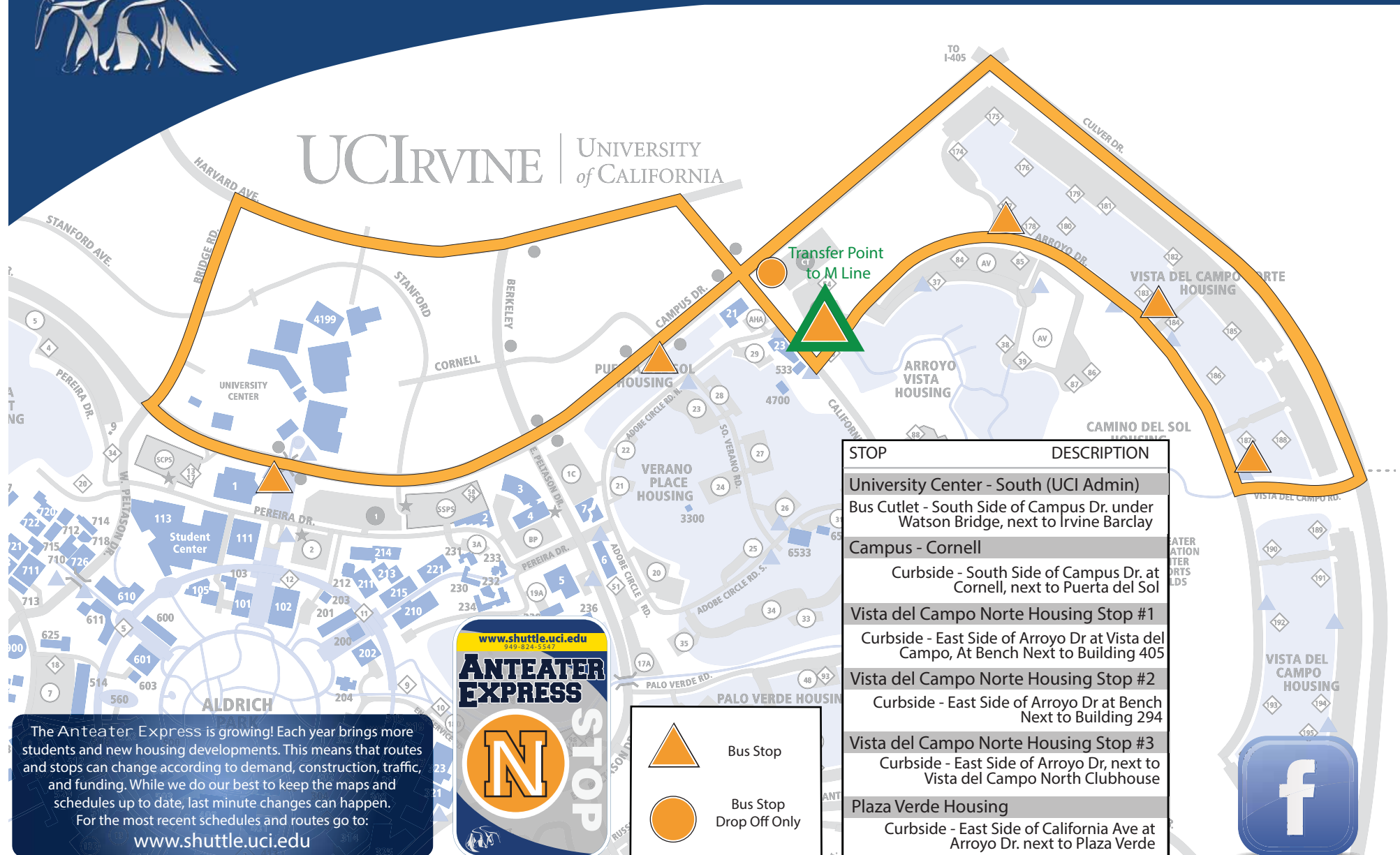
The Anteater Express is growing! Each year brings more students and new housing developments. This means that routes and stops can change according to demand, construction, traffic, and funding. While we do our best to keep the maps and schedules up to date, last minute changes can happen. For the most recent schedules and routes go to: www.shuttle.uci.edu

STOP	DESCRIPTION
University Center - South (UCI Admin)	Bus Cutlet - S. Side of Campus Dr Under Watson Bridge, next to Barclay Theater
Puerta del Sol Housing - South	Bus Shelter - S. Side of Campus Dr at Cornell (OCTA Stop #3248)
East Campus Housing	Curbside - California Ave at Arroyo Dr
Anteater Recreation Center	Curbside - California Ave at Adobe Circle
Palo Verde Housing	Curbside - California Ave at Anteater Dr
Engineering	Bus Cutlet - E. Peltason, by Eng. Gateway
Physical Sciences	Bus Cutlet - E. Peltason by MSTB
West Peltason - Bison	Curbside - W. Peltason at Bison Ave
West Peltason - Academy Way	Curbside - W. Peltason at Academy Way
Bren Events Center & Crawford Hall	Bus Cutlet - W. Peltason (OCTA Stop #3363)
Humanities and Fine Arts	Bus Cutlet - W. Peltason at Mesa Rd

ANTEATER EXPRESS





N LINE: VDCN - ADMIN



UCI IRVINE | UNIVERSITY of CALIFORNIA

STOP	DESCRIPTION
University Center - South (UCI Admin)	
Bus Cutlet - South Side of Campus Dr. under Watson Bridge, next to Irvine Barclay	
Campus - Cornell	Curbside - South Side of Campus Dr. at Cornell, next to Puerta del Sol
Vista del Campo Norte Housing Stop #1	Curbside - East Side of Arroyo Dr at Vista del Campo, At Bench Next to Building 405
Vista del Campo Norte Housing Stop #2	Curbside - East Side of Arroyo Dr at Bench Next to Building 294
Vista del Campo Norte Housing Stop #3	Curbside - East Side of Arroyo Dr, next to Vista del Campo North Clubhouse
Plaza Verde Housing	Curbside - East Side of California Ave at Arroyo Dr. next to Plaza Verde



 Bus Stop
 Bus Stop Drop Off Only

The Anteater Express is growing! Each year brings more students and new housing developments. This means that routes and stops can change according to demand, construction, traffic, and funding. While we do our best to keep the maps and schedules up to date, last minute changes can happen. For the most recent schedules and routes go to: www.shuttle.uci.edu



A Line: Monday - Thursday

UNIVERSITY CENTER, NORTH STOP No. 107	CAMPUS - CORNELL STOP No. 101	CALIFORNIA - CAMPUS STOP No. 108	ARROYO VISTA HOUSING STOP No. 109	CDS HOUSING STOP #1 STOP No. 110	CDS HOUSING STOP #2 STOP No. 111	CDS HOUSING STOP #3 STOP No. 112	VDC HOUSING STOP #1 STOP No. 103	VDC HOUSING STOP #2 STOP No. 104	PUERTA DEL SOL, NORTH STOP No. 113
1st Departure: 7:38 AM	1st Departure: 7:42 AM	1st Departure: 7:42 AM	1st Departure: 7:20 AM	1st Departure: 7:22 AM	1st Departure: 7:22 AM	1st Departure: 7:22 AM	1st Departure: 7:25 AM	1st Departure: 7:25 AM	1st Departure: 7:31 AM
a bus every 8 minutes									
10:31 AM	10:35 AM	10:35 AM	10:36 AM	10:39 AM	10:39 AM	10:39 AM	10:43 AM	10:43 AM	10:49 AM
a bus every 13 minutes									
Last Departure: 10:30 PM	Last Departure: 10:34 PM	Last Departure: 10:34 PM	Last Departure: 10:03 PM	Last Departure: 10:06 PM	Last Departure: 10:06 PM	Last Departure: 10:06 PM	Last Departure: 10:10 PM	Last Departure: 10:10 PM	Last Departure: 10:16 PM
: Buses will not leave prior to their listed departure time. Timed Stops are identified with a clock at the top of their respective columns. ***No Service on the following dates/holidays: (Nov 11, 24-25)***									








Schedule for Sept 22, 2022 - Dec 9, 2022
Produced by Anteater Express
Updated: 09/02/2022
(949) 824-5547

A Line: Friday

UNIVERSITY CENTER, NORTH STOP No. 107	CAMPUS - CORNELL STOP No. 101	CALIFORNIA - CAMPUS STOP No. 108	ARROYO VISTA HOUSING STOP No. 109	CDS HOUSING STOP #1 STOP No. 110	CDS HOUSING STOP #2 STOP No. 111	CDS HOUSING STOP #3 STOP No. 112	VDC HOUSING STOP #1 STOP No. 103	VDC HOUSING STOP #2 STOP No. 104	PUERTA DEL SOL, NORTH STOP No. 113
1st Departure: 7:38 AM	1st Departure: 7:42 AM	1st Departure: 7:42 AM	1st Departure: 7:20 AM	1st Departure: 7:22 AM	1st Departure: 7:22 AM	1st Departure: 7:22 AM	1st Departure: 7:25 AM	1st Departure: 7:25 AM	1st Departure: 7:31 AM
a bus every 8 minutes									
10:31 AM	10:35 AM	10:35 AM	10:36 AM	10:39 AM	10:39 AM	10:39 AM	10:43 AM	10:43 AM	10:49 AM
a bus every 13 minutes									
Last Departure: 7:30 PM	Last Departure: 7:34 PM	Last Departure: 7:34 PM	Last Departure: 7:08 PM	Last Departure: 7:11 PM	Last Departure: 7:11 PM	Last Departure: 7:11 PM	Last Departure: 7:15 PM	Last Departure: 7:15 PM	Last Departure: 7:21 PM
: Buses will not leave prior to their listed departure time. Timed Stops are identified with a clock at the top of their respective columns. ***No Service on the following dates/holidays: (Nov 11, 24-25)***									

Schedule for Sept 22, 2022 - Dec 9, 2022
Produced by Anteater Express
Updated: 09/02/2022
(949) 824-5547

M Line: Monday - Thursday







UNIVERSITY CENTER, SOUTH STOP No. 100 	PUERTA DEL SOL, SOUTH STOP No. 137	EAST CAMPUS HOUSING STOP No. 158 	CALIFORNIA AVE. - ADOBE CR. SOUTH STOP No. 159 	PALO VERDE HOUSING STOP No. 160	ENGINEERING STOP No. 161 	PHYSICAL SCIENCES, MSTB STOP No. 162 	W. PELTASON DR. - BISON STOP No. 163	W. PELTASON DR. - ACADEMY WAY STOP No. 164	BREN EVENTS CENTER - CRAWFORD HALL STOP No. 165	HUMANITIES & FINE ARTS, SOUTH STOP No. 166 
1st Departure: 7:45 AM	1st Departure: 7:28 AM	1st Departure: 7:31 AM	1st Departure: 7:32 AM	1st Departure: 7:33 AM	1st Departure: 7:35 AM	1st Departure: 7:37 AM	1st Departure: 7:39 AM	1st Departure: 7:40 AM	1st Departure: 7:40 AM	1st Departure: 7:42 AM
					a bus every 13 minutes					
7:25 PM	7:26 PM	7:05 PM	7:06 PM	7:07 PM	7:09 PM	7:13 PM	7:15 PM	7:16 PM	7:16 PM	7:20 PM
					a bus every 25 minutes					
Last Departure: 10:30 PM	Last Departure: 10:31 PM	Last Departure: 10:00 PM	Last Departure: 10:01 PM	Last Departure: 10:02 PM	Last Departure: 10:04 PM	Last Departure: 10:08 PM	Last Departure: 10:10 PM	Last Departure: 10:11 PM	Last Departure: 10:11 PM	Last Departure: 10:15 PM
 : Buses will not leave prior to their listed departure time. Timed Stops are identified with a clock at the top of their respective columns.										
No Service on the following dates/holidays: (Nov 11, 24-25)										

Schedule for Sept 22, 2022 - Dec 9, 2022
Produced by Anteater Express



Updated: 09/02/2022
(949) 824-5547

M Line: Friday

UNIVERSITY CENTER, SOUTH STOP No. 100 	PUERTA DEL SOL, SOUTH STOP No. 137	EAST CAMPUS HOUSING STOP No. 158 	CALIFORNIA AVE. - ADOBE CR. SOUTH STOP No. 159 	PALO VERDE HOUSING STOP No. 160	ENGINEERING STOP No. 161 	PHYSICAL SCIENCES, MSTB STOP No. 162 	W. PELTASON DR. - BISON STOP No. 163	W. PELTASON DR. - ACADEMY WAY STOP No. 164	BREN EVENTS CENTER - CRAWFORD HALL STOP No. 165	HUMANITIES & FINE ARTS, SOUTH STOP No. 166 
1st Departure: 7:45 AM	1st Departure: 7:28 AM	1st Departure: 7:31 AM	1st Departure: 7:32 AM	1st Departure: 7:33 AM	1st Departure: 7:35 AM	1st Departure: 7:37 AM	1st Departure: 7:39 AM	1st Departure: 7:40 AM	1st Departure: 7:40 AM	1st Departure: 7:42 AM
					a bus every 13 minutes					
3:40 PM	3:41 PM	3:20 PM	3:21 PM	3:22 PM	3:24 PM	3:28 PM	3:30 PM	3:31 PM	3:31 PM	3:35 PM
					a bus every 25 minutes					
Last Departure: 7:25 PM	Last Departure: 7:26 PM	Last Departure: 7:05 PM	Last Departure: 7:06 PM	Last Departure: 7:07 PM	Last Departure: 7:09 PM	Last Departure: 7:13 PM	Last Departure: 7:15 PM	Last Departure: 7:16 PM	Last Departure: 7:16 PM	Last Departure: 7:20 PM
 : Buses will not leave prior to their listed departure time. Timed Stops are identified with a clock at the top of their respective columns.										
No Service on the following dates/holidays: (Nov 11, 24-25)										

Schedule for Sept 22, 2022 - Dec 9, 2022
Produced by Anteater Express



Updated: 09/02/2022
(949) 824-5547

N Line: Monday - Thursday						
UNIVERSITY CENTER, SOUTH STOP No. 100	CAMPUS - CORNELL STOP No. 101	CAMPUS - CALIFORNIA, DROP OFF ONLY	VDCN HOUSING STOP #1 STOP No. 118	VDCN HOUSING STOP #2 STOP No. 124	VDCN HOUSING STOP #3 STOP No. 125	PLAZA VERDE HOUSING STOP No. 106
1st Departure: 7:35 AM	1st Departure: 7:36 AM		1st Departure: 7:21 AM	1st Departure: 7:21 AM	1st Departure: 7:21 AM	1st Departure: 7:27 AM
			a bus every 7 minutes			
10:55 AM	10:56 AM		10:38 AM	10:38 AM	10:38 AM	10:44 AM
			a bus every 9 minutes			
7:15 PM	7:16 PM		6:58 PM	6:58 PM	6:58 PM	7:04 PM
			a bus every 13 minutes			
Last Departure: 10:35 PM	Last Departure: 10:36 PM		Last Departure: 10:18 PM	Last Departure: 10:18 PM	Last Departure: 10:18 PM	Last Departure: 10:24 PM
: Buses will not leave prior to their listed departure time. Timed Stops are identified with a clock at the top of their respective columns. ***No Service on the following dates/holidays: (Nov 11, 24-25)***						
Schedule for Sept 22, 2022 - Dec 9, 2022 Produced by Anteaater Express					Updated: 09/02/2022 (949) 824-5547	

N Line: Friday						
UNIVERSITY CENTER, SOUTH STOP No. 100	CAMPUS - CORNELL STOP No. 101	CAMPUS - CALIFORNIA, DROP OFF ONLY	VDCN HOUSING STOP #1 STOP No. 118	VDCN HOUSING STOP #2 STOP No. 124	VDCN HOUSING STOP #3 STOP No. 125	PLAZA VERDE HOUSING STOP No. 106
1st Departure: 7:35 AM	1st Departure: 7:36 AM		1st Departure: 7:21 AM	1st Departure: 7:21 AM	1st Departure: 7:21 AM	1st Departure: 7:27 AM
			a bus every 7 minutes			
10:55 AM	10:56 AM		10:38 AM	10:38 AM	10:38 AM	10:44 AM
			a bus every 9 minutes			
3:30 PM	3:31 PM		3:13 PM	3:13 PM	3:13 PM	3:19 PM
			a bus every 13 minutes			
Last Departure: 7:28 PM	Last Departure: 7:29 PM		Last Departure: 7:11 PM	Last Departure: 7:11 PM	Last Departure: 7:11 PM	Last Departure: 7:17 PM
: Buses will not leave prior to their listed departure time. Timed Stops are identified with a clock at the top of their respective columns. ***No Service on the following dates/holidays: (Nov 11, 24-25)***						
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