Appendix E

Trip Generation Analysis

This document is designed for double-sided printing to conserve natural resources.

PN 198494

May 24, 2024

Scope of Work:
University of California Agricultural and Natural Resources South Coast Research and Extension Center - Limited Scope Traffic Study
Case No. 00926597-PPA

UC ANR's Transportation Consultant will be preparing the required traffic-related technical studies for the University of California Agriculture and Natural Resources (UC ANR) South Coast Research and Extension Center (South Coast REC) Project (Project). The following scoping agreement provides relevant information for the proposed Project, identifies the required traffic-related studies, and outlines the approach that the transportation consultant will take in preparation of the studies. The required studies will be consistent with City of Irvine's *Traffic Study Guidelines*, Technical Update approved March 2023 (City's Guidelines).

Vehicle Miles Traveled (VMT) – A VMT evaluation will be conducted to satisfy the Transportation Component of the California Environmental Quality Act (CEQA) process. The CEQA document being prepared for the Project is an Initial Study/Mitigated Negative Declaration. A preliminary screening analysis is presented below to determine if the Project can be presumed to have less-than-significant VMT impact.

Level of Service (LOS) – The City's Guidelines were evaluated to determine if a Comprehensive Traffic Study, Limited-Scope Traffic Study, or Access Study are required to analyze traffic operating conditions using LOS.

1. Project Description

The existing South Coast REC Project site is approximately 193 acres facility located at 7601 Irvine Boulevard, within the eastern portion of the City of Irvine (City), Orange County. **Exhibit 1** shows the location of the site in terms of the Regional Vicinity. The proposed project (Project) includes improvements within the existing South Coast REC site. Areas of the proposed improvements are referred to as the "project site", see **Exhibit 2**. All exhibits are attached at the end of this document in **Attachment A**.

The Project would construct a new Engagement Center at the Southeast corner of the South Coast REC to support existing programming. The construction of a new Engagement Center would also include internal roadway improvements to facilitate ingress/egress to the proposed development and through the South Coast REC. An existing signalized "T"-intersection will be modified to provide additional access to the site by converting it to a four-way "+" intersection. **Exhibit 3** shows the Conceptual Site Plan. In addition to these improvements, the Project would protect and enhance the existing agricultural research space.

The project site also includes a bus pick-up/drop-off area. Buses are not expected to occur on an average day and have not been included in the trip generation. Buses are anticipated to be generally used for high school field trips on a monthly basis, which generally arrive outside of the peak hours.

The proposed Engagement Center would support existing programming and would include 13,750 square feet of building space; including a conference center, demonstration kitchen, classrooms, audio/video (AV) tech center, and ancillary uses. The proposed Engagement Center is intended to provide a space for existing programs provided by the South Coast REC, including Master Food Preservers, Master Gardeners, and 4-H programs across the County at local schools, community centers, libraries, and non-profit locations. Master Gardeners regularly utilize various community center facilities across the City the City of Irvine for their larger general meetings. The Project would enable these programs to relocate to the same space where research and agricultural practices take place. Programming would coincide within the same hours of operation currently held on site.

2. Project Trip Generation

While the City's Guidelines encourage the use of the most recent version of the *Institute of Transportation Engineers (ITE) Trip Generation Manual* to estimate site generated trips, the manual does not have uses that are applicable to this Project. Therefore, to develop a Project-specific trip generation analysis which estimates the projected net new site trips for the expanded uses on-site, detailed operational information was provided by the applicant that included number of employees, operating hours, as well as number of visitors. **Table 1** summaries the estimated site trips for the expanded uses, or the projected net new trips.

TABLE 1 – TRIP GENERATION SUMMARY

South Coast REC	Daily Trips	AM Peak Hour Trips		PM Peak Hour Trips	
		Total	In : Out	Total	In : Out
Net New Trips	102	40	40 : 0	4	0 : 4

A detailed 24-hour breakdown of the trip forecasts to be generated by the Project are included in **Attachment B.**

3. Vehicle Miles Traveled (VMT) Screening Assessment

As outlined in the City's Guidelines, certain projects may be screened out from a full VMT analysis based on project location, size, and/or type. **Table 2** provides an initial assessment of the City's VMT screening criteria. As shown, the Project is anticipated to meet the screening criteria based on the Project Size criteria and potentially the Project Type criteria. Therefore, it is anticipated that the Project can be presumed to have less-than-significant VMT impact.

This preliminary review of the VMT screening criteria indicates that the Project will screen out of a full VMT calculation and assessment and can be presumed to have less-than-significant VMT impact. A detailed VMT Screening Technical Memorandum will be prepared documenting the complete screening analysis process, assumptions, and findings. The information contained in this document will be the basis of the VMT Screening Memorandum and will be submitted for City review.

TABLE 2 – VMT SCREENING CRITERIA

Screening Criteria	Project Evaluation	Result
1. The project requires an Addendum to a certified EIR and can demonstrate that it is not subject to VMT analysis per CEQA Guidelines Section 15064.3 and 15007(c) and applicable guidance from the Governor's Office of Planning and Research.	This project is not tiering off an existing EIR and therefore this criteria is not applicable.	Not Applicable
2. The project results in a net increase of 250 or less weekday trips based on latest edition of the Institute of Transportation Engineers (ITE) trip rates (or other trip generation rate approved by the City).	The Project is shown to generate approximately 102 net new daily trips, which is less than the 250 daily trip threshold.	**Meets Screening Criteria**
3. The project is located in a Transit Priority Area (i.e., within half-mile distance of existing rail transit station or located within half-mile or two or more existing bus routes with a frequency of service interval of 15 minutes or less during morning and evening peak hours) except when the project: a) Has a Floor Area Ratio (FAR) of less than 0.75; b) Includes more parking for use by residents, customers, or employees of the project than required; c) Is inconsistent with the applicable Sustainable Communities Strategy; or d) Replaces affordable residential units with smaller number of moderate or high-income residential units.	The nearest bus stops are approximately 2 miles away near Jefferson Road to the north or near Alton Parkway to the south	Does Not Meet Criteria
4. The project is 100 percent restricted affordable housing units (Note: if less than 100 percent, the number of restricted affordable units is not subject to VMT impact analysis. "Restricted" for VMT analysis purposes shall mean having a recorded instrument against the property that defines affordability terms).	This is not a residential project and this criterion is not applicable	Not Applicable
5. The project is locally serving such as 100,000 SF or less of retail use, a daycare use, or locally serving public school (kindergarten through 12th grade).	The Project is a unique combination of university class, agricultural, and recreation/park use that could be considered a "community institution" (locally serving). A forthcoming detailed VMT Screening Assessment will explore this further.	**Potentially Meets Screening Criteria**

4. Level of Service Traffic Study

The City's Guidelines were evaluated to determine if a Study (and what level of study) would be required to analyze the potential Level of Service (LOS) operations of the surrounding roadway network or site driveways. Per

the City's Guidelines, a Comprehensive Traffic Study is required when a project generates 50 or more peak hour trips. A Limited-Scope Traffic Study is required when a project generates between 1 and 49 peak hour trips. An Access Study is required when new, removed, or relocated driveways are proposed with no other land use changes or peak hour trips. As noted in the trip generation analysis, the Project is anticipated to generate up to 35 peak hour trips. While no new uses beyond the existing or entitled uses are proposed, the Project plans to expand the existing uses thus resulting in a net increase in site generated trips and the Project also proposes to modify an existing intersection to add a site driveway, therefore; a Limited-Scope Traffic Study is required.

4.1 Study Intersections

The Limited-Scope Traffic Study shall include the intersections listed below and shown in **Exhibit 5**:

1. Ridge Valley Pkwy / Irvine Blvd (traffic signal)
2. Bosque / Irvine Boulevard / (traffic signal)
3. Existing Project Driveway / Irvine Boulevard / (right-in / right-out)*****
4. Modjeska / Irvine Boulevard / (traffic signal)
5. Modjeska / Still Night / Future Project Driveway (traffic signal)
6. Modjeska / Walking Stick (traffic signal)
7. Modjeska / Portola Springs (traffic signal)

*******Unsignalized intersections will be analyzed utilizing HCM methodology. See **Section 4.3** below.*

4.2 Traffic Counts

New traffic counts will be collected at the off-site study intersections to establish baseline "without project" conditions. The data collection efforts will adhere to the following:

- Must include pedestrian volume counts and bicycle counts
- Must be taken on an average weekday (Tuesday/Wednesday/Thursday)
- Must exclude holidays
- Must be collected while schools are in session
- Must be collected during days of good weather and avoid atypical conditions (e.g., road construction, detours, or major traffic incidents,
- Collected during the following periods:
    - 7:00 – 9:00 AM
    - 4:00 – 6:00 PM

4.3 Analysis Methodology / Approach

Study area intersections will be analyzed using Intersection Capacity Utilization (ICU) methodology for signalized intersections and Highway Capacity Manual (HCM) methodology for unsignalized intersections. The roadway segments between the intersections will also be analyzed in the report. Daily traffic volumes and V/C ratios will be presented in the analysis for these roadway segments. A peak-hour link analysis will be conducted for roadway segments where the "plus project" LOS is LOS E and the project contributes greater than 0.02 to the V/C ratio.

4.4 Study Scenarios

The analysis scenarios to be analyzed include:

1. Existing

   The characteristics of the site's surrounding roadway network will be surveyed to verify existing number of lanes, traffic signal locations, intersection configurations, and other visible factors that may have to be included in the analysis.

   Existing roadway volumes, volume-to-capacity (V/C) ratios, and levels of service (LOS) at intersections will be included for the above roadways and intersections. The ICU and HCM methodologies will be used for signalized and unsignalized intersections, respectively.

2. Short Term Interim Year – No Project

   Short-term interim year conditions will be based on the City's Irvine Transportation Analysis Model (ITAM) baseline model data representing forecasted traffic five years out. City staff will provide baseline data for the following intersections: Bosque/Irvine Blvd, Modjeska/Irvine Blvd, Ridge Valley/Irvine, and Modjeska/Portola Springs. An annual growth rate of 2% per year for five years will be applied to existing count data (2024) at the following intersections: Existing Project Driveway/Irvine Blvd, Modjeska/Still Night/Future Project Driveway, and Modjeska/Walking Stick to generate baseline conditions.

3. Short Term Interim Year With Project Conditions

   Short-term interim year with project conditions will be evaluated to assess the impacts of the addition of project-generated trips on the study area intersections and roadway segments. Project generated trips will be manually added to the baseline conditions. V/C ratios and LOS will be provided for the study area intersections and roadway segments for both baseline and plus project conditions in order to identify potential impacts.

4.5 Trip Distribution

Project trip distribution will be based on the surrounding regional access routes to identify probable routes onto which project traffic would be distributed. The anticipated travel patterns to and from the project are shown in the attached **Exhibit 6**. The project trips will be distributed manually to the Short-term Interim With Project Conditions based on the percentages identified in the distribution exhibit.

4.6 Special Analyses/Issues

The Limited-Scope Traffic Study will include a chapter to discuss vehicular, pedestrian, and bicycle access and circulation.

A. Access Analysis

The proposed Project will include access improvements and traffic signal modifications at the intersection of Modjeska and Still Night as a result of converting the existing signalized "T"-intersection to a four-way "+"-intersection by adding a site driveway. In addition to constructing one new internal roadway, the Project will construct improvements to the other internal access roadways throughout the existing South Coast REC site and to the proposed Engagement Center. It should be noted that the secondary existing driveway west of the main access (Int. 3) is gated and currently operates as emergency access only. Additionally, while Lambert

Road provides access to the outlying agricultural areas to/from Irvine Boulevard, no new project trips will be utilizing this roadway and no existing trips are forecast to be redistributed to/from Lambert Road.

The following Transportation Design Procedures will be evaluated in the traffic study:

- TDP-1 – Left Turn Pocket
    - Int. 4 – Modjeska at Irvine Boulevard – Eastbound Left Turn
    - Int. 5 - Modjeska at Still Night / New Project Driveway – Northbound Left Turn
- TDP-4 – Right Turn lane at unsignalized intersection
    - Int. 3 – Existing Project Driveway / Irvine Boulevard
- TDP-14 – Driveway Lengths
    - Int. 3 – Existing Project Driveway / Irvine Boulevard
    - Int. 5 - Modjeska at Still Night / New Project Driveway

B. Circulation Phasing

An analysis of any impacted intersections identified in the City's 2020 Circulation Phasing Analysis Report within the project study area (if any) will be included in this section.

C. Congestion Management (CMP) Land Use Coordination Requirements

The City's "CMP Monitoring Checklist: Land Use Coordination Component" will be completed and included in the traffic study if the proposed project is forecast to generate 2,400 or more ADT, or greater than 1,600 ADT directly onto the CMP Highway System.

D. Pedestrian Circulation

The pedestrian circulation on-site and connection to the adjacent public facilities and corresponding traffic control measures within the project site will be discussed in this section. The traffic study will include a discussion on how policies a, b, and c of the General Plan Objective B-3 will be met with the implementation of this project.

The traffic study will evaluate the opportunity to install a sidewalk along the west side of Modjeska along the project frontage.

E. Bicycle Circulation

Bicycle circulation on-site and connection to adjacent bicycle facilities will be discussed in this section. The Traffic Consultant will document how the project will conform to applicable policies of Objective B-4 of the City's General Plan.

F. Transit Facilities

The Traffic Study will identify the transit facilities (e.g. OCTA bus, iShuttle) within the project vicinity.

4.7 Required Mitigation Measures and/or Recommendations

Based on the results and in accordance with the adopted City Traffic Guidelines, physical, operational, and/or alternative improvements required to offset any potentially adverse effects due to the proposed project will be identified. Text will be provided that will summarize the analysis of the traffic impacts from the traffic study.

4.8 Conclusions

A summary of the results of the analysis and recommendations will be prepared.

4.9 Revisions to Analysis

Revisions to the traffic study will be provided in response to City's comments.

4.10 Signature

The traffic study will be prepared under the supervision of, and signed, stamped, and dated by, a registered traffic engineer or a registered professional civil engineer with appropriate engineering and/or planning credentials.

5. List of Attachments

- Attachment A – Exhibits
- Attachment B – 24 Hour Trip Generation Breakdown

Attachment A
Exhibits

SOUTH COAST RESEARCH AND EXTENSION CENTER (REC) PROJECT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Regional Vicinity

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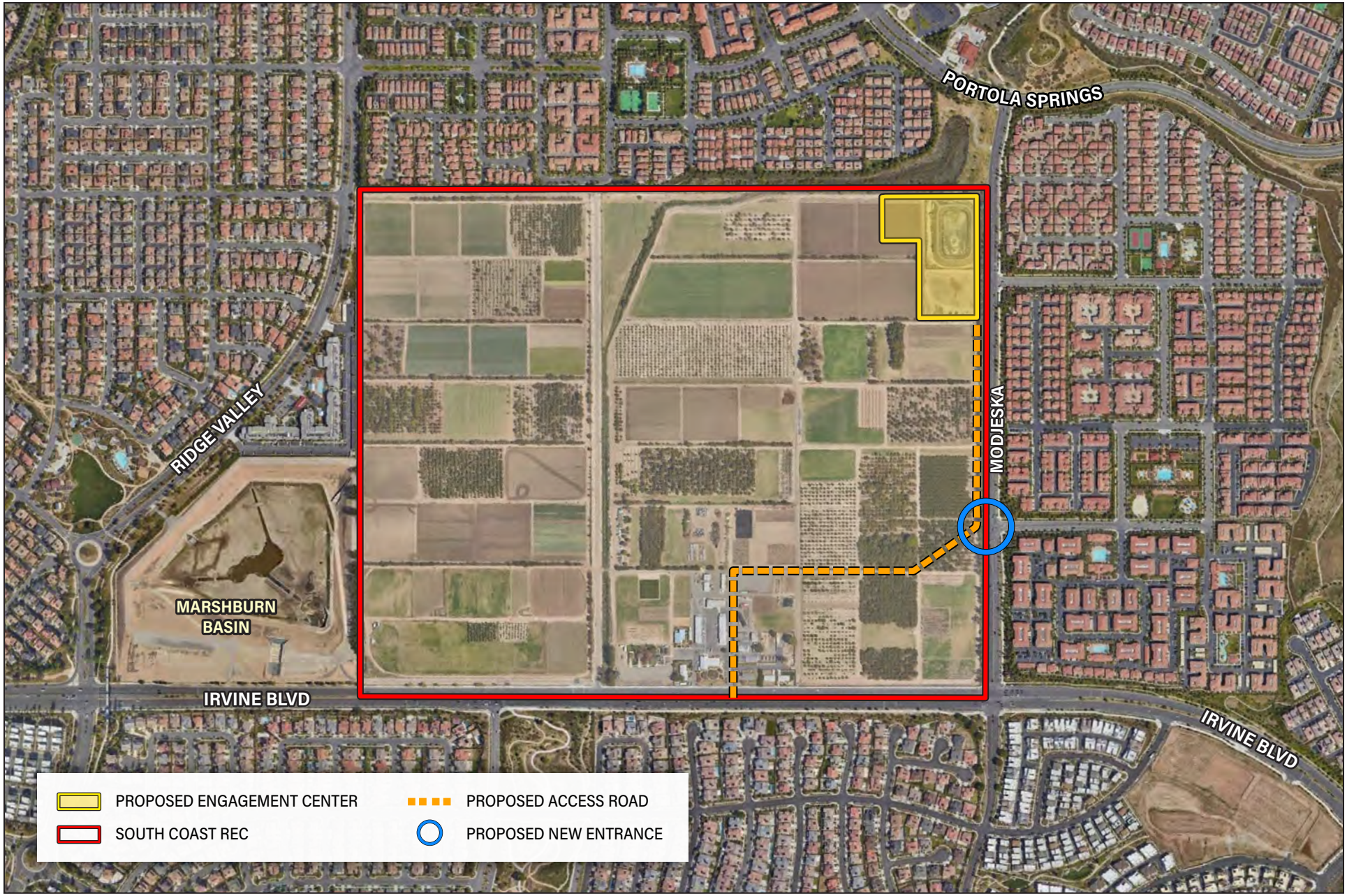
Exhibit 1



Source: Google Earth Pro, December 2023

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SOUTH COAST RESEARCH AND EXTENSION CENTER (REC) PROJECT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Site Vicinity

Exhibit 2

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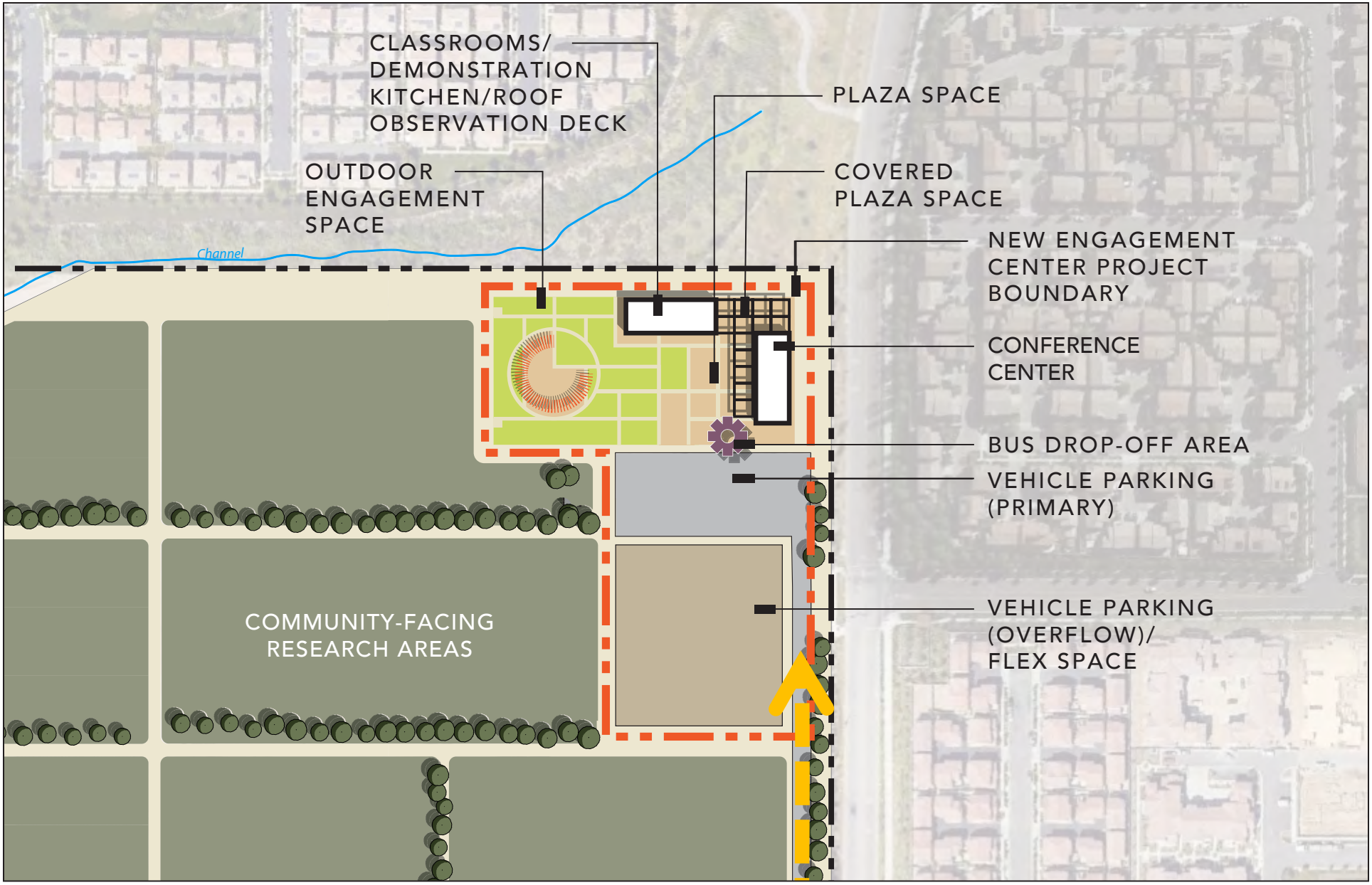
SOUTH COAST RESEARCH AND EXTENSION CENTER (REC) PROJECT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Conceptual Site Plan

Exhibit 3



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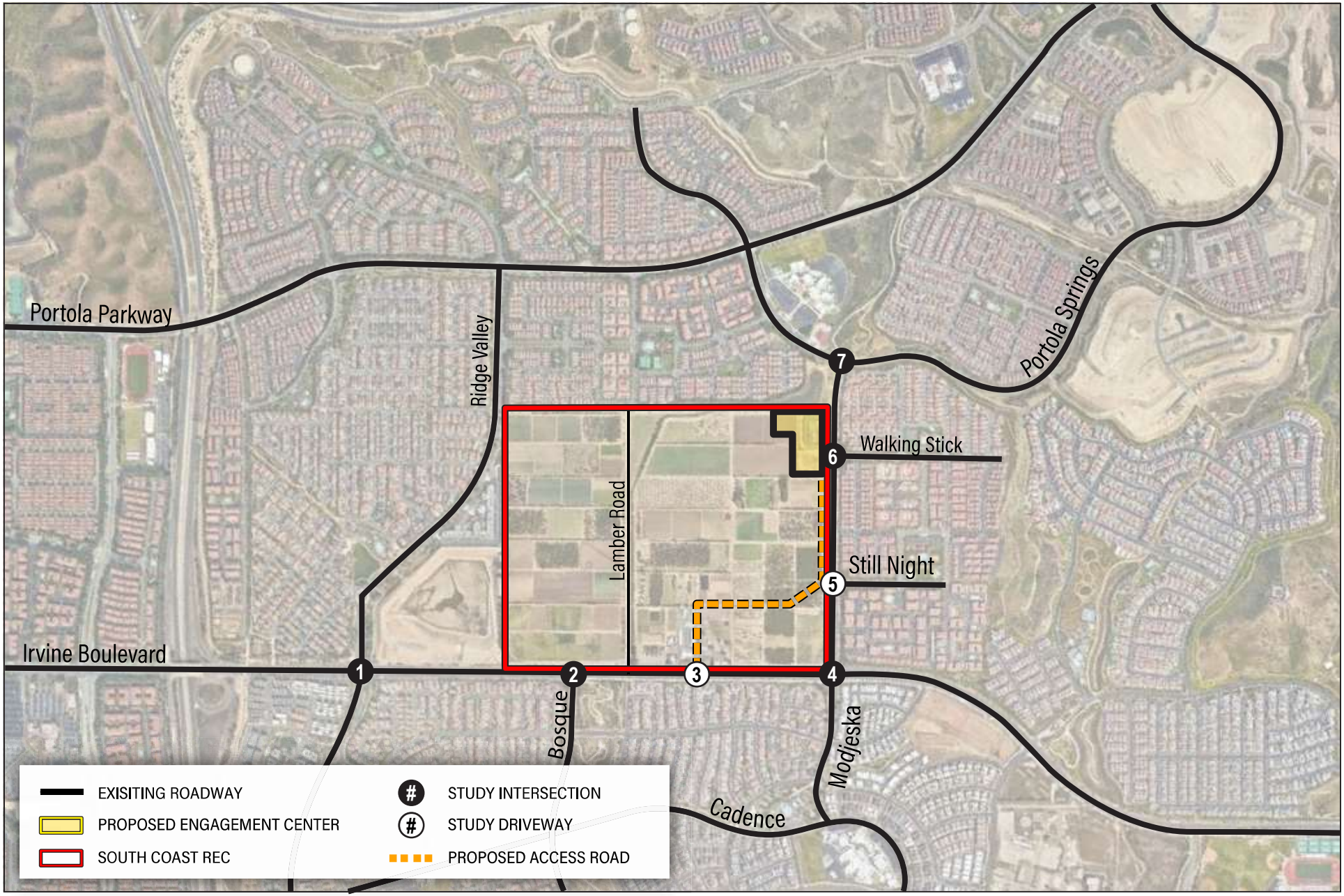
SOUTH COAST RESEARCH AND EXTENSION CENTER (REC) PROJECT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Conceptual Site Plan - Proposed Engagement Center

Exhibit 4



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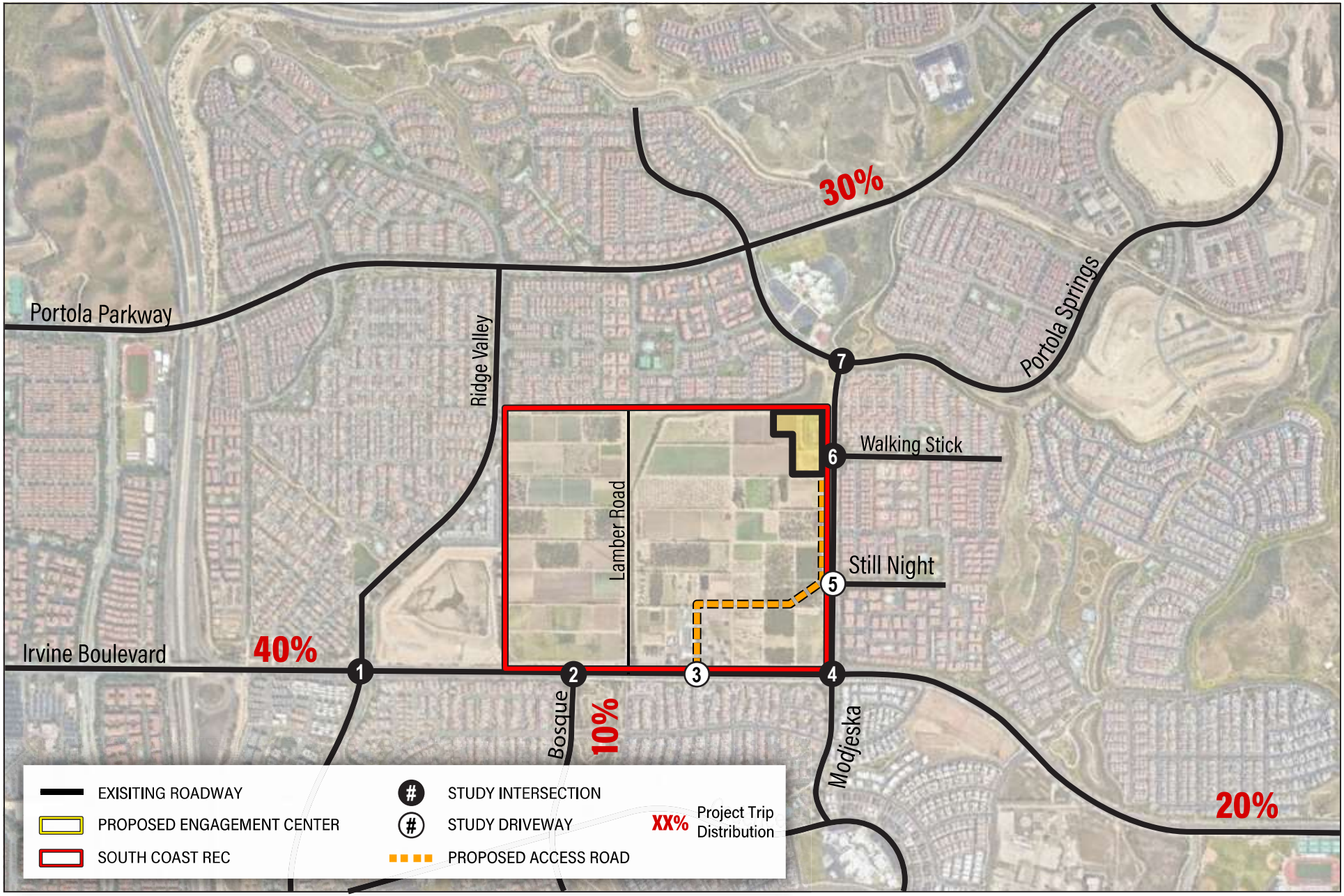
SOUTH COAST RESEARCH AND EXTENSION CENTER (REC) PROJECT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Project Study Area

Exhibit 5



Source: Google Earth Pro, December 2023

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SOUTH COAST RESEARCH AND EXTENSION CENTER (REC) PROJECT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Project Trip Distribution

Exhibit 6

Attachment B
24-Hour Trip Generation Breakdown

24-Hour Trip Generation Breakdown by Use
South Coast REC Expansion Project - Irvine, CA

Hour		Start Time	End Time	Average Trips (Per Day, Monday through Friday) based on Project Use [1]											
				Employee Trips			Workshop / Classrooms			Visitors			Net New Trips		
				Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit
Prior to Business Opening	1	12:00 AM	1:00 AM	0			0			0			0	0	0
	2	1:00 AM	2:00 AM	0			0			0			0	0	0
	3	2:00 AM	3:00 AM	0			0			0			0	0	0
	4	3:00 AM	4:00 AM	0			0			0			0	0	0
	5	4:00 AM	5:00 AM	0			0			0			0	0	0
	6	5:00 AM	6:00 AM	0			0			0			0	0	0
	7	6:00 AM	7:00 AM	4	4	0	0			0			4	4	0
Operating Hours	8	7:00 AM	8:00 AM	0			0			0			0	0	0
	9	**8:00 AM**	**9:00 AM**	**0**			**40**	**40**	**0**	**0**			**40**	**40**	**0**
	10	*9:00 AM*	*10:00 AM*	*0*			*0*			*1*	*1*		*1*	*1*	*0*
	11	*10:00 AM*	*11:00 AM*	*0*			*0*			*1*	*1*		*1*	*1*	*0*
	12	*11:00 AM*	*12:00 PM*	*0*			*0*			*2*	*1*	*1*	*2*	*1*	*1*
	13	*12:00 PM*	*1:00 PM*	*4*	*2*	*2*	*0*			*2*	*1*	*1*	*6*	*3*	*3*
	14	*1:00 PM*	*2:00 PM*	*0*			*40*	*0*	*40*	*2*	*1*	*1*	*42*	*1*	*41*
	15	2:00 PM	3:00 PM	0			0			1		1	1	0	1
	16	3:00 PM	4:00 PM	0			0			1		1	1	0	1
After Business Closing	**17**	**4:00 PM**	**5:00 PM**	**4**	**0**	**4**	**0**			**0**			**4**	**0**	**4**
	18	5:00 PM	6:00 PM	0			0			0			0	0	0
	19	6:00 PM	7:00 PM	0			0			0			0	0	0
	20	7:00 PM	8:00 PM	0			0			0			0	0	0
	21	8:00 PM	9:00 PM	0			0			0			0	0	0
	22	9:00 PM	10:00 PM	0			0			0			0	0	0
	23	10:00 PM	11:00 PM	0			0			0			0	0	0
	24	11:00 PM	12:00 AM	0			0			0			0	0	0
Total Daily Trips				**12**	**6**	**6**	**80**	**40**	**40**	**10**	**5**	**5**	**102**	**51**	**51**
AM Peak Hour Trips				**0**	**0**	**0**	**40**	**40**	**0**	**0**	**0**	**0**	**40**	**40**	**0**
PM Peak Hour Trips				**4**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**4**
Key Assumptions				2 New Employees & 2 New Researches (VOC=1.0)[4] during regular operating hours (7:00 AM - 4:00 PM)			1 class per day with 40 people per class. (VOC=1.0)[4] during class hours (9:00 AM - 2:00 PM)			Increase of 5 visitors during operating hours for 2 hours duration.			--		

Notes:

[1] Trip generation developed based on site specific information provided by site operator for new activities only. Classroom hours shown in *italics*.

[2] AM peak hour assumes highest hour during the peak period of adjacents streets between 7:00 AM and 9:00 AM

[3] PM peak hour assumes highest hour during the peak period of adjacents streets between 4:00 AM and 6:00 PM

[4] VOC = Vehicle Occupancy (ie average persons per vehicle)