

Appendix E

Transportation Impact Study

Draft Memorandum

Date: September 26, 2022

To: Deirdre Clem, Cal Poly Humboldt Facilities Management

CC: Marianne Lowenthal and Chris Mundhenk, Ascent Environmental

From: Ian Barnes, PE, and Bruno Lertora, Fehr & Peers

**Subject: Cal Poly Humboldt Craftsman Mall Student Housing Project CEQA
Transportation Analysis**

WC22-3875

This technical memorandum documents the results of the California Environmental Quality Act (CEQA) transportation analysis prepared for the proposed Cal Poly Humboldt Craftsman Mall Student Housing Project (project). This analysis reflects the updated CEQA analysis procedures identified in the *California State University Transportation Impact Study Manual (CSU TISM)* and supersedes the analyses completed in previous studies, including *The Village Student Housing Project Draft Environmental Impact Report* and *Final Environmental Impact Report*, dated October 2017 and March 10, 2018, respectively.

The primary purpose of this evaluation is to provide a CEQA-compliant analysis of Transportation system impacts, including an analysis of vehicle-miles traveled (VMT) per the CSU TISM and the State Office of Planning and Research's *Technical Advisory on Evaluating Transportation Impacts in CEQA*.

Project Description

The project site is located at 2905 Saint Louis Road in the City of Arcata, approximately one-half mile northwest of the Cal Poly Humboldt campus. The Project site is bound by an abandoned railroad and US 101 to the east, residential development to the south and west, and Mad River Lumber to the north, as shown on **Figure 1** (all figures are provided at the end of the memorandum). The site is currently occupied by the Craftsman's Mall, a collection of artisan and light industrial rental spaces, and an outdoor storage area for local contractors. The proposed project aims to construct a 241-unit student housing community; up to 964 students would be housed at the project site. The project will include other amenities such as a student study center and exercise facilities that are commonly found on off-campus, University-sponsored student



housing. The proposed project does not include an increase in enrollment at the University. Vehicular access to the project site would be provided the southern stub end of Saint Louis Road, in addition to a proposed emergency vehicle access point from the northern stub end of Eye Street. The project would also construct 340 single-occupancy vehicle spaces along the perimeter with 10 percent reserved for electric vehicles. No through automobile traffic would be allowed through the project site.

Existing Transportation System

As noted previously, public vehicular access to the site will be provided via Saint Louis Road; an additional emergency vehicle access point will be provided at the northern end of Eye Street. Future bicycle and pedestrian access may be provided via a new Class I multi-use path proposed for the abandoned rail line.

Saint Louis Road is a north-south local street with one travel lane in each direction, traveling from Spear Avenue/West End Road in the north to a cul-de-sac at the project site. Saint Louis Road also provides access to the US 101 overcrossing to L.K. Wood Boulevard. The posted speed limit along Saint Louis Road is 25 miles per hour. Sidewalks are present on the at least one side of the roadway north of the US 101 overcrossing. Class II bike lanes are provided on both sides of the roadway from the US 101 overcrossing to Spear Avenue/West End Road.

Eye Street is primarily a north-south residential roadway with one travel lane in each direction ranging from Jay Street in the south and terminating at the proposed project site in the north. The speed limit along Eye Street is (prima facie) 25 miles per hour. Sidewalks are present on a 350-foot segment starting at Jay Street. No other sidewalks are present. There are no designated bicycle facilities along Eye Street.

Analysis Methods

The following discusses the analysis methods and assumptions for the assessment.

CEQA Transportation Analysis

As noted previously, the project analysis is being analyzed under the auspices of the latest CEQA Guidelines and the CSU TISM. For CEQA Transportation analysis, projects are generally required to respond to the following CEQA Guidelines Appendix G checklist questions:

Would the project:



- a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?
- b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, 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?

Criterion B is the formal implementation of the Senate Bill (SB) 743 requirement to analyze VMT as part of the CEQA Transportation section. Under SB 743, congestion related project effects (such as those measured by Level of Service or similar metrics) are deemed to be **less-than-significant** by statute. Relevant subsections of CEQA Guidelines section 15064.3(b) for the project read as follows:

- (1) **Land Use Projects.** *Vehicle-miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle-miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.*
- (4) **Methodology.** *A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.*

As noted above, the California State University System, in its discretion as lead agency, has the ability to select the methodology and CEQA significance criteria for use in the CEQA Transportation section. CEQA transportation impact significance criteria are provided in the following section.

CEQA Transportation Impact Criteria

CEQA impacts are identified based on the project's VMT per capita and its effects to the pedestrian, bicycle, and transit modes of travel. For land use projects, intersection operations impacts (such as those measured by congested-based metrics such as Level of Service) are



specifically excluded from CEQA consideration per CEQA Guidelines §15064.3 and Senate Bill 743. The detailed CEQA Transportation section impact criteria are presented below.

Vehicle-Miles Traveled (VMT)

The State Office of Planning and Research (OPR), in their *Technical Advisory on the Evaluation of Transportation Impacts in CEQA* (December 2018), has provided non-binding guidance on thresholds that could be used in the analysis of CEQA transportation impacts, using VMT as the quantified metric for evaluation. In its capacity as lead agency, the California State University System has adopted the *Technical Advisory* VMT metrics, methodologies and thresholds as summarized in the CSU TISM. The basis of these OPR-recommended thresholds includes state climate planning documents and legislation.

CEQA Guidelines §15064.3(a) notes that, for the purposes of §15064.3 and CEQA Transportation analysis, VMT “refers to the amount and distance of automobile travel attributable to a project.” This statement has been interpreted by OPR to mean automobile and light-duty truck travel (e.g., pickup trucks). For many residential land uses, the amount and distance of automobile travel is the overwhelming component of weekday daily VMT. OPR notes that heavy-duty truck VMT could be included for convenience and ease of calculation, if a lead agency so chooses, but are not required to be included in the calculations.

In the *Technical Advisory*, OPR has recommended thresholds and calculation approaches for three project types: residential, office and retail. The thresholds and calculation approaches noted in the *Technical Advisory* are in part based on the legislative intent of SB 743, which include (1) promoting infill development, (2) promoting healthy communities through encouraging active transportation, and (3) assisting California in meeting its statewide climate targets. In essence, the switch to VMT as the CEQA Transportation metric measures the efficiency of land use patterns and streamlines development that enhance a diversity of land uses and access to common goods and commercial/public services.

Based on the guidance presented in the *Technical Advisory* and the CSU TISM, the CSU system has chosen the following VMT-based thresholds to be applied to assess the CEQA significance of the project’s VMT per capita for residential projects:

- Project-level impacts: The project would result in a significant impact related to VMT if the project VMT per resident exceeds a threshold of 15% below existing regional, sub-regional, or citywide VMT per resident
- Cumulative impacts: VMT per resident under the “with project” condition exceeds the regional, sub-regional, or citywide VMT per resident identified under the RTP/SCS condition.



For the purposes of the analysis of VMT impacts for the Cal Poly Humboldt Craftsman Mall Student Housing Project the regional, Humboldt County-wide average will be used as the basis for the assessment. This determination was based on the following considerations.

The OPR *Technical Advisory* VMT significance criteria are based on statewide greenhouse gas reduction targets, which are defined (per SB 375) at the Metropolitan Planning Organization (MPO) level; outside of the major urbanized areas of California (e.g., the San Francisco Bay Area and Los Angeles area), many single-county MPOs exist. While the Humboldt County Association of Governments is a Regional Transportation Planning Agency (RTPA), and not an MPO, the entirety of Humboldt County represents a logical boundary for the evaluation of VMT impacts based on the methodology used by OPR to develop the thresholds identified in the *Technical Advisory*. The *Technical Advisory* also notes that the VMT calculation itself should not be arbitrarily truncated at political boundaries (i.e., an arbitrarily defined sub-area boundary), and thus using a Humboldt County-wide geography represents a good faith effort at the full accounting of the VMT effects of the project. This County-wide analysis also represents the extents of the Humboldt County travel demand model.

In addition to the methodological reasoning for the selection of a Humboldt County-wide basis, student housing location data from Cal Poly Humboldt, location-based services “Big Data” regarding University-related trips, and from the Humboldt County Association of Governments Travel Model (HCAOG Travel Model) indicate that there is a substantial regional student housing component consisting of students living off-campus and outside of the City of Arcata. Because the project does not propose to increase student enrollment, it is reasonable to assume that the net effect of the project would be that students who would otherwise be living outside of the City of Arcata would move closer to campus. So, the most reasonable basis for evaluating the effect of the project would be a regional basis (i.e., a Humboldt County-wide basis).

Public Transit System

The project would create a significant impact related to public transit service if either of the following criteria are met:

- The project generates a substantial increase in public transit riders that cannot be adequately served by existing public transit services; or,
- The project conflicts with existing or planned public transit facilities.

Pedestrian System

The project would create a significant impact related to the pedestrian system if any of the following criteria are met:



- The project design would not provide or would eliminate pedestrian facilities to connect to the area circulation system, or
- The project design would create hazardous conditions for pedestrians due to geometric design feature or introduction of incompatible uses, or
- The project conflicts with existing or planned pedestrian facilities.

Bicycle System

The project would create a significant impact related to the bicycle system if any of the following criteria are met:

- The project design would not provide or would eliminate bicycle facilities that connect to the area circulation system; or
- The project design would create hazardous conditions for bicyclists due to geometric design feature or introduction of incompatible uses; or
- The project conflicts with existing or planned bicycle facilities.

Vehicle System Hazard Impacts

The project would create a significant impact related to the vehicle system if any of the following criteria are met:

- The project design would substantially increase hazards due to a geometric design feature, or
- The project introduces incompatible vehicle uses to the system.

Note that, per Senate Bill 743 and CEQA Guidelines §15064.3, impacts to the operations of the circulation system as measured by metrics such as Level of Service are considered to be **less-than-significant** by statute.

Emergency Access

The project would create a significant impact related to emergency vehicle access if the following criterion is met:

- The project incorporates design features that limit or result in inadequate emergency vehicle access.



CEQA VMT Analysis

As noted previously in the discussion regarding the CEQA significance criteria for VMT impacts, the Humboldt County Association of Governments Travel Model (HCAOG Travel Model) has been selected as the tool to calculate VMT per capita metrics for the proposed project. The use of a travel demand model to calculate VMT and related metrics is recommended by OPR in the *Technical Advisory*, and the CSU TISM notes that the travel demand model is applicable for the project area and VMT calculation context. The HCAOG Travel Model covers the entirety of Humboldt County, including the proposed project area. Caltrans District 1 maintains the HCAOG Travel Model and periodically updates the model to reflect changing travel conditions and approved land use projects and programs. This analysis used the latest HCAOG Travel Model as received from Caltrans District 1 in early 2022. The trip patterns in the HCAOG Travel Model were checked against location-based services “Big Data” to confirm that the model is reasonably replicating existing travel patterns related to the University.

HCAOG Travel Model Baseline VMT

Baseline VMT information from the HCAOG Travel Model is provided below in **Table 1**.

Table 1: Baseline Vehicle-Miles Traveled (VMT) Information

Horizon Year	Residential VMT per Resident
Base Year 2015	18.1
Cumulative Year 2045	23.2
Interpolated Near-Term Baseline (2022)	19.3

Source: Fehr & Peers, 2022.

The applicable project-level CEQA standard of significance for residential VMT per resident is 15 percent below the baseline value of 19.3, or 16.4 VMT per resident. The applicable Cumulative CEQA standard of significance is the Cumulative Year 2045 value of 23.2 VMT per resident.

Project Vehicle-Miles Traveled

The proposed project was input into the HCAOG Travel Model to assess the project’s VMT per resident. The VMT per resident for the proposed project is summarized below in **Table 2**.



Table 2: Project VMT

Horizon Year	Project VMT per Resident	Threshold Value	CEQA Impact?
Baseline Year 2022	14.1	16.4	No
Cumulative Year 2045	15.2	23.2	No

Source: Fehr & Peers, 2022.

The data from **Table 2** indicate that the impact to VMT from the proposed project is **less-than-significant**. No mitigation measures are needed.

CEQA Transit, Pedestrian, and Bicycle Impacts

This following section evaluates the projects potential impacts on multimodal transportation under existing with project conditions.

Transit

The project site is served by the Arcata & Mad River Transit System (A&MRTS), which provides fixed-route transit service within the City of Arcata. Additionally, paratransit service is also available for those who are unable to independently use the transit system due to a medical and other conditions. The nearest public transit stop is located about 0.25 miles away from the Project site on L.K. Wood Boulevard, which is served by the A&MRTS Gold Route and Red Route. The existing transit system is expected to accommodate Project-generated demand for transit services, and the University will continue to work with the Humboldt Transit Authority to address transit needs associated with the University. The Project is not expected to conflict with existing or planned transit facilities. Therefore, impacts to transit are **less-than-significant**.

Pedestrian and Bicycle Systems

As noted in previous environmental documents for the project, the proposed project is expected to include the following pedestrian and bicycle improvements on and off-site:

- Covered bicycle parking areas near building entrances
- Bicycle and pedestrian access to the proposed Annie-Mary trail along the eastern boundary of the site upon the construction of the trail in 2024.

These connections would support connectivity and align with the *City of Arcata Pedestrian & Bicycle Master Plan*. Although, currently there is no planned pedestrian connection as part of the Project to the US 101 overcrossing to the north of the project site through Saint Louis Road, thus



not providing pedestrian facilities to connect to the area circulation system. Therefore, impacts to pedestrian and bicycle systems would result in a **significant impact**.

Mitigation Measure

This section describes the mitigation measure the Project should implement to reduce its impact on the pedestrian system.

A sidewalk shall be built on the east side of Saint Louis Road to connect the Project site to the US 101 overcrossing and the rest of the pedestrian circulation system. There is adequate right-of-way available to complete the sidewalk gaps along the roadway. Completing the pedestrian connection as described would reduce the impact to a **less-than-significant** impact.

It is also recommended that the project includes wayfinding signage to guide pedestrians to key destinations beyond the Project site. The University should also work with the City of Arcata to close gaps in the bikeway system along Eye Street and Saint Louis Road.

CEQA Vehicle System Hazard Impacts

Vehicular site access is proposed at one driveway on Saint Louis Road, a local road with a posted speed limit of 25 miles per hour. Stopping sight distance is a critical factor that ensures that drivers have enough time and space to stop to avoid hazards. Eye Street provides an additional emergency vehicle access and has a speed limit of 25 miles per hour.

According to Table 201.1 of the Caltrans Highway Design Manual, the stopping sight distance at 25 miles-per-hour is 150 feet. The sight distance entering the Project site at both entrances appears to be more than 150 feet, indicating that the sight distance should be adequate. It is strongly recommended that the final site improvement plan be reviewed for potential sight distance impediments including any new signs, above ground utility boxes, or landscaping proposed in the sight triangle.

When developed, it is recommended the internal roadways meet the neighborhood streets standards required by the City of Arcata.

Overall, the project does not introduce incompatible uses to the roadway system, nor would it introduce geometric features that would result in hazardous conditions. Thus, the project's impact to the vehicle system is **less-than-significant**. The preceding finding is related to the project's interface with the public roadway system and the project's effect on hazards to the public roadway system; site design recommendations are presented later in this memorandum.



CEQA Emergency Access Impacts

Factors such as number of access points, roadway width, and proximity to fire stations determine whether a project provides sufficient emergency access. The closest fire station to the project site is located approximately 1.5 miles to the northwest of the project site at Janes Road and Parton Lane.

The project site includes two access points for emergency vehicles: one full vehicular access point on Saint Louis Road, and a second emergency vehicle-only access point located at the northern terminus of Eye Street. The University will collaborate with the City to integrate the design of the development into the City's emergency response and evacuation plans for wildfires, floods, and other potential emergency situations.

The proposed on-site roadway design provides adequate emergency vehicle circulation and sufficient clearance to accommodate likely emergency vehicle movements. Therefore, the project's impacts to emergency vehicles are ***less-than-significant***.

Site Plan Review

This section analyzes site access and internal circulation for vehicles, pedestrians, and bicyclists. The recommendations provided in this section are not CEQA mitigation measures and are provided for informational purposes only. **Figure 3** includes the proposed site plan.

The Project can be accessed via an existing access road on Saint Louis Road approximately 700 feet south of the US 101 overcrossing. This access road becomes the site's internal drive aisle from the eastern site boundary and wraps around the entirety of the site in a loop. The 20-foot-wide drive aisle is sufficient for two-way vehicle circulation, emergency vehicle circulation, and loading trucks. Parking spaces are provided along the north, south and west site boundaries. The residential units and amenities are located in the middle of the site.

Class II bicycle lanes are present on both sides of Saint Louis Road between the US 101 overcrossing and Spear Avenue/West End Road; however, a dedicated lane along the project frontage road is not present. Walkways are provided within the site for access between and around the residential buildings. As mentioned, the proposed Annie-Mary Trail along the eastern boundary of the site would provide primary bike and pedestrian access to the site upon its construction in 2024. Access to this trail from the site is not provided.

Recommendations to improve wayfinding and pedestrian and bicycle visibility and encourage ped/bike travel modes are provided below:



- Add wayfinding signage to different parking areas (visitor parking, electric vehicle parking, bike parking)
- Provide high-visibility crossings at the access road and by using patterns or raised crossings
- Add a pedestrian crossing signage
- Provide short-term (typically in the form of bicycle racks) and long-term (typically in a secured bike room or bike lockers) bicycle parking near building entrances
- Provide a Class I connection through the western parking area for easy access to the Annie-Mary Trail to promote pedestrian usage.

Final site plan should be checked for design vehicle movements and potential sight distance obstructions.

Traffic Volume Generation

This section provides existing traffic volume data along the roadway system, as well as the trip-making characteristics of the Project. This information is being presented for inclusion into other CEQA analysis topic areas; a Level of Service analysis has not been conducted for this project as CEQA impacts related to traffic operations are automatically considered to be **less-than-significant** per the CEQA Guidelines and Senate Bill 743.

Existing and Projected Traffic Volumes

To provide background information on traffic volumes along the roadway system, Fehr & Peers collected midweek AM and PM peak period traffic counts at three key intersections in the area surrounding the project. Counts were collected in the following intersections in August 2022 when Cal Poly Humboldt was in session:

1. St. Louis Road/Spear Avenue/West End Road
2. St. Louis Road/US 101 overcrossing
3. Sunset Avenue/L. K. Wood Boulevard

This information was used to estimate the traffic volumes along the following roadway segments in the study area:

- Spear Avenue between Alliance Road and West End Road
- West End Road between Spear Ave and West End Court
- St Louis Road between West End Road and Project site
- US 101 overcrossing between St Louis Road and L. K. Wood Boulevard
- L. K. Wood Boulevard between Granite Avenue and Sunset Avenue
- L. K. Wood Boulevard between Sunset Avenue and Plaza Avenue



- Sunset Avenue between G Street and L. K. Wood Boulevard

Table 3 shows the baseline and cumulative year weekday daily traffic segment volumes. Baseline segment volumes were estimated by factoring PM peak hour counts. Cumulative (far-term) traffic volumes were developed using data from the counts and the HCAOG Travel Model.

Table 3: Baseline and Cumulative Weekday Daily Traffic Volumes Without Project

Segment	Baseline Traffic Volume	Cumulative Traffic Volume
Spear Avenue between Alliance Road and West End Road	3,040	3,400
West End Road between Spear Ave and West End Court	3,220	3,590
St Louis Road between West End Road and US 101 overcrossing	3,070	3,440
US 101 overcrossing between St Louis Road and L. K. Wood Boulevard	3,390	3,770
L. K. Wood Boulevard between Granite Avenue and Sunset Avenue	7,010	7,490
L. K. Wood Boulevard between Sunset Avenue and Plaza Avenue	8,220	8,780
Sunset Avenue between G Street and L. K. Wood Boulevard	8,750	9,780

Source: Fehr & Peers, 2022.

The amount of traffic added to the roadway system associated with the Project was estimated using a three-step process:

- Trip Generation** – The *amount* of vehicle traffic entering/existing the Project site was estimated.
- Trip Distribution** – The *direction* of trips would use to approach and depart the site was projected.
- Trip Assignment** – Trips were then *assigned* to specific roadway segments and intersection turning movements.

Trip Generation

Trip generation refers to the process of estimating the amount of vehicular traffic a project would add to the surrounding roadway system. Estimates are created on a weekday daily basis. The Project trip generation was estimated using the HCAOG Travel Model. The Project is estimated to generate about 3,796 daily vehicle trips, as presented in **Table 4**.



Table 4: Vehicle Trip Generation

Land Use	Dwelling Units	Rooms	Daily Vehicle Trips
Multi-Family Housing	241	964	3,796

Source: HCAOG Travel Model, 2022.

Trip Distribution and Assignment

The Project trip distribution was based on relative distance to major gates and similar nearby land uses, as well as HCAOG Travel Model information. **Figure 3** shows the trip distribution. These trips were then assigned to the main roadway segments in the study area based on the paths they would take to the Project site, presented on **Table 5**.

Table 5: Project Weekday Daily Traffic Volumes

Segment	Traffic Volume
Spear Avenue between Alliance Road and West End Road	570
West End Road between Spear Ave and West End Court	380
St Louis Road between West End Road and US 101 overcrossing	950
US 101 overcrossing between St Louis Road and L. K. Wood Boulevard	2,850
L. K. Wood Boulevard between Granite Avenue and Sunset Avenue	1,900
L. K. Wood Boulevard between Sunset Avenue and Plaza Avenue	950
Sunset Avenue between G Street and L. K. Wood Boulevard	950

Source: Fehr & Peers, 2022. HCAOG Travel Model, 2022.

Table 6 presents the segment volumes with and without the project-added trips for baseline and Cumulative years.

Table 6: Weekday Daily Traffic Volumes

Segment	Baseline	Baseline with Project	Cumulative	Cumulative with Project
Spear Avenue between Alliance Road and West End Road	3,040	3,610	3,400	3,970
West End Road between Spear Ave and West End Court	3,220	3,600	3,590	3,970
St Louis Road between West End Road and US 101 overcrossing	3,070	4,020	3,440	4,390



Table 6: Weekday Daily Traffic Volumes

Segment	Baseline	Baseline with Project	Cumulative	Cumulative with Project
US 101 overcrossing between St Louis Road and L. K. Wood Boulevard	3,390	6,240	3,770	6,620
L. K. Wood Boulevard between Granite Avenue and Sunset Avenue	7,010	8,910	7,490	9,390
L. K. Wood Boulevard between Sunset Avenue and Plaza Avenue	8,220	9,170	8,780	9,730
Sunset Avenue between G Street and L. K. Wood Boulevard	8,750	9,700	9,780	10,730

Source: Fehr & Peers, 2022. HCAOG Travel Model, 2022

Conclusion

Results of the assessment indicate that project CEQA Transportation impacts are ***less-than-significant with mitigation***.

This completes our CEQA Transportation assessment for the proposed the Cal Poly Humboldt Craftsman Mall Student Housing Project in the City of Arcata. Please call Ian Barnes at (925) 357-3388 with any questions.

Attachments

- Figure 1** Project Site Vicinity
- Figure 2** Project Site Plan
- Figure 3** Project Trip Distribution

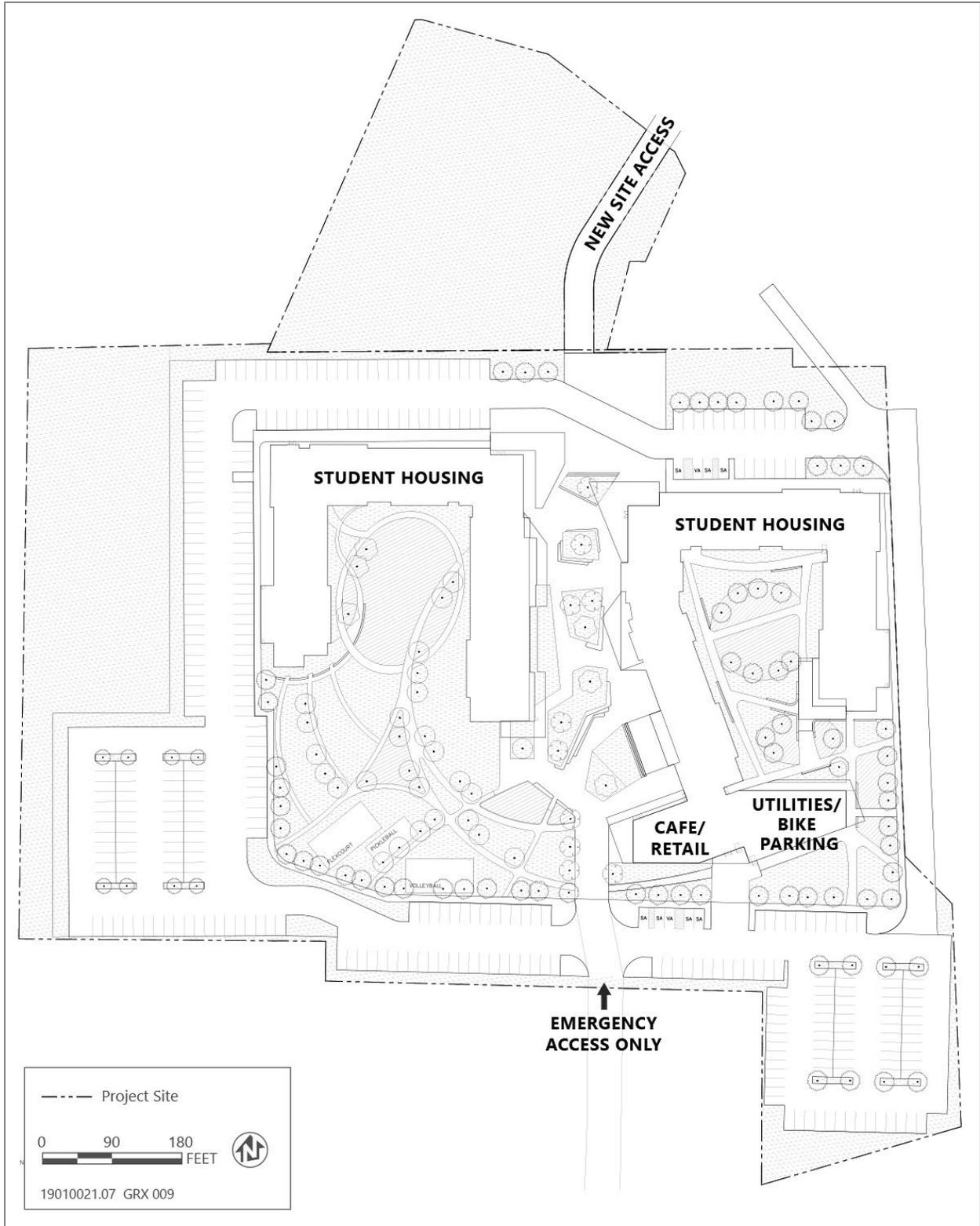


 Project Site



Figure 1

Project Site Vicinity



Source: Adapted by Ascent Environmental in 2022.



Figure 2

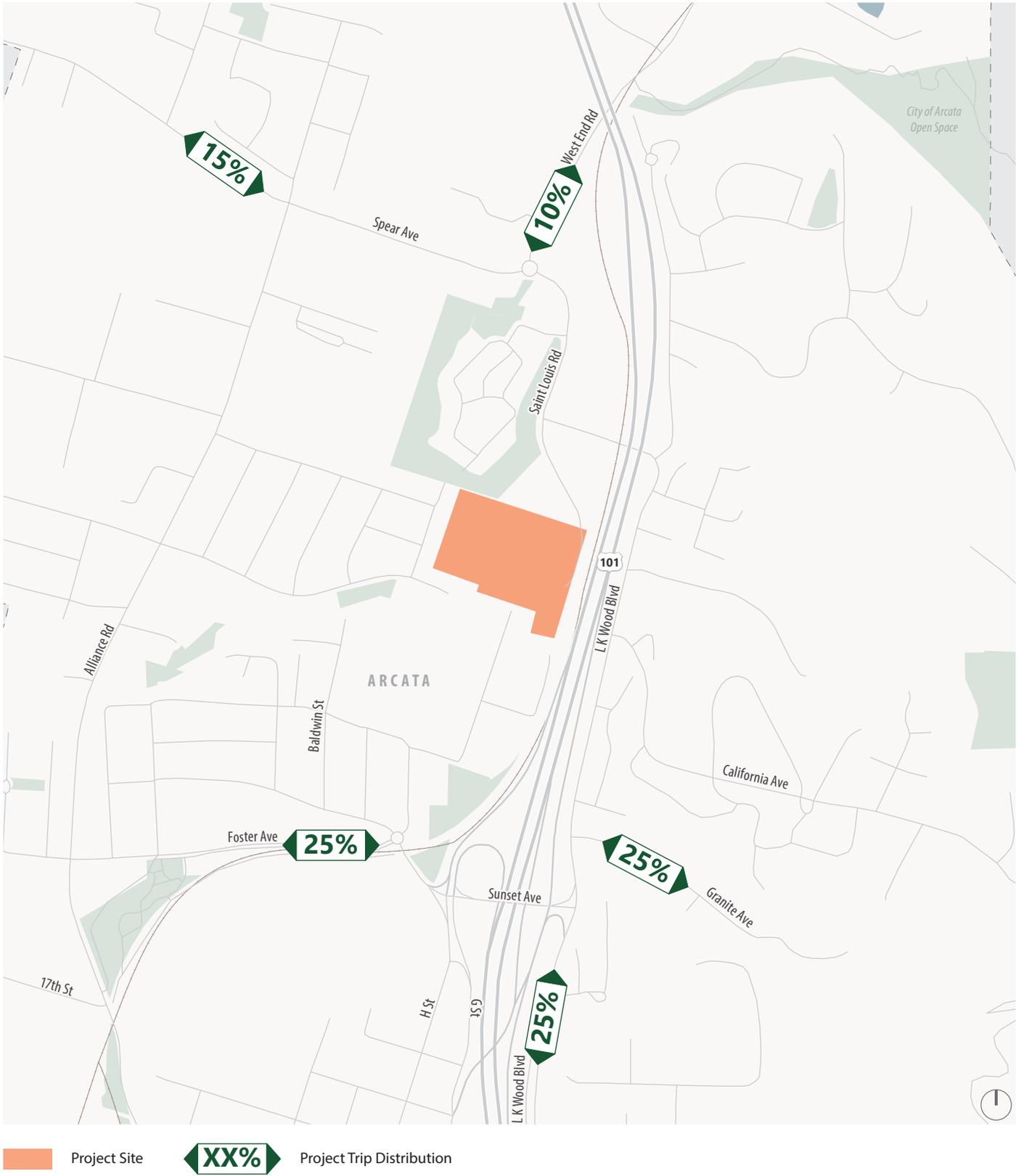


Figure 3

Project Trip Distribution

