

Memorandum

Date: October 25, 2024
To: Trevor Miller, Santa Cruz City Schools
From: Alex Huang, Daniel Rubins, and Matt Haynes, Fehr & Peers
Subject: **Project Trip Generation Analysis for an Educator Housing Development at 313 Swift Street, Santa Cruz, California**

SJ24-2284

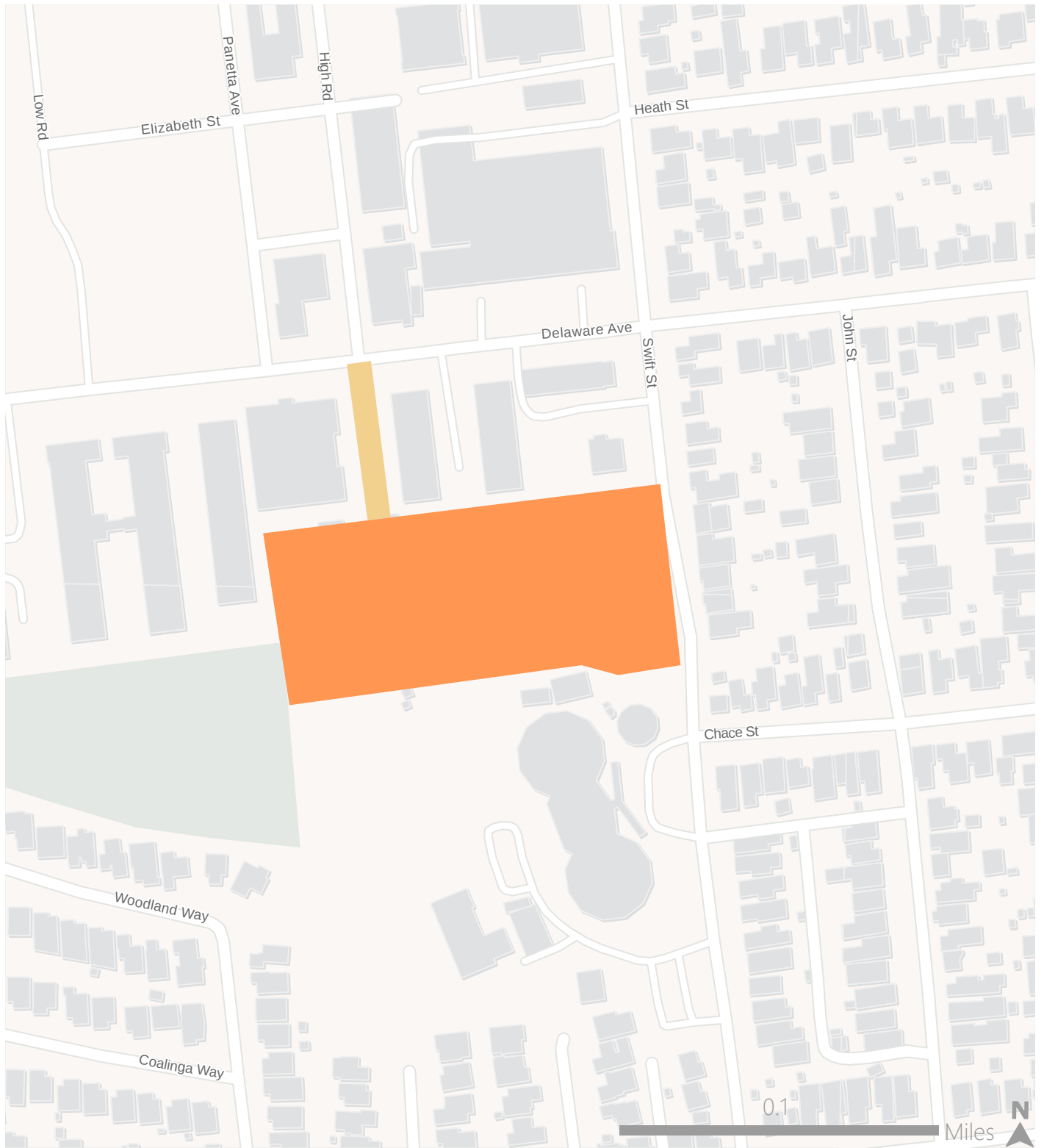
This memorandum documents the project trip generation analysis for the proposed development at 313 Swift Street in Santa Cruz, California.

Summary

A transportation study is not needed for this project, because the project will generate fewer than 50 net new evening peak hour vehicle trips and add fewer than 25 new morning or evening peak hour project trips to a critical intersection (refer to the *Transportation Study Requirements for Development*, City of Santa Cruz, August 2021).

Project Description

The project is in Santa Cruz, California. The project site is bounded by industrial land use along Delaware Avenue to the north, Swift Street to the east, a charter school to the south, and industrial and park land uses to the west. The project proposes to construct approximately 100 residential units for educators with a maximum parking supply of 119 parking spaces, reuse an existing building (currently a 3,308 square foot daycare center) as storage space for residents, and an existing office building (2,077 square feet) would remain office. The residential unit mix includes 11 studio units, 28 one-bedroom units, 50 two-bedroom units, and 11 three-bedroom units. The project will connect Swift Street and Delaware Avenue (via an easement through the neighboring industrial land use is under negotiations). **Figure 1** and **Figure 2** show the project location and the project site, respectively.



- Proposed Project Location
- Proposed Easement

Figure 1
Project Site Location





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Introduction

The City of Santa Cruz adheres to the *Transportation Study Requirements for Development* (TS Requirements), which provides a clear and consistent technical approach for analyzing projects that could affect the City's transportation system and services. The TS Requirements outline the City's approach for determining the need for a transportation analysis, preparing its content, and identifying acceptable transportation improvements for land use and transportation projects proposed within the City of Santa Cruz. The TS Requirements also provide guidance for analyzing and determining environmental impacts under the California Environmental Quality Act (CEQA).

The amount of detail required in a transportation study is based on the project's expected level of daily and/or peak hour vehicle trip generation. Projects with fewer than 50 net new evening peak hour trips will not require a Transportation Study. Additionally, projects with fewer than 25 net new morning or evening peak hour trips at a critical intersection (the nearest critical intersection to this site is at Mission Street and Swift Street) do not need to conduct off-site intersection analysis.

Vehicle Trip Generation Estimates

This section summarizes the vehicle trip generation of the existing and future land use for the project site.

Trip Credits for Existing Uses

The estimate of new trips generated by the proposed development project includes a credit for trips associated with existing uses on the site. Uses are considered existing if they are actively present on the project site at the time of the transportation analysis or could be easily re-occupied. The project sponsor for this development (Santa Cruz City School) has control and continuous ownership of the project site and on-site occupancy was paused due to this redevelopment activity. In other words, the project sponsor could re-occupy the site if it chooses to, and a trip credit is based on the most recent use of the site—a 3,308 square foot preschool/daycare center. The 2,077 square foot existing office building is not changing use, and neither a trip credit nor trip generation estimate is provided for this analysis.

The existing preschool/daycare center trips were estimated using vehicle-trip rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 11th Edition (ITE Land Use Code 565). The existing trip credit is 157 daily vehicle trips, 36 AM peak hour trips (19 inbound and 17 outbound), and 37 PM peak hour (17 inbound and 20 outbound).



Trip Estimates for Proposed Uses

The proposed project most closely fits the description of ITE land use code 220 (Suburban, Low-rise Residential Multifamily Housing). No transit trip reductions or other location-based trip reductions were applied to the proposed uses. The proposed project would generate 716 daily vehicle trips, 54 AM peak hour trips (13 inbound and 41 outbound), and 64 PM peak hour trips (40 inbound and 24 outbound).

Net New Project Estimates

Table 1 summarizes trip generation estimates based on the methods outlined above. Considering the trip credit for the existing on-site establishment, the project would generate fewer trips; specifically, 559 more daily trips, 18 more AM peak hour trips, and 27 more PM peak hour trips than the existing number of calculated trips. As shown in **Table 1**, the proposed project is expected to generate fewer than 50 net new trips during the AM and PM peak hours; therefore, according to the City of Santa Cruz *Transportation Study Requirements for Development* (2021), no transportation study is necessary.

Table 1: Trip Generation Using ITE Trip Generation Method

ITE#	Land Use Type	Method	Size	Type	Weekday Trips	AM Peak Hour Trips			PM Peak Hour Trips		
						In	Out	Total	In	Out	Total
Proposed Development											
220 ¹	Multifamily Housing (Low-Rise)	Fit Curve	100	Dwelling Units	716	13	41	54	40	24	64
Existing (To-Be-Reused as an Amenity) Development Credit											
565	Daycare/Preschool Facility	Average Rate	3.3	1,000 SF GFA	157	19	17	36	17	20	37
Net New Project Trips					559	-6	24	18	23	4	27
The project will generate fewer than 50 net new evening peak hour vehicle trips?											Yes

Notes:

ITE *Trip Generation Manual* (11th Edition) provides an average rate and a best fit curve equation for trip generation estimates. The equation used for the projects is from ITE Land Use 220: Multifamily Housing (Low-Rise) – Not Close to Rail Transit:

Daily: $T = 6.41(X) + 75.31$;

AM Peak Hour: $T = 0.31(X) + 22.85$ (24% in, 76% out);

PM Peak Hour: $T = 0.43(X) + 20.55$ (63% in, 37% out).

where T is the number of trips generated and X is the number of dwelling units.

Average rate for weekday and peak periods were used for the estimating trips contributed by the existing daycare facility is from ITE Land Use 565: Daycare/Preschool Facility:

Daily Split between entering and exiting traffic – 50% in, 50% out;

AM Peak Hour Split between entering and exiting traffic - 53% in, 47% out;

PM Peak Hour Split between entering and exiting traffic - 47% in, 53% out.

Source: Fehr & Peers, 2024.



Study Intersections

This section shows that fewer than 25 net new AM or PM peak hour project trips are added to the nearby intersections of Delaware Avenue and Swift Street.

Trip Distribution

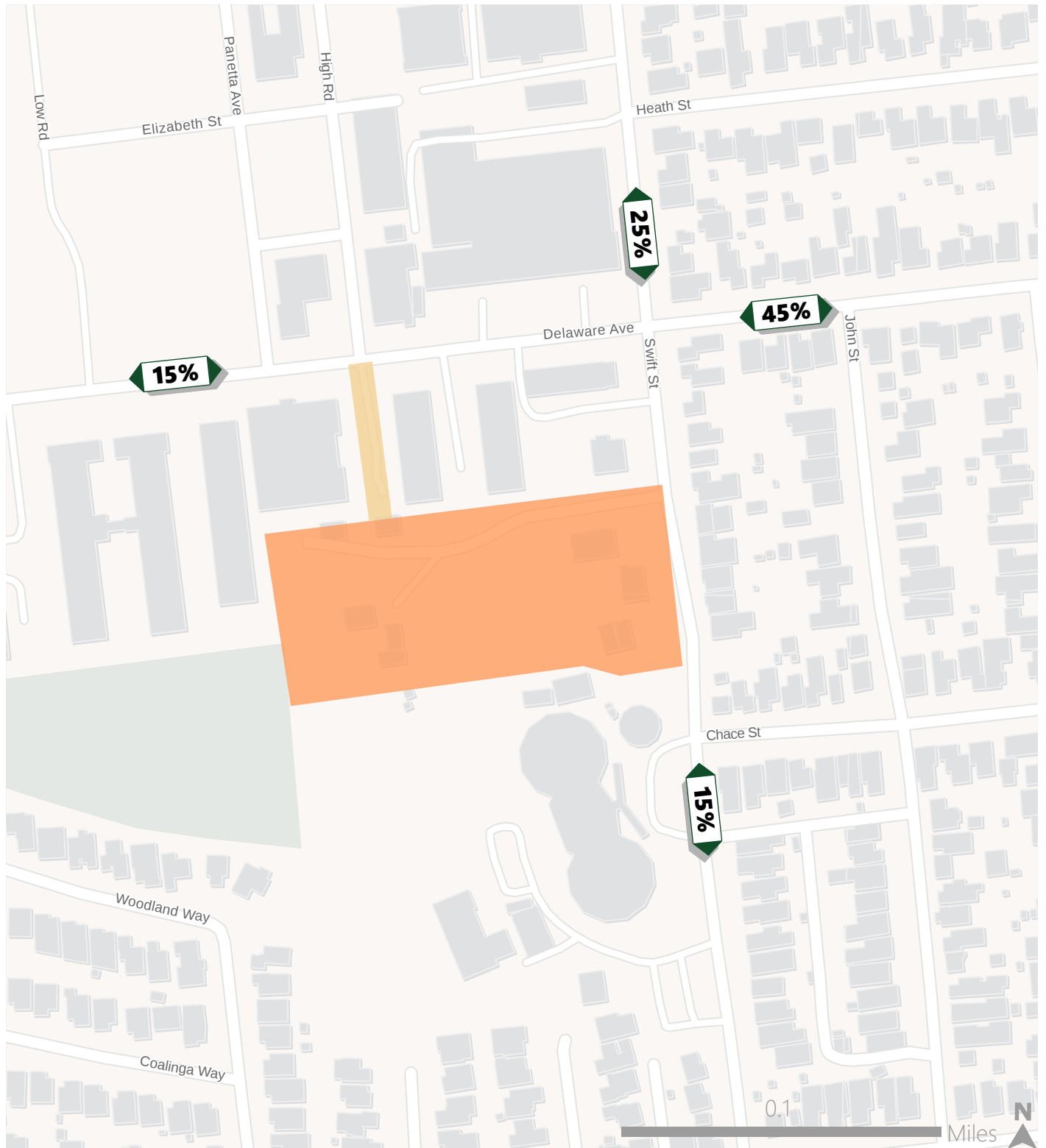
The directions of approach and departure of project trips were based on the locations of complementary land uses as well as existing travel patterns in the area. **Figure 3** shows the trip distribution for each relevant segment in the roadway network.

Trip Assignment

The project trips were assigned to the roadway system based on the directions of approach and departure discussed above. **Figure 4** shows the project trips assigned to each turning movement by intersection.

Critical Intersection Evaluation

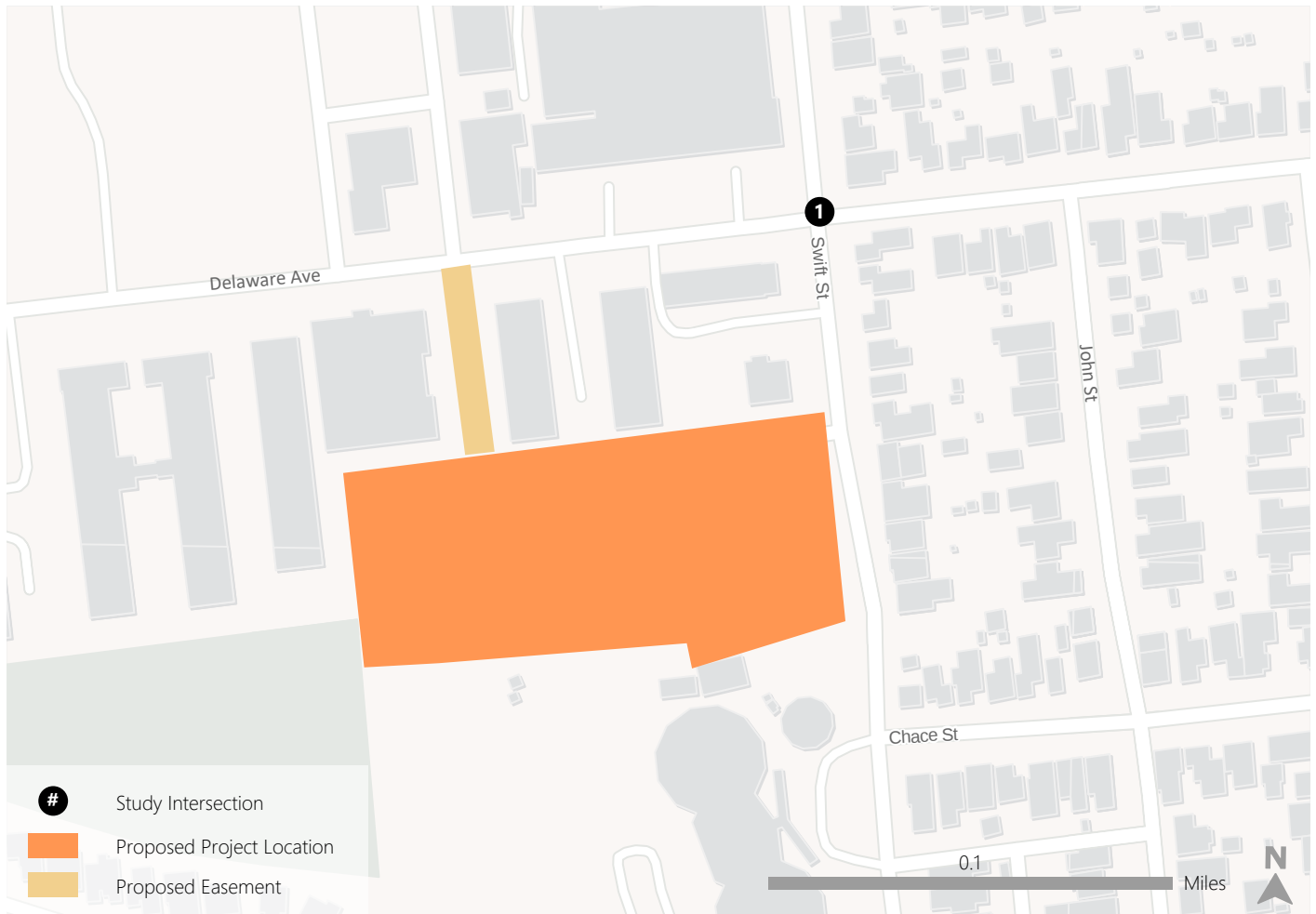
Figure 4 shows that 5 net new AM peak hour, and 13 net new PM peak hour project trips are added to the nearby intersection of Delaware Avenue and Swift Street. If the proposed easement is not built, the morning and evening peak hour traffic would be 13 net new AM peak hour, and 23 net new PM peak hour project trips are added to the nearby intersection of Delaware Avenue and Swift Street. Thus, an off-site intersection analysis is not needed because the project would add fewer than 25 new morning or evening peak hour project trips to the nearest intersection and even less to a critical intersection. The assignment also shows 5 net new AM peak hour trips are subtracted and 4 net new PM peak hour project trips are added to the other nearby intersection of Chace Street and Swift Street.



- Proposed Project Location
- Easement
- Trip Distribution



Figure 3
Trip Distribution



**Nearby Intersection
Swift St/ Delaware Ave**

Existing Development Trip Credit	Proposed Development Trips	Net New Project Trips
Swift Street Delaware Avenue 0 (0) -5 (-4) 0 (0) 0 (0) 0 (0) -9 (-8) 0 (0) 0 (0) -3 (-3) 0 (0) -3 (-3) -4 (-5) -8 (-9)	Swift Street Delaware Avenue 0 (1) 3 (9) 0 (0) 0 (0) 1 (3) 5 (15) 1 (1) 3 (2) 0 (0) 0 (0) 9 (5) 15 (9)	Swift Street Delaware Avenue 0 (1) -2 (5) 0 (0) 0 (0) 1 (3) -4 (7) 1 (1) 3 (2) -3 (-3) -3 (-3) 5 (0) 7 (0)

**Nearby Intersection
Swift St/ Chace St**

Existing Development Trip Credit	Proposed Development Trips	Net New Project Trips
Swift Street Chace St -2 (-3) 0 (0) 0 (0) 0 (0) -2 (-2) 0 (0)	Swift Street Chace St 7 (3) 0 (0) 0 (0) 0 (0) 2 (0) 0 (0)	Swift Street Chace St 5 (0) 0 (0) 0 (0) 0 (0) 0 (4) 0 (0)

Figure 4
Trip Assignment