Appendix E

Transportation Impact Study

SJ23-2209

SAN JOSÉ STATE UNIVERSITY
CAMPUS MASTER PLAN:

Transportation Analysis for the Environmental Review

PREPARED FOR

ASCENT ENVIRONMENTAL
SAN JOSÉ STATE UNIVERSITY

MAY 2025

FEHR & PEERS

San José State University Campus Master Plan: Transportation Analysis for the Environmental Review

Prepared for:
Ascent Environmental and
San José State University

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SJ23-2209

FEHR PEERS

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Executive Summary

This report presents the results of the transportation analysis (TA) conducted to evaluate the environmental effects of the proposed San José State University Campus Master Plan (SJSU Campus Master Plan, or "Project"). The purposes of the TA are to show compliance with the California Environmental Quality Act (CEQA), including analysis of the Project's vehicle miles traveled (VMT), and to identify significant impacts and mitigation, where applicable, for inclusion in the Environmental Impact Report (EIR).[1] The analysis presented in this report conforms to the *2020 California State University Transportation Impact Study Manual* (*2020 CSU TISM)* and evaluates the effects of the Project on the transportation system on and near the campus. **Figure 1** in **Chapter 1** shows the SJSU Campus Master Plan boundary and location within the downtown San José area, the Spartan-Keys neighborhood, and the surrounding transportation network.

Project Description

The proposed SJSU Campus Master Plan is described in Chapter 2 (Project Description) of the SJSU Master Plan Draft Environmental Impact Report (Master Plan Draft EIR). Project elements that would affect the transportation system near the campus include the proposed increase in the face-to-face student population and associated increase in faculty and staff; the added on-campus housing for students; the increase in faculty and staff to support the increased online classes; and a parking system that facilitates and prioritizes walking, bicycling, and transit use over vehicle travel. These project elements are grouped into the land use program, campus population in headcount, campus population in full-time equivalents, the campus transportation network, and transportation demand management (TDM) sections described below.

Land Use Program

Existing campus academic facilities provide about 7,800,000 gross square feet (gsf) of space for university operations, including housing. The SJSU Campus Master Plan projects future demand for approximately 10,500,000 gsf (an increase of approximately 2,650,000 million gsf) of academic, administrative, housing, and support facilities based on the proposed increase in student enrollment (headcount). This includes the addition of 1,000 dwelling units (half reserved for market-rate housing and half reserved for SJSU students, faculty, and staff) at the Alquist Redevelopment site west of the Main Campus.

[1] VMT refers to "vehicle miles traveled," a metric that accounts for the number of vehicle trips generated plus the length or distance of those trips. This report uses total VMT and boundary VMT metrics for specific geographic areas, which are defined in **Chapter 2**.

The Main Campus includes most of the academic facilities, all the on-campus housing, and all the campus life buildings (e.g., recreational facilities, health-related facilities, meeting facilities, etc.). The Main Campus has the following land uses:

- academic mixed use
- campus life
- residential
- open space
- operational support
- market-rate housing

The South Campus primarily supports athletic and recreational activities (e.g., SJSU athletics, recreational sports, intramural sports, sport clubs), special events, and academic classes and research. It has the following land uses:

- academic mixed use
- athletic fields and facilities
- open space
- operational support

Campus Population in Headcount

Upon buildout, the Project would accommodate an increase in campus enrollment from the existing 35,475 headcount (HC)[2] students and 4,072 HC faculty and staff, to 44,000 HC students, 5,260 HC faculty and staff, and 1,000 dwelling units at the Alquist Redevelopment, as shown in **Table ES-1** and **Table ES-2**. This level of growth results in an increase of approximately 8,525 HC students and 1,188 HC faculty and staff. **Table 1** in **Section 1.2.2** summarizes the student population, faculty, staff, and management population, collectively referred to as the campus population. **Table 1** also summarizes the number of students living on campus.

Table ES-1: Campus Population in Headcount

Timeframe	Students	Faculty/Staff	Total
Existing Conditions (2018-2019 Academic Year) (A)	35,475	4,072	39,547
Master Plan Buildout (B)	44,000	5,260	49,260
Change in Headcount (B-A=C)	8,525	1,188	9,713

Source: Fehr & Peers, 2024.

[2] Headcount (HC) is the total number of individual students, faculty, or staff.

Table ES-2: Alquist Redevelopment Dwelling Units

Timeframe	Market-Rate	Student	Faculty/Staff	Total
Existing Conditions (2018-2019 Academic Year)[1]	N/A	N/A	N/A	N/A
Master Plan Buildout	500	450	50	1,000

Notes:
1. Alquist was vacant during the spring semester of 2019.

Source: Fehr & Peers, 2024.

Campus Population in Full-Time Equivalents

Using full-time equivalent (FTE)[3] as the unit of measurement, upon buildout, the Project would accommodate an increase in campus enrollment from the existing 28,127 FTE students and 3,110 FTE faculty and staff, to 39,200 FTE students, and 4,099 FTE faculty and staff, as shown in **Table ES-3**. Achieving this growth would result in an increase of approximately 11,073 FTE students and 989 FTE faculty and staff over existing levels. **Table 3** in **Section 1.2.3** provides a detailed summary of the campus student and worker FTE. The Alquist Redevelopment will add approximately 1,185 residents in the 500 market-rate dwelling units plus 500 of the students, and faculty and staff will live in the Alquist Redevelopment, as shown in **Table ES-4**. The total population of students housed on-campus with the Alquist Redevelopment is forecasted to increase from 16% (4,450 of 27,084 FTE students) to 20% (7,000 of 35,625 FTE students).

Table ES-3: Campus Population in Full-Time Equivalents (FTE)

Timeframe	Students	Faculty/Staff	Total
Existing Conditions (2018-2019 Academic Year) (A)	28,127	3,110	31,237
Master Plan Buildout (B)	39,200	4,099	43,299
Change in FTE (B-A=C)	11,073	989	12,062

Source: Fehr & Peers, 2024.

Table ES-4: Alquist Redevelopment Population in Full-Time Equivalents (FTE)

Timeframe	Market-Rate Residents	Students	Faculty / Staff	Total
Existing Conditions (2018-2019 Academic Year)[1]	N/A	N/A	N/A	N/A
Master Plan Buildout	1,185	450	50	1,685

Notes:
1. Alquist was vacant during the spring semester of 2019.

Source: Fehr & Peers, 2024.

[3] FTE is used to measure a worker's or student's level of activity on the job or school load. An FTE of 1.0 is equivalent to a full-time worker or student, while an FTE of 0.5 signals half of a full work or school load. When there are part-time workers or students, the FTEs will be less than the campus headcount.

The campus population would reflect six key changes between Existing Conditions and Project Conditions:

1. Increase in student course load (average course load)
2. Increase in the portion of special session students[4]
3. Increase in the portion of students living on campus or at the Alquist Redevelopment
4. Increase in the portion of online and off-site classes
5. Increase in the portion of staff and management working remotely
6. Addition of faculty, staff, and management living at the Alquist Redevelopment

These six key changes result in more students who will live on campus or at the Alquist Redevelopment, the addition of staff and management living at the Alquist Redevelopment, as well as more students and staff / management who will attend classes virtually / work remotely.

The Alquist Redevelopment trips are summarized separately from the campus, which requires those trips to be moved from the campus to the separate Alquist Redevelopment summary of trips. These are trip accounting adjustments.

Campus Transportation Network

The Project includes physical modifications to existing campus parking and transportation facilities to create a more micromobility-, pedestrian-, and bicycle-oriented campus core. Micromobility includes small personal transportation devices such as bicycles, skateboards, scooters, e-scooters, and e-bikes.

The SJSU Campus Master Plan encourages pedestrian mobility on campus in the form of a grid of sidewalks and pathways that offer direct connections and separation from bicycle and micromobility modes. Bicycle and micromobility modes have dedicated lanes on, and adjacent to, the campus and dedicated parking areas. Active transportation, micromobility, and transit gateways to the Main Campus are also identified in the plan.

Transportation Demand Management

The SJSU Campus Master Plan includes removing surface parking lots and reducing vehicle circulation on the campus to add more usable open space with no net increase in parking spaces. The existing Transportation Solutions division under the auxiliary organization Associated Students serves the commute needs of students and employees at SJSU, with parking management provided by University Police Department Parking Services. The list of existing TDM strategies is in the Existing Conditions chapter (**Chapter 3**).

[4] Special session students refer to classes that are funded by student tuition (self-supported) and are primarily on-line and off campus classes.

CEQA Impacts and Mitigation Measures

The *2020 CSU TISM* provides guidance for the preparation of a CEQA-compliant transportation impact analysis pursuant to SB 743 and is the operative TISM for this transportation analysis. Examples of non-compliant situations are as follows:

- **Plan Conflicts**: The project would conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.
- **VMT Impacts**: The project would result in a VMT-related impact in accordance with the CSU's Significance Threshold for the project's direct impacts relative to total VMT per service population as well as the project's long-term effect on VMT using boundary VMT per service population evaluated under Cumulative Conditions.
- **Hazard Impacts**: The project would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- **Emergency Access Impacts**: The project would result in inadequate emergency vehicle access.

Each of these criteria is discussed further below.

Plan Conflicts

The Project's consistency with relevant transportation programs, plans, ordinances, or policies, was evaluated for each respective mode of travel—transit and carpool, roadways, bicycle facilities, and pedestrians as listed below.

Transit and Carpool System

Implementation of the proposed Project will not result in modifications to the transit or carpool networks that would disrupt existing facilities or services or interfere with the implementation of planned facilities/services contained in adopted programs, plans, policies, or ordinances. The proposed Project would lead to increases in the campus population, which would increase the demand for transit and carpool facilities and services and may cause transit vehicle delays. However, these impacts would be accommodated by existing and planned improvements to the transit system. Therefore, the impact relative to disruption of existing or planned transit or carpool facilities or conflicts with transit programs, plans, ordinances, or policies would be **less-than-significant**.

Roadway System

The Project includes modifications to existing parking and street facilities to create a more pedestrian- and bicycle-oriented campus and to increase connectivity between the Main Campus and South Campus. The changes to circulation on campus and between the Main Campus and South Campus as part of the Project would not be expected to interfere with existing roadway facilities nor conflict with planned roadway facilities or conflict with adopted plans, guidelines, policies, or standards. Therefore, the impact relative to disruption of existing or planned roadways or conflicts with programs, plans, ordinances, or

policies through the implementation of the proposed Project would be **less-than-significant** on roadway facilities and no mitigation would be required.

Bicycle System

Project improvements to bicycle facilities include encouraging bikeshare; adding new internal bicycle paths, bikeshare stations, and on-road bicycle facilities; and providing connections to existing and planned bicycle facilities. The Project is expected to generate demand for bicycle lanes, bicycle parking, bicycle routes, and off-street shared-use paths between the campuses and adjacent land uses through improvements to bicycle travel. The Project improvements would not disrupt or conflict with the intent of planned bicycle facilities consistent with relevant plan goals and policies, and would not conflict with applicable programs, plans, ordinances, or policies related to bicycle facilities. Therefore, the bicycle-related impact would be **less-than-significant**.

Pedestrian System

The Project improvements, such as increased micromobility, expanding multi-use pathways, adding pedestrian areas, reducing vehicle circulation through the core of the campus, and closing gaps in the pedestrian network, align with relevant regional goals and policies. The Project would not interfere with existing or planned pedestrian facilities nor conflict with applicable non-vehicle transportation plans, guidelines, policies, or standards. Instead, it would enhance pedestrian circulation within the Main Campus core and connections to adjacent land uses, which is a beneficial effect on the pedestrian circulation and access. Therefore, the Project would not conflict with pedestrian-related plans and any impact would be **less-than-significant**.

VMT Impacts

The VMT impact analysis presented in this report considers the Project's direct impacts relative to total VMT per service population as well the Project's long-term effect on VMT using boundary VMT per service population evaluated under Cumulative Conditions. The Project would result in a VMT-related impact as described below and discussed in **Table 12** in **Section 5.1.2**.

Each of these impact criteria is discussed further below.

Project-Generated VMT (Project Analysis)

The significance threshold for determining the Project's direct impact is a total VMT per service population rate that is 15% below the existing total VMT per service population for the region (defined as Santa Clara County, Alameda County, and San Mateo County). The threshold applied in this analysis is 15% below the existing total VMT per service population of 18.07, as shown in **Table ES-5**. This results in a total VMT per service population threshold of 15.36 miles. Therefore, the Project would cause a significant project generated VMT impact if the SJSU Campus Master Plan total VMT per service population under Existing with Project Conditions is greater than 15.36 miles.

Table ES-5: Project Generated VMT Threshold

	Project Generated VMT Threshold
Total Vehicle Miles Traveled (A)[1]	120,353,080
Service Population (B)[1,2]	6,659,650
Total VMT per Service Population (A/B = C)	18.07
Total VMT per Service Population Threshold (C*85% = D)	**15.36**

Notes:
1. Rounded service population and VMT to nearest 10.
2. Service population is defined as the sum of all residents (including students from kindergarten to 12th grade), employees (including faculty, staff, and management), and university students.

Source: Fehr & Peers, 2024.

As shown in **Table ES-6**, the SJSU Campus Master Plan would generate VMT at a rate of 13.66 miles per service population. This value is less than the VMT threshold of 15.36 total VMT per service population.

Table ES-6: Project VMT Results

	Total Project Generated VMT
SJSU Campus	
Total Project Generated Vehicle Miles Traveled (A)[1]	655,270
Service Population (B)[1,2]	47,959
Total Project Generated VMT per Service Population (A/B = C)	13.66
Initial Impact Assessment	
Total VMT per Service Population Threshold	15.36
(Initial Impact Conclusion)	Less Than Significant

Notes:
1. Rounded service population and VMT to nearest 10.
2. Service population is defined as the sum of all residents (including students from kindergarten to 12th grade), employees, (including faculty, staff, and management), and university students.

Source: Fehr & Peers, 2024.

Implementation of the SJSU Campus Master Plan would result in a total project-generated VMT per service population under Existing with Project Conditions that is less than the applicable threshold. Therefore, the impact of the SJSU Campus Master Plan total VMT rate would be **less-than-significant**.

Projects Effect on VMT (Cumulative Analysis)

As shown in **Table ES-7**, the impact threshold for the Project's effect on VMT, or the project's cumulative impact, is the regional boundary VMT per service population, or 8.97 miles. Like the total Project-generated VMT discussed above, the boundary VMT baseline assumes the same three county region[5] to evaluate the Project's effects on VMT. Therefore, the Project's effect on VMT would result in a significant

[5] The region is defined as Santa Clara County, Alameda County, and San Mateo County.

cumulative impact if it causes the cumulative regionwide daily boundary VMT per service population to be greater than 8.97 miles.

To evaluate the Project's effect on VMT between the Cumulative Condition and Cumulative with Project Condition, the boundary VMT for the region is divided by the service population (sum of all residential population (including students from kindergarten to 12th grade), employment population, and university students). The change in boundary VMT captures the combined effects of:

- shifts in existing VMT due to land use and transportation network changes in the region,
- shifts in existing traffic to alternate travel routes or modes, and
- new VMT from additional land use development in the region.

Further, in the Cumulative Conditions the SJSU Campus is presumed to be the same as Existing Conditions (2019) because the campus is near the capacity of the 2001 Campus Master Plan, whereas in the Cumulative with Project Condition the SJSU Campus incorporates the proposed SJSU Campus Master Plan. This analysis evaluates whether the Project would result in an increase in the regionwide boundary VMT from Cumulative Conditions to Cumulative with Project Conditions. The boundary VMT per service population would be similar under Cumulative Conditions and Cumulative with Project Conditions. The regional impact threshold for the Project's effect on VMT is the regionwide Cumulative Conditions boundary VMT per service population of 8.97 miles per service population.

Table ES-7: Project's Effect (Boundary) VMT Assessment

	Cumulative Condition	Cumulative with Project Condition
South Bay Area[1]		
Boundary Vehicle Miles Traveled (A)[1]	74,218,350	74,164,850
Service Population (B)[1,2]	8,278,410	8,291,730
Boundary VMT per Service Population (A/B = C)	8.97	8.94
Boundary VMT per Service Population Threshold		8.97
(Initial Impact Conclusion)		Less Than Significant

Notes:
1. Rounded service population and VMT to nearest 10.
2. Service population is defined as the sum of all residents (including students from kindergarten to 12th grade), employees, (including faculty, staff, and management), and university students.

Source: Fehr & Peers, 2024.

Under Cumulative with Project Conditions the region boundary VMT per service population of 8.97 is less than the applicable threshold of 8.94. Therefore, the impact of the Project's effect on VMT under Cumulative with Project Conditions would be ***less-than-significant***.

Hazard Impacts

The proposed Project would have a significant impact if it substantially increased hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). SJSU takes a safety-first approach that incorporates Caltrans' Four Pillars of Traffic Safety:[6] Double Down on What Works; Accelerate Advanced Technology; Lead Safety Culture Change; and Integrate Equity.

The Project includes modifications to existing campus parking and transportation facilities to create a safer, more pedestrian- and bicycle-oriented campus core. These modifications would change the design of parking lots and local streets and intersections, but they would not create hazards such as sharp curves or include otherwise dangerous transportation facility design features. The Project also includes policy changes to continue to build a culture that values safety. Therefore, the Project impact related to hazards would be **less-than-significant**.

Emergency Access

The proposed Project would have a significant impact if it resulted in inadequate emergency access. While most vehicle traffic under the Project will have limited access to the Main Campus core, emergency vehicles will have unlimited access to campus streets restricted to pedestrians, bicyclists, transit vehicles, and service vehicles. Additionally, future parking facilities and streets will be designed to accommodate emergency vehicles. The SJSU Campus Master Plan includes the following goal in the Master Plan to ensure adequate emergency access on campus: "Continue to designate emergency access and egress for both campuses" (MO-9). The emergency and service vehicles will continue to have unlimited access to the campus that will be improved by the design of future parking facilities and streets. Therefore, the Project impact related to emergency access would be **less-than-significant**.

[6] Caltrans Proven Safety Countermeasures, Accessed on July 27, 2023.

1. Introduction and Project Description

This report presents the results of the transportation analysis (TA) conducted to evaluate the environmental effects of the proposed San José State University Campus Master Plan (SJSU Campus Master Plan). The SJSU Campus Master Plan includes a combination of land use, transportation infrastructure, and parking improvements to accommodate an increase in the student enrollment and associated increase in faculty and staff. The trip generation and vehicle miles traveled analysis presented in this report assumes the SJSU Campus Master Plan will increase its absolute vehicle trip generation but lower its vehicle trip rates due to the increase in students living on campus, remote learning, remote work for staff, and the addition of staff living on campus. **Figure 1** shows the SJSU Campus Master Plan boundary and location within the downtown San José area, the Spartan-Keys neighborhood, and the surrounding transportation network.

This chapter outlines the report purpose, project description, recent changes in the California Environmental Quality Act (CEQA) regarding transportation analyses, the analysis scenarios, and report organization.

1.1 Purpose

The primary purpose of this report is to present the transportation analysis for compliance with CEQA, including identification of potential significant impacts and applicable recommended mitigation for inclusion in the Environmental Impact Report (EIR). Specifically, this report includes a plan conflict analysis of the project against the various regional, county, and local plans; a vehicle miles travel (VMT) impact analysis; a hazardous impact analysis; and an emergency access impact analysis. Project effects on the environment were evaluated following the CEQA guidelines along with guidance from the *2020 California State University Transportation Impact Study Manual* (2020 *CSU TISM*), the City of San José, and Caltrans.

Figure 1

San José State University Campus Master Plan: Project Locations

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1.2 Project Description

The proposed SJSU Campus Master Plan is described in Chapter 2 (Project Description) of the SJSU Master Plan Draft Environmental Impact Report (Master Plan Draft EIR) (see **Appendix A** for the Project Description). Project elements that would affect the transportation system near the campus include the proposed increase in the face-to-face student[7] population and associated increase in faculty and staff; the added on-campus housing for students; the increase in faculty and staff to support the increased online classes; the addition of staff living on campus; and a parking system that facilitates and prioritizes walking, bicycling, and transit use over vehicle travel. Each of these Project elements is described below.

1.2.1 Land Use Program

Existing campus academic facilities provide about 7,800,000 million gross square feet (gsf) of space for university operations, including housing. The SJSU Campus Master Plan projects future demand for approximately 10,500,000 million gsf (an increase of approximately 2,650,000 million gsf) of academic, administrative, housing, and support facilities based on the proposed increase in student enrollment (headcount). This includes the addition of 1,000 dwelling units (half reserved for market-rate housing and half reserved for SJSU students, faculty, and staff) at the Alquist Redevelopment west of the Main Campus.[8]

The Main Campus includes most of the academic facilities, on-campus housing, and campus life buildings (e.g., recreational facilities, health-related facilities, meeting facilities, etc.). The Main Campus has the following land uses:

- academic mixed use
- campus life
- residential
- open space
- operational support
- market-rate housing

The South Campus primarily supports athletic and recreational activities (e.g., SJSU athletics, recreational sports, intramural sports, sport clubs), special events, and academic classes and research. It has the following land uses:

- academic mixed use
- athletic fields and facilities

[7] Face-to-face student is defined as students who go to class in-person on campus.

[8] This project studies the following mix:
- 500 market-rate dwelling units
- 450 student dwelling units
- 50 faculty and staff dwelling units

- open space
- operational support

1.2.2 Campus Population in Headcount

Upon buildout, the Project would accommodate an increase in campus enrollment from the existing (based on academic year 2018-2019) 35,475 headcount (HC) students[9] and 4,072 HC faculty and staff, to 44,000 HC students, 5,260 HC faculty and staff, and 1,000 dwelling units at the Alquist Redevelopment, as shown in **Table 1** and **Table 2**. Achieving this growth would result in an increase of approximately 8,525 HC students and 1,188 HC faculty and staff over existing levels. **Table 1** summarizes the student population, faculty, staff, and management population, collectively referred to as the campus population. **Table 1** also summarizes the number of students living on campus.

[9] Headcount (HC) is the total number of individual students, faculty, or staff.

Table 1: Campus Population – Headcount

Campus Population	Existing Conditions (HC)[1]	Project Conditions (HC)[1]	Project – Existing[2] Change	Project – Existing[2] % Change
Student Population[3] (A)	35,475	44,000	8,525	24.0%
Student Population				
Students not on Campus (Special Session)[4] (B)	-1,983	-6,500	-4,517	-227.8%
Students on Campus (A-B=C)	*33,492*	*37,500*	*4,008*	12.0%
Faculty, Staff, and Management Population				
Faculty[5] (D)	2,074	2,500	426	20.5%
Staff and Management[6] (E)	1,998	2,760	762	38.1%
Total Faculty and Staff Population (D+E=F)	*4,072*	*5,260*	*1,188*	29.2%
Campus Population				
Students, Faculty, and Staff (C+F = G)	37,564	42,760	5,196	13.8%
Residents, Students, Faculty and Staff Living on Campus with Alquist Redevelopment				
Market-Rate Residents[7] (H)	0	1,185	1,185	N/A
Students Living on Campus with Alquist[8] (I)	4,450	7,000	2,550	57.3%
Faculty and Staff Living on Campus with Alquist[9] (J)	0	50	50	N/A

Note:

1. HC = Headcount of students, faculty, and staff.
2. Change (Project – Existing) = Project Conditions Column – Existing Conditions Column.
3. Student population as described in Table 2-4 titled "Fall Student Headcount and Full-Time Equivalent Students" of the environmental project description.
4. Special session students as summarized in Table A (SJSU Headcounts) with supplemental data from Institutional Research (data provided August 11, 2023). Special session students refer to classes that are funded by student tuition (self-supported) and are primarily on-line and off campus classes.
5. Faculty headcount as summarized in Table 2-5 titled "Student Enrollment, Faculty, and Staff Headcount" of the environmental project description.
6. Includes staff, administrators, and research staff as summarized in Table 2-5 titled "Student Enrollment, Faculty, and Staff Headcount" of the environmental project description.
7. Market-rate housing residents living in Alquist (not affiliated with SJSU) based on the assumption that 500 units are reserved for market-rate housing with an average occupancy of 2.37 persons per dwelling unit.
8. Students living on campus as summarized in Table 2-7 titled "Student Enrollment, Faculty, and Staff Headcount" of the environmental project description and with the assumption that 450 units of Alquist are reserved for graduate students with an average occupancy of 1 student per dwelling unit.
9. Faculty and staff living on campus with the assumption that 50 units of Alquist are reserved for faculty / staff with an average occupancy of 1 faculty / staff per dwelling unit.

Source: Fehr & Peers, 2024.

Table 2: Alquist Redevelopment Dwelling Units

Dwelling Units	Existing Conditions (DU)[1]	Project Conditions (DU)[1]	Project – Existing Change
Market-Rate	0	500	500
Students	0	450	450
Faculty, Staff, and Management	0	50	50
Total	0	*1,000*	*1,000*

Notes:
1. Alquist was vacant during the spring semester of 2019.

Source: Fehr & Peers, 2024.

1.2.3 Campus Population in Full-Time Equivalents

Using full-time equivalent (FTE) as the unit of measurement, upon buildout, the Project would accommodate an increase in campus enrollment from the existing (based on academic year 2018-2019) 28,127 FTE students and 3,110 FTE faculty and staff, to 39,200 FTE students and 4,099 FTE faculty and staff. Achieving this growth would result in an increase of approximately 11,073 FTE students and 989 FTE faculty and staff over existing levels (refer to **Table 3**). The Alquist Redevelopment will add approximately 1,185 residents in the 500 market-rate dwelling units plus 500 SJSU students, and 50 SJSU faculty, staff, and management will live in the Alquist Redevelopment (refer to **Table 4**).

As shown in **Table 3**, the total population housed on campus (i.e., the number of students residing in on-campus housing) with the Alquist Redevelopment is forecasted to increase from the existing 16% (4,450 of 27,084 FTE students) to 20% (7,000 of 35,625 FTE students).

Table 3: Campus Population – Full-Time Equivalents

Campus Population	Existing Conditions (FTE)[1]	Project Conditions (FTE)	Project – Existing[2] Change	Project – Existing[2] % Change
Student Population				
Student Population[3] (A)	28,127	39,200	11,073	39.4%
Students not on Campus (Special Session)[4] (B)	-1,043	-3,575	-2,532	-242.8%
Students on Campus (A-B=C)	*27,084*	*35,625*	*8,541*	31.5%
Faculty, Staff, and Management Population				
Faculty[5] (D)	1,082	1,409	327	30.2%
Staff and Management[6] (E)	2,028	2,690	662	32.7%
Total Faculty and Staff Population (D+E=F)	*3,110*	*4,099*	*989*	31.8%
Campus Population				
Students, Faculty and Staff[7] (C+F = G)	30,194	39,724	9,530	31.6%
Residents, Students, Faculty, and Staff Living on Campus with Alquist Redevelopment				
Market-Rate Residents[7] (H)	0	1,185	1,185	N/A
Students Living on Campus with Alquist[8] (I)	4,450	7,000	2,550	57.3%
Faculty and Staff Living on Campus with Alquist[9] (J)	0	50	50	N/A

Note:

1. FTE = Full-time equivalent students, faculty, and staff.
2. Change (Project – Existing) = Project Conditions Column – Existing Conditions Column.
3. Student population as described in Table 2-4 titled "Fall Student Headcount and Full-Time Equivalent Students" of the environmental project description.
4. Special session students as summarized in Table B (SJSU Full-Time Equivalents) of the Campus Master Plan with supplemental data from Institutional Research (data provided August 11, 2023).
5. Faculty FTEs as summarized in Table B (SJSU Full-Time Equivalents) of the Campus Master Plan for 2018-2019 academic year provided by Institutional Research on August 11, 2023.
6. Includes staff, administrators, and research staff as summarized in Table B (SJSU Full-Time Equivalents) of the Campus Master Plan for 2018-2019 academic year provided by Institutional Research on August 11, 2023.
7. Market-rate housing residents living in Alquist (not affiliated with SJSU) based on the assumption that 500 units are reserved for market-rate housing with an average occupancy of 2.37 persons per dwelling unit.
8. Students living on campus as summarized in Table 2-7 Student Enrollment, Faculty, and Staff Headcount of the environmental project description and with the assumption that 450 units of Alquist are reserved for graduate students with an average occupancy of 1 student per dwelling unit.
9. Faculty and staff living on campus with the assumption that 50 units of Alquist are reserved for faculty / staff with an average occupancy of 1 faculty / staff per dwelling unit.

Source: Fehr & Peers, 2024.

Table 4: Alquist Redevelopment Population in Full-Time Equivalents (FTE)

Population	Existing Conditions (FTE)[1]	Project Conditions (FTE)	Project – Existing Change
Market-Rate Residents	0	1,185	1,185
Students	0	450	450
Faculty, Staff, and Management	0	50	50
Total	0	*1,685*	*1,685*

Notes:
1. Alquist was vacant during the spring semester of 2019.

Source: Fehr & Peers, 2024.

The campus population would reflect six key changes between Existing Conditions and Project Conditions:

1. **Increase student course load**: The HC student percent change is less (24.0%) than the FTE student percent change (39.4%).[10]
2. **Increase in the portion of special session students**: The portion of special session FTE students increases from 3.7% (1,043 of 28,127 FTE students) to 9.1% (3,575 of 39,200 FTE students).[11]
3. **Increase in the portion of students living on campus**: The portion of FTE students living on campus increases from 16.4% (4,450 of 27,084 FTE students) to 19.6% (7,000 of 35,625 FTE students).[12]
4. **Increase in the portion of online and off-site classes**: The portion of FTE students taking online and off-site classes increases from 10.0% (2,816 of 28,127 FTE students) to 15.6% (6,100 of 39,200 FTE students).[13]
5. **Increase in the portion of staff and management working remotely**: The portion of FTE staff and management working remotely increases from 1.2% (25 of 2,028 FTE staff and management) to 25.0% (673 of 2,690 FTE staff and management).[14]
6. **Addition of faculty, staff, and management living on campus**: With the addition of the Alquist Redevelopment, there will be FTE staff and management living on campus.

[10] Student population as described in Table 2-4 titled "Fall Student Headcount and Full-Time Equivalent Students" of the environmental project description.

[11] Special session students as summarized in Table A (SJSU Headcounts) with supplemental data from Institutional Research (data provided August 11, 2023).

[12] Students living on campus as summarized in Table 2-7 Student Enrollment, Faculty, and Staff Headcount of the environmental project description and with the assumption that 450 units of Alquist are reserved for graduate students with an average occupancy of 1 student per dwelling unit

[13] Online and off-site students as summarized in Table B (SJSU Full-Time Equivalents) with supplemental data from Institutional Research (data provided August 11, 2023).

[14] Percentage of staff and management working remotely provided from Institutional Research (data provided August 1, 2023).

1.2.4 Campus Transportation Network

The Project includes physical modifications to existing campus parking and transportation facilities to create a more micromobility- (includes small personal transportation devices such as bicycles, skateboards, scooters, e-scooters, and e-bikes), pedestrian-, and bicycle-oriented campus core. The SJSU Campus Master Plan includes the following guiding mobility (MO) principles related to the campus's circulation network:

- MO-1. Support multimodal transportation.
- MO-2. Anticipate planned BART and high-speed transit services and related projects that will open toward the end of the time horizon of the plan [~2040].
- MO-3. Support first-last mile connections to both campuses. First-last mile connections include travel by bicycle, on foot, and with other micromobility devices.
- MO-4. Improve pedestrian safety on campus.
- MO-5. Support micromobility (bicycling and rolling using wheelchairs, skateboards, scooters, and other devices).
- MO-6. Improve access between the Main and South Campuses.
- MO-7. Reduce internal vehicle circulation on campus.
- MO-8. Provide convenient and safe drop off and loading zones.
- MO-9. Continue to designate emergency access and egress for both campuses.

Figure 2 shows the future shuttle route anticipated by the SJSU Campus Master Plan. **Figure 3** shows planned mobility improvements on campus. The SJSU Campus Master Plan encourages pedestrian mobility on campus with a grid offering direct connections and separation from bicycle and micromobility modes. Bicycle and micromobility modes have dedicated lanes on and adjacent to the campus and dedicated parking areas. Active transportation, micromobility, and transit gateways to the Main Campus are also identified.

1.2.5 Transportation Demand Management

The SJSU Campus Master Plan will remove surface parking lots and reduce the vehicle circulation network to add more usable open space on the campus. There is no planned increase in parking spaces on the main campus. Transportation demand management (TDM) will be used to reduce vehicle trips and parking demand at the main campus. The existing Transportation Solutions division under the auxiliary organization Associated Students serves the commute needs of students and employees at SJSU, with parking management provided by University Police Department Parking Services. The list of existing TDM strategies is in the Existing Conditions chapter (**Chapter 3**).

Source: San José State University Campus Master Plan (May 2023) Figure 4-6

Figure 2

San José State University Campus Master Plan: Shuttle Route

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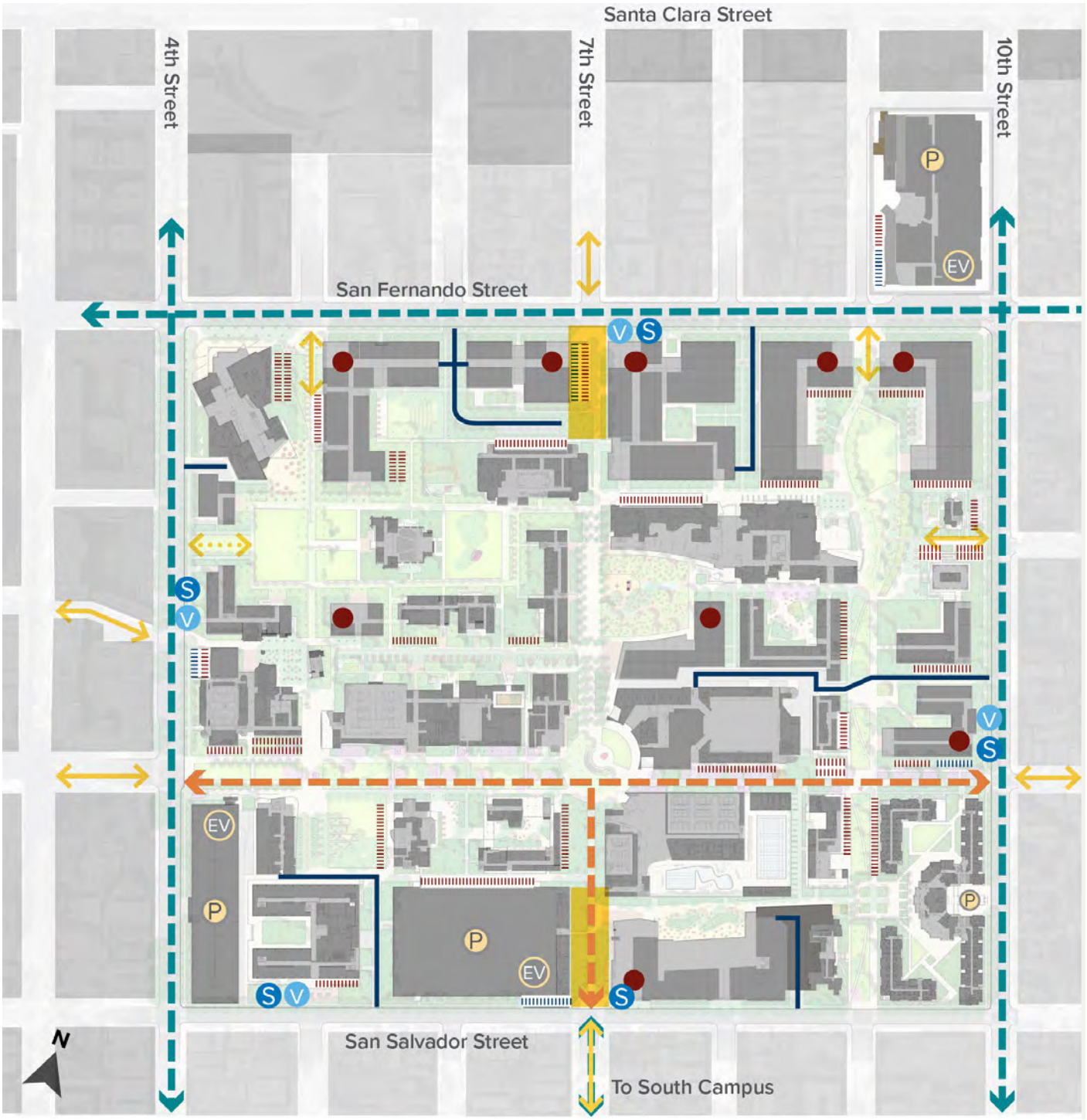


Source: San José State University Campus Master Plan (May 2023) Figure 4-7

- Dedicated Bicycle Lanes around Main Campus (SJDOT)
- Dedicated Micromobility Lanes on Main Campus
- Short-term Micromobility Parking (Outdoors)
- Micromobility and Bikeshare Docking Stations
- Service Access
- Gateways
- Pedestrianized Areas
- SJSU Vehicular Parking
- SJSU Shuttle Stops
- Desired VTA Bus Stops
- Indoor Micromobility Parking

Figure 3

San José State University Campus Master Plan: Mobility Improvements on the Main Campus

N:\Projects_SJ23_Projects\SJ23_2209_SJSU_MasterPlan_EIR\Graphics\ADOBE\F818\Fig03_Mobility_Improvements.ai

1.3 Recent Changes to CEQA Transportation Analysis

Senate Bill (SB) 743 changed how transportation impacts under CEQA are analyzed. SB 743 removed the use of automobile delay or traffic congestion for determining transportation impacts in environmental review. The latest *CEQA Statute & Guidelines* now specify that VMT is the appropriate metric to evaluate transportation impacts (**Chapter 2** provides additional context). In short, SB 743 changes the focus of transportation impact analysis in CEQA from measuring impacts to drivers to measuring the impact of driving.

In response to this methodological change in required transportation analysis, the CSU Chancellor's Office issued the *2020 CSU TISM*, which supersedes the *2012 CSU TISM*. The *2020 CSU TISM* provides guidance for the preparation of CEQA-compliant transportation impact analysis pursuant to SB 743 and is the operative TISM for the analysis presented here.

The SJSU Campus Master Plan project is a large project that will modify and increase the student housing, academic, and supporting campus land use supply on the SJSU campus; implement a transportation demand management (TDM) program; and influence the total VMT within downtown San José and nearby.

1.4 Analysis Scenarios

The VMT analysis includes the following study scenarios:

- **Scenario 1: Existing Conditions** – Existing (2019) travel characteristics.
- **Scenario 2: Existing with Project Conditions** – Scenario 1 travel characteristics plus the combined effects of the SJSU Campus Master Plan including the following:
    - Increase in the campus population
    - Increase in the portion of special session students
    - Increase in the portion of students living on campus
    - Increase in the portion of online and off-site classes
    - Increase in the portion of staff and management working remotely
    - Addition of faculty, staff, and management living on campus
- **Scenario 3: Cumulative Conditions** – Year 2040 travel behavior based on the 2040 travel model and the Plan Bay Area 2040 Association of Bay Area Governments (ABAG) land use projections and planned and funded transportation system improvements noted in the *Valley Transportation Plan (VTP) 2040*. On the SJSU campus, this scenario uses the existing campus population and travel characteristics.

- **Scenario 4: Cumulative with Project Conditions** – Scenario 3 travel characteristics plus the combined effects of the SJSU Campus Master Plan including the following:
    - Increase in the campus population
    - Increase in the portion of special session students
    - Increase in the portion of students living on campus
    - Increase in the portion of online and off-site classes
    - Increase in the portion of faculty, staff, and management working remotely
    - Addition of faculty, staff, and management living on campus

1.5 Report Organization

This report is divided into seven chapters:

- **Chapter 1 – Introduction and Project Description** includes the TA purpose, proposed project description, a description of recent changes to CEQA transportation analysis, a summary of the analysis scenarios, and report organization.
- **Chapter 2 – VMT Approach and Analysis Methods** discusses the approach for a comprehensive VMT assessment and the forecasting methods used to estimate total VMT per service population rate and the project's effect on VMT using boundary VMT per service population.
- **Chapter 3 – Existing Conditions** describes the existing campus parking and transportation demand management and the transportation system near the Project site, including the transit service and carpool system, surrounding street network, truck routes, bicycle facilities, and pedestrian facilities.
- **Chapter 4 – Summary of Relevant Regional Circulation and Transportation Plans** provides background information to be used for the plan consistency evaluation.
- **Chapter 5 – Significance Criteria** lists the significance criteria used for the environmental impact analysis.
- **Chapter 6 – Vehicle Miles Traveled Forecasts** summarizes the VMT forecast methods including the daily trip generation, service population, and the San José travel model overview.
- **Chapter 7 – Environmental Impacts and Mitigation Assessment** includes a plan conflict analysis, a VMT analysis, hazards analysis, and an emergency access analysis.

2. VMT Approach and Analysis Methods

This chapter summarizes the use of CEQA prior to SB 743, an overview of SB 743 and legal framework, and VMT assessment approach decisions and VMT analysis methods.

2.1 Use of CEQA Prior to SB 743

CEQA was enacted in 1970 with the goal of providing a mechanism for disclosing to the public the environmental impacts of proposed actions. Before taking a discretionary action, lead agencies (such as the San José State University) must determine if that action is subject to CEQA and conduct a review of the effects of that action on the physical environment. The State Office of Planning and Research (OPR) prepares and maintains guidelines to help agencies implement CEQA.

Under CEQA, lead agencies must determine whether a proposed project has the potential to cause significant environmental impacts. This determination must be based, to the extent possible, on factual data and scientific methods of analysis. The project's effect on transportation is one of the 13 areas that must be analyzed. For many years, many lead agencies have used vehicle level of service (LOS) as the primary measure to evaluate a project's effect and determine transportation impacts.

LOS is a qualitative description of vehicular traffic flow based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels are defined from LOS A, which reflects free-flow conditions where there is very little interaction between vehicles, to LOS F, where vehicle demand exceeds capacity and high levels of vehicle delay result. LOS E represents "at-capacity" operations.

Mitigating a LOS impact typically involves making changes to the physical transportation system to accommodate additional vehicles and reduce delays. These mitigations may involve actions such as installing traffic signals, adding turn lanes, widening roads, or contributing to the construction of HOV/Express Lanes, among other options. The identification of necessary mitigations resulting from project impacts has historically led to project sponsors identifying and funding these changes to the transportation system (i.e., paying for or providing a "fair share" contribution toward funding a new traffic signal or widening an existing roadway).

2.2 Overview of Senate Bill 743 and Legal Framework

On September 27, 2013, Governor Jerry Brown signed SB 743 into law and started a process intended to fundamentally change transportation impact analysis as part of CEQA compliance. Specifically, the legislation directed the State of California's OPR to look at different metrics for identifying transportation impacts and make corresponding revisions to the *CEQA Statute & Guidelines*. The initial bill included two legislative intent statements (emphasis and bullets added):

- **New methodologies** under the California Environmental Quality Act are **needed for evaluating transportation impacts** that are better able to promote the state's goals of reducing greenhouse gas emissions and traffic-related air pollution, promoting the development of a multimodal transportation system, and providing clean, efficient access to destinations.
- More appropriately balance the needs of congestion management with statewide goals related to **infill development**, promotion of public health through **active transportation**, and **reduction of greenhouse gas emissions**.

These statements provide direction to OPR and to lead agencies. For OPR, the direction is about what the new metrics should achieve. For lead agencies, the direction is about expected changes in transportation analysis (and related technical areas) and what factors to consider for significance thresholds.

To implement this intent, SB 743 contains amendments to current congestion management law that allow cities and counties to opt out of the LOS standards that would otherwise apply. SB 743 does not prevent a lead agency from continuing to analyze delay or LOS as part of other plans (e.g., a general plan), fee programs, or ongoing network monitoring. However, automobile delay as described by LOS is not considered a significant impact on the environment for purposes of CEQA. Lead agencies may still consider vehicle LOS outside of the CEQA process if they determine it is an important part of their transportation planning process. The most common applications will occur for jurisdictions wanting to use vehicle LOS to plan roadways in their general plans or determine nexus relationships for their impact fee programs. Jurisdictions can also continue to condition projects to build transportation improvements through the entitlement process in a variety of ways.

Following several years of draft proposals and related public comments, OPR settled upon VMT as the preferred metric for assessing passenger vehicle-related impacts and issued revised *CEQA Statute & Guidelines* in December 2018, along with a *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018) (OPR *Technical Advisory*) to assist practitioners in implementing the *CEQA Statute & Guidelines* revisions. Under the revised *CEQA Statute & Guidelines*, vehicle LOS is no longer to be used as a determinant of significant environmental impacts under CEQA, and analysis of a project's impacts will now be based on assessment of VMT.

The OPR *Technical Advisory* provides guidance and recommendations for SB 743 implementation. However, lead agencies must still make their own specific decisions about metrics, methods, thresholds, and mitigation. Further, the OPR guidance is primarily tied to statewide goals for greenhouse gas (GHG) reduction and does not attempt to balance or resolve potential conflicts between state and lead agency goals, such as those expressed in local agency general plans and/or climate action plans.

The use of VMT as a metric focuses on the total *amount* of driving, rather than the driving *experience*. This new view presents an impact filter intended to promote the reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses. VMT can help identify how projects (land development and infrastructure) influence accessibility (i.e., access to places and people), noise, and emissions; thus, its selection as a metric is aligned with the objectives of SB 743.

Many jurisdictions find it useful to express VMT as an efficiency metric (e.g., VMT per person or VMT per employee). This form of the metric is unrelated to the level of activity in a particular location and more about how efficiently the people at that location travel. A project that contributes to a more efficient use of the transportation system would reduce the total VMT per person as compared to a no-project scenario. A commonly used efficiency metric is "total VMT per service population," in which the denominator, called "service population," includes all the variables that generate vehicle trips in the models that estimate VMT; in most instances, this will be the total number of all residents (including students from kindergarten to 12th grade), employees (including faculty, staff, and management), and university students in the analysis area or project. However, it may also include other categories of people, such as visitors or students, if those categories are used in the trip generation estimates in the model. Based on the background context outlined above, the remainder of this chapter provides information about key decisions the SJSU staff made regarding VMT metrics, calculation methods, and impact thresholds.

2.3 Approach

Under CEQA, agencies must decide what constitutes a significant environmental impact. The *CEQA Statute & Guidelines* encourage local agencies to adopt thresholds of significance. The thresholds for VMT can be quantitative (i.e., a measured value such as the concentration of GHG emissions in the atmosphere) or qualitative performance standards (e.g., VMT on local streets) by which the agency can measure the relative magnitude of an impact caused by a project to determine if the project's impacts are significant. In fact, the new *CEQA Statute & Guidelines* Section 15064.3(b)(4) establishes that the lead agency has discretion to choose the most appropriate VMT methods for transportation impact analysis:

> *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.*

After careful evaluation of the OPR *Technical Advisory* relative to the SJSU campus setting, the CSU Chancellor's Office prepared the *2020 CSU TISM* to provide guidance for CEQA-compliant transportation impact analyses pursuant to SB 743 for all CSU campuses. Considering the information and options provided in the *2020 CSU TISM*, SJSU staff chose to prepare a comprehensive VMT assessment to evaluate the effect of this large land use project. The comprehensive VMT assessment (i.e., VMT including all vehicle trips, vehicle types, and trip purposes without separation by land use) presented in this report

considers the Project's long-term effect on VMT[15] based on direct and indirect impacts under cumulative conditions. This VMT approach was prepared by transportation engineers and support staff with a strong understanding of CEQA practice and a focus on consistency and compliance with *CEQA Statute & Guidelines*.

The OPR *Technical Advisory* provides a blueprint for organizing key decisions regarding SB 743 methods: the decisions listed later in this section follow the basic structure of the OPR *Technical Advisory*. The OPR *Technical Advisory* recommends considering a project's short-term, long-term, and cumulative effects on VMT but provides limited recommendations on how to prepare a comprehensive VMT assessment for large land use projects.

SJSU staff considered the substantial evidence presented in the OPR *Technical Advisory* and the *2020 CSU TISM* to make key decisions about the VMT forecasting model, VMT accounting methods, calculation of the baseline and cumulative regional VMT estimates, and VMT thresholds required for a comprehensive analysis.

The inclusion of a project's effects on VMT for retail projects in the OPR *Technical Advisory* is one of the reasons that the analysis presented here includes all trip purposes and vehicle types, without separation of VMT by land use, and an evaluation of a project's effects on VMT (i.e., total project-generated VMT per service population and boundary VMT).

The expectations of a CEQA impact analysis to provide a complete picture of the VMT effects on the environment are highlighted within the *CEQA Statute & Guidelines* in the following sections.

- **<u>CEQA Guidelines – Expectations for Environmental Impact Analysis</u>**
    - § 15003 (F) = fullest possible protection of the environment…
    - § 15003 (I) = adequacy, completeness, and good-faith effort at full disclosure…
    - § 15125 (C) = EIR must demonstrate that the significant environmental impacts of the proposed project were adequately investigated…
    - § 15144 = an agency must use its best efforts to find out and disclose…
    - § 15151 = sufficient analysis to allow a decision which intelligently takes account of environmental consequences…

All of these suggest that completeness and accuracy is important when judging an adequate analysis. Furthermore, to understand the effects of a project, VMT inputs for air quality, GHG emissions, and energy

[15] This is in contrast with the OPR Technical Advisory recommendation to use partial VMT for transportation impact analysis (Governor's Office of Planning and Research, *Technical Advisory: On Evaluating Transportation Impacts in CEQA*, pages 15 and 16). Using partial VMT for project generated VMT screening may not tell the full story of the project's benefits. For example, mixed-use projects help reduce VMT by shortening vehicle trip lengths or reducing vehicle trips because of the convenience of walking, bicycling, or using transit between project destinations. A comprehensive VMT analysis is a more complete evaluation.

consumption already require a comprehensive analysis of total "project-generated" VMT and "project's effect on VMT" using local or regional travel forecasting models:

- **Total (project-generated) VMT per service population (Direct/Project Impacts)**: The sum of the "VMT from" and "VMT to" and within a specific geographic area are divided by the sum of the number of residents, employees, and students in the same geographic area.
- **Project's effects on VMT per service population (Cumulative Impacts)**: An evaluation of the change in travel between Without and With Project Conditions on all roadways within a geographic area under Cumulative Conditions divided by the sum of the number of residents, employees, and students in the same geographic area.

Both total VMT and the project's effects on VMT are needed to fully account for VMT effects that may include changes to VMT generation from neighboring land uses. The importance of a comprehensive analysis using all VMT per service population and that considers the project's effects on VMT is that land use projects can influence the routing of existing trips and the VMT generation of surrounding land uses.[16]

2.3.1 Summary of VMT Methods Decisions

Implementation of a comprehensive VMT assessment requires certain methodology decisions. The following steps were taken to establish SB 743 VMT thresholds:

- Select a VMT calculation tool
    - Use the City of San José travel model (CSJ Travel Model)
- Select the VMT accounting method(s)
    - **Total (project-generated) VMT per service population (Direct/Project Impacts)**: The sum of the VMT within the specified geographic area (internal-internal trips), "VMT from" the specified geographic area (internal-external trips), and "VMT to" the specified geographic area (external-internal trips), divided by the sum of the number of residents, employees, and students in the same geographic area.
    - **Project's effects on VMT per service population (Cumulative Impacts)**: An evaluation of the change in travel between Without and With Project Conditions on all roadways within a geographic area under the Cumulative Conditions scenario, divided by the sum of the number of residents, employees, and students in the same geographic area.
- Calculate the baseline and cumulative regional VMT estimates
    - The analysis presented here uses VMT from all trip purposes and vehicle types (i.e., there is no separation of VMT by land use) for the region (defined as Santa Clara County, Alameda

[16] Typical CEQA practice focuses on environmental effects that occur on a typical weekday, so all references to VMT in this document are intended to mean VMT that occurs on a typical weekday.

County, and San Mateo County) with a baseline set as Existing Conditions VMT generated by the region and cumulative set as VMT on all roadways in the region under Cumulative Conditions (refer to the VMT Accounting Methods sections for detailed descriptions).

- Set the VMT threshold(s)
    - The threshold to be applied in assessing project-specific impacts is 15% below existing total VMT per service population rate for the region. (Refer to **Table 12** and **Table 13** in **Chapter 5** for additional details about this threshold.)
    - The threshold to be applied in assessing cumulative impacts (project's effect on VMT) is no change in the cumulative conditions (future) boundary VMT per service population for the region. (Refer to **Table 12** and **Table 14** in **Chapter 5** for additional details about this threshold.)

For direct impacts, total VMT per service population is the metric used to evaluate how the project VMT changes (increases or decreases) between the Without Project and With Project scenarios, considering both VMT increases due to growth and VMT reductions due to changes in travel behavior. Total VMT per service population is used to evaluate if the VMT rate due to the project (i.e., the direct impacts) is greater than a specified VMT threshold; however, it does not evaluate a project's effect on VMT on the entire roadway system,[17] which is evaluated as part of the cumulative analysis.[18]

Regarding the cumulative analysis, the SJSU Campus Master Plan land use changes are small in the context of the regional residential population and employment; therefore, it is to be expected that the Project's effect on VMT (cumulative impact) would have localized VMT effects. Furthermore, the Project is likely to cause existing traffic to shift to active and transit modes as more residential infrastructure is built on the SJSU campus and in downtown San José and transportation demand management programs become more effective. Therefore, the Project's effect on VMT, as evaluated by the cumulative effects of the Project's land use and transportation changes, compares the changes in boundary VMT per service population[19] between the Cumulative Condition and the Cumulative with Project Condition. Each scenario is described in **Chapter 1**.

For the reasons listed above, the analysis presented in this report focuses on the VMT for all trip purposes and vehicle types without separation of VMT by land use. For the Project analysis, the total Project-generated VMT threshold was developed using the Existing Conditions total VMT for the region because a substantial majority of the residential population lives within these counties. As a result, most of the SJSU Campus Master Plan total VMT would be within the region and, therefore, impacts assessed against the

[17] An often-cited example of how a project can affect VMT is the addition of a grocery store in a food desert. Residents of a neighborhood without a grocery store have to travel a great distance to an existing grocery store. Adding the grocery store to that neighborhood will shorten many of the grocery shopping trips and reduce the VMT to/from the neighborhood. This concept is likely to occur with the addition of housing and supporting retail uses on the SJSU campus.

[18] For this analysis, service population is defined as the sum of all residents, employees, and university students.

[19] Boundary VMT captures all VMT on a roadway network within a specified geographic area, including local trips plus interregional travel, which does not have an origin or destination within the area.

regionwide baseline is the most appropriate assessment of the Project's direct impact. Like the total VMT baseline rate, the boundary VMT baseline uses the regionwide boundary VMT to evaluate the Project's effects on VMT because the Project effects are likely to be localized near the SJSU Campus Master Plan area and within the region.

2.4 VMT Accounting Methods

To understand the VMT forecasts and VMT impact analysis, this section defines important VMT terms and analysis methods. The CSJ travel model was used to develop daily VMT forecasts for the following metrics:

- **Total VMT**: The sum of the VMT associated with travel from, to, and within a project site.
- **Project's Effect on VMT (within a selected geographic boundary)**: An evaluation of the change in total vehicle travel within a defined geographic area boundary, compared between the Without Project and With Project conditions. The boundary for a project's analysis will be selected based on project characteristics such as size and location.

Total VMT per service population is the metric used to evaluate how the project VMT changes (increases or decreases) between the Without Project and With Project scenarios, considering both VMT increases due to growth and VMT reductions due to changes in travel behavior. As noted earlier, total VMT per service population is used to evaluate if the VMT rate due to the project is greater than a specified VMT threshold; however, it does not evaluate a project's effect on VMT across an entire roadway system. The project's effect on VMT compares the changes in boundary VMT per service population between the Cumulative Condition and Cumulative with Project Conditions. The analysis presented in this report focuses on the VMT for all trip purposes and vehicle types (i.e., there is no separation of VMT by land use).

2.4.1 Total VMT

The total VMT is the VMT from all vehicle trips for all trip purposes and types caused by the residential population and employment population in a specific area. It is calculated by summing the "VMT within" the specified geographic area (internal-internal trips), "VMT from" the geographic area (internal-external trips), and "VMT to" the geographic area (external-internal trips), as follows:

$$Total\ VMT = (II + IX) + (II + XI) = 2 * II + IX + XI$$

- **Internal-internal (II)**: The full length of all trips made entirely within the specified geographic study area limits.
- **Internal-external (IX)**: The full length of all trips with an origin within the specified geographic study area and destination outside of the area.
- **External-internal (XI)**: The full length of all trips with an origin outside of the specified geographic study area and destination within the area.

The intra-zonal VMT and VMT between traffic analysis zones, or TAZs, that are in the specified geographic study area cause some double counting, which is an expected result when summing the trip end based VMT. To ensure a VMT rate is expressed properly (i.e., that the numerator and denominator include the

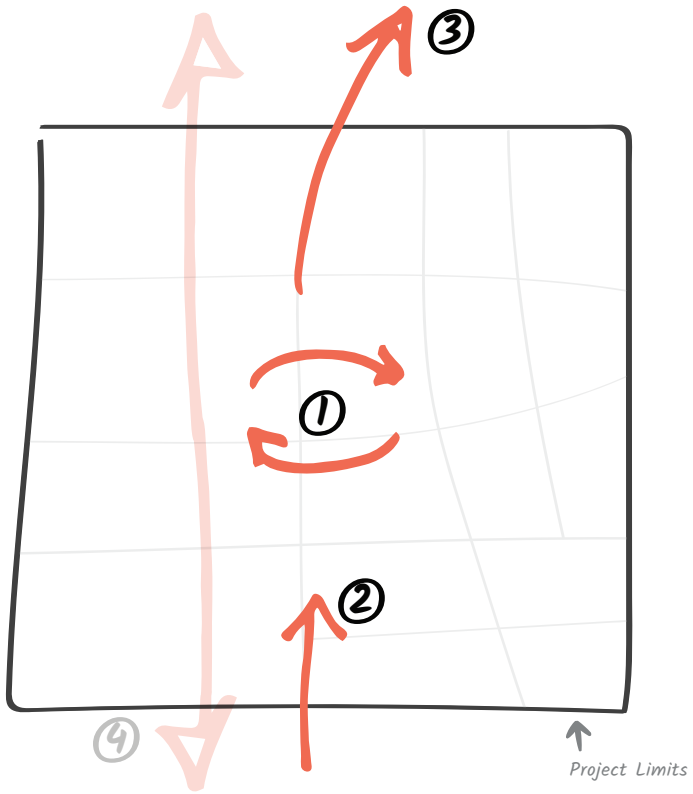
generators of both trip ends of the VMT), the total VMT is divided by the service population (residential population, employment population, and student population)—the generator of both trip ends of the VMT. The VMT estimates are also presented on a per service population basis to account for both the effects of population and/or employment growth and the effects of changes in personal travel behavior. For example, population growth may cause an increase in overall VMT, while travelers changing their behavior by using different travel modes or decreasing their vehicle trip lengths (such as a higher percentage of students living and working on the SJSU campus) would cause decreases in the amount of VMT that each person generates.

2.4.2 Project's Effect on VMT (Using Boundary VMT)

A project's effect on VMT is evaluated using the boundary VMT, which captures all VMT on the roadway network within a specified geographic area, including local trips plus interregional travel that does not have an origin or destination within the study area. The geographical boundary method only considers traffic within the physical limits of the selected study area and does not include the impact of vehicles once they travel outside the area limits. The use of boundary VMT is a more comprehensive evaluation of the potential effects of a project because it captures the combined effect of new VMT, shifts in existing VMT to/from other neighborhoods, and/or shifts in existing traffic to alternate travel routes or modes. The boundary VMT is also divided by the service population (sum of residents, employees, and students) to account for the effects of population and/or employment growth and the effects of changes in personal travel behavior within the specified geographic area.

Figure 4 presents a representation of both total VMT and boundary VMT. Both metrics are needed for a comprehensive evaluation of a project's VMT effects.

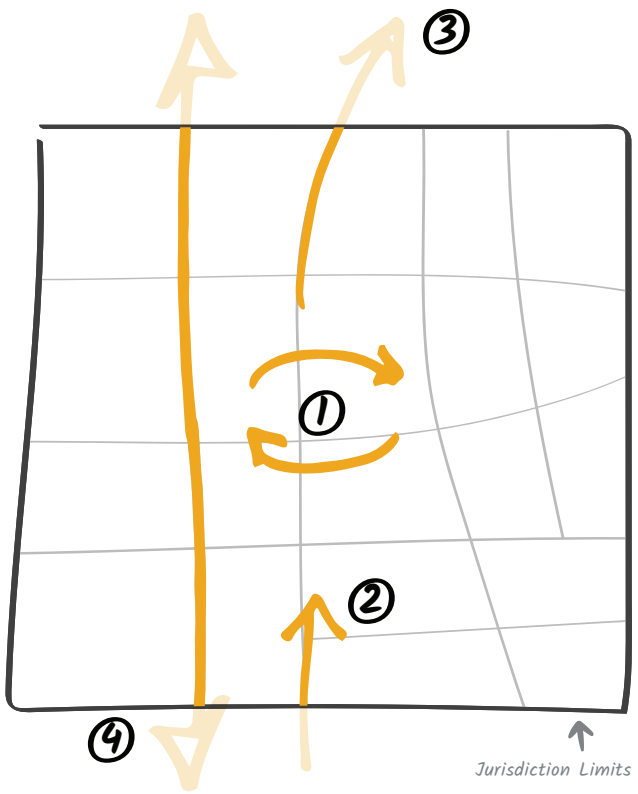
Total VMT
(Project Generated VMT)



① 2x Internal to Internal (2xII) VMT
② External to Internal (XI) VMT
③ Internal to External (IX) VMT
④ External to External (XX) VMT

Notes: External to External (XX) trips (shown as transparent arrow 4) are excluded from this VMT metric. Adjustments to total VMT made to include the full length of trips that leave the project limits to capture inter-jurisdiction travel.

Project Effect on VMT
(Boundary VMT)



① Internal to Internal VMT
② External to Internal (XI) VMT
③ Internal to External (IX) VMT
④ External to External (XX) VMT

Notes: Boundary VMT is all the VMT on the streets within the Jurisdiction Limits. Transparent portions of arrows 2, 3 and 4 are not included in the VMT metric.

Figure 4

Measuring Vehicle Miles Traveled (VMT)

3. Existing Conditions

This chapter describes the Existing Conditions associated with the SJSU Campus parking and transportation demand management (TDM) measures, and the nearby transit and carpool facilities, streets, truck routes, bicycle facilities, and pedestrian facilities.

3.1 Existing Campus Parking and TDM Measures

3.1.1 On-Campus Parking

SJSU provides a total of 8,376 vehicle parking spaces across 5 garages and 11 lots. The breakdown of parking spaces by type and location is shown in **Table 5** and in **Figure 5** and **Figure 6**. The parking inventory reflects a mix of 2019 and 2024 conditions, as the South Campus Garage was not built in 2019. This does not include the International House parking, as it is not part of the SJSU Campus Master Plan Project Description.

Most on-campus parking is permitted and requires a parking permit. Students, faculty, and staff can purchase long-term parking permits online or at digital pay stations based on the vehicle license plate. Permits are offered weekly, by semester, by academic year, by annual year, or for 1-day per week or 2-days per week. Prices vary between students, faculty, staff, and visitors/guests and by type of permit and permit location. SJSU also offers housing parking permits for students living on campus by semester or academic year.

SJSU also offers carpool permit options for students, faculty, and staff who live off campus, commute to campus, and are committed to carpooling daily. Carpools consist of two to four eligible members and allow up to four vehicles on one carpool permit. Student carpool permits are valid on the upper floors of the South Garage, the West Garage, or in the North Garage (3rd floor and above). Student carpool permits are priced the same as the standard "S" student commuter permit but can be shared with multiple drivers. Employee carpool spaces are located on the 1st floor of the South Garage and the 2nd floor of the North Garage.

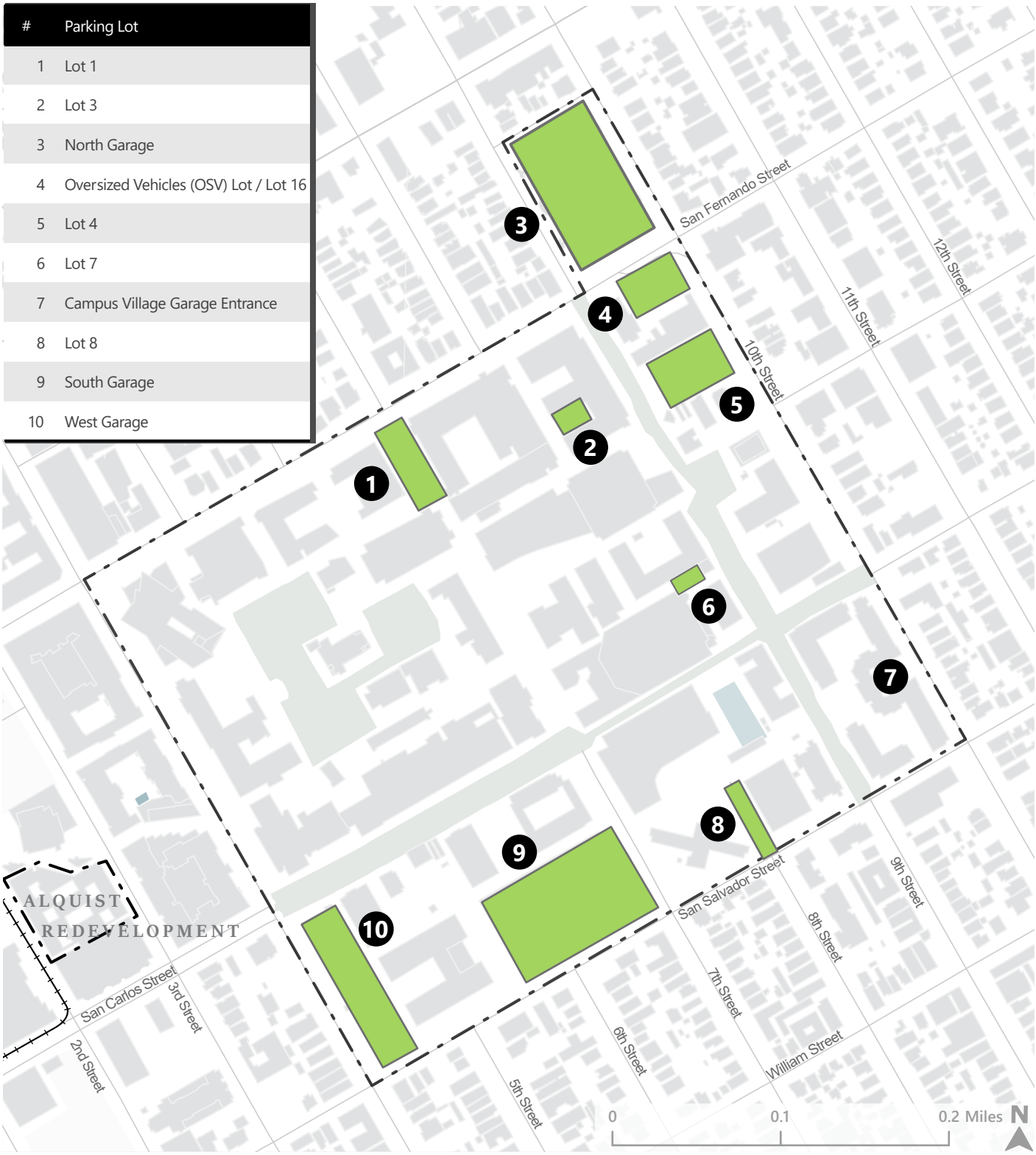
Table 5: Existing Parking Space Inventory

#	Parking Facility	General Students	Faculty/ Staff	ADA[1]	Housing	Carpool/ Vanpool	Time Limited[2]	Electric Vehicles	Other[3]	Total[4]
	Main Campus									
1	Lot-1	0	0	37	0	0	0	0	17	**54**
2	Lot-3	0	0	3	0	0	0	0	6	**9**
3	North Garage	1,329	463	8	0	5	22	14	9	**1,850**
4	Over-Sized Vehicles Lot (OSV) / Lot 16	0	11	2	0	0	0	0	0	**13**
5	Lot-4	0	67	19	0	0	0	4	33	**123**
6	Lot-7	0	0	3	0	0	0	0	8	**11**
7	Campus Village Garage	0	0	18	624	0	0	0	2	**644**
8	Lot-8	0	0	2	0	0	12	0	10	**24**
9	South Garage	1,445	448	32	0	4	12	0	75	**2,016**
10	West Garage	1,090	36	8	0	0	0	0	18	**1,152**
	Subtotal	**3,864**	**1,025**	**132**	**624**	**9**	**46**	**18**	**178**	**5,896**
	South Campus									
1	Park & Ride Lot	762	0	21	0	0	0	48	4	**835**
2	Lot-14	0	43	3	0	0	0	0	12	**58**
3	Lot-18	0	0	0	0	0	0	0	1	**1**
4	South Campus Garage (SCG)	1,475	0	25	0	0	0	0	0	**1,500**
5	Spartan Athletic Administration Building (SAAB) Lot	0	51	2	0	0	0	0	8	**61**
6	Lot-24 / Old Tennis Court	0	0	0	0	0	0	0	25	**25**
	Subtotal	**2,237**	**94**	**51**	**0**	**0**	**0**	**48**	**50**	**2,480**
	Total	***6,101***	***1,119***	***183***	***624***	***9***	***46***	***66***	***228***	***8,376[4]***

Notes:

1. ADA refers to accessible parking spaces that meet accessible parking requirements defined under the American with Disabilities Act (1990).
2. Time Limited parking is limited to 20 or 30 minutes depending on the location.
3. Other includes state vehicles, loading/unloading spaces, maintenance/service spaces, reserved spaces, guest reservation spaces, and special permit spaces.
4. The SJSU Campus Master Plan Project Description does not include Campus Village Garage parking spaces.

Source: SJSU, 2024.



#	Parking Lot
1	Lot 1
2	Lot 3
3	North Garage
4	Oversized Vehicles (OSV) Lot / Lot 16
5	Lot 4
6	Lot 7
7	Campus Village Garage Entrance
8	Lot 8
9	South Garage
10	West Garage

Project Locations

Parking Location

Light Rail

Figure 5

Main Campus Parking Lots

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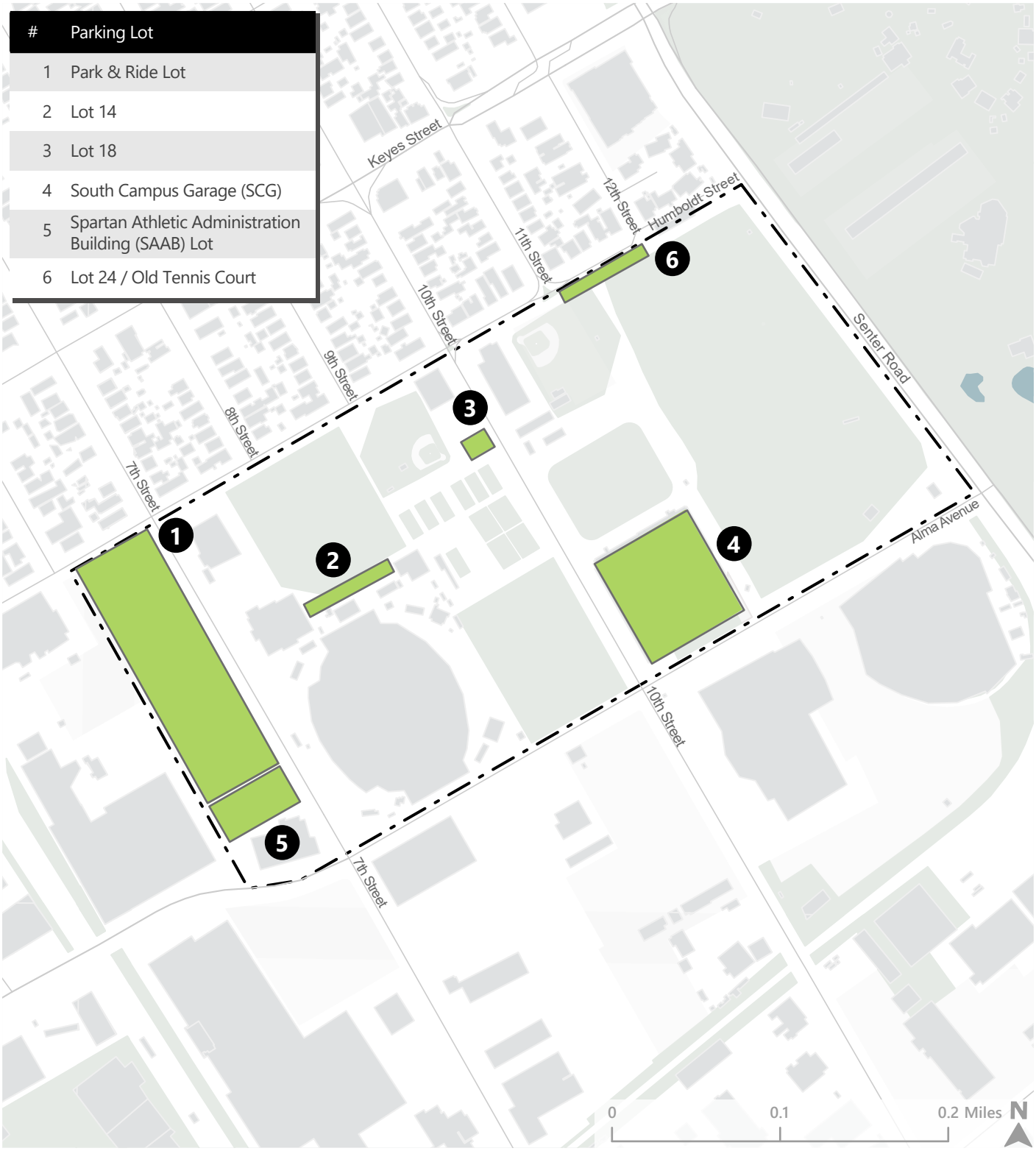

#	Parking Lot
1	Park & Ride Lot
2	Lot 14
3	Lot 18
4	South Campus Garage (SCG)
5	Spartan Athletic Administration Building (SAAB) Lot
6	Lot 24 / Old Tennis Court

Project Locations

Parking Location

Figure 6

South Campus Parking Lots

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3.1.2 Additional Parking

There are also many City-owned and operated parking garage options near campus. These garages are open to the public but require an hourly fee. The City of San José website shows the location of each lot, details about hours of operation, and up-to-date garage capacity information. **Table 6** shows a list of all public parking garages near campus.

Table 6: City Parking Garages

Parking Garage	Address	Price
Fourth Street Garage	44 S. Fourth Street, at San Fernando Street	First 90 minutes free $1 per additional 15 minutes Maximum $25 (weekdays), $10 (weekends and weeknights)
City Hall Garage	200 E. Santa Clara Street (Entrance on Sixth St.)	$1 per 20 minutes, $20 max
Fourth Street and St. John Garage	50 N. Fourth Street	Daily fee: Reserved for City employees Evening (6 PM to 10 PM): Free and open to the public
Third Street Garage	95 N. Third Street, north of Santa Clara Street	First 90 minutes free $1 per additional 15 minutes Maximum $25 (weekdays), $10 (weekends and weeknights)
Market & San Pedro Square Garage	45 N. Market Street (Entrances on Market and San Pedro streets)	First 90 minutes free $1 per additional 15 minutes Maximum $25 (weekdays), $10 (weekends and weeknights)
Second & San Carlos Street Garage	280 S. Second Street, also accessible from South Third Street	First 90 minutes free $1 per additional 15 minutes Maximum $25 (weekdays), $10 (weekends and weeknights)
Convention Center	150 W. San Carlos Street (Entrances on Almaden Boulevard and Market Street)	$1 per 15 minutes, $25 to $30 max.
South Hall Lot	435 S. Market Street at Viola Street	$7 flat fee
First Street & I-280 Lot	630 S First Street, under Interstate 280	$7 flat fee Free after 6 PM and on weekends
Almaden & Woz Lot	401 Almaden Boulevard	$7 flat fee
Woz & 87 Lot	180 Woz Way under Hwy. 87, south of Auzerais Avenue	$7 flat fee

Source: Park SJ, Accessed July 4, 2023.

3.1.3 TDM Measures

In addition to managing parking demand, SJSU offers the following TDM measures to its student, faculty, and staff:

- Transit subsidies and discounts:
    - SmartPass Clipper card: All students, faculty, and staff can submit an online request to get a clipper card that allows unlimited rides on Santa Clara Valley Transportation Authority (VTA) on local and rapid buses, limited routes, and Light Rail lines. There is a surcharge per ride for Express buses. To ride Express lines, students, faculty, and staff must first load their SmartPasses with cash value.
    - BayPass Pilot Program: As of fall 2022, SJSU has been piloting a program on a quarter of the student population (about 7,000 students). This pass will allow enrolled students free travel access to all 24 Bay Area transit operators that accept the Clipper Card, including VTA, AC Transit, BART, and Caltrain.
    - Clipper START: SJSU offers discounts for Caltrain, MUNI, Golden Gate Transit and Ferry, San Francisco Bay Ferry, and BART for SJSU students that are Bay Area residents and have a household income of 200% of the federal poverty level or less.
- Park-and-ride lots: SJSU Parking Services offers a park-and-ride lot at a reduced permit rate located on Seventh Street adjacent to the South Campus as shown in **Figure 6**.
- Regional transit access: Although SJSU does not offer discounts for regional transit options, buses, such as VTA Rapid 500, that serve campus provide connections to regional transit services such as Altamont Corridor Express, Amtrak, BART, Caltrain, FlixBus, Greyhound, Highway 17 Express, and Tufesa.
- Carpool referrals and incentives: SJSU partners with 511 Bay Area's Merge program to track carpool trips. Members can earn $1 toward a reward of their choice per carpool trip with a limit of one $25 reward per month, per person. Associated Students Transportation Solutions provides rideshare matching services.
- Bicycle infrastructure and reimbursements:
    - Bike facilities and amenities: The SJSU campus provides many bicycle facilities such as bike lanes adjacent to the campus and bike parking (open racks, bike cages, and rentable bike lockers) that make bicycling more comfortable and convenient. For bike commuters who are looking for showers, students have free access to the Spartan Recreation and Aquatic Center (SRAC) and all faculty, staff, and students can utilize the showers and lockers in the Kinesiology department in Spartan Complex, which are open during regular business hours. Faculty and staff must pay to access the SRAC.
    - Bike reimbursement program: Associated Students Transportation Solutions provides a one-time reimbursement to eligible students for up to $50 on qualifying bike expenses for new bikes purchased after January 1, 2023.

- Bike and scooter share: SJSU partners with the City of San José and Santa Clara County to provide Bay Wheels bikeshare docking stations on campus (see **Figure 10**). Bay Wheels offers a discount and special membership deals to SJSU students, faculty, and staff. SJSU also designates parking locations for the three scooter share companies (Lime, Bird, and Veo) that service San José. However, neither electric biking nor electric scooters are permitted on campus.
- Carshare: SJSU partners with Zipcar, a carsharing company, to offer short term car rentals with discounted membership. There are four cars located in the South Garage as well as cars located nearby off campus.
- Commuter benefits program: The pre-tax Commuter Benefits Program allows eligible SJSU employees to use pre-tax dollars, up to $300 per month, to purchase transit passes. This provides savings by reducing taxable income.

3.2 Existing Transit Service and Carpool System

Transit provides access to the Project site. Santa Clara VTA provides services in the South Bay region. **Table 7** details the current VTA transit routes accessible near the Project site and **Table 8** shows the pre-pandemic VTA transit routes and schedules.

Table 7: Existing Transit Service: 2024 Conditions

			Weekdays	Weekdays	Weekends	Weekends
Route	**From**	**To**	**Operating Hours**	**Peak Headway (minutes)**	**Operating Hours**	**Peak Headway (minutes)**
VTA Frequent Bus Routes						
22	Palo Alto Transit Center	Eastridge	4:15 AM to 3:00 AM	15	4:30 AM to 3:00 AM	15
23	De Anza College	Alum Rock Station	5:00 AM to 1:30 AM	15	5:45 AM to 1:30 AM	15
64A	Ohlone-Chynoweth Station	McKee & White	5:15 AM to 12:30 AM	30	6:30 AM to 12:30 AM	30
64B	Almaden & Camden	McKee & White	5:30 AM to 10:30 PM	30	7:45 AM to 7:45 PM	60
66	North Milpitas	Santa Teresa	4:45 AM to 12:45 AM	15	5:15 AM to 12:45 AM	20
68	San José Diridon	Gilroy Transit Center	4:15 AM to 11:45 PM	15	5:30 AM to 1:30 AM	20
72	Downtown San José	Senter & Monterey	5:30 AM to 11:00 PM	15	6:00 AM to 12:30 AM	20
73	Downtown San José	Senter & Monterey	5:30 AM to 11:45 PM	15	6:30 AM to 12:00 AM	20
Rapid 500	San José Diridon	Berryessa BART	4:30 AM to 2:30 AM	10	5:30 AM to 2:30 AM	20
Rapid 523	San José State University	Lockheed Martin	5:30 AM to 11:30 PM	20	6:00 AM to 11:45 PM	20
Rapid 568	Gilroy Transit Center	San José Diridon	4:45 AM to 9:00 PM	30	-	-
VTA Light Rail Routes						
Blue Line	Baypointe	Santa Teresa	4:30 AM to 1:00 AM	15	5:00 AM to 1:00 AM	30
Green Line	Old Ironsides	Winchester	5:00 AM to 12:30 AM	15	6:00 AM to 12:30 AM	30

Source: VTA https://www.vta.org/go/routes, Accessed November 2024.

Table 8: Transit Service: Pre-Pandemic[1]

			Weekday	Weekday	Weekends	Weekends
Route	**From**	**To**	**Operating Hours**	**Peak Headway (minutes)**	**Operating Hours**	**Peak Headway (minutes)**
VTA Local Bus Routes						
64B	Almaden & Camden	McKee & White	6:00 AM to 9:00 PM	15	9:00 AM to 6:00 PM	60
VTA Frequent Bus Routes						
22	Palo Alto Transit Center	Eastridge Transit Center	24 Hours a Day	15	24 Hours a Day	15
23	De Anza College	Alum Rock Station	5:05 AM to 1:30 AM	15	6:00 AM to 1:30 AM	15
64A	Ohlone / Chynoweth	McKee & White	5:30 AM to 12:00 AM	15	7:00 AM to 11:00 PM	30
66	North Milpitas	Kaiser San José	5:00 AM to 12:00 AM	15	5:30 AM to 12:00 AM	20
68	Gilroy Transit Center	Diridon Station	4:00 AM to 1:30 AM	15	5:15 AM to 11:45 PM	15
72	Senter & Monterey	Bassett Terminal	5:30 AM to 12:30 AM	15	6:30 AM to 12:30 AM	20-30
73	Senter & Monterey	Bassett Terminal	5:30 AM to 12:30 AM	15	6:30 AM to 12:30 AM	20-30
Rapid 500	Diridon Station	Santa Clara & 5th/6th	6:40 AM to 9:30 PM	15	No Weekend Service	No Weekend Service
Rapid 523	San José State University	Berryessa BART	5:00 AM to 10:30 PM	15	6:30 AM to 11:00 PM	15
522	Palo Alto Transit Center	Eastridge Transit Center	5:00 AM to 11:45 PM	12	6:00 AM to 11:45 PM	15
VTA Light Rail Routes						
Blue Line	Santa Teresa Station	Baypointe Station	4:10 AM to 2:00 AM	15	5:00 AM to 2:00 AM	15
Green Line	Old Ironsides Station	Winchester Station	5:00 AM to 12:45 AM	15	6:00 AM to 12:30 AM	20

Note:
1. Existing service levels pre-COVID 19 pandemic (February 2020).

Source: VTA, February 2020.

The campus is also accessible by personal vehicle or through carpooling. SJSU supports and incentivizes carpool through programs detailed in **Section 3.1**. There are also nine carpool/vanpool parking spaces reserved on campus. Accessing campus, drivers who carpool can utilize carpool lanes (high-occupancy vehicle lanes) or express lanes (high-occupancy toll) on nearby freeways. **Figure 8** shows the carpool lanes nearest to campus and **Table 9** shows the carpool and express lanes accessing campus. Carpool lanes are reserved for vehicles with multiple passengers during operating hours and drivers who carpool can use these lanes at no cost. Express lanes are dynamically priced based on demand and are available to anyone to use; however, vehicles with multiple passengers are eligible to use the lanes at discounted prices.

Table 9: Carpool and Express Lanes Accessing Campus

Freeway	From	To	Hours of Operation	Number of Persons in Vehicle	Discount
Carpool Lanes (High-Occupancy Vehicle Lane – HOV)					
SR 87 San José	SR 85 (San José)	US 101 (San José)	Mon-Fri - 5:00 AM to 9:00 AM Mon-Fri - 3:00 PM to 7:00 PM	2+ people per vehicle	Free
I-280 Los Altos to San José	Magdalena Ave (Los Altos Hills)	Leland Ave (San José)	Mon-Fri - 5:00 AM to 9:00 AM Mon-Fri - 3:00 PM to 7:00 PM	2+ people per vehicle	Free
US 101 San Francisco to San José	San Francisco	SR 85 (San José)	Mon-Fri - 5:00 AM to 9:00AM Mon-Fri - 3:00 PM to 7:00 PM	2+ people per vehicle	Free
Express Lanes (High-Occupancy Toll Lane – HOT)					
US 101 San Bruno to Mountain View	SR 380 (San Bruno)	SR 237 (Mountain View)	Mon-Fri - 5:00 AM to 8:00 PM	3+ people per vehicle	Half Price

Source: 511 SF Bay https://511.org/?lid=HOV, Accessed May 2023.

Project Locations
Railroad
VTA Rapid Bus Service
VTA Express Bus Service
VTA Frequent Bus Service
VTA Local Bus Service
VTA Light Rail Blue Line
VTA Light Rail Green Line

Figure 7

Existing (2024) Transit Service to SJSU Campus

Figure 8

Existing Carpool Lanes Near SJSU Campus

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3.3 Existing Street System

The following freeways provide regional access to the study area: State Route (SR) 87, US 101, I-280, I-680, and I-880. First Street, Second Street, Fourth Street, Tenth Street, Santa Clara Street, San Fernando Street, and San Salvador Street, along with other nearby roadways, provide access to the Main Campus. First Street, Seventh Street, Tenth Street, Senter Road, Keyes Street, East Humboldt Street, and Alma Avenue, along with other nearby roadways, provide access to the South Campus.

3.3.1 Freeways

SR 87 is a north-west freeway located west of the Main Campus with three general travel lanes in each direction including an HOV lane in each direction. The HOV lane is in effect from 5:00 to 9:00 AM and from 3:00 to 7:00 PM, Monday through Friday. SR 87 extends between US 101 to the north and SR 85 to the south. Access to the Main Campus from SR 87 is provided via Woz Way, Park Avenue, and Santa Clara Street. Access to the South Campus from SR 87 is via Alma Avenue.

US 101 is a north-south interstate highway that extends from Southern California up past Oregon. The freeway has three general purpose lanes and one HOT lane in each direction between San Bruno and Mountain View. Between Mountain View and San José, US 101 has one carpool lane. US 101 provides access to the Main Campus via Santa Clara Street.

I-280 is an east-west freeway located between the Main and South Campuses with three general purpose lanes and one HOV lane in each direction. I-280 provides large thoroughfare east-west movement through San José and neighboring cities. Access to the Main Campus from I-280 is provided via Fourth Street, Seventh Street, Tenth Street, and Eleventh Street; access to the South Campus from I-280 is provided via Seventh Street or Tenth Street.

I-680 is a north-south interstate highway located east of the Main Campus. The interstate has three general purpose lanes and one HOT lane in each direction.

I-880 is a north-south interstate highway extending north from the I-280/I-880/SR 17 interchange in San José to Oakland. The interstate has three general purpose lanes. Between Oakland and Milpitas, it has one HOT lane in each direction and between Milpitas and San José, one HOV lane. I-880 provides access to the Main Campus via First Street.

3.3.2 Streets Near Main Campus

First Street, Second Street, Third Street, Fourth Street, Tenth Street, Santa Clara Street, San Fernando Street, and San Salvador Street along with other nearby roadways, provide access to the Main Campus. Each facility is described below in more detail.

First Street near the Main Campus is a two-lane, northbound one-way road between Market Street and Julian Street. Toward the north, First Street ends where it continues into Taylor Street. Beyond Market Street and Julian Street to the south, First Street is a two- to four-lane Grand Boulevard providing both

northbound and southbound travel. On-street parking is prohibited on both sides of the street near the Project site. First Street and Market Street converge south of Reed Street, where the road continues as First Street. Toward the south, First Street ends where it continues into Monterey Street. The posted speed limit is 20 mph.

Second Street is a two-lane, southbound one-way road between St. James Street and First Street. North of St. James Street, Second Street is a two-lane Local Connector Street allowing both northbound and southbound travel. Second Street ends in the south where it continues into First Street and to the north as a dead-end just south of I-880. On-street parking is provided on both sides of the street near the Project site. The posted speed limit is 20 mph.

Third Street is a two-lane, northbound one-way road between Julian Street and Humboldt Street. North of Julian Street, Third Street is a two-lane Local Connector Street allowing both northbound and southbound travel. Third Street ends in the south at Humboldt Street and to the north as a dead-end just south of I-880. On-street parking is provided on both sides of the street near the Project site. The posted speed limit is 25 mph.

Fourth Street is a two-lane, southbound one-way road. Past San Salvador Street, Fourth Street is a three-lane road. On-street parking is provided on both sides of the street near the Project site parallel to the protected bike lane. The posted speed limit is 20 mph but increases to 30 mph south of East Alma Avenue.

Seventh Street is a two-lane north-south road that becomes Paseo de César Chávez between San Fernando Street and Paseo de San Carlos. On-street parking is provided on both sides of Seventh Street near the Project site parallel to the protected bike lane. The posted speed limit is 25 mph.

Tenth Street is a two-lane, southbound one-way road between Hedding Street and Humboldt Street. South of Humboldt Street, Tenth Street is a four-lane Local Connector Street allowing both northbound and southbound travel. On-street parking is provided on both sides of the street near the Project site. The posted speed limit is 30 mph.

Santa Clara Street is an east-west Grand Boulevard that is a continuation of The Alameda east of Barack Obama Boulevard. It is a four-lane roadway that extends east from Stockton Avenue through downtown San José and toward Alum Rock Avenue.

San Fernando Street is a two- to three-lane east/west street. On-street parking is provided on both sides of the street near the Project site. The posted speed limit is 25 mph.

San Salvador Street is a two-lane roadway which continues into 17th Street to the east and ends at Market Street to the west. On-street parking is permitted on the south side of Market Street, east of First Street. San Salvador Street is directly adjacent to the Project site to the south. The posted speed limit is 20 mph.

3.3.3 Streets Near South Campus

The South Campus can be accessed on local streets via Seventh Street, Tenth Street, Senter Road, East Humboldt Street, and Alma Avenue, along with other nearby roadways. Each facility is described below in more detail.

Seventh Street is a two-lane north-south road. On-street parking is prohibited on both sides of the street near the Project site. There is a Class II bike lane on both sides of the street. The posted speed limit is 35 mph.

Tenth Street is a four-lane Local Connector Street allowing both northbound and southbound travel. On-street parking is prohibited on both sides of the street near the Project site, but both sides of the street have buffered bike lanes. The posted speed limit is 35 mph.

Senter Road is a six-lane north-south street with a center median. On-street parking is prohibited on both sides of the street near the Project site, but both sides of the street have buffered bike lanes. The posted speed limit is 40 mph.

East Humboldt Street is a two-lane east/west road that extends from Senter Road to Sixth Street. East Humboldt Street is a one-way eastbound street until Tenth Street where it becomes bidirectional. On-street parking is allowed on the northern side of the street. The posted speed limit is 25 mph.

Alma Avenue is a four-lane east/west road. On-street parking is prohibited on both sides of the street near the Project site. The posted speed limit is 35 mph.

3.4 Existing Truck Routes

To provide for the safe and efficient movement of goods to support commerce and industry in the city of San José, primary truck routes were established. Further information about policies pertaining to goods movement can be found in Chapter 6 of the *Envision San José 2040 General Plan*. The existing primary truck routes near the Project area are shown on **Figure 9** and are described below:

First Street is a north-south primary truck route that extends from the I-880 interchange to East Hedding Street. This truck route is accessible from the Main Campus via First Street.

Monterey Road/First Street is a north-south primary truck route that extends from Goodyear Street/Keyes Street to the southern border of the city. This truck route runs one block west of the South Campus.

Seventh Street is a north-south primary truck route that extends from Tully Road to the I-280 interchange. This truck route provides direct access to the South Campus.

Tenth Street is a north-south primary truck route that extends from Tully Road to the I-280 interchange. This truck route provides direct access to the South Campus.

Senter Road is a north-south primary truck route that extends from Tully Road to the I-280 interchange. This truck route provides direct access to the South Campus.

Story Road is an east-west primary truck route that extends from South King Road to Senter Road. This truck route provides access to the Main Campus via Seventh Street and to the South Campus via Seventh Street, Tenth Street, and Senter Road.

Figure 9

Existing Truck Route

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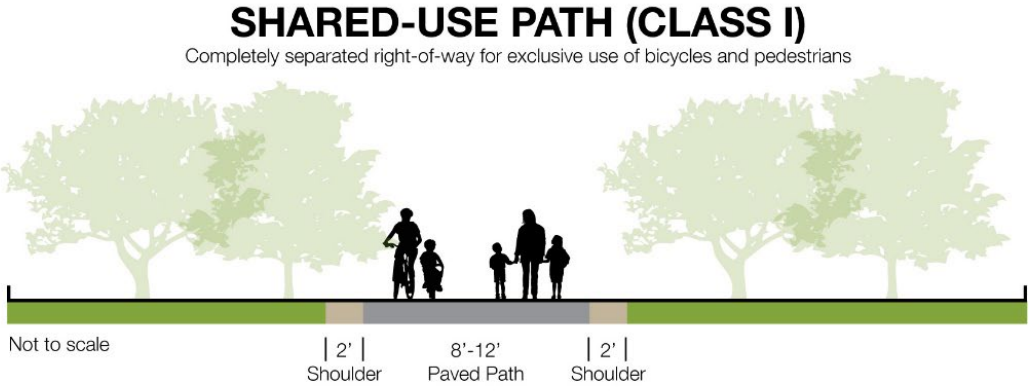
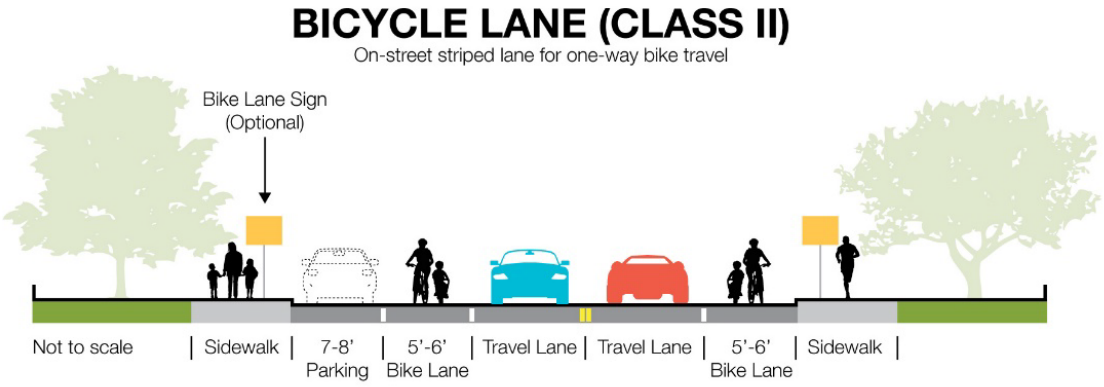
3.5 Existing Bicycle Facilities

The four classes of bicycle facilities in San José are described in the *San José Better Bike Plan 2025* (2020). These descriptions are based on California Department of Transportation (Caltrans) classifications of bikeways from California Assembly Bill 1193 and the *Highway Design Manual* (Chapter 1000: Bikeway Planning and Design). Each bikeway class is intended to provide bicyclists with enhanced riding conditions. Bikeways offer various levels of separation from traffic based on traffic volume and speed, among other factors. The four bikeway types and appropriate contexts for each are presented below.

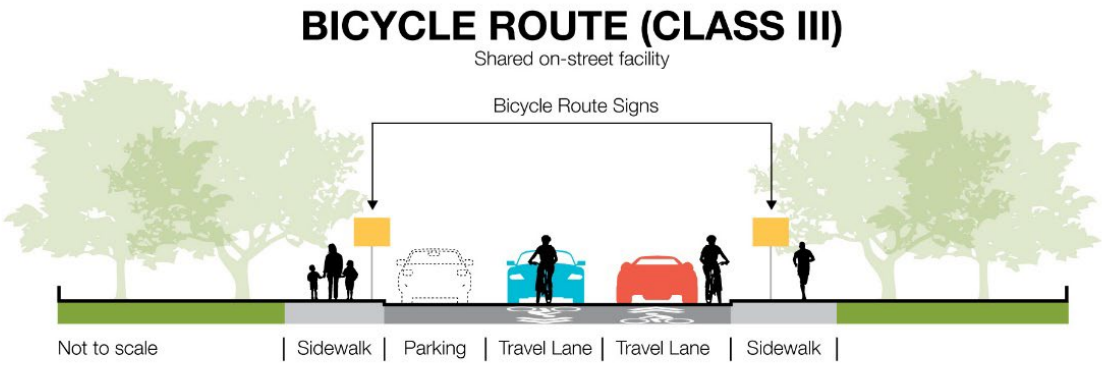
Class I Bikeway (Shared-Use Path): Shared-use paths, sometimes referred to as multi-use paths, provide completely separate right-of-way and are designated for the exclusive use of people riding bicycles and walking with minimal roadway crossings. In general, shared-use paths are along corridors not served by streets or where sufficient right-of-way exists to allow them to be constructed away from the influence of vehicles. Class I Bikeways can also offer opportunities not provided by the road system by serving recreational areas and/or desirable commuter routes.



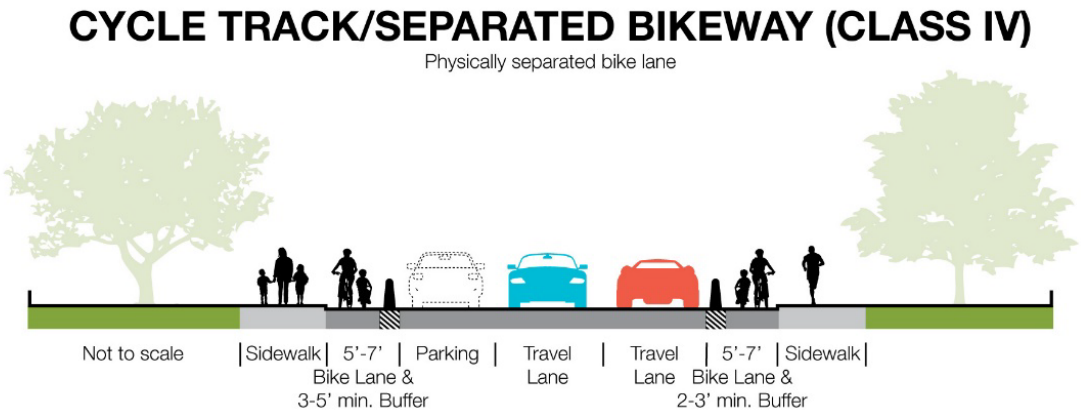
Class II Bikeways (On-Street Bike Lanes): Bike lanes provide a striped lane, pavement markings, and signage for one-way bike travel on a street or highway. Bicycle lanes are typically five feet wide, although wider lanes are desirable on roadways with high traffic volumes and/or high travel speeds. The *VTA Bicycle Technical Guidelines* (December 2012) recommends that Caltrans standards regarding bicycle lane dimensions be used as a minimum and provides supplemental information and guidance on when and how to better accommodate the many types of bicyclists. Bike lanes may be enhanced with painted buffers between vehicle lanes and/or parking and green paint at conflict zones (such as driveways or intersections).



Class III Bikeways (Bike Routes): Bike routes may be identified on a local residential or collector street when the travel lane is wide enough, and the traffic volume is low enough, to allow both cyclists and motor vehicles to share a lane and/or to provide continuity to a bikeway network. Shared-use arrows or "sharrows" are common striping treatments for bike routes.



Class IV Bikeways (Separated Bikeway): Separated bikeways, also referred to as cycle tracks or protected bikeways, are bikeways for the exclusive use of bicycles which are physically separated from vehicle traffic. Separated bikeways were adopted by Caltrans in 2015. Types of separation may include, but are not limited to, grade separation, flexible posts, physical barriers, or on-street parking.



Under California Law, bicyclists are allowed to use all roadways in California unless posted otherwise. Therefore, even for roadways that have no designated (or planned) bikeway identified, a majority are open for cycling.

Bicycles are allowed on most pathways on campus except where appropriate dismount signs are posted or when there is no clear path due to crowding. Bike parking is also available on campus including 17 bike racks and 6 bike cages. Students, faculty, and staff can obtain a bike cage access key by filling out the key agreement form and paying a onetime $15.00 fee.

At the Main Campus, Fourth Street and Tenth Street provide Class IV biking facilities for southbound travel and Third Street and Eleventh Street provide Class IV biking facilities in the northbound direction. A buffered Class II bike lane runs down the north side of San Salvador Street in the westbound direction and the south side of San Salvador Street has a Class III bike boulevard in the eastbound direction. A Class II bike lane runs down both directions of San Fernando Street near the Project site with frequent segments protected by buffer and/or parked vehicles. **Figure 10** displays these facilities. The *San José Better Bike Plan 2025* includes several bicycle facility improvements for road segments near the Project site, including a proposed bicycle boulevard on First Street between San Carlos Street and San Salvador Street to replace the existing bike route and a proposed Class II or Class IV bike lanes on Market Street.

The South Campus is accessible by bike on Seventh Street, Tenth Street, and on Senter Road which all have buffered Class II bike lanes.

SJSU also partners with the City of San José to provide Bay Wheels bikeshare stations to campus, with bikeshare stations located on campus at both the Main and South Campuses. SJSU is accessible by e-scooter through the city's three scooter share programs. However, e-scooters may not be ridden on campus at SJSU, and all three of these companies use a geofence to remotely shut scooters down when they enter the campus. There are six e-scooter drop off zones located on the outskirts of campus.

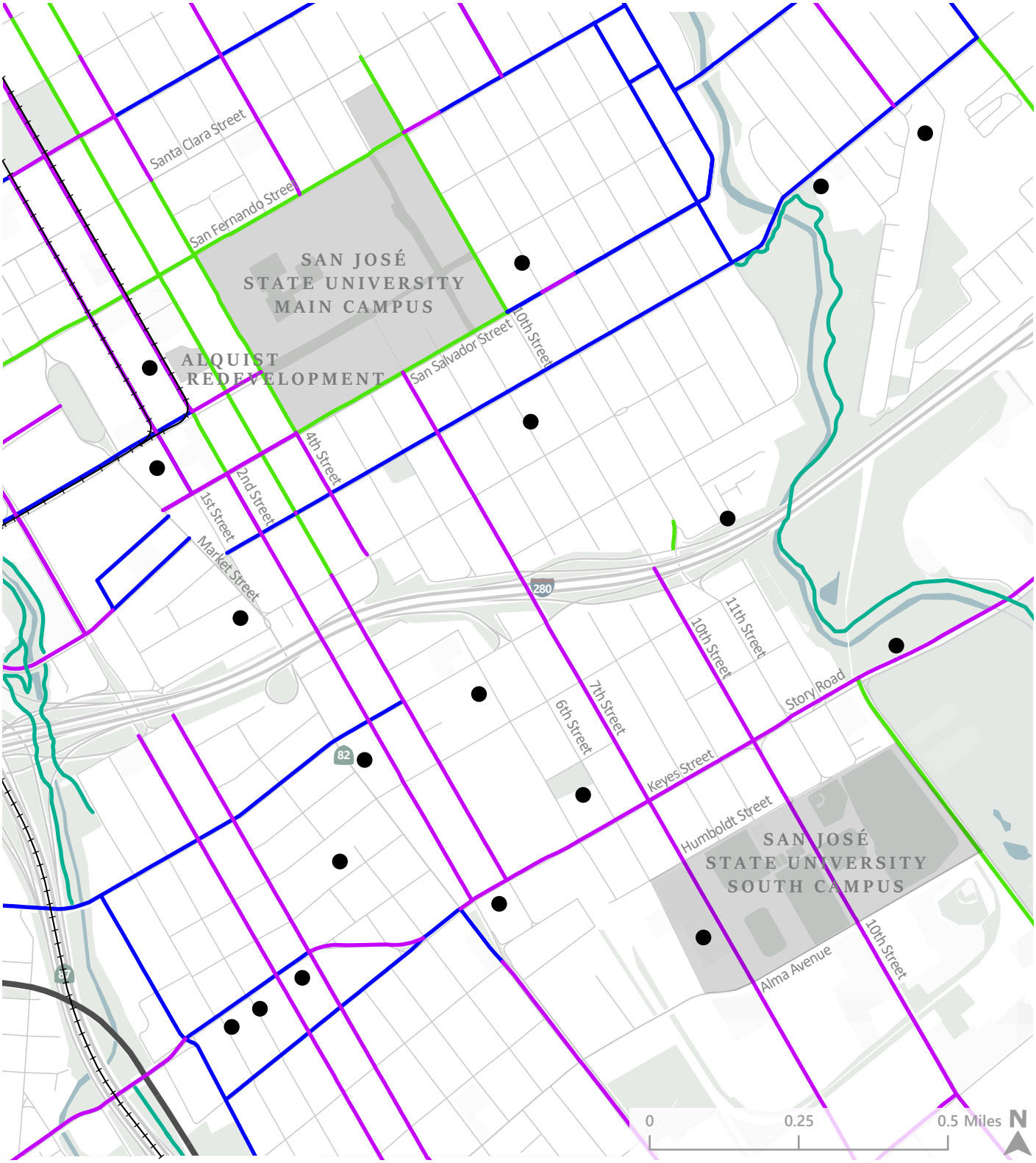


Figure 10

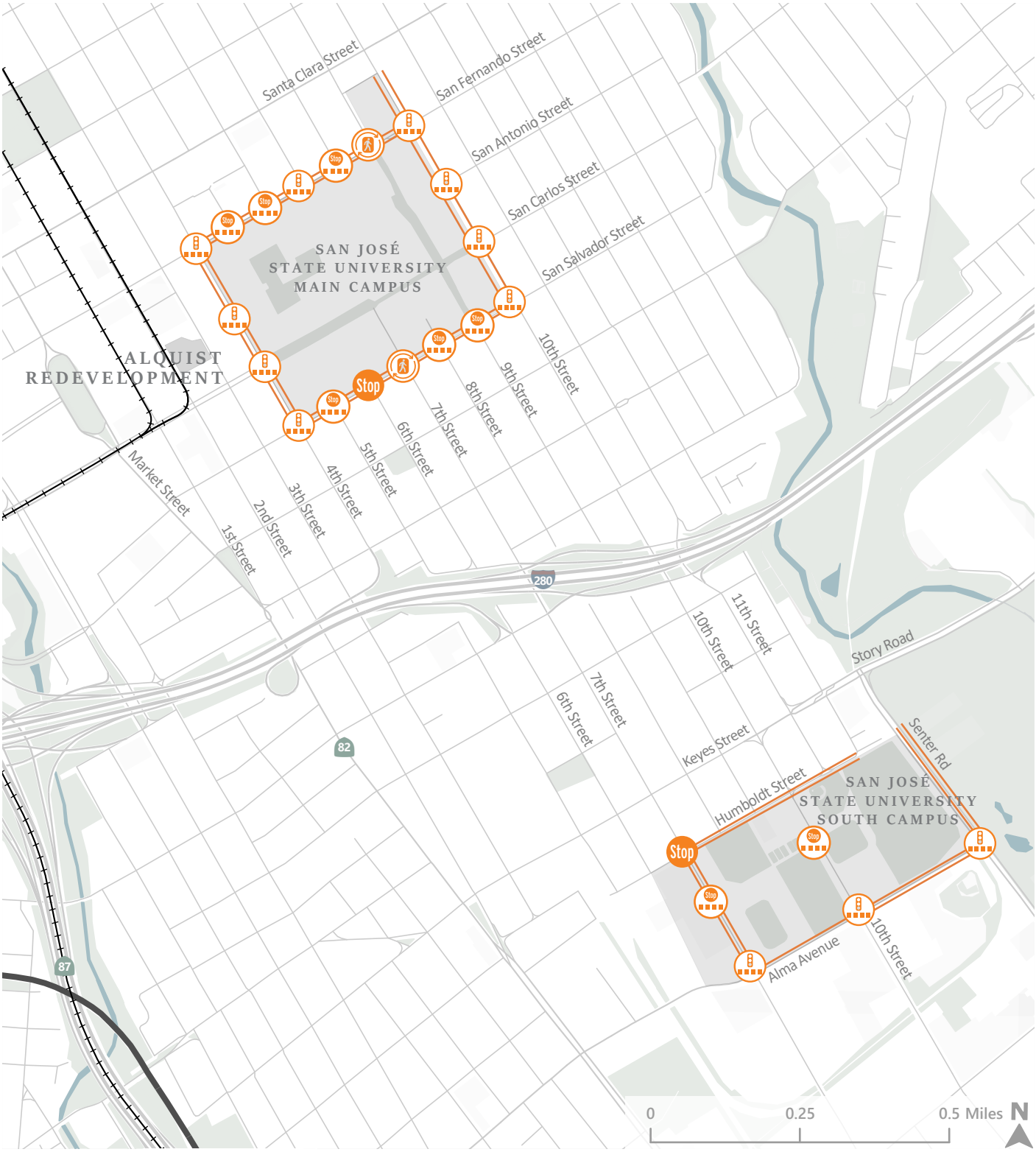
Existing Bicycle Facilities

3.6 Existing Pedestrian Facilities

Pedestrian facilities are comprised of sidewalks and crosswalks. On campus, most pedestrian facilities are pedestrian-only paths or pedestrian and bicycle shared-use paths, which separates pedestrians from vehicles and reduces vehicle interactions.

All the streets adjacent to the Main Campus—Fourth Street, Tenth Street, San Fernando Street, and San Salvador Street—have sidewalks. **Figure 11** displays these facilities. Fourth Street has high visibility crosswalks at all intersections and a midblock decorative crosswalk at Paseo de San Antonio. All intersections along Fourth Street adjacent to the Main Campus are signalized, including the intersection of Fourth Street and Paseo de San Antonio. All intersections along Tenth Street are also marked with high visibility crosswalks and signalized. San Fernando Street has high visibility crosswalks at all intersections near the Main Campus. Along San Fernando Street, the intersections of Fifth Street, Sixth Street, and Eighth Street are side street stop controlled and marked with pedestrian walk signs. The intersections at San Fernando Street and Fourth Street, Seventh Street, Ninth Street, and Tenth Street are signalized. The intersection of San Fernando Street and Ninth Street has a pedestrian scramble. Near campus, there are high visibility crosswalks at all four legs of the intersections along San Salvador Street at Fourth Street, Seventh Street, Ninth Street, and Tenth Street. All of these four intersections are signalized except for the intersection of San Salvador Street/Ninth Street. The intersection of San Salvador Street and Seventh Street has a pedestrian scramble. At the intersections of San Salvador Street/Fifth Street and San Salvador/Eighth Street, there are high visibility crosswalks at only two legs of the intersection allowing for crossing on San Salvador Street and the side street. Both intersections are side street stop controlled. At San Salvador and Sixth Street, there is a crosswalk only along the southside of the intersection crossing Sixth Street. This intersection is also side street stop controlled.

At the South Campus, the streets adjacent to the Project site—Humboldt Street, Seventh Street, Tenth Street, and Senter Road—all have continuous sidewalks on two sides of the street. Alma Avenue has sidewalks only on the northern side of the street west of Tenth Street and sidewalks on both sides of the street east of Tenth Street. Near the South Campus, Seventh Street has high visibility crosswalks where it intersects with Alma Avenue and midblock, allowing access to the park-and-ride lot on the west side of Seventh Street. The intersection of Seventh Street and Humboldt Street does not have any crosswalks and is side-street stop controlled. There are no crosswalks at Humboldt Street and Tenth Street, but there is a high visibility crossing midblock and standard crosswalks at Tenth Street and Alma Avenue. Along Seventh Street and Tenth Street, all of the intersections intersecting with Alma Avenue are signalized. There are no crosswalks along Humboldt Street near the South Campus. All intersections along Alma Avenue near the campus have crosswalks and are signalized; however, the intersection of Alma Avenue and Tenth Street has only standard crosswalks instead of high visibility crosswalks.



Project Locations
Railroad
Light Rail
Sidewalks

High Visibility Crosswalks & Signal
High Visibility Crosswalks
Pedestrian Scramble
Stop Sign

Figure 11

Existing Pedestrian Facilities

N:\Projects_SJ23_Projects\SJ23_2209_SJSU_MasterPlan_EIR\Graphics\ADOBE\F818\Fig11_sidewalk.ai

3.7 Field Observations

Field observations were conducted in June 2023 to observe existing facilities and overall circulation of pedestrians and bicyclists on the Main Campus. Vehicles are prohibited from entering most parts of campus. We observed the Main Campus during the summer session, so we did not observe pedestrian and bicycle volumes and activity present during the school year. Our observations focus on existing facilities and circulation patterns.

On the Main Campus, parking lots and structures are located along the outer edge of campus. Vehicles can drive onto campus and then are required to park in these designated parking areas. Vehicles are prohibited elsewhere on the Main Campus, making it very walkable. There are wide sidewalks and many walking paths that allow direct access to buildings. The sidewalks are in good condition. Landscaping provides some shade to protect pedestrians and bicyclists on warmer days. On the Main Campus, the bike cages are in prominent locations and easy to find.

Due to land uses on the South Campus, there are fewer pedestrian and bicycle paths throughout the campus. Many of these paths are shared with vehicles that are accessing parking. However, the volume of vehicles in these areas is low and travel speeds are slow. Accessing the campus, the sidewalks are in good condition and many of the bike lanes adjacent to the campus have buffers and safe-hit posts. The lack of crosswalks at some intersections, especially along Humboldt Street, can make it uncomfortable for pedestrians to cross. Those accessing the campus by car can park in the lots on the borders of campus or at the South Campus garage.

4. Summary of Relevant Regional Circulation and Transportation Plans

This chapter provides a summary of regional circulation and transportation plans that are relevant to this Project. The *Metropolitan Transportation Commission's (*MTC*) Regional Transportation Plan* provides a roadmap for accommodating projected household and employment growth in the nine-county Bay Area by 2050 as well as a transportation investment strategy for the region. The *Santa Clara Valley Transportation Authority (VTA) VTP 2040 Plan* describes all major projects in Santa Clara Valley over the next 20 years. The *Santa Clara Countywide Bicycle Plan*'s primary goal was to make it easier and safer for people to bike when traveling from one city to the next in Santa Clara County. The *Congestion Management Program Monitoring and Conformance Report* sets state and federal funding priorities for transportation improvements affecting the Santa Clara County Congestion Management Program (CMP) transportation system.

Envision San José 2040 General Plan includes mobility goals aimed to enhance travel by all modes by encouraging use by non-auto modes and thus reduce vehicle trips. The *San José Downtown Strategy 2040* is an integrated strategic design plan focused on revitalizing downtown. The *San José Better Bike Plan 2025* focuses on improving the safety and comfortability of the bike network in San José. The *San José Complete Streets Design Standards & Guidelines* is a comprehensive set of street design standards and guidelines to inform how the City of San José builds and retrofits streets. The *San José Downtown Transportation Plan* identifies and advances the big transportation moves that help shape the future of downtown. The *San José's Citywide Transit First Policy Framework* provides guidelines to make transit more attractive to reduce auto use and dependence.

4.1 Metropolitan Transportation Commission's (MTC) Regional Transportation Plan (Plan Bay Area)

Plan Bay Area 2050[20] is a joint regional planning document overseen by the MTC and the Association of Bay Area Governments (ABAG). It serves as the region's Sustainable Communities Strategy (SCS) pursuant to SB 375 and the 2050 Regional Transportation Plan (RTP) (preceded by Plan Bay Area 2040)[21] and integrates four elements (Housing, Economy, Transportation, and Environment) and five guiding principles (affordable, connected, diverse, healthy, and vibrant) to manage GHG emissions and plan for future population growth. Most of the investments are directed toward residents of Equity Priority Communities

[20] Metropolitan Transportation Commission, 2021. *Plan Bay Area 2050*. Available online at Plan Bay Area 2050 | Plan Bay Area.

[21] Metropolitan Transportation Commission, 2021. *Plan Bay Area 2040*. Available online at Plan Bay Area 2040 Final Plan

or other systematically underserved communities. The plan envisions investment in affordable housing production and preservation, a universal basic income to support residents' essential needs, investments in means-based transit fare discounts, and subsidies to protect homes and businesses from natural hazards. The following strategies are included:

- *Housing Strategies*
  - *Protect and Preserve Affordable Housing*
    - *H1. Further strengthen renter protections beyond state law*
    - *H2. Preserve existing affordable housing*
  - *Spur Housing Production for Residents of All Income Levels*
    - *H3. Allow a greater mix of housing densities and types in Growth Geographies*
    - *H4. Build adequate affordable housing to ensure homes for all*
    - *H5. Integrate affordable housing into all major housing projects*
    - *H6. Transform aging malls and office parks into neighborhoods*
  - *Create Inclusive Communities*
    - *H7. Provide targeted mortgage, rental, and small business assistance to Equity Priority Communities*
    - *H8. Accelerate reuse of public and community-owned land for mixed-income housing and essential services*
- *Economic Strategies*
  - *Improve Economic Mobility*
    - *EC1. Implement a statewide universal basic income*
    - *EC2. Expand job training and incubator programs*
    - *EC3. Invest in high-speed internet in underserved low-income communities*
  - *Shift the Location of Jobs*
    - *EC4. Allow greater commercial densities in Growth Geographies*
    - *EC5. Provide incentives to employers to shift jobs to housing-rich areas well served by transit*
    - *EC6. Retain and invest in key industrial lands*
- *Transportation Strategies*
  - *Maintain and Optimize the Existing System*
    - *T1. Restore, operate, and maintain the existing system*

        - *T2. Support community-led transportation enhancements in Equity Priority Communities*
        - *T3. Enable a seamless mobility experience*
        - *T4. Reform regional transit fare policy*
        - *T5. Implement per-mile tolling on congested freeways with transit alternatives*
        - *T6. Improve interchanges and address highway bottlenecks*
        - *T7. Advance other regional programs and local priorities*
    - *Create Healthy and Safe Streets*
        - *T8. Build a Complete Streets network*
        - *T9. Advance regional Vision Zero policy through street design and reduced speeds*
    - *Build a Next-Generation Transit Network*
        - *T10. Enhance local transit frequency, capacity, and reliability*
        - *T11. Expand and modernize the regional rail network*
        - *T12. Build an integrated regional express lanes and express bus network*
- *Environmental Strategies*
    - *Reduce Risk from Hazards*
        - *EN1. Adapt to a sea level rise*
        - *EN2. Provide means-based financial support to retrofit existing residential buildings*
        - *EN3. Fund energy upgrades to enable carbon neutrality in all existing commercial and public buildings*
    - *Expand Access to Parks and Open Space*
        - *EN4. Maintain urban growth boundaries*
        - *EN5. Protect and manage high-value conservation lands*
        - *EN6. Modernize and expand parks, trails, and recreation facilities*
    - *Reduce Climate Emissions*
        - *EN7. Expand commute trip reduction programs at major employers*
        - *EN8. Expand clean vehicle initiatives*
        - *EN9. Expand transportation demand management incentives*

Major transit projects included in *Plan Bay Area 2050* include a BART extension to San José/Santa Clara, Caltrain electrification, enhanced service along the Amtrak Capitol Corridor, and improvements to local and express bus services.

4.2 Santa Clara Valley Transportation Authority VTP 2040 Plan

The Santa Clara VTA, the countywide transportation authority, has adopted the *Valley Transportation Plan (VTP) 2040* (adopted in October 2014) that describes all major projects and initiatives expected to occur in the next 20 years. It prioritizes complete streets, express lanes, light rail effectiveness upgrades, bus rapid transit, and bicycle/pedestrian improvements. *VTP 2040* projects serve as VTA's recommendations for the RTP known as Plan Bay Area.

4.3 Santa Clara Countywide Bicycle Plan

The *Santa Clara Countywide Bicycle Plan's* primary goal is to make it easier and safer for people to bike when traveling from one city to the next in Santa Clara County. The plan establishes a network of Cross County Bikeway Corridors that will provide continuous, complete bike connections across the county. The plan also identifies locations where new and improved bicycle connections are needed across freeways, rail lines, and creeks. Lastly, the plan identifies ways to make it easier for people to use their bicycle with transit, including bicycle access to major transit stops, bicycle parking at stops, and bicycle accommodations onboard.

4.4 Congestion Management Program (CMP) Monitoring and Conformance Report

As the county's Congestion Management Agency (CMA), VTA is responsible for managing the county's blueprint to reduce congestion and improve air quality. VTA is authorized to set state and federal funding priorities for transportation improvements affecting the Santa Clara County CMP transportation system. The CMP regional roadway network in San José includes all state highways, county expressways, and some principal arterials, while the transit network includes rail service and selected bus service. The bicycle network focuses on the Cross County Bicycle Corridors, which is a network of 57 routes that are identified in the *Santa Clara Countywide Bicycle Plan* (summer 2018). The long-range countywide transportation plan and how projects compete for funding and prioritization are documented in *VTP 2040* (adopted in October 2014).

4.5 Envision San José 2040 General Plan

The City's General Plan (*Envision San José 2040 General Plan*) includes goals, policies, and strategies regarding land use and community design, transportation, housing, environmental resources, and municipal services to 2040. The Land Use and Transportation Element of the General Plan establishes the link between land use and transportation with an emphasis on encouraging growth in compact mixed-use developments and a balanced transportation system. Other key themes in the General Plan are (1) construction of a comprehensive, safe, direct, and well-maintained citywide bikeway network; (2) supporting the development of amenities and land uses that contribute to increased transit ridership; and (3) reducing the number of vehicle miles traveled. The plan also recognizes that under SB 743, automobile

LOS will be replaced with VMT as the City's metric for CEQA transportation analysis. The following strategies are included:

- *Goal TR-1: Complete and maintain a multimodal transportation system that gives priority to the mobility needs of bicyclists, pedestrians, and public transit users while also providing for the safe and efficient movement of automobiles, buses, and trucks.*
    - Transportation (TR)-1.1 Accommodate and encourage use of non-automobile transportation modes to achieve San José's mobility goals and reduce vehicle trip generation and vehicle miles traveled (VMT).
    - TR-1.3 Increase substantially the proportion of travel using modes other than the single-occupant vehicle. The 2030 and 2040 mode split targets for all trips made by San José residents, workers, and visitors are presented in **Table 10**.

Table 10: Mode Split Targets for 2030 and 2040

	All Trips Starting and/or Ending in San José	All Trips Starting and/or Ending in San José	All Trips Starting and/or Ending in San José
Mode[1]	**2019**	**2030 Goal**	**2040 Goal**
Drive Alone	80%	No more than 45%	No more than 25%
Shared Mobility/Carpool	12%	At least 25%	At least 25%
Transit	5%	At least 10%	At least 20%
Bicycle	Less than 2%	At least 10%	At least 15%
Walk	Less than 2%	At least 10%	At least 15%

Note:
1. The 2008 mode split data were obtained from the American Community Survey (2008).

Source: Table TR-1 of the *Envision San José 2040 General Plan*, 2022.

    - *TR-1.4 Through the entitlement process for new development, projects shall be required to fund or construct needed transportation improvements for all transportation modes giving first consideration to improvement of bicycling, walking, and transit facilities and services that encourage reduced vehicle travel demand.*
        - *Development proposals shall be reviewed for their impacts on all transportation modes through the study of Vehicle Miles Traveled (VMT), Envision San José 2040 General Plan policies, and other measures enumerated in the City Council Transportation Analysis Policy and its Local Transportation Analysis. Projects shall fund or construct proportional fair share mitigations and improvements to address their impacts on the transportation systems.*
        - *The City Council may consider adoption of a statement of overriding considerations, as part of an EIR, for projects unable to mitigate their VMT impacts to a less than significant level. At the discretion of the City Council, based on CEQA Guidelines Section 15021, projects that include overriding benefits, in accordance with Public Resources Code Section 21081 and are consistent with the General Plan and the Transportation Analysis Policy 5-1 may be considered for approval. The City Council will only consider a statement of overriding*

considerations for (i) market-rate housing located within General Plan Urban Villages; (ii) commercial or industrial projects; and (iii) 100% deed-restricted affordable housing as defined in General Plan Policy IP-5.12. Such projects shall fund or construct multimodal improvements, which may include improvements to transit, bicycle, or pedestrian facilities, consistent with the City Council Transportation Analysis Policy 5-1.

- *Goal TR-5: Maintain the City's street network to promote the safe and efficient movement of automobile and truck traffic while also providing for the safe and efficient movement of bicyclists, pedestrian, and transit vehicles.*
    - *TR-5.3 Development projects' effects on the transportation network will be evaluated during the entitlement process and will be required to fund or construct improvements in proportion to their impacts on the transportation system. Improvements will prioritize multimodal improvements that reduce VMT over automobile network improvements.*
        - *Downtown. Downtown San José exemplifies low-VMT with integrated land use and transportation development. In recognition of the unique position of the Downtown as the transit hub of Santa Clara County, and as the center for financial, business, institutional and cultural activities, Downtown projects shall support the long-term development of a world class urban transportation network.*
- *Goal TR-7: Implement effective Transportation Demand Management (TDM) strategies that minimize vehicle trips and vehicle miles traveled.*
    - *TR-7.1 Require large developments and employers to develop and maintain TDM programs with TDM services provided for their residents, full-time and subcontracted workers, and visitors to promote use of non-automobile modes and reduce the vehicle trips.*
- *Goal TR-8: Develop and implement parking strategies that reduce automobile travel through parking supply and pricing management.*
    - *TR-8.2 Balance business viability and land resources by maintaining an adequate supply of parking to serve demand while avoiding excessive parking supply that encourages automobile use.*
    - *TR-8.3 Support using parking supply limitations and pricing as strategies to encourage use of non-automobile modes.*
    - *TR-8.5 Promote participation in car share programs to minimize the need for parking spaces in new and existing developments.*
    - *TR-8.6 Allow reduced parking requirements for mixed-use developments and for developments providing shared parking or a comprehensive TDM program, or developments located near major transit hubs or within Urban Villages and other Growth Areas.*
    - *TR-8.7 Encourage private property owners to share their underutilized parking supplies with the general public and/or other adjacent private developments.*

- *TR-8.8 Promote use of unbundled private off-street parking associated with existing or new development, so that the sale or rental of a parking space is separated from the rental or sale price for a residential unit or for non-residential building square footage.*

- *Goal TR-9: Reduce Vehicle Miles Traveled (VMT) per service population by 20% (2030 goal) and by 45% (2040 goal), from the 2017 levels.*
  - *TR-9.1 Enhance, expand, and maintain facilities for walking and bicycling to provide neighborhoods with safe and direct access to transit and key destinations, particularly to provide neighborhoods with safe and direct access to transit and key destinations, a complete alternative transportation network that facilitates non-automobile trips, and enjoyable outdoor open space.*
  - *TR-9.2 Serve as a model city for VMT reduction by implementing programs and policies that reduce VMT for City of San José employees.*

- *Goal TR-10: Reduce VMT through participating and taking a leadership role in on-going regional and statewide VMT reduction efforts.*
  - *TR-10.1 Support, at the state level, the establishment of vehicle taxes or VMT tax targeted to fund congestion pricing strategies and public transportation, bicycle, and pedestrian infrastructure.*
  - *TR-10.2 Take a leadership role in working with the County, the Metropolitan Transportation Commission, Caltrans, VTA and other municipalities to establish congestion pricing or VMT tax for automobile travel through and within Santa Clara County.*
  - *TR-10.3 Support and collaborate on the development of toll lanes on all major freeways and expressways in Santa Clara County.*
  - *TR-10.4 Support a regional parking policy that levels the playing field and incentivizes local reforms. Do this in coordination with other regional climate/smart growth strategies such as the Sustainable Communities Strategy.*

4.6 San José Downtown Strategy 2040

The *Downtown Strategy 2040* (DTS 2040) is an integrated strategic design plan focused on the revitalization of downtown San José through the development of underutilized land uses and increasing the density of infill developments within the downtown boundary. The *DTS 2040* updates the 2000 Downtown Strategy by increasing the number of residential units in downtown by 4,000 units compared to what is planned in the *Envision San José 2040 General Plan* as well as shifting 3,000,000 square feet of allocated office development from Coyote Valley to downtown San José.

4.7 San José Better Bike Plan 2025

In October 2020, the San José City Council approved *Better Bike Plan 2025*. The plan seeks to make bicycling safe and convenient for all ages and abilities in all parts of the city. This will be accomplished by

building new bikeways, enhancing existing bikeways, and implementing supportive programs and policies. *Better Bike Plan 2025* focuses on three goals:

- Safety – Increase safety for all people biking in San José and align with Vision Zero San José
- Mode Shift – Increase the number of trips made by bike in San José
- Equity – Apply the plan in a way that serves historically underserved communities

4.8 San José Complete Streets Design Standards & Guidelines

The *San José Complete Streets Design Standards & Guidelines* were developed as a comprehensive set of street design standards and guidelines to inform how the City of San José builds and retrofits streets. The document presents standards for the design and implementation of streets that are comfortable and welcoming for all modes of travel in accordance with the City's Vision Zero. The design standards and guidelines vary depending on roadway typology and context of the built environment including downtown areas, which are characterized by intensive office, retail, service, residential, and entertainment land uses. Transit usage and pedestrian activity are given primary emphasis over automobile activity in this context. The designs standards and guidelines refer to the *2003 Downtown Streetscape Master Plan* (DSMP) for identified pedestrian networks in the downtown area.

4.9 San José Downtown Transportation Plan

The City of San José adopted the *Downtown Transportation Plan* (*DTP*) in November 2022. The *DTP* identifies and advances the big transportation moves that help shape the future of downtown. Building from past and ongoing work, the *DTP* determines ways to improve safety, equity, access, and mobility throughout the downtown area to meet future travel needs. A comprehensive community engagement process was used to identify and establish network-level transportation plans designed to complement adjacent land uses and accommodate all travel modes. In addition, the plan develops prioritization methods to rank transportation projects and programs and produce concept level designs and implementation strategies for high priority improvements.

4.10 San José's Citywide Transit First Policy Framework

The City of San José adopted a "Transit First Policy" in August 2022. The policy builds off of the City's zero emissions and greenhouse gas reduction goals to make transit more attractive in order to reduce auto use and dependence. The policy works to prioritize transit needs on city streets by establishing the following nine guidelines:

1. *Prioritize the public transit system and its riders along Grand Boulevards throughout the city above other modes, barring safety concerns, to achieve the three goals of Equity, Reliability, and Competitiveness. Evaluate and recommend streets serving High Quality Transit upon which to similarly prioritize the public transit system.*
2. *Dedicate City right of way on streets designated as Grand Boulevards and recommended streets serving High Quality Transit, in a way that prioritizes the public transit system and rider needs,*

before other road users are accommodated, barring safety concerns. Designs should prioritize the mobility and access of transit vehicles and riders, including improvements to transit stops and the pedestrian realm.

3. *Evaluate and recommend via Multimodal Transportation Improvement Plans (MTIP) and similar area plans the re-assignment of City Connector and Local Connector General Plan designated streets serving High Quality Transit routes, where appropriate, as Grand Boulevards.*
4. *Seek grant funding, available City funding, and developer mitigation contributions for public transit improvements.*
5. *Apply equity screening and prioritize disadvantaged communities when investing in street improvements to improve ridership, desirability, and on-time performance of the public transit system.*
6. *Utilize the Transit First Toolkit to select the appropriate infrastructure and/or technology to best achieve City goals in the design process.*
7. *Implement transit-supporting infrastructure and technology in street design on streets served by or proximate to transit where feasible.*
8. *Continue to monitor the effectiveness of tools within the Transit First Toolkit, and tools recommended by the National Association of City Transportation Officials (NACTO), Institute of Transportation Engineers (ITE), and international best practices; update the Transit First Toolkit over time.*
9. *Support the implementation of transit infrastructure for frequent transit routes on County and VTA right-of-way.*

5. Significance Criteria

The detailed impact criteria for VMT and other transportation-related items are described below. The project's potential impacts are presented in **Chapter 7**.

5.1 Significance Criteria

The *2020 California State University Transportation Impact Study Manual* (*2020 CSU TISM)* provides guidance for the preparation of CEQA-compliant transportation impact analyses pursuant to SB 743 and is the operative TISM for this transportation analysis. **Table 11** below summarizes the significance criteria as presented in the *2020 CSU TISM*.

Table 11: Significance Criteria

Impact Categories	CSU Significance Criteria
Plan Conflicts	The project would conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.
VMT Impacts	The project would result in a VMT-related impact as described in **Table 12**.
Hazard Impacts	The project would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
Emergency Access Impacts	The project would result in inadequate emergency access.

Source: Fehr & Peers, 2024.

Each of these criteria is discussed further below.

5.1.1 Plan Conflicts

As described in the *2020 CSU TISM*, a project may cause a significant impact if it conflicts with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

To determine the proposed Project's consistency with relevant transportation programs, plans, ordinances or policies, the following significance thresholds were applied to each respective mode of travel—transit and carpool, roadways, bicycle facilities, and pedestrians as discussed below.

5.1.1.1 Transit and Carpool System

Analysis of transit-related impacts encompasses the proposed Project's consistency with local transit plans. To determine the proposed Project's consistency with local transit plans, significant impacts would occur if the proposed Project, or any part of the proposed Project, directly or indirectly:

- disrupts existing transit services or facilities;[22] or
- interferes with the implementation of a planned transit facility; or
- creates physical or operational transportation outcomes that conflict with desired conditions expressed in transit policies adopted by the City of San José, Santa Clara County, or Santa Clara VTA for their respective facilities in the study area.

5.1.1.2 Roadway System

To determine the proposed Project's consistency with local roadway plans, significant impacts would occur if the proposed Project, or any part of the proposed Project, directly or indirectly:

- disrupts existing facilities; or
- interferes with the implementation of a planned vehicle facility; or
- creates physical or operational transportation outcomes that conflict with applicable program, plan, ordinance, or policy.

5.1.1.3 Bicycle System

To determine the proposed Project's consistency with local bicycle plans, significant impacts would occur if the proposed Project, or any part of the proposed Project, directly or indirectly:

- disrupts existing bicycle programs or facilities; or
- interferes with the implementation of a planned bicycle facility; or
- creates physical or operational transportation outcomes that conflict with applicable bicycle system plans, guidelines, policies, or standards.

5.1.1.4 Pedestrian System

To determine the proposed Project's consistency with local pedestrian plans, significant impacts would occur if the proposed Project, or any part of the proposed Project, directly or indirectly:

- disrupts existing pedestrian facilities; or
- interferes with the implementation of a planned pedestrian facility; or
- creates physical or operational transportation outcomes that conflict with applicable pedestrian system plans, guidelines, policies, or standards.

[22] This includes disruptions caused by the Project relative to transit street operations and transit stops/shelters; or impacts to transit operations from traffic improvements proposed or resulting from the Project.

5.1.2 VMT Impacts

The VMT impact analysis presented in this report considers the Project's direct impacts relative to total VMT per service population as well the Project's long-term effect on VMT using boundary VMT per service population evaluated under Cumulative Conditions. The Project would result in a VMT-related impact as described below in **Table 12**.

Table 12: VMT Significance Thresholds

Impact Category	CSU Significance Threshold	Calculated Numeric Threshold for Project
Under Existing (Baseline) Conditions		
Project Impact	The threshold to be applied in assessing Project-specific impacts is 15% below the existing total VMT per service population rate of 18.07 miles.	The Project would result in a significant Project-specific impact if the Project total VMT per service population under Existing with Project Conditions is greater than 15.36 miles.
Under Cumulative Conditions		
Project Effect	The threshold to be applied in assessing cumulative impacts is no change in the cumulative conditions (future) boundary VMT per service population for 2040.	The Project would result in a significant cumulative impact if it causes the cumulative regionwide daily boundary VMT per service population to be greater than 8.97 miles.

Source: *2020 California State University Transportation Impact Study Manual, 2020 CSU TISM*, and Fehr & Peers, 2024.

Each of these criteria is discussed further below.

5.1.2.1 Project-Generated VMT Impact Thresholds and Impact Criteria

As discussed in the VMT Approach and Analysis Methods chapter (**Chapter 2**), the significance threshold for determining the project's direct impact is a total VMT per service population rate that is 15% below the Existing Conditions total VMT per service population for the region (Santa Clara County, Alameda County, and San Mateo County). The threshold applied in this analysis is 15% below the existing total VMT per service population of 18.07, which, as shown in **Table 13**, is the existing total VMT of 120,353,080 divided by the service population of 6,659,650. This results in a total VMT per service population threshold of 15.36 miles (18.07 miles * 85% = 15.36 miles).

Table 13: Project Generated VMT Threshold

	Project Generated VMT Threshold
Total Vehicle Miles Traveled (A)[1]	120,353,080
Service Population (B)[1,2]	6,659,650
Total VMT per Service Population (A/B = C)	18.07
Total VMT per Service Population Threshold (C*85% = D)	**15.36**

Notes:
1. Rounded service population and VMT to nearest 10.
2. Service population is defined as the sum of all residents (including students from kindergarten to 12th grade), employees (including faculty, staff, and management), and university students.

Source: Fehr & Peers, 2024.

Therefore, the Project would cause a significant Project-generated VMT impact if the SJSU Campus Master Plan total VMT per service population under Existing with Project Conditions or Cumulative with Project Conditions is greater than 15.36 miles.

5.1.2.2 Project's Effect on VMT Thresholds and Impact Criteria

The impact threshold for the Project's effect on VMT, or the Project's cumulative impact, is the regional[23] boundary VMT per service population, or 8.97 miles (see **Table 14**). Like the total Project-generated VMT discussed above, the boundary VMT baseline uses the regionwide boundary VMT to evaluate the Project's effects on VMT.

Table 14: Project's Effect on VMT (Boundary VMT) Cumulative Threshold

	Boundary VMT Threshold
Boundary Vehicle Miles Traveled (A)[1]	74,218,350
Service Population (B)[1,2]	8,278,410
Boundary VMT per Service Population (A/B = C)	8.97
Boundary VMT per Service Population Threshold (C)	**8.97**

Notes:
1. Rounded service population and VMT to nearest 10.
2. Service population is defined as the sum of all residents (including students from kindergarten to 12th grade), employees (including faculty, staff, and management), and university students.

Source: Fehr & Peers, 2024.

Therefore, the Project's effect on VMT would result in a significant cumulative impact if it causes the cumulative regionwide daily boundary VMT per service population to be greater than 8.97 miles.

[23] The region is defined as Santa Clara County, Alameda County, and San Mateo County.

5.1.2.3 Plan Consistency

CEQA, Section 15125(d), also requires an EIR to discuss any inconsistencies between the proposed Project and applicable general and regional plans; therefore, a significant impact would occur if the Project were inconsistent with the RTP/SCS Plan (Plan Bay Area).

5.1.3 Hazard Impacts

The proposed Project would have a significant impact regarding hazards if the proposed Project, or any part of the proposed Project, directly or indirectly substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

5.1.4 Emergency Access Impacts

Ease of access and travel time are critical for first responders when traveling in emergency vehicles. Obstructions in the roadway, detours, and excessive delays due to congestion are among the factors that can affect emergency response time. A significant impact would occur if the proposed Project, or any part of the proposed Project, directly or indirectly results in inadequate emergency access.

6. Vehicle Miles Traveled Forecasts

The City of San José (CSJ) Travel Model was used to develop daily VMT and traffic forecasts for the SJSU Campus Master Plan. VMT forecasts were prepared for the SB 743 VMT assessment, as well as for use as inputs for the air quality, greenhouse gas (GHG), and noise analysis.

6.1 Summary of VMT Forecasts Methods

The VMT assessment calculates VMT using the following steps and methods:

- **Trip Generation**: Daily and peak hour trip generation rates for the Main Campus and South Campus were derived using StreetLight data (**Appendix B** provides a summary of the data and methods used). The daily and peak hour trip generation rates for the Alquist Redevelopment are from the City of San José (CSJ) Travel Model.
- **Trip Distribution**: Trip distribution for the SJSU trips were derived using StreetLight data and spring 2023 zip code data, though we used the trip distribution rates from the CSJ Travel Model.
- **Trip Length**: Trip lengths for the SJSU trips were estimated from StreetLight data, though we used the trip lengths from the CSJ Travel Model.
- **Service Population**:[24] For this analysis, the residential and employee populations are derived from the 2017 Association of Bay Area Governments (ABAG) land use projections for adjacent communities and the SJSU's Campus Master Plan estimates and projections for students, faculty, and staff.
- **Vehicle Miles Traveled**: The total VMT and boundary VMT were developed using the CSJ Travel Model. The VMT estimates are also presented on a per service population basis to distinguish the effects of population and/or employment growth from the effects of changes in personal travel behavior.[25] (The total VMT metric and calculation methods and the Project's effect on VMT using boundary VMT are described in **Chapter 2** and illustrated in **Figure 4**.)
- **City of San José Travel Model**: The City of San José (CSJ) Travel Model was used to develop the VMT forecasts for this study.

6.2 Trip Generation

The trip generation approach and technical methods were tailored for the Project because of the size of the SJSU campus and the unique travel behavior of the Main Campus and South Campus under Existing Conditions and Project Conditions. In establishing conditions tailored for the Project, the Project trip generation is based on observed Existing Conditions SJSU travel characteristics using a campus-specific trip generation rate expressed in vehicle trips per FTE. The Project Conditions is derived from the

[24] Service population is the sum of all residents (including students from kindergarten to 12th grade), employees (including faculty, staff, and management), and university students.

[25] For example, population growth may cause an increase in total VMT, but if travelers change their behavior by using different travel modes or decreasing their trip lengths, then the VMT per service population metric could decrease.

combination of the existing campus vehicle trip rates and the vehicle trip adjustments to account for the six key changes in the campus population characteristics due to the SJSU Campus Master Plan:

- Increase student course load
- Increase in the portion of special session students
- Increase in the portion of students living on campus
- Increase in the portion of online and off-site classes
- Increase in the portion of staff and management working remotely
- Addition of faculty, staff, and management living on campus

The existing Parking Management and TDM measures would remain in place on the SJSU campus; those measures continue to be effective in reducing vehicle trip making and encouraging the use of other modes of travel. Because the Main Campus parking lots are near capacity for most of the day and the SJSU Campus Master Plan is not building a new parking supply on the Main Campus, the increase in vehicle growth is assigned to the South Campus and a shuttle system will transport students, faculty, and staff to/from the Main Campus. Specifically, the net new Project traffic is the difference in the Project Conditions and Existing Conditions SJSU campus trip generation. This section summarizes the trip generation for the SJSU Main Campus and South Campus under Existing Conditions and Project Conditions.

6.2.1 Existing SJSU Campus Trip Generation

The existing SJSU campus vehicle trip generation, shown in **Table 15**, is derived from StreetLight data for the spring 2019 semester (January 22, 2019, to May 24, 2019) and draws from two separate zones for the Main Campus and South Campus. The trip generation values are for an average mid-week (Tuesday to Thursday) daily, AM peak hour (8:00 to 9:00 AM) and PM peak hour (4:00 to 5:00 PM).

Table 15: SJSU Campus Vehicle Trip Generation for Existing Conditions

			AM Peak Hour	AM Peak Hour	AM Peak Hour	PM Peak Hour	PM Peak Hour	PM Peak Hour
Location	**Campus Population[1] (FTE)**	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Main Campus[2]	30,194	41,100	2,460	740	3,200	1,150	2,080	3,230
Alquist Redevelopment[3]	30,194	0	0	0	0	0	0	0
South Campus[2]	30,194	2,220	100	50	150	60	90	150
Campus Trip Total	30,194	**43,320**	**2,560**	**790**	**3,350**	**1,210**	**2,170**	**3,380**

Notes:
1. Campus population is defined as full-time equivalent and includes students, faculty, and staff and uses the unit of FTEs.
2. Average mid-week (Tuesday to Thursday) vehicle trips between January 22, 2019, and May 24, 2019. The morning peak hour occurs from 8:00 to 9:00 AM, and the evening peak hour occurs from 4:00 to 5:00 PM.
3. Alquist was vacant during the spring semester of 2019.

Source: Fehr & Peers, 2024.

The trip generation is then divided by the total SJSU campus population to derive the trip rates, as shown in **Table 16**.

Table 16: SJSU Campus Vehicle Trip Generation Rates for Existing Conditions

			AM Peak Hour	AM Peak Hour	AM Peak Hour	PM Peak Hour	PM Peak Hour	PM Peak Hour
Location	**Campus Population[1] (FTE)**	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Campus Vehicle Trip Total[2]								
Campus Vehicle Trip Total	30,194	43,320	2,560	790	3,350	1,210	2,170	3,380
Trip Generation Rates per Campus Population (Vehicle Trips / FTEs)								
Campus Vehicle Trip Rate	30,194	1.43	0.08	0.03	0.11	0.04	0.07	0.11

Notes:
1. Campus population is defined as full-time equivalent and includes students, faculty, and staff and uses the unit of FTEs.
2. Average mid-week (Tuesday to Thursday) vehicle trips between January 22, 2019, and May 24, 2019. The morning peak hour occurs from 8:00 to 9:00 AM, and the evening peak hour occurs from 4:00 to 5:00 PM.

Source: Fehr & Peers, 2024.

To provide a frame of reference, the vehicle trip rates for students were compared to the trip generation rates from two other sources: 1) the average Institute of Transportation Engineers (ITE) trip generation rates for University/College (ITE land use code 550); and 2) the trip generation rates of other college campuses (see **Table 17**).

As described in the Institute of Transportation Engineers *Trip Generation Manual* 11th Edition (2021), the ITE University/College land use category is based on fewer than 10 surveys (with the trip generation for employees having four or fewer studies) and the actual universities or colleges are not disclosed and may or may not include graduate programs. Therefore, when possible, ITE recommends that the national database be supplemented with local empirical surveys. The comparable university and college campus trip rates capture local factors such as demographics, cost of automobile ownership, land use patterns (e.g., density, diversity, distance to transit, etc.), and transportation choice.

Table 17 provides a summary comparison of the trip generation rates for daily, morning peak hour, and evening peak hour trips for the three subject sources. As shown on the table, the SJSU rates lies between the California University and College Campus averages and the ITE trip generation rates.

Table 17: Existing Conditions Vehicle Trip Generation Rate Comparison

Campus	Campus Population (FTEs)	Vehicle Trips Daily	Vehicle Trips AM Peak Hour	Vehicle Trips PM Peak Hour	Vehicle Trips per Campus Population Daily	Vehicle Trips per Campus Population AM Peak Hour	Vehicle Trips per Campus Population PM Peak Hour
California University and College Campuses							
UC Berkeley[1]	55,129	22,495	-	-	0.41	-	-
CSU Sacramento[2]	32,549	32,692	3,030	2,921	1.00	0.09	0.09
UCSC[3]	23,471	22,702	1,469	2,051	0.97	0.06	0.09
CSUMB[4]	9,781	17,875	1,401	1,457	1.83	0.14	0.15
Cal Poly SLO[5]	24,092	23,000	1,530	1,690	0.95	0.06	0.07
ITE							
ITE Code 550 (University / College) – Students[6]	27,084	39,485	4,133	4,146	1.46	0.15	0.15
ITE Code 550 (University / College) – Employees[7]	3,110	27,647	2,545	2,703	8.89	0.82	0.87
ITE Code 550 (University / College) – Total	30,194	67,132	6,678	6,849	2.22	0.22	0.23
California University and College Campuses Averages							
Average Trips per Campus Population[8]					1.03	0.09	0.10
Average Trips per Campus Population (without UCB)					1.19	0.09	0.10
SJSU Campus Average							
SJSU[9]	**30,194**	**43,320**	**3,350**	**3,380**	**1.43**	**0.11**	**0.11**

Notes:

1. Trips and trip rates based on data collected in 2019.
2. Trips and trip rates based on data shown in Tables 3.15-3 and 3.15-4 of the Transportation chapter of the CSU Sacramento Placer Center Draft EIR (Fehr & Peers, 2022).
3. Trips and trip rates based on data shown in Tables 3.16-3 and 3.16-6 of the Transportation Chapter of the UCSC 2021 Long Range Development Plan EIR (Fehr & Peers, 2021).
4. Trips and trip rates based on data shown in Tables 1 and 8 of the CSUMB Master Plan EIR - Trip Generation Evaluation Methods and Estimates (Fehr & Peers, 2021).
5. Trips and trip rates based on data shown in Tables 2 and 11 of the TDM Plan Existing Conditions Report for Cal Poly SLO (Fehr & Peers, 2023).
6. Trip rates taken from Institute of Transportation Engineers Trip Generation Manual, 11th Edition (2021), using the fitted curve equation for daily, AM and PM peak hour trips.
7. Trip rates taken from Institute of Transportation Engineers Trip Generation Manual, 11th Edition (2021), using the average rate for daily trips and the fitted curve equation for AM and PM peak hour trips.
8. This rate is calculated by averaging the rates from UC Berkeley, CSU Sacramento, UCSC, CSUMB, and Cal Poly SLO.

9. This rate is taken from Table 13: SJSU Campus Vehicle Trip Generation for Existing Conditions.

Source: Fehr & Peers, 2024.

6.2.2 Cumulative Conditions SJSU Campus Trip Generation

For the Cumulative Conditions, the campus vehicle trip generation is presumed to be the same as Existing Conditions because the campus is near the capacity of the 2001 Campus Master Plan (see **Table 18**).

Table 18: SJSU Campus Vehicle Trip Generation for Cumulative Conditions

			AM Peak Hour	AM Peak Hour	AM Peak Hour	PM Peak Hour	PM Peak Hour	PM Peak Hour
Location	**Campus Population[1] (FTE)**	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Main Campus[2]	N/A	41,100	2,460	740	3,200	1,150	2,080	3,230
Alquist Redevelopment[3]	N/A	0	0	0	0	0	0	0
South Campus[2]	N/A	2,220	100	50	150	60	90	150
Campus Vehicle Trip Total	**30,194**	**43,320**	**2,560**	**790**	**3,350**	**1,210**	**2,170**	**3,380**

Notes:

1. Campus population is defined as full-time equivalent and includes students, faculty, and staff and uses the unit of FTEs.
2. Average mid-week (Tuesday to Thursday) vehicle trips between January 22. 2019 and May 24, 2019. The morning peak hour occurs from 8:00 to 9:00 AM, and the evening peak hour occurs from 4:00 to 5:00 PM.
3. Alquist is not included, because it was vacant during the spring semester of 2019 and for this cumulative analysis.

Source: Fehr & Peers, 2024.

6.2.3 Alquist Redevelopment Trip Generation

The Alquist Redevelopment residential trip generation is derived from the City of San José Travel Model (see **Table 19**). Vehicle trip rates were compared to other sources (StreetLight Data, other downtown San José residential projects, and Institute of Transportation Engineers (ITE) Trip Generation Manual), and can be found in **Appendix C**.

Table 19 also includes the vehicle trip rates for the faculty housing (accounting for the partners / spouses / family of the faculty) and for the student housing (accounting for the non-commute trips students make off-campus) at the Alquist Redevelopment.

Table 19: Alquist Redevelopment Vehicle Trip Generation Rate

Land Use	Daily	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
Residential Trip Generation Rates per DU (Vehicle Trips / DU)							
Market-Rate Housing[1]	4.53	0.05	0.26	0.31	0.26	0.12	0.38
Faculty, Staff, and Management Housing (non-SJSU commuter trips)[2]	3.49	0.03	0.14	0.17	0.11	0.05	0.17
Student Housing (non-commuter trips)[3]	1.19	0.01	0.06	0.07	0.07	0.07	0.14

Notes:
1. Trip rates taken from the City of San José Travel Model.
2. Trip rates taken from a combination of observed resident staff vehicle trip generation rates from the CSUMB campus and trip rates from the City of San José Travel Model.
3. Trip rates taken from a combination of the student resident rate from VMT+ for daily trip generation and the observed resident student vehicle trip generation rates from the CSUMB campus.

Source: Fehr & Peers, 2024.

6.2.4 Project Conditions SJSU Campus Trip Generation

Based on parking occupancy data, the Main Campus is currently near parking capacity under Existing Conditions. For the Existing with Project Conditions and Cumulative with Project Conditions, the trips generated by the Project (implementation of the SJSU CMP) would be added to the South Campus, as the South Parking Garage was not open in Existing Conditions. **Table 20** shows the existing trip generation for the Main and South Campuses and the Project trip generation at the South Campus. The table also includes the additional shuttle trips between the Main and South Campuses to transport the people who park at South Campus and need to go to Main Campus, along with the trips generated by the residents in the market-rate apartments in Alquist.

Table 20 includes the trip adjustments to account for the six key changes in the campus population characteristics due to the SJSU Campus Master Plan:

1. **Increased student course load**: The increase in student commute trips adjustment is accounted for in the increase in the student population between Existing Conditions and Project Conditions and the SJSU trip generation rates shown in **Table 16**. No additional adjustment is needed.
2. **Increase in the portion of special session students**: The change in the portion of special session students is accounted for in the change in the student population between Existing Conditions and Project Conditions. Because special session students do not travel to the SJSU campus, they do not generate vehicle trips. No additional adjustment is needed.
3. **Increase in the portion of students living on campus**: The change in student commute trips adjustment is accounted for by multiplying the increase in the student population between

Existing Conditions and Project Conditions (2040) by the percent adjustment in the campus trip rates presented in **Table 21**, and the SJSU trip generation rates presented in **Table 16**.

4. **Increase in the portion of online and off-site classes**: The decrease in student commute trips adjustment is accounted for by multiplying the increase in the student population between Existing Conditions and Project Conditions (2040) by the percent adjustment in the campus trip rates presented in **Table 21** (50% reduction), and the SJSU trip generation rates presented in **Table 16**. The 50% reduction in the campus trip rate means that half of the increased portion of students taking online and off-site classes do not come to the campus.
5. **Increase in the portion of staff and management working remotely**: The decrease in staff commute trips adjustment is accounted for by multiplying the increase in the portion of staff and management working remotely between Existing Conditions and Project Conditions (2040) by the percent adjustment in the campus trip rates presented in **Table 21** (100% reduction), and the SJSU trip generation rates presented in **Table 16**. Staff and management that work remotely will not travel to/from the campus.
6. **Addition of faculty, staff, and management living on campus**: The decrease in staff commute trips adjustment is accounted for by multiplying the addition of staff living on campus between Existing Conditions and Project Conditions (2040) by the percent adjustment in the campus trip rates presented in **Table 21** (100% reduction). Staff and management that live at Alquist Redevelopment will not make any vehicle trips to/from the campus.

Table 20: SJSU Campus Vehicle Trip Generation for Project Conditions

				AM Peak Hour	AM Peak Hour	AM Peak Hour	PM Peak Hour	PM Peak Hour	PM Peak Hour
ID	Location	Campus Population[1] (FTE)	Daily	In	Out	Total	In	Out	Total
	SJSU Campus Trip Rates								
A	Campus Trip Rate		1.43	0.08	0.03	0.11	0.04	0.07	0.11
	SJSU Campus Trip Generation								
B	Main Campus (Existing)	30,194	41,100	2,460	740	3,200	1,150	2,080	3,230
C	South Campus (Existing)	—	2,220	100	50	150	60	90	150
D	South Campus[2] (Project)	9,530	13,670	810	250	1,060	380	690	1,070
E	***Trip Generation Subtotal (B+C+D)***	***39,724***	***56,990***	***3,370***	***1,040***	***4,410***	***1,590***	***2,860***	***4,450***
	Vehicle Trip Adjustments								
	Increased Student Course Load	See note 12	See note 12	See note 12	See note 12	See note 12	See note 12	See note 12	See note 12
	Increase in the Portion of Special Session Students	See note 13	See note 13	See note 13	See note 13	See note 13	See note 13	See note 13	See note 13
F	Increased Portion of Students Living On Campus[3]	*2,550*	370	(190)	60	(130)	80	0	80
G	Increased Portion of Students Taking Online or Off-site Classes[4]	*3,284*	(2,360)	(140)	(40)	(180)	(70)	(120)	(190)
H	Increased Portion of Staff and Management Working Remotely[5]	*648*	(930)	(50)	(20)	(70)	(30)	(50)	(80)
I	Addition of Faculty, Staff, and Management Living On Campus[6]	*50*	(70)	0	0	0	0	0	0
J	Total Vehicle Trip Adjustments (F+G+H+I)		(2,990)	(380)	0	(380)	(20)	(170)	(190)
K	Percent Reduction (J/E)		-5.2%	-11.3%	0%	-8.6%	-1.3%	-5.9%	-4.3%

				AM Peak Hour	AM Peak Hour	AM Peak Hour	PM Peak Hour	PM Peak Hour	PM Peak Hour
ID	Location	Campus Population[1] (FTE)	Daily	In	Out	Total	In	Out	Total
L	***Trip Adjustments Subtotal (E+J)***		***54,000***	***2,990***	***1,040***	***4,030***	***1,570***	***2,690***	***4,260***
	Campus / Alquist Vehicle Trip Adjustments								
M	Students Living at the Alquist Redevelopment Site[7]	*450*	(530)	0	(30)	(30)	(30)	(30)	(60)
N	***Campus Trips Subtotal (L+M)***		***53,470***	***2,990***	***1,010***	***4,000***	***1,570***	***2,690***	***4,260***
	Shuttle Trips Between Main Campus and South Campus								
O	Shuttles between Main Campus and South Campus[8]		480	30	30	60	30	30	60
	Alquist Redevelopment Trips								
P	Market-Rate Housing	500[9]	2,270	30	130	160	130	60	190
Q	Student Housing (non-commuter)[10]	450	530	0	30	30	30	30	60
R	Faculty Housing (non-SJSU commuter) [11]	50	170	0	10	10	10	0	10
S	***Alquist Subtotal (P+Q+R)***		***3,380***	***30***	***170***	***200***	***170***	***90***	***260***
T	***Campus (including shuttles and Alquist) Total (N+O+S)***		**56,920**	**3,050**	**1,210**	**4,260**	**1,740**	**2,780**	**4,520**

Notes: Vehicle trip generation is rounded to the nearest ten vehicles.

1. Campus population is defined as full-time equivalent and includes students, faculty, and staff and uses the unit of FTEs.
2. Additional trips generated as part of the SJSU Campus Master Plan would be added to South Campus, as the Main Campus parking lots are close to or at capacity.
3. Percent Adjustment comes from comparing the student commuter and student resident rates from VMT+ for the daily rates, and from comparing the student peak hour trip rates from Table D-1 of the CSUMB Master Plan EIR - Trip Generation Evaluation Methods and Estimates Memo as compared to the existing campus peak hour trip generation rates.
4. Percent Adjustment comes from taking the average (50%) of the maximum (all online / offsite students no longer travel to campus - 100% reduction) and minimum (all online / offsite students still travel to campus - 0% reduction) reductions.
5. Percent Adjustment comes from understanding that remote staff and management no longer travel to campus (100% reduction in trip generation). This is separate from the faculty / staff who live at Alquist Redevelopment.

6. Percent Adjustment comes from understanding that staff and management living at Alquist Redevelopment make no vehicle trips to / from the Main Campus.
7. Vehicle trip generation derived from observed resident student vehicle trip generation rates as shown in **Table 19**.
8. The number of shuttles is calculated using a headway of 5 minutes and two routes.
9. Expressed in DU (assuming household occupancy of 2.37 persons per dwelling unit from the CSJ Travel Model) and using the market-rate trip generation rate in **Table 19**.
10. Vehicle trip generation derived by multiplying the population by the student housing trip generation rate in **Table 19**.
11. Vehicle trip generation derived by multiplying the population by the faculty, staff, and management housing trip generation rate in **Table 19**.
12. The increase in the student commute trips adjustment is accounted for in the increase in the student population between Existing Conditions and Project Conditions.
13. The change in the portion of special session students is accounted for in the change in the student population between Existing Conditions and Project Conditions.

Source: Fehr & Peers, 2024.

Table 21: SJSU Campus Vehicle Trip Adjustments for Project Conditions

Adjustments	Campus Population [1] (FTE)	Daily	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
SJSU Campus Trip Rates								
Campus Trip Rate (A)	30,194	1.43	0.08	0.03	0.11	0.04	0.07	0.11
Alquist Redevelopment Trip Rates								
Model Trip Generation Rate for Residential		4.53	0.05	0.26	0.31	0.26	0.12	0.38
Faculty Housing (non-SJSU commuter trips)		3.49	0.03	0.14	0.17	0.11	0.05	0.17
Student Housing (non-commuter trips)		1.19	0.01	0.06	0.07	0.07	0.07	0.14
Vehicle Trip Adjustments (%)								
Increased Student Course Load		See note 7	See note 7	See note 7	See note 7	See note 7	See note 7	See note 7
Increase in the Portion of Special Session Students		See note 8	See note 8	See note 8	See note 8	See note 8	See note 8	See note 8
Increased Portion of Students Living On Campus[3] (a)	2,550	10%	-90%	90%	-46%	75%	0%	28%
Increased Portion of Students Taking Online or Off-Site Classes[4] (b)	3,284	-50%	-50%	-50%	-50%	-50%	-50%	-50%
Increased Portion of Staff and Management Working Remotely[5] (c)	648	-100%	-100%	-100%	-100%	-100%	-100%	-100%
Addition of Faculty, Staff, and Management Living On Campus[6] (d)	50	-100%	-100%	-100%	-100%	-100%	-100%	-100%

Notes:

1. Campus population is defined as full-time equivalent and includes students, faculty, and staff and uses the unit of FTEs.
2. Additional trips generated as part of the SJSU Campus Master Plan would be added to South Campus, as the Main Campus parking lots are close to or at capacity.
3. Percent Adjustment comes from comparing the student commuter and student resident rates from VMT+ for the daily rates, and from comparing the student peak hour trip rates from Table D-1 of the CSUMB Master Plan EIR - Trip Generation Evaluation Methods and Estimates Memo as compared to the existing campus peak hour trip generation rates.
4. Percent Adjustment comes from taking the average (50%) of the maximum (all online / offsite students no longer travel to campus - 100% reduction) and minimum (all online / offsite students still travel to campus - 0% reduction) reductions.
5. Percent Adjustment comes from understanding that remote staff and management no longer travel to campus (100% reduction in trip generation).
6. Percent Adjustment comes from understanding that faculty, staff, and management living on campus would not make any vehicle trips to/from the campus.

7. No adjustment needed. Accounted for in Campus Population Change between Existing Conditions and Project Conditions.
8. No adjustment needed. Accounted for in Campus Population Change between Existing Conditions and Project Conditions

Source: Fehr & Peers, 2024.

6.3 Trip Distribution

Campus vehicle trips are generated by students, faculty, staff, and management, and visitors traveling to/from the SJSU campus. The following sources were reviewed to better understand the campus trip distribution patterns:

- SJSU Student Resident Zip Code Data – The spring 2023 SJSU student zip code data was provided by SJSU staff and includes on-campus and off-campus student resident location by zip code.
- SJSU Faculty, Staff, and Management Resident Zip Code Data – The spring 2023 SJSU employee zip code data was provided by SJSU staff and includes off-campus faculty, staff, and management resident location by zip code.
- Campus Distribution using StreetLight data (includes students, faculty, staff, management, and visitors) – The StreetLight data was used to summarize the average vehicle distribution during the mid-week (Tuesday through Thursday) between January 22, 2019, and May 24, 2019.

Fehr & Peers reviewed the SJSU Student Resident Zip Code data, which is limited to student resident locations. However, this data set represents only a sample of the student resident locations because some students provide only their parents' resident location and not the student's resident location while attending SJSU; in other words, the zip codes with resident locations listed outside of the proximity of the SJSU Campus (such as counties in Southern California) were not considered as part of the trip distribution analysis. As shown in **Table 22**, most of the students live in Santa Clara, Alameda, or San Mateo counties (81%).

The review of the SJSU Faculty, Staff, and Management Resident Zip Code data also shows Santa Clara, Alameda, and San Mateo counties as the most common residents for faculty, staff, and management (88%) (see **Table 22**). In fact, nearly three-quarters of the faculty, staff, and management live in Santa Clara County.

Finally, the distribution of all SJSU trips through StreetLight shows that 88% of the daily trips are within Santa Clara County. And 97% of all SJSU trips are made within Santa Clara, Alameda, and San Mateo counties.

Table 22: Population and Vehicle Trip Distribution of SJSU Campus

	Population Distribution	Population Distribution	Population Distribution	Vehicle Trips Distribution
Resident Location	**Student (Zip Code)[1]**	**Faculty, Staff, and Management (Zip Code)$_1$**	**Total (Zip Code)[2]**	**All Trips (StreetLight)[3]**
Santa Clara County	60%	73%	61%	88%
Alameda County	16%	11%	15%	7%
San Mateo County	5%	4%	5%	2%
Other County	19%	12%	19%	3%
Total	100%	100%	100%	100%

Notes:
1. Zip code data based on spring 2023 residency data.
2. Trip distribution calculated from the weighted average of the student zip codes and faculty, staff, and management zip codes.
3. Trip distribution calculated from the same StreetLight data pull as the trip generation.

Source: Fehr & Peers, 2024.

6.4 Trip Length

To provide context and as a point of comparison to the subsequent VMT analysis in **Section 6.6**, the average vehicle trip lengths were estimated for the zip code data and StreetLight data and are presented in **Table 23**.

The trip length varies significantly between the zip code data and StreetLight data. The zip code data shows an average trip length of about 20 miles, whereas StreetLight data shows about 8 miles. This is also reflected in the difference in trip distribution (i.e., StreetLight shows 88% of the trips are within Santa Clara County whereas the combined zip code data shows 61% of all students, faculty, staff, and management residing in Santa Clara County, see **Table 22**).

Table 23: Average Vehicle Trip Lengths

Data Source	Average Trip Length (Miles) for Students	Average Trip Length (Miles) for Faculty, Staff, and Management	Average Trip Length (Miles) for Total
Zip Code[1]	21.8	17.2	**21.2**
StreetLight[2]	N/A[3]	N/A[3]	**8.3**

Notes:
1. Trip length taken from the centroid of the zip code for the students and for the faculty, staff, and management.
2. Trip length calculated from the same StreetLight data pull as the trip generation.
3. StreetLight only has trip length for total trips and not broken out by population type.

Source: Fehr & Peers, 2024.

The zip code data is the place of residence, which is a proxy for the average commute trip. The zip code data has some limitations, such as how the students may provide their parents' resident location and not their resident location while attending SJSU (e.g., the parents may live in San Mateo or Alameda Counties, but the student lives in Santa Clara County while attending SJSU). StreetLight Data is a combination of all trips, including commute, recreational, and visitor trips (hence why there is only one average trip length instead of trip length by population).

6.5 Service Population

Service population is the sum of the number of all residents (including students from kindergarten to 12th grade), employees (including faculty, staff, and management), and university students. **Table 24** shows the service population for the SJSU Campus, Santa Clara County, and the South Bay[26] for each project scenario. This service population method is used to ensure the VMT rate is expressed properly (i.e., that the numerator and denominator include the generators of both trip ends of the VMT), the total VMT is divided by the service population (residential population, employment population, and student population)—the generator of both trip ends of the VMT. In other words, the travel model uses residential population, employment population, and student population to estimate trips and to develop a VMT rate the total VMT needs to be divided by the service population that generated the VMT.

[26] The region is defined as Santa Clara County, Alameda County, and San Mateo County.

Table 24: Service Population

Population Type	Existing Conditions[4]	Existing with Project Conditions	Cumulative Conditions[5]	Cumulative with Project Conditions
SJSU Campus with Alquist Redevelopment[1]				
Residents (A)	4,450	8,235	4,450	8,235
Employees (B)	3,110	4,099	3,110	4,099
Students (C)	27,084	35,625	27,084	35,625
Service Population (A+B+C=D)	34,644	47,959	34,644	47,959
Santa Clara County[2]				
Residents (A)	1,874,350	1,878,140	2,328,000	2,331,790
Employees (B)	1,039,380	1,040,370	1,441,450	1,442,440
Students (C)	130,380	138,920	168,680	177,220
Service Population (A+B+C=D)	3,044,110	3,057,430	3,938,130	3,951,450
South Bay (Santa Clara County + Alameda County + San Mateo County)[3]				
Residents (A)	4,234,130	4,237,920	5,226,300	5,230,090
Employees (B)	2,182,990	2,183,980	2,769,210	2,770,200
Students (C)	242,530	251,070	282,900	291,440
Service Population (A+B+C=D)	6,659,650	6,672,970	8,278,410	8,291,730

Notes: Population values rounded to nearest 10.

1. TAZs included in this summary 556, 1142, 1143, 1169, and 1171.
2. TAZs included in this summary 1-1490 and 2981-3045.
3. TAZs included in this summary 1-1687, 1891-2371, and 2981-3045.
4. Existing Conditions represents spring 2019 conditions.
5. Cumulative Conditions represents 2040 conditions.

Source: Fehr & Peers, 2024.

The service population is expected to increase by 29% for Santa Clara County and 24% for the South Bay region between Existing and Cumulative Conditions. The service population for the SJSU Campus is expected to increase by 34% in Project conditions. These growth rates of residents, employees, and university students have a direct influence on the VMT growth rates for each of the geographic areas described above.

6.6 Daily VMT Forecasts

This section summarizes the total VMT and boundary VMT forecasts for the SJSU Campus under the four study scenarios.

6.6.1 Total Project Generation VMT Forecasts

The total Project-generated VMT SJSU Campus trip generation is presented in **Table 25** is the expected VMT growth "budget" established by the SJSU's Campus Master Plan transportation network and land use growth assumptions. The SJSU Campus's project generated VMT grows at a slower rate than its service population, and thus the SJSU Campus total VMT per service population rate decreases with the introduction of the SJSU Campus Master Plan. This downward trend in the total VMT per service population in SJSU is an important observation that means that SJSU could consider the results of a baseline total VMT per service population may be sufficient for some land use project types. Between No Project and Project Conditions, total project generated VMT for both Santa Clara County and South Bay Region increases, while total VMT per service population rate for both Santa Clara County and South Bay Region decreases.

Table 25: Total Project Generated VMT Forecasts

Land Use	Existing Conditions[1]	Existing with Project Conditions	Cumulative Conditions[2]	Cumulative with Project Conditions
SJSU with Alquist Redevelopment[3]				
Total Project Generated VMT (A)	498,060	655,270	437,110	552,550
Service Population (B)	34,644	47,959	34,644	47,959
Total VMT per Service Population (A/B = C)	14.38	13.66	12.62	11.52
Santa Clara County[4]				
Total Project Generated VMT (A)	56,106,750	56,218,410	71,386,290	71,405,040
Service Population (B)	3,044,110	3,057,430	3,938,130	3,951,450
Total VMT per Service Population (A/B = C)	18.43	18.39	18.13	18.07
South Bay (Santa Clara County + Alameda County + San Mateo County)[5]				
Total Project Generated VMT (A)	120,353,080	120,472,010	139,788,080	139,818,680
Service Population (B)	6,659,650	6,672,970	8,278,410	8,291,730
Total VMT per Service Population (A/B = C)	18.07	18.05	16.89	16.86

Notes: Population values rounded to nearest 10.
1. Existing Conditions represents spring 2019 conditions.
2. Cumulative Conditions represents 2040 conditions.
3. TAZs included in this summary 556, 1142, 1143, 1169, and 1171.
4. TAZs included in this summary 1-1490 and 2981-3045.
5. TAZs included in this summary 1-1687, 1891-2371, and 2981-3045.

Source: San José Travel Model land use summary prepared by Fehr & Peers, 2024.

6.6.2 Boundary VMT Forecasts

Boundary VMT is a VMT metric that measures the VMT on a jurisdictions roadway system and is presented in **Table 26**. This boundary VMT is then divided by the service population (sum of all residential population (including students from kindergarten to 12th grade), employment population, and university

students) to calculate boundary VMT per service population. The South Bay Region's boundary VMT per service population stays approximately constant between Existing and Cumulative Conditions. The South Bay Region's boundary VMT per service population slightly decreases with the introduction of the SJSU Campus Master Plan. The change in boundary VMT with the introduction of the SJSU Campus Mater Plan captures the effect of shifting VMT due to new connections with Project land uses (e.g., regional school trips redistribution) and VMT efficiency of land use in the Project's location.

Table 26: Boundary VMT Forecasts

Land Use	Existing Conditions[1]	Cumulative Conditions[2]	Cumulative with Project Conditions
Santa Clara County[3]			
Boundary VMT (A)	27,683,800	36,299,040	36,269,180
Service Population (B)	3,044,110	3,938,130	3,951,450
Boundary VMT per Service Population (A/B = C)	9.09	9.22	9.18
South Bay (Santa Clara County + Alameda County + San Mateo County)[4]			
Boundary VMT (A)	60,662,180	74,218,350	74,164,850
Service Population (B)	6,659,650	8,278,410	8,291,730
Boundary VMT per Service Population (A/B = C)	9.11	8.97	8.94

Notes: Population values rounded to nearest 10.
1. Existing Conditions represent spring 2019 conditions.
2. Cumulative Conditions represent 2040 conditions.
3. TAZs included in this summary 1-1490 and 2981-3045.
4. TAZs included in this summary 1-1687, 1891-2371, and 2981-3045.

Source: San José Travel Model land use summary prepared by Fehr & Peers, 2024.

6.7 City of San José Travel Model

The CSJ Travel Model was used to develop the VMT forecasts for this study. The CSJ Travel Model is a refinement of the Santa Clara VTA's City/County Association of Governments of San Mateo County (C/CAG) Bi-County Model (VTA Travel Model), with additional roadway and transportation analysis zone (TAZ) detail in the City of San José. It remains consistent with Plan Bay Area 2040 future year land use and transportation assumptions. The CSJ Travel Model is a 4-Step trip-based model with peak AM one hour and PM peak one hour auto vehicle assignments. Daily auto vehicle assignment is calculated by applying factors to the AM and PM peak one hour auto vehicle assignments.

The CSJ Travel Model has more TAZ structure (around 740 TAZs that cover CSJ) and roadway network detail than the VTA Travel Model in the City of San José, and slightly more street detail in downtown San José. The CSJ Travel Model has similar TAZ structure and roadway network detail as the VTA Travel Model outside the City of San José. The available travel model documentation is presented in **Appendix D**.

7. Environmental Impacts and Mitigation Assessment

This section describes the analysis methods, assumptions, and results used to identify potential significant impacts of the proposed Project on the transportation system per the significance criteria described in **Section 5.1.1**. Transportation/traffic impacts are described and assessed, and mitigation measures are recommended for impacts identified as significant.

7.1 Plan Conflict Analysis

The *2020 CSU TISM* provides guidance for the preparation of CEQA-compliant transportation impact analysis including determining whether the Project conflicts with relevant transportation programs, plans, ordinances, or policies. To determine the proposed Project's consistency with relevant transportation programs, plans, ordinances or policies, significance thresholds were applied to each respective mode of travel—transit and carpool, roadways, bicycle facilities, and pedestrian facilities as described in **Section 5.1.1**. The following sections describe whether the Project meets the thresholds of significance for each mode.

7.1.1 Transit and Carpool Evaluation

Implementation of the proposed Project will not result in modifications to the transit or carpool networks that would disrupt existing facilities or services or interfere with the implementation of planned facilities/services contained in adopted programs, plans, policies, or ordinances. However, the proposed Project would lead to increases in the campus population, which would increase the demand for transit and carpool facilities and services and would cause additional roadway traffic congestion that may affect several transit corridors by increasing travel times and decreasing headway reliability for transit vehicles. Potential increases in transit vehicle delays are a result of buses operating in mixed-flow lanes with other vehicles.

The VTA operates the bus and light rail transit system near the SJSU campus. The VTA will make service changes over time based on the equitable distribution of the following performance measures (VTA's Title VI: System-Wide Service Standards and Policies, OPS-PL-0059; November 2013):

- Vehicle Load
- Vehicle Headways
- On-Time Performance
- Service Availability
- Ridership Productivity

The increase in demand for transit service and transit vehicle delay caused by the proposed Project would be accommodated by existing and planned improvements to the transit system, such as improving access to transit for campus residents, students, faculty, staff, and management (e.g., transit stop enhancements, sidewalk widening, etc.), and improving how transit vehicles move in and around the SJSU campus (e.g., new and more frequent bus services, expansion of the VTA system, provision of transit-focused facilities, etc.). This effort to increase or modify transit service capacity and operations would be approved by a publicly appointed decision body (like the VTA board).

The proposed SJSU Campus Master plan includes goals to enhance access to transit and increase connection between the Main and South Campuses by implementing the following:

- Continue to plan with the City of San José Department of Transportation, VTA, BART, Caltrain, and other transit agencies to maximize transit access to the campus. (MO-2)
- Increase the frequency of university-provided transportation between campuses to include connections to future transit and changes in the road network. (MO-2)
- Work with VTA to locate prominent and intuitively located transit stops at the edges of both campuses. Strategically place bus stops near amenities and destinations on campus. (MO-2)
- Support bus transit with prioritized curb locations. Clearly mark waiting areas on the sidewalk and provide shelter. Design bus loading areas so that they do not interfere with on-street bicycle facilities. (MO-2)
- Increase university-provided transportation between campuses. (MO-6)

To meet the desired policy outcomes stated above, the multimodal improvements would need to address transit ridership trends[27] and include access to transit and access by transit improvements, such as transit stop enhancements, direct bicycle and pedestrian network enhancements to transit stops, and street operational improvements (e.g., signal coordination, transit vehicle preemption, etc.) that enhance transit reliability and travel time. The improvements would need to be incorporated into a multimodal improvement plan to support the SJSU Campus Master Plan land use changes.

Consistent with the *VTP 2040 (2014)*, the existing transit carpool circulation would be modified in the future and adjusted periodically based on VTA's latest transit service plan. The changes to transit stop locations and circulation between the Main Campus and South Campus as part of the Project would not be expected to interfere with existing transit facilities nor conflict with planned transit facilities and services or conflict with adopted transit plans, guidelines, policies, or standards. Additionally, the Project is supportive of the transit use and goals summarized in **Chapter 4**. Therefore, the impact relative to disruption of existing or planned transit or carpool facilities or conflicts with transit programs, plans, ordinances, or policies would be **less-than-significant**.

[27] Santa Clara Valley Transportation Authority. Annual Report 2019. Available online at https://www.vta.org/sites/default/files/2020-04/AnnualReport2019_Accessible.pdf

7.1.2 Roadway Evaluation

The Project includes the following modifications to existing parking and street facilities to create a more pedestrian- and bicycle-oriented campus and to increase connectivity between the Main and South Campuses:

- Provide more short-term and visitor parking in convenient locations in parking facilities. Enforce parking rules to increase the turnover of parking spaces. (MO-1)
- Continue to add more EV charging in parking facilities as the market share of electric vehicles increases. (MO-1)
- Continue to work with the City of San José to make streetscape improvements to streets adjacent to campuses that support micromobility. (MO-3)
- Integrate vertical speed control elements on the Ninth Street Paseo, El Paseo de César Chávez, and El Paseo de San Carlos to distinguish the paseos as places for walking and not rolling. Elements may include textured surfaces, bollards, signage, and other indicators to define pedestrian zones in busy areas with design that respects safety for people with limited hearing, vision, mobility. (MO-4)
- Add a dedicated pathway for micromobility to separate traveling at different speeds. (MO-5)
- Add a new dedicated pathway near the middle of Paseo de San Carlos to separate pedestrians from cyclists and other rolling devices. (MO-5)
- The design of the dedicated pathway should use landscaping, material treatment, signage, and markers to create a safer environment for all modes crossing the Main Campus. (MO-5)
- Work with the City of San José to make streetscape improvements to streets adjacent to and connecting the two campuses—particularly Seventh Street. (MO-6)
- Reduce the amount of open space dedicated to vehicles on campuses to minimize opportunities for pedestrian and vehicular conflict on and around campus. The replacement of vehicular spaces, such as surface parking lots and driveways, with pedestrian-oriented environments increases the amount of open space on campuses. (MO-7)
- Move most vehicular circulation away from the center of both campuses. (MO-7)
- Provide convenient and safe drop off and loading zones. (MO-8)

The changes to circulation on campus and between the Main Campus and South Campus as part of the Project would not be expected to interfere with existing roadway facilities nor conflict with planned roadway facilities or conflict with adopted plans, guidelines, policies, or standards. Therefore, the impact relative to disruption of existing or planned roadways or conflicts with programs, plans, ordinances, or policies through the implementation of the proposed Project would be **less-than-significant** on roadway facilities, and no mitigation would be required.

7.1.3 Bicycle Evaluation

The Project is expected to generate demand for bicycle lanes, bicycle parking, bicycle routes, and off-street shared use paths between the campuses and adjacent land uses. The Project proposes to improve bicycle travel throughout the SJSU as follows:

- Increase the number of bikeshare locations at each campus. Increase access to bikeshare by all large parking facilities. (MO-3)
- Continue to support the cycle track around Main Campus. The University and the City of San José have included a cycle track at the perimeter of the Main Campus to support bicycle connections to and around the Main Campus. (MO-3)
- Add a dedicated pathway for micromobility to separate traveling at different speeds. (MO-5)
- Add a new dedicated pathway near the middle of Paseo de San Carlos to separate pedestrians from cyclists and other rolling devices. (MO-5)
- The design of the dedicated pathway should use landscaping, material treatment, signage, and markers to create a safer environment for all modes crossing Main Campus. (MO-5)
- Provide a supporting network of short-term and long-term micromobility parking in and around new and renovated buildings. (MO-5)
- Provide outdoor, short-term bicycle, skateboard, and scooter parking at the edge of campus to encourage dismounting. (MO-5)
- Place secure micromobility parking racks in visible places near the sides of buildings with blank walls, without barriers such as fences and cages. (MO-5)
- Provide convenient and secure indoor micromobility parking in new buildings, which allow bikes to be parked overnight. (MO-5)
- Include water refill stations, lockers, tools for maintenance, access to shower facilities, and other amenities at strategic locations to support this alternative mode to driving. (MO-5)
- Provide electrical charging outlets for e-bikes and accommodate a portion of long-tail bicycles. (MO-5)
- Provide additional bikeshare stations at each campus. (MO-6)

The Project improvements which include encouraging bikeshare; adding new internal bicycle paths, bikeshare stations, and on-road bicycle facilities; and providing connections to existing and planned bicycle facilities align with the overall goals and policies of the plans described in **Chapter 4**. The Project improvements would not disrupt or conflict with the intent of planned bicycle facilities consistent with relevant plan goals and policies, and would not conflict with applicable programs, plans, ordinances, or policies related to bicycle facilities. Therefore, the bicycle-related impact would be **less-than-significant**.

7.1.4 Pedestrian Evaluation

The Project includes many improvements with the goal of encouraging micromobility and increasing pedestrian safety and comfortability:

- Improve lighting, pedestrian amenities and safety features. (MO-4)
- Maintain sight lines at the pedestrian level so that it is easy to see potential conflicts. (MO-4)
- Add a dedicated pathway for micromobility to separate traveling at different speeds. (MO-5)
- Add a new dedicated pathway near the middle of Paseo de San Carlos to separate pedestrians from cyclists and other rolling devices. (MO-5)
- The design of the dedicated pathway should use landscaping, material treatment, signage, and markers to create a safer environment for all modes crossing Main Campus. (MO-5)
- Provide a supporting network of short-term and long-term micromobility parking in and around new and renovated buildings. (MO-5)
- Reduce the amount of open space dedicated to vehicles on campuses to minimize opportunities for pedestrian and vehicular conflict on and around campus. The replacement of vehicular spaces, such as surface parking lots and driveways, with pedestrian-oriented environments increases the amount of open space on campuses. (MO-7)

The Project does not conflict with pedestrian goals and policies of the plans as summarized in **Chapter 4**. The Project improvements, such as increased micromobility, expanding multi-use pathways, adding pedestrianized areas, reducing vehicle circulation through the core of the campus, and closing gaps in the pedestrian network, align with these goals and policies. The Project would not interfere with existing or planned pedestrian facilities nor conflict with applicable non-vehicle transportation plans, guidelines, policies, or standards. Instead, it would enhance pedestrian circulation within the Main Campus core and connections to adjacent land uses, which is a beneficial effect on the pedestrian circulation and access. Therefore, the Project would not conflict with pedestrian-related plans and any impact would be **less-than-significant**.

7.2 VMT Analysis

This section presents an analysis of the project's impacts relative to VMT. Both direct (Project-generated) and cumulative (Project's effect) VMT impacts were evaluated. Direct VMT impacts were evaluated using total VMT per service population rate of the SJSU campus under Existing with Project Conditions. Indirect and Cumulative VMT impacts were evaluated using boundary VMT per service population Cumulative with Project Conditions. The results of the Project-generated VMT and Project's effect on VMT analyses are presented in **Table 27** and **Table 28**, respectively.

7.2.1 Total Project Generated VMT Assessment

As shown in **Table 27**, the SJSU Campus Master Plan would generate 655,270 daily total VMT, or 13.66 miles on a per service population basis. This value would be approximately 11% less than the VMT threshold (15.36 total VMT per service population). The total project-generated VMT evaluates project

effects with the six key changes in the campus population characteristics due to the SJSU Campus Master Plan listed below:

- Increase student course load;
- Increase in the portion of special session students;
- Increase in the portion of students living on campus;
- Increase in the portion of online and off-site classes; and
- Increase in the portion of staff and management working remotely; and
- Addition of faculty, staff, and management living on campus.

Due to the changes listed above, implementation of the SJSU Campus Master Plan would result in a total project-generated VMT per service population under Existing with Project Conditions that is less than the applicable threshold. Therefore, the impact of the SJSU Campus Master Plan total VMT rate would be **less-than-significant**.

Table 27: Total Project-Generated VMT Assessment

	Total Project Generated VMT
SJSU Campus	
Total Project Generated Vehicle Miles Traveled (A)[1]	655,270
Service Population (B)[1,2]	47,959
Total Project Generated VMT per Service Population (A/B = C)	13.66
Initial Impact Assessment	
Total VMT per Service Population Threshold	15.36
(Initial Impact Conclusion)	Less Than Significant

Notes:
1. Rounded service population and VMT to nearest 10.
2. Service population is defined as the sum of all residents (including students from kindergarten to 12th grade), employees (including faculty, staff, and management), and university students.

Source: Fehr & Peers, 2024.

7.2.2 Project's Effect on VMT Analysis (Cumulative Analysis)

7.2.2.1 Project's Effect on VMT Assessment (using Boundary VMT)

To evaluate the project's effect on VMT between the Cumulative Condition and Cumulative with Project Condition, the boundary VMT for the region (i.e., Santa Clara County, Alameda County, and San Mateo County) is divided by the service population (sum of all residential population (including students from kindergarten to 12th grade), employment population, and university students). The change in boundary VMT captures the combined effect of:

- shifts in existing VMT due to land use and transportation network changes in the region,
- shifts in existing traffic to alternate travel routes or modes, and
- new VMT from additional land use development in the region.

Further, in the Cumulative Conditions the SJSU Campus is presumed to be the same as Existing Conditions (2019) because the campus is near the capacity of the 2001 Campus Master Plan; whereas in the Cumulative with Project Condition the SJSU Campus incorporates the proposed SJSU Campus Master Plan. As shown in **Table 28**, this analysis evaluated whether the project would result in an increase in the regionwide boundary VMT from Cumulative Conditions to Cumulative with Project Conditions. The boundary VMT per service population slightly decreases from Cumulative Conditions to Cumulative with Project Conditions. The regional impact threshold for the project's effect on VMT is the regionwide Cumulative Conditions boundary VMT per service population of 8.97 miles per service population.

Under Cumulative with Project Conditions the region boundary VMT per service population of 8.94, which is below the applicable threshold of 8.97. Therefore, the impact of the Project's effect on VMT under Cumulative with Project Conditions would be ***less-than-significant***.

Table 28: Project's Effect (Boundary) VMT Assessment

	Existing Condition	Cumulative Condition	Cumulative with Project Condition
South Bay Area[1]			
Boundary Vehicle Miles Traveled (A)[1]	60,662,180	74,218,350	74,164,850
Service Population (B)[1,2]	6,659,650	8,278,410	8,291,730
Boundary VMT per Service Population (A/B = C)	9.11	8.97	8.94
Boundary VMT per Service Population Threshold			8.97
(Initial Impact Conclusion)			Less Than Significant

Notes:
1. Rounded service population and VMT to nearest 10.
2. Service population is defined as the sum of all residents (including students from kindergarten to 12th grade), employees (including faculty, staff, and management), and university students.

Source: Fehr & Peers, 2024.

7.2.3 Regional Transportation Plan/Sustainable Community Strategy Plan Consistency

The purpose of this section is to discuss the proposed project's consistency with the policies in the region's Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), also known as *Plan Bay Area 2050* (July 2021),[28] and to provide an analysis of the proposed project's impacts on transportation policies for the region. The Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG) are the designated metropolitan planning organizations

[28] Metropolitan Transportation Commission, 2021. *Plan Bay Area 2050*. Available online at Plan Bay Area 2050 | Plan Bay Area.

and, as such, are mandated by the federal government to research and draw up plans for transportation, growth management, hazardous waste management, and air quality. This analysis considers each *Plan Bay Area 2050* strategy (i.e., Housing, Economic, Transportation, and Environmental) listed in **Section 4.1**. The Project does not conflict with the goals or policies in *Plan Bay Area 2050*. **Appendix E** includes the goals included in *Plan Bay Area 2050* and demonstrates the Project's consistency with the plan.

The proposed Project includes modifications to existing street facilities to create more pedestrian- and bicycle-oriented streets, and to support access to transit. The expected influence on existing and future traffic is likely to be minimal because no through-vehicle lanes are proposed to be removed within the proposed Project. These commitments are supportive of transit and active transportation use.

The Project does not propose changes to the transit system that would impact the *Plan Bay Area 2050 (*2021*)* goals of expanding the role transit plays in meeting the region's mobility needs such as investments in bus rapid transit, expansion of local services, and planned rail projects. Internal circulation changes would support core regional transit travel near the SJSU campus.

Overall, the proposed Project would not conflict with existing or planned transportation facilities because the proposed street changes are additions of pedestrian and bicycle facilities with few, if any, reductions in vehicle lanes. The proposed Project would not be expected to interfere with existing roadway facilities; conflict with planned roadway facilities; or conflict with adopted transportation plans, guidelines, policies, or standards. Further, as show in **Appendix E**, the Project supports or does not obstruct the Plan Bay Area strategies. Therefore, the impact relative to disruption of existing or planned roadways or conflicts with programs, plans, ordinances, or policies would be ***less-than-significant***.

7.3 Hazards Analysis

SJSU takes a safety-first approach that incorporates Caltrans' Four Pillars of Traffic Safety[29] as follows:

- Double Down on What Works
- Accelerate Advanced Technology
- Lead Safety Culture Change
- Integrate Equity

The Project includes modifications to existing campus parking and transportation facilities to create a safer, more pedestrian- and bicycle-oriented campus core. These modifications would change the design of parking lots and local streets and intersections, but they would not create hazards such as sharp curves or include otherwise dangerous transportation facility design features. The Project also includes policy changes to continue to build a culture that values safety. Therefore, the Project impact related to hazards would be **less-than-significant**.

[29] Caltrans Proven Safety Countermeasures, Accessed on July 27, 2023.

7.4 Emergency Access Analysis

While most vehicle traffic under the Project will have limited access to the Main Campus core, emergency vehicles will have unlimited access to campus streets restricted to pedestrians, bicyclists, transit vehicles, and service vehicles. Additionally, future parking facilities and streets will be designed to accommodate emergency vehicles. The SJUS Campus Master Plan includes the following goal to ensure adequate emergency access on campus "Continue to designate emergency access and egress for both campuses" (MO-9). The emergency and service vehicles will continue to have unlimited access to the campus that will be improved by the design of future parking facilities and streets. Therefore, the Project impact related to emergency access would be **less-than-significant**.

Appendix A:
SJSU Campus Master Plan Project Description

2 PROJECT DESCRIPTION

2.1 INTRODUCTION

San José State University (SJSU or University) is one of 23 universities in the California State University (CSU) system. SJSU is composed of seven colleges: the Lucas College and Graduate School of Business; Connie L. Lurie College of Education; Charles W. Davidson College of Engineering; College of Graduate Studies; College of Health and Human Sciences; College of Humanities and the Arts; College of Information, Data, and Society; College of Science; and College of Social Sciences. In keeping with its state charter and California Education Code 66202.5, and in response to projections of continued increases in demand for higher education enrollment to meet California's future workforce needs, the CSU Board of Trustees (Trustees) has directed each CSU university to take the necessary steps to accommodate additional systemwide enrollment increases (CSU 2020a). To comply with this directive, CSU universities are required to periodically review and revise their physical master plans, in part, to ensure that proposed University capital improvement programs remain consistent with those plans.

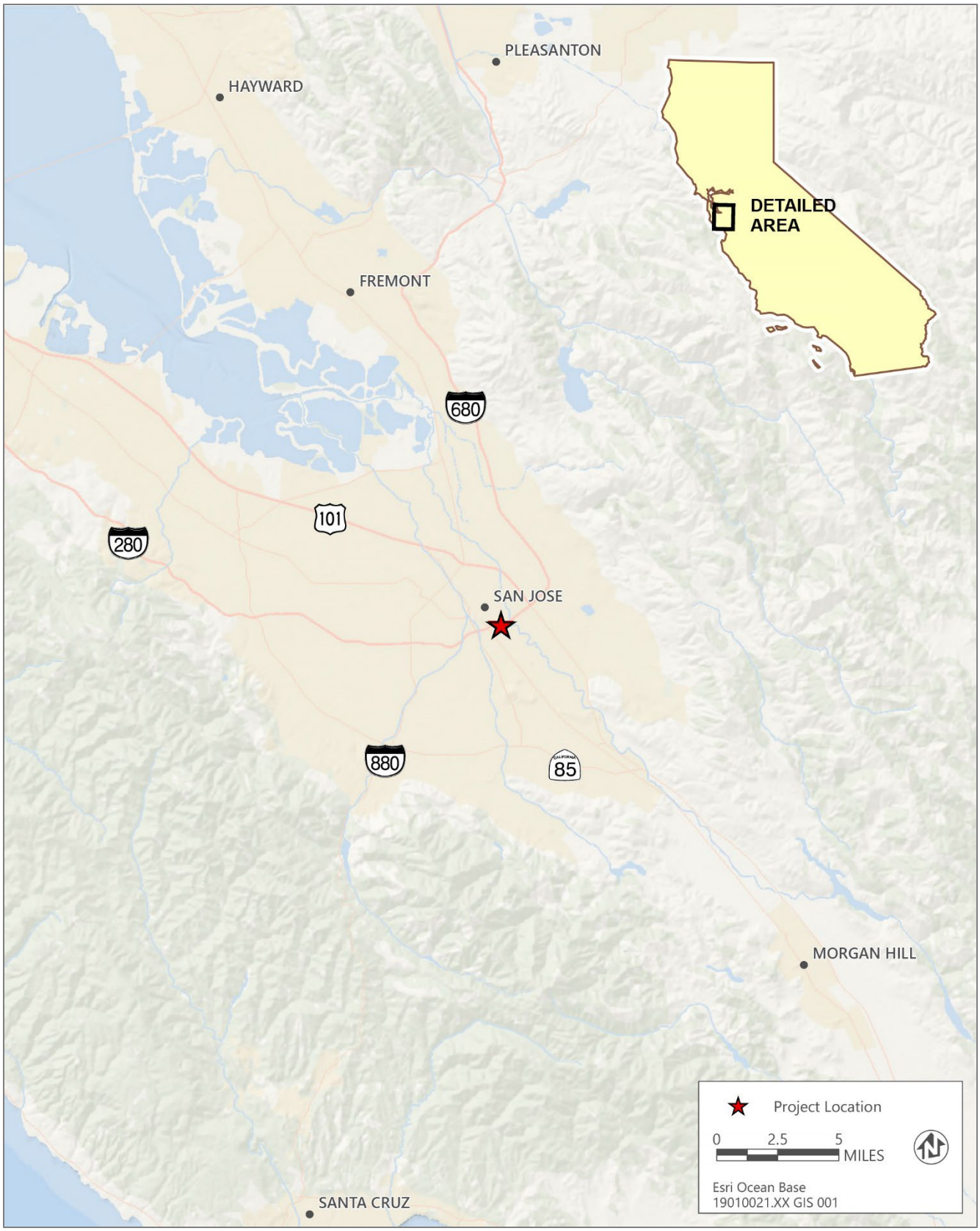
This chapter presents a detailed description of the SJSU Campus Master Plan for its Santa Clara County properties. It describes the project's location, setting, goals and objectives, and elements, as well as the permits and approvals that may be necessary during plan implementation.

2.2 PROJECT LOCATION AND SETTING

The Master Plan Area for its presence in Santa Clara County encompasses SJSU-owned properties on the Main and South campuses of the University, as well as various off-campus properties in and around the City of San José (City) in Santa Clara County (see Figures 2-1 and 2-2). The Main Campus encompasses 88.5 acres in downtown San José at 1 Washington Square and is developed with academic, student life, administrative, and athletic facilities, as well as student residence halls. The Main Campus is bordered by several lower-density single-family residential neighborhoods: the Horace Mann neighborhood (to the north), the University neighborhood to the east, and the South University neighborhood to the south. University-affiliated fraternity and sorority houses lie to the east along 10th Street within the University neighborhood. To the west, the campus is bordered by a pedestrian-oriented paseo (Paseo de San Antonio) and South First Area (SoFA), downtown San José's arts, cultural, and entertainment district. Older multi-family apartment buildings line the campus's western perimeter along 4th Street in the University & SoFA neighborhoods. Other nearby land uses around the campus's perimeter include office buildings, churches, the Hammer Theatre Center (a City-owned facility operated by SJSU) and retail uses along 4th Street and E. San Fernando Street. San José City Hall is a block north of the Main Campus.

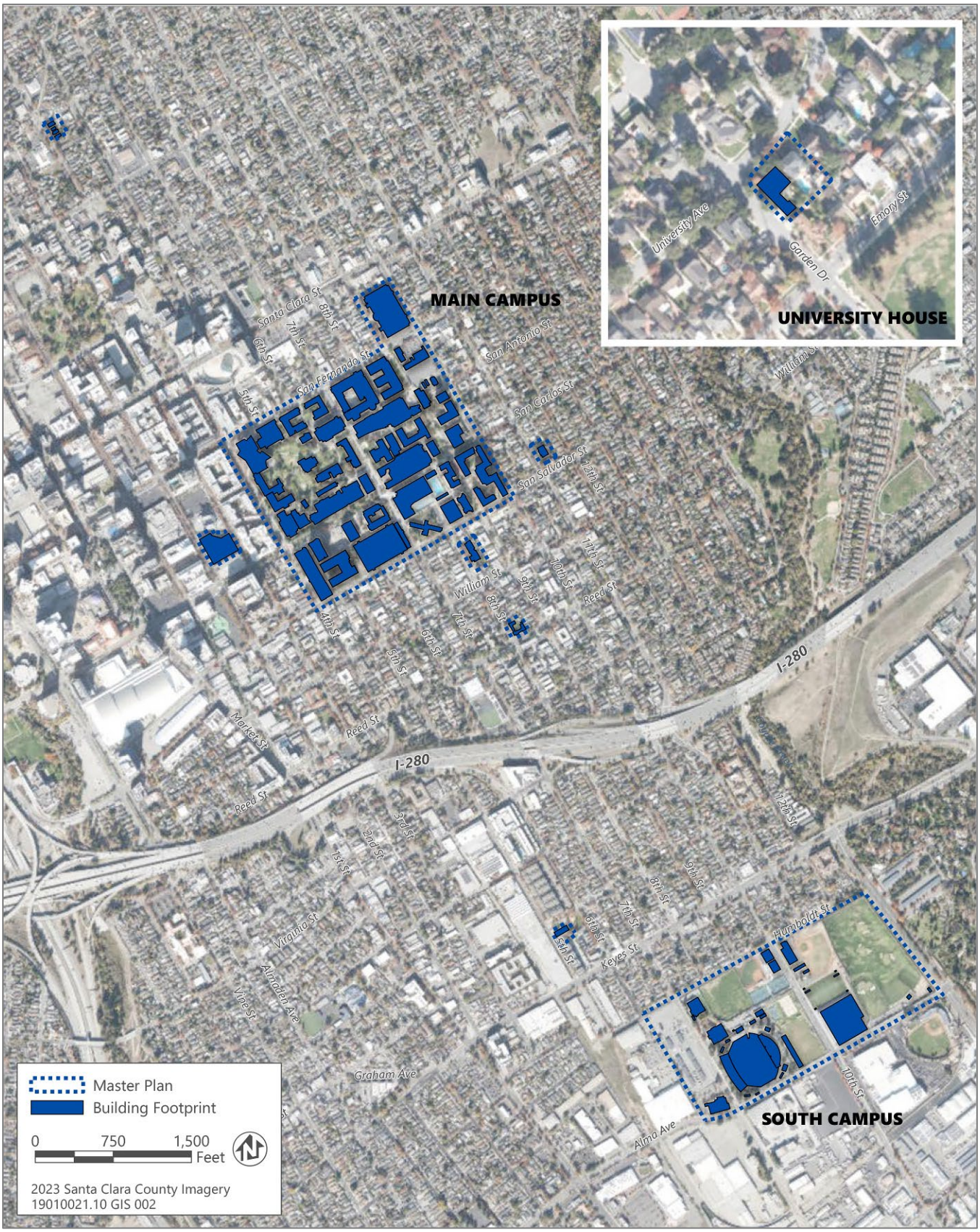
As shown on Figure 2-2, regional vehicular access to the Main Campus is provided via Interstate 280 (I-280) and State Route 87 (SR-87). Two Valley Transportation Authority (VTA) light rail stations, the Santa Clara Station and the San Antonio Station, are located approximately two blocks northwest and west, respectively, of the Main Campus. The San José Diridon Station provides regional rail access to campus and the San José region and is located approximately one mile west of the Main Campus.

The South Campus encompasses 62 acres located approximately 8 city blocks or 1.3 miles southeast of the Main Campus and is the home of the Athletic Department, including a majority of the University's athletic facilities. The South Campus is developed with CEFCU Stadium, the Simpkins Athletic Administration Building, the Koret Center, the Simpkins Stadium Center, and various athletic playing fields, as well as a parking structure and surface parking lots. The South Campus is located within the Spartan-Keyes residential neighborhood. It is bordered on the north by residential uses; on the west and south by industrial and commercial uses, including the Sharks Ice at San José and Excite Minor League Ballpark; and on the east by the Little Saigon and Spring Brook neighborhood, which includes Happy Hollow Park & Zoo.



Source: Adapted by Ascent in 2024.

Figure 2-1 Regional Vicinity



Source: Adapted by Ascent in 2024.

Figure 2-2 Master Plan Area (Including Other University-Owned Properties)

As shown on Figure 2-2, regional vehicular access to the Main Campus is provided via I-280 and SR-87, while vehicular access to the South campus largely originates via I-280 or via City surface streets. With respect to public transportation, the Main Campus is served by the aforementioned Diridon station, light rail stations, and VTA light rail and bus. The University maintains a shuttle service between the Main Campus and South Campus. The closest transit stop to the South Campus is Tamien Station, located approximately one mile west, which is served by VTA light rail and the Caltrain commuter rail line, as well as bus connections that bring commuters within one block of the South Campus.

In addition to the Main and South campuses, the Master Plan Area encompasses additional properties owned by the University, including faculty/staff housing located at 380-394 N. 4th Street, the University House located at 1690 University Avenue, the Associated Students Child Development Center located at 460 S. 8th Street, the Associated Students Campus Community Garden located at 372 E. San Salvador Street, the International House located at 360 S. 11th Street, faculty/staff housing located at 360 E. Reed Street, the Alquist Building located at 100 Paseo de San Antonio, and the San José State Art Sculpture Facility located at 1019 S. 5th Street.

Although not a part of the Master Plan Area, SJSU also leases space at 210 N. 4th Street for the SJSU Research Foundation, Mineta Transportation Institute and Institute for the Study of Sport, Society and Social Change; the Timpany Center at 730 Empey Way; 76 S. 1st Street for the Department of Urban and Regional Planning, College of Social Sciences; Spartan Village on the Paseo located at 170 Market Street; and space at the Reid Hillview Airport (2500 Cunningham Avenue) for the Aviation and Technology Department. Additionally, SJSU operates the Hammer Theatre at 101 Paseo de San Antonio on behalf of the City.

2.2.1 Existing Campus Conditions

The following describes the existing conditions for the Main and South campuses.

MAIN CAMPUS

Existing On-Campus Facilities

The Main Campus consists of more than 50 buildings, including 23 academic buildings and 6 residence halls, as well as multiple parking structures and park-like plazas and open space that link the four quadrants of the campus. The compact nature of the Main Campus, approximately 0.4-mile or six blocks wide, allows pedestrians and bicyclists to easily access all areas of the campus. Table 2-1 identifies the existing buildings and other facilities on the Main Campus.

Table 2-1 Existing Buildings and Facilities on the Main Campus

Building No.	Building Name	Building No.	Building Name
1	Automated Bank Teller Facility	53A	Student Services Center
3	Student Union	54	South Parking Facility
4	Central Plant	55	West Parking Facility
6	Spartan Memorial	59	Clark Hall
7	Faculty Office Building	71	Central Classroom Building
12A	Corporation Yard Offices	72	Tower Hall
12B	Corporation Yard Trades Building	78	MacQuarrie Hall
19	Associated Students House	89	Washburn Hall (Student Residence)
20	Washington Square Hall	90	Joe West Hall (Student Residence)
21	Dwight Bentel Hall	91	Dining Commons
25	Morris Dailey Auditorium	92	Boccardo Business Classroom Building
27	Computer Center	92T	Business Tower
30	Administration	100	Provident Credit Union Event Center

Building No.	Building Name	Building No.	Building Name
31	Art	100A	Modular A
33	Instructional Resource Center	100B	Modular B
34	Dudley Moorhead Hall	112	Interdisciplinary Sciences Building
35	Engineering	115	Spartan Recreation and Aquatic Center
36	Sweeney Hall	116	Student Wellness Center
38	Health Building	133	University Police Department Building
39	Industrial Studies	134	Dr. Martin Luther King, Jr. Library
44	Music	135	Child Development Center
45	Yoshihiro Uchida Hall	140F	Modular F
46	SPX East	151	Campus Village A
47	SPX Central	151A	Campus Village Garage
48	Science	152	Campus Village B
49	Hugh Gillis Hall	153	Campus Village C
52	Duncan Hall	156	Campus Village Phase 2
53	North Parking Facility		

Open Space and Landscaping

The Main Campus contains several plazas and open space areas that are concentrated in the northwest quadrant of the campus. These areas consist of large grass quads, mature trees, and ornamental landscaping, notably in the areas of Tower Hall and the nearby Rose Garden. While the majority of open space is in the northwestern quadrant of the Main Campus, there are several landscaped paseos that interconnect the four quadrants of the campus.

Circulation and Parking

The Main Campus is bounded by E. San Fernando Street on the north, S. 10th Street on the east, E. San Salvador Street on the south, and S. 4th Street on the west. Vehicle access to the Main Campus is provided primarily via three on-site parking garages (i.e., the North, South, and West parking facilities) and several small surface parking lots. Given its compact size, the Main Campus does not contain any internal vehicular through-roads and is primarily pedestrian and bicyclist oriented, with various walkways and paseos providing pedestrian and bicycle access throughout the campus. Vehicle access is provided to support operations for the Provident Credit Union Event Center, Student Union, Dining Commons, Washington Square Hall, Dr. Martin Luther King, Jr. Library, and Duncan Hall.

The North Parking Facility, located in the northeast quadrant of the Main Campus, consists of a six-story parking garage with roof-level parking. This parking facility has 1,850 parking spaces and is accessible from E. San Fernando Street. The South Parking Facility is located in the south-central portion of the Main Campus and consists of a four-story parking garage with roof-level parking. This parking facility has approximately 2,020 parking spaces and is accessible from S. 7th Street. The West Parking Facility is located in the southwest quadrant of the Main Campus and consists of a four-story parking garage with roof-level parking. This parking facility has approximately 1,150 parking spaces and is accessible from S. 4th Street. In addition, there are approximately 1,000 additional parking spaces within other parking facilities throughout the Main Campus.

SOUTH CAMPUS

Existing On-Campus Facilities

The South Campus consists primarily of athletic and recreation facilities and also houses the Athletic Department's administration offices. In addition, the South Campus includes a Park and Ride lot and the South Campus parking structure in the western and southern portions of the campus, respectively. Table 2-2 identifies the existing buildings and other facilities on the South Campus.

Table 2-2 Existing Buildings and Facilities on South Campus

Building No.	Building Name	Building No.	Building Name
9A	Modular Building A	128	Concession Buildings
9B	Modular Building B	129	Simpkins Center Storage Building
		130	Training/Locker Facility
62	Field House	130A	Bally Hut
117	CEFCU Stadium	132	Simpkins Administration Building
118	Outdoor Physical Education	141	Koret Center
119	Tennis Complex	142	Spartan Athletics Center
122	Softball Center	146	Baseball Batting Structure
123	Tennis/Softball Facility	147	South Campus Parking Structure
124	Storage Building	148	Sports Field Facility
125	Simpkins Stadium Center	162	Driving Range
127	Tennis Stadium Court	163	Soccer Complex

Landscaping

The South Campus contains large turf athletic fields with trees and other site landscape features largely limited to the periphery or along walkways/concourses through the South Campus.

Circulation and Parking

The South Campus is bounded by E. Humboldt Street on the north, Senter Road on the east, E. Alma Avenue on the south, and an abandoned rail line with industrial and commercial uses further to the west (west of the SJSU surface parking lot at S. 7th Street.) Vehicle access, parking, and shuttle stops for the South Campus are provided via the surface parking lot (approximately 840 parking spaces) on the western side of the South Campus and the South Campus Garage, a 4-story parking garage with 1,500 parking spaces. The South Campus includes Stadium Way between 7th and 10th Streets and areas to the north and south of the Golf Complex that include a small amount of surface parking. Other than Stadium Way, there are limited vehicle access points, pedestrian pathways, and bicycle routes in and through the South Campus.

2.2.2 Off-Site Properties

In addition to the Main and South campuses, SJSU maintains several off-site properties in and around the City that are used for University programming (including housing) and administration purposes. These off-site properties are either owned by SJSU or are occupied by SJSU via agreement/lease. A summary of SJSU's off-site properties is provided in Table 2-3.

Table 2-3 SJSU Off-Site Properties

Property/Tenant Name	Address	Owned by SJSU or Auxiliary	Agreement-Based or Leased by SJSU
Faculty/Staff Housing	355-371 E. Reed Street and 370-394 N. 4th Street	X	
University House	1690 University Avenue	X	
Associated Students Child Development Center	460 S. 8th Street	X	
Associated Students Campus Community Garden	372 E. San Salvador Street	X	
International House	360 S. 11th Street	X	
8th and Reed Street Faculty/Staff Housing	360 E. Reed Street	X	

Property/Tenant Name	Address	Owned by SJSU or Auxiliary	Agreement-Based or Leased by SJSU
Art Sculpture Facility	1036 S. 5th Street	X	
Alquist Building	100 Paseo de San Antonio	X	
Spartan Village on the Paseo[1]	184 Market Street	X*	
SJSU Research Foundation	210 N. 4th Street		X
Mineta Transportation Institute	210 N. 4th Street		X
Timpany Center	730 Empey Way		X
Hammer Theater	101 Paseo de San Antonio		X
Department of Urban and Regional Planning	76 S. 1st Street		X
Aviation Department - Reid Hillview Airport	2105 Swift Avenue		X

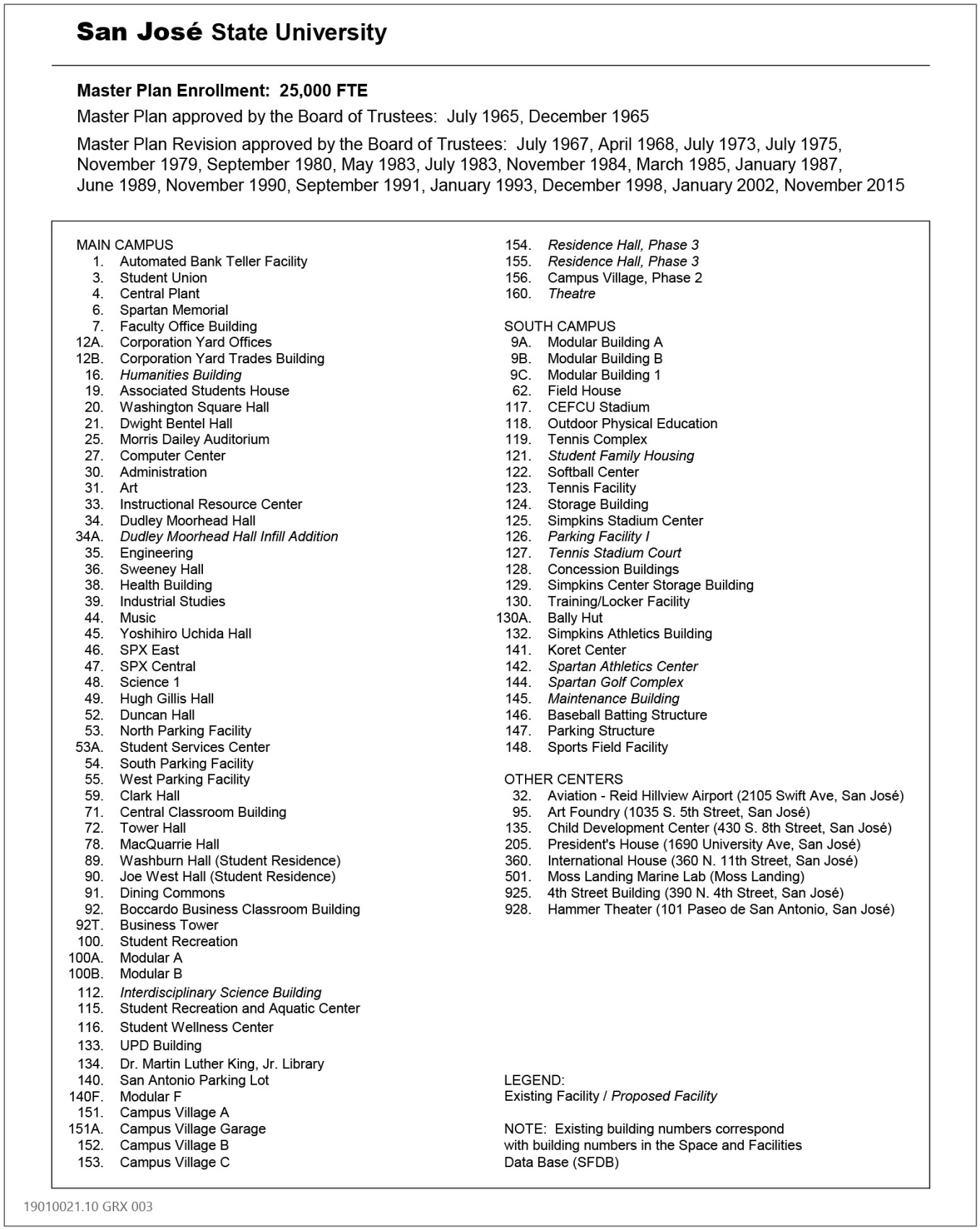
[1] SJSU is in the process of acquiring the property, but as of the writing of this document, it is currently leased.

2.3 PROJECT BACKGROUND

SJSU is the oldest state institution for higher education in California, founded in 1857 as part of the San Francisco School System. An act of the legislature relocated the campus to San José in 1871. Fifty years later, in 1921, it became San José State Teachers College, with authorization to grant bachelor's degrees. After several additional name changes (including San José State College in 1934), the present name was adopted through legislation in 1974. Over time, facilities on the campus have evolved and developed to accommodate additional academic programming and student enrollment.

To provide a more structured/cohesive path of academic programming for an evolving student body, the CSU Chancellor's Office requires each of its universities to have a Campus Master Plan. Within the CSU system, a master plan for a given university campus is a comprehensive land use plan that guides the physical development necessary to achieve the university's mission. The Campus Master Plan establishes a land use framework for academic and administrative space needs, housing, open space, circulation, and other land uses that ultimately facilitate the appropriate siting of capital projects. The Campus Master Plan informs the strategic funding and implementation of projects on its sites and depicts existing and anticipated facilities "necessary to accommodate a specified enrollment at an estimated planning horizon, in accordance with approved educational policies and objectives" (CSU 2020b). Campus Master Plans are based on annual full-time-equivalent-student (FTES) college-year enrollment targets prepared by each university in consultation with the CSU Chancellor's Office (CSU 2020a).

Before the proposed Campus Master Plan, development on the SJSU campus was guided by the 2001 Master Plan; however, this plan only addressed the Main Campus. Planning for the South Campus was later provided in the South Campus Facilities Development Plan prepared in 2016. The currently adopted planning efforts for both the Main and South campuses were developed independent of each other, and while they provide a framework for land use, open space, development, and circulation to accommodate the overall campus population for academic, administrative, housing, support, and athletics needs, they do not take into consideration the interrelationship between the two campuses nor current educational trends (e.g., increased online learning opportunities and the need for more flexible teaching spaces and support facilities). Further, components of the 2001 Master Plan included redevelopment of academic/administrative uses along East San Fernando Street, enhanced student life opportunities within the Main Campus, potential redevelopment of existing student housing in the southeast portion of the Main Campus, and the provision of additional parking and administrative facilities within the South Campus. Several of the projects from the 2001 Master Plan, including the student life facilities and student housing within the Main Campus and parking opportunities within the South Campus, have been implemented either as proposed or with modifications and subsequently approved. Figure 2-3 provides a legend for the existing plans for the Main and South campuses with corresponding building numbers as presented in Tables 2-2 and 2-3 above. Figures 2-4 and 2-5 show the existing plan maps for both the Main and South campuses.

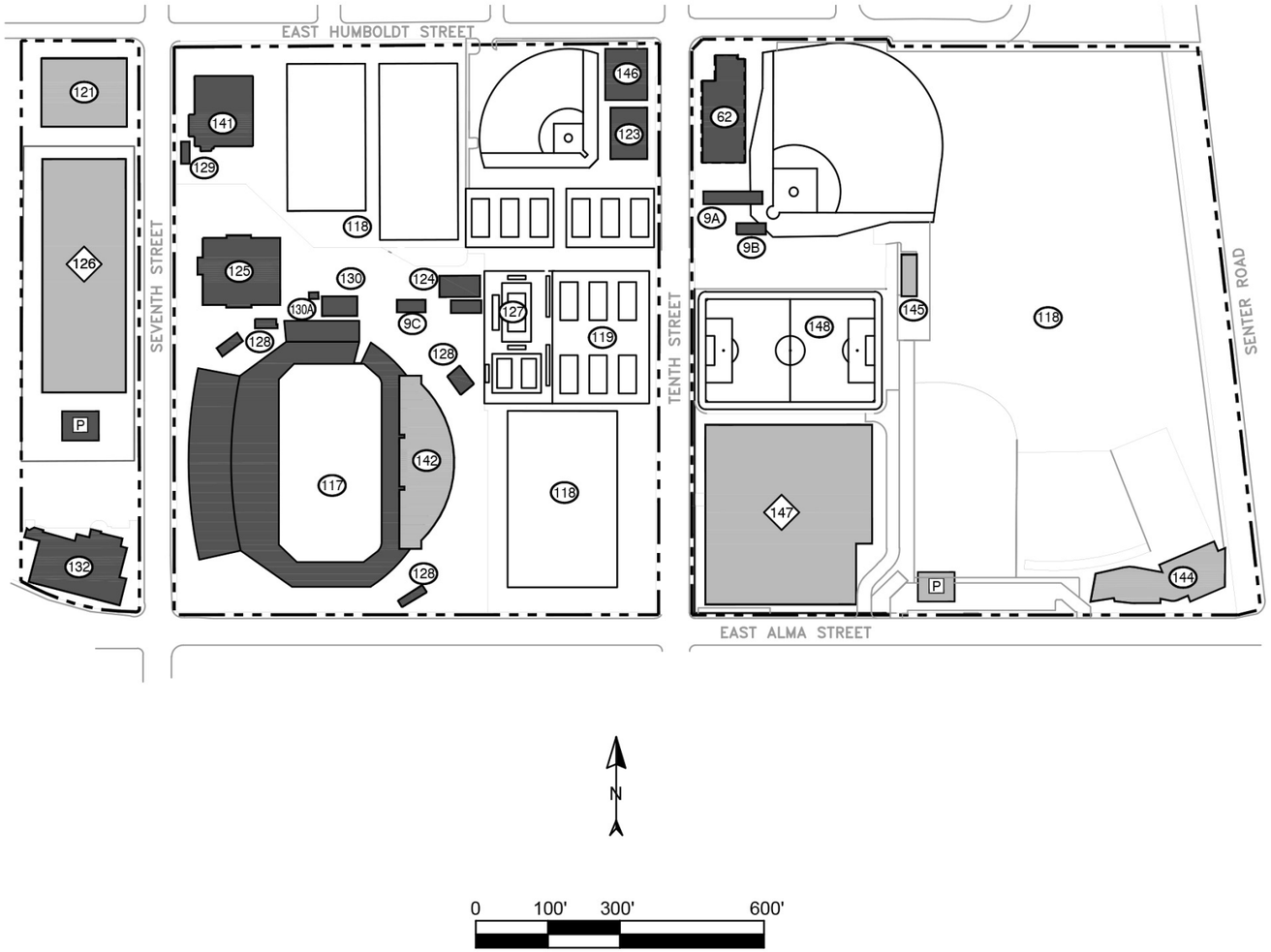


Source: SJSU 2015.

Figure 2-3 San José State University Existing Campus Master Plan – (1 of 3)

Source: SJSU 2015.

Figure 2-4 San José State University Existing Campus Master Plan – Main Campus (2 of 3)



San José State University

South Campus Master Plan
Master Plan Enrollment: 25,000 FTE
Approval Date: July/December 1965
Revised Date: November 2015
South Campus Acreage: 62

Buildings	Campus Boundary	Parking
EXISTING BUILDING	EXISTING	EXISTING LOT
FUTURE BUILDING	FUTURE	FUTURE LOT
TEMPORARY BUILDING		EXISTING STRUCTURE
		FUTURE STRUCTURE

19010021.10 GRX 002

Source: SJSU 2015.

Figure 2-5 San José State University Existing Campus Master Plan – South Campus (3 of 3)

SJSU initiated its Campus Master Plan update process in 2020 for its properties in Santa Clara County, which includes the Main and South campuses, as well as other locations in and around the City of San José. The proposed Campus Master Plan sets out a vision for SJSU based on the University's strategic plan, *Transformation 2030* and anticipates the future spatial needs of the University by developing strategies for future growth. The proposed Campus Master Plan came about through an iterative process that began with gathering background information, setting goals and direction with the University, presenting preliminary ideas, receiving feedback, making adjustments, and seeking more feedback before consolidating all the work into the Campus Master Plan document.

The first phase of the Campus Master Plan process included baseline research of existing conditions and a series of stakeholder interviews to identify the issues that the Campus Master Plan should address. The interviews were conducted with the leadership of more than twenty University organizations and groups, and public input was provided through a virtual Open House. The Campus Master Plan Preliminary Background Report explained the scope and process of the SJSU Campus Master Plan, summarized the overall University context and direction, outlined existing issues and opportunities, and synthesized this information into preliminary goals. This first phase of the Campus Master Plan development process was completed in June 2021.

The second phase of the process focused on developing a framework for the Campus Master Plan and began during the summer of 2021 when the Campus Master Plan team worked with the SJSU Cabinet to formulate a draft vision and direction for the University. The University and community had an opportunity to review and comment on preliminary physical planning vision for the Campus Master Plan framework during Fall 2021. The subsequent Campus Master Plan Framework Report provided the basis for further review by University stakeholders during Spring 2022.

2.4 CAMPUS POPULATION

2.4.1 Policies Governing Enrollment Growth

The California budget is the primary factor that determines enrollment levels at CSU universities. The Trustees require each university to have a master plan showing existing and anticipated facilities necessary to accommodate a specified enrollment at an estimated target date or planning horizon, in accordance with approved educational policies and objectives. Each year, the CSU negotiates with the State of California for funding to support planned enrollment growth as part of the annual budget process. The annual state budget identifies anticipated enrollment growth systemwide for the CSU each year; according to the 2022-2023 California State Budget, the state expects the CSU to accommodate growth in enrollment of 9,434 FTES during that period (DOF 2022). Following negotiation, the CSU allocates enrollment growth funding for California residents according to an enrollment target for each of the 23 CSU universities. The universities are expected to manage their enrollments within a small margin of error around the target because they receive state/CSU funding only for the targeted number. In the past, when the state experienced a fiscal crisis, the enrollment funding for the CSU was reduced, and universities had to reduce their enrollment until additional funding became available in subsequent years. During the past 30 years, enrollment reductions have occurred four times.

Individual CSU universities like SJSU establish their long-term enrollment goals through the campus master planning process. This process sets a future campus capacity that each university can work toward. However, because of variations in state funding and CSU allocations, the annual growth rate can vary from year to year. Moreover, long-term enrollment projections are not hard ceilings or caps on growth, but rather projections based on expected demand and other factors.

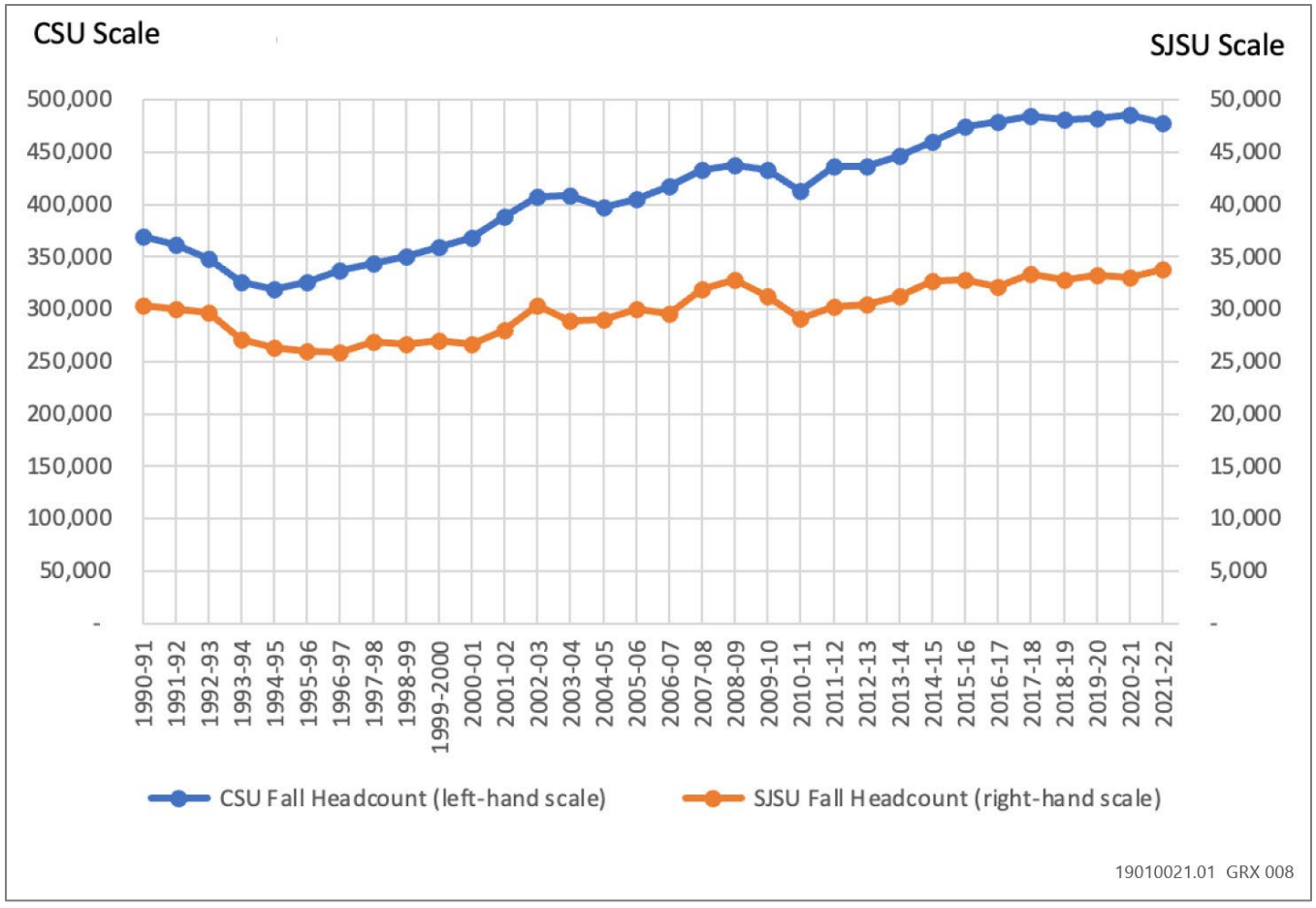
INCREASED STUDENT ENROLLMENT

SJSU enrollment has grown faster than the design capacity of its facilities to support instruction and student services. SJSU taught nearly 28,130 Full-Time Equivalent Students (FTES) in the 2018-2019 Academic Year (including Special Session),[1] of

[1] Special Session opportunities are primarily online and off-campus educational opportunities for enrolled students. "Special sessions are a means whereby the instructional programs of the CSU can be provided to matriculated students on a self-support basis at times and in locations not supported by State General Fund appropriations." CSU Executive Order 1047 (May 5, 2010).

which about 22,015 FTES (approximately 78%) were face-to-face on campus before the pandemic. During this time, SJSU taught approximately 500 more FTES on campus than the design capacity of its buildings. As a result, labs were overscheduled, and some classes were taught in spaces not designated for instruction. Further, SJSU is considered "impacted" because it receives more qualified applicants than it can accommodate at the undergraduate level. California resident enrollment has exceeded the target set by the CSU for the past decade.

It is challenging to project a precise growth rate for a given year due to annual fluctuations in state/CSU funding for higher education, demand for certain degrees, economic prosperity and the reputation of SJSU. Instead, enrollment growth is managed over a longer period, which allows adjustments to address changing economic, demographic, and other related trends. As a long-term guide for development of the campus, the Campus Master Plan is intended to address a future enrollment capacity rather than specific enrollment fluctuations on a year-to-year basis. SJSU expects to reduce the rate of enrollment growth in Regular Session and increase the rate of enrollment growth for Special Session opportunities so that it gradually converges with the CSU target set for SJSU. While the overall projected increase in students over the next 20 years is approximately 10 percent per decade, the increase for Regular Session headcount is under 7 percent per decade, which is below the rate that occurred during the 2010s. Figure 2-6 below shows that the University has fluctuated between enrollment reductions and increases at different times over the past three decades.



Source: SJSU 2024.

Figure 2-6 CSU and SJSU Regular Fall Student Headcount

FULL-TIME EQUIVALENT STUDENTS AND RELATIONSHIP TO OVERALL HEADCOUNT

The Campus Master Plan projects overall student enrollment to increase from a total headcount of 35,475 students (AY 2018-2019) to 44,000 students under the Campus Master Plan. Converted to Regular Session FTES, the Campus Master Plan includes an increase in the University's capacity from 25,000 FTES to 27,500 FTES to be taught in-person at the Main Campus. The FTES calculation is based on the assumptions that a full-time undergraduate student is expected to enroll in 15 units each term (i.e., semester) and a full-time graduate student is expected to enroll in 12 units each term. FTES balance out the amount of instruction involved and level of academic instruction required, because not all students take exactly these loads each term. Academic Year FTES (AY FTES) refers to the average FTES for the Fall and Spring terms. As average unit load changes, the ratio between student headcount and FTES would also change, as shown in Table 2-4.

Table 2-4 Student Headcount and Full-Time Equivalent Students

	Anticipated under 2001 Master Plan	Academic Year (AY) 2018-2019	AY 2019-2020	AY 2020-2021	AY 2021-2022	AY 2022-2023	Anticipated Under Campus Master Plan	Net Change From AY 2018-2019
Fall Headcount								
Fall Student Headcount	**34,247**	35,475	36,182	36,302	37,208	35,809	**44,000**	**8,525**
AY Full-Time Equivalent Students (FTES) and Instructional Facility Capacity[1]								
AY FTES		28,127	28,815	29,138	28,804	--	**39,200**	**11,073**
AY FTES to Fall HC Ratio	73.0%	79.3%	79.6%	80.3%	77.4%	--	89.1%	
Approved 2001 Master Plan On-Campus Enrollment Capacity	**25,000**						**27,500**	**2,500[2]**
Face-to-Face Regular Session FTES		22,015	21,965	--	--	--	**27,000**	**4,985**
Online and Off-Site Other On-Site Instruction FTES		6,111	6,850	--	--	--	**12,200**	**6,089**
Face-to-Face FTES as Percentage of All FTES		78.3%	76.2%	--	--	--	68.9%	(9.4 %)

[1] As FTES is a calculated average, totals shown in this table may not add due to rounding.

[2] Represents the net change between the proposed Campus Master Plan and 2001 Master Plan.

Source: SJSU 2024.

2.4.2 Determining Campus Master Plan Capacity and Projections

Before development of a master plan, the CSU Board of Trustees approves a future allowable capacity for campus facilities at all CSU universities, including SJSU. The 2001 Master Plan for SJSU projected 25,000 FTES on campus, and the proposed Campus Master Plan projects an increase of 2,500 FTES to 27,500 FTES on campus. This calculation excludes FTES that may receive academic instruction via online classes; unscheduled ("to be arranged") classes, such as graduate theses and independent study; and off-campus activities, such as travel study programs and internships. Future projections are based on assumptions about trends, and future plans are based on changes in policy and practice. Thus, they should always be considered estimates rather than predictions and are based on reasonably conservative assumptions regarding what could happen in terms of higher education at SJSU and within the broader CSU system. For example, scheduled in-person instruction at SJSU in AY 2018-2019 was approximately 78% of total AY FTES and has been decreasing with the increase in online and other instruction offerings at SJSU. This trend is expected to continue and was accounted for in the projections for the Campus Master Plan (as shown in Table 2-4). Under the Campus Master Plan, on-campus FTES is anticipated to be approximately 69% of total AY FTES at SJSU under the Campus Master Plan, for a decrease of approximately 9.4 percent compared to AY 2018-2019.

STUDENT, FACULTY, AND STAFF HEADCOUNT

For the purposes of this EIR, FTES is generally considered to be the most appropriate measure of student population at a university on a given day, as opposed to headcount, because it provides a more accurate representation of the population that will be on-campus at one time. Compared to FTES, headcount totals assume that every enrolled student is on-campus full-time, which can lead to an overstatement of the campus's student population and, consequently, the associated environmental impacts. Potential impacts associated with the activities of the projected on-campus population (i.e., vehicle miles traveled, air quality emissions, greenhouse gas emissions) are analyzed proportionate to the amount of time any one student or faculty member may be on campus based on their unit loads, or staff based on their responsibilities.

However, there are instances where consideration of headcount information can be appropriate. Student, faculty, and staff "headcount" is considered the preferred metric for purposes of analyzing population changes for a project of this nature. Part-time students who may enroll at SJSU could relocate from outside the area and would be considered new residents. For this reason, the use of Fall headcount information is considered more appropriate when considering population-based analysis, including utility and housing demand evaluations. The Campus Master Plan and environmental analysis, where appropriate, uses Fall headcount data because enrollment is generally highest during the Fall term, decreases slightly during the Spring semester, and decreases substantially during the Summer.

SUMMER ENROLLMENT

Between 2012 and 2022, SJSU had an active Summer enrollment program with as much as 17-25 percent of Fall enrollment headcount. The enrollment level has steadily increased since 2012, although Summer enrollment dropped by approximately 700-800 students in the summers of 2018 and 2019. Since then, the Summer headcount has stabilized at approximately 9,000 students, or about 25 percent of the Fall headcount (SJSU 2023).

2.4.3 Projected Student Enrollment, Faculty, and Staffing

SJSU leadership anticipates moderate growth in student enrollment in the future. Due to demographic changes (particularly an anticipated decline in the number of students graduating from California high schools), SJSU is expecting a decrease in the number of first-year students and an increase in those transferring from community colleges as juniors. In addition, SJSU is planning for an increase in graduate students and a modest increase in international students.

While a majority of courses will continue to be taught face-to-face, hybrid and online instruction will increase substantially. Overall enrollment could increase by nearly 8,000 students, with more than half of that growth in Special Session/Self-Support[2] and online enrollment. The Campus Master Plan estimates overall student enrollment to increase from a total headcount of 35,475 (AY 2018-2019) students to 44,000 students by 2045, along with sufficient faculty and staff to provide instruction and support services that would accommodate the demand of this increased headcount. However, it is anticipated that only 37,500 of the projected 44,000 students would be taught regularly in-person on the campus, compared to 32,828 of 35,475 on-site students in AY 2018-2019. The anticipated enrollment represents a net headcount increase of 8,525 students from AY 2018-2019 conditions (an approximately 22 percent increase over 20 years, or just over one percent per year) and 8,191 students from Fall 2022 conditions (an approximately 23 percent increase over 18 years, or just over one percent per year). Table 2-5 shows the net increase in students, faculty, and staff (i.e., the campus population) planned for in the Campus Master Plan and assessed in the environmental analysis.

[2] Self-support programs are higher-education programs in which all program costs, both direct and indirect, are covered by revenues generated by the program.

Table 2-5 Student Enrollment, Faculty, and Staff Headcount

	Fall Headcount for AY 2018-2019	Fall Headcount for AY 2022-2023	Fall Headcount under Campus Master Plan	Net Change from Fall 2018	Net Change from Fall 2022
Student Enrollment[1]					
Fall Headcount	35,475	35,809	44,000	8,525	8,191
On-Campus Fall Headcount	32,828	32,432	37,500	4,672	5,068
Faculty and Staff Fall Headcount					
Faculty	2,074	2,263	2,500	426	237
Staff and Management[2]	1,998	2,007	2,760	762	753
Total Regular Employees	**4,072**	**4,270**	**5,260**	**1,188**	**990**

[1] Includes undergraduate and graduate enrollment.

[2] Includes staff, administrators, and research staff.

Source: SJSU 2024.

SJSU determines faculty and staff needs by evaluating the historical relationship between students and faculty headcount, as well as the relationship between students and staffing. However, SJSU expects to make some changes in the future, including increasing the percentage of tenured and tenure-track faculty to 35 percent and providing time for research and scholarship (particularly for new faculty). These changes would result in a proportionate increase in faculty, rather than simply carrying past ratios forward into the future. It is important to note that the number of faculty depends on the total amount of instruction (FTES taught), whereas the number of staff depends on student headcount. Growth may fluctuate year-to-year (due to the availability of funding and facilities, as well as other factors) but is anticipated to trend towards the overall anticipated numbers identified in Table 2-5.

PROJECTED SUMMER ENROLLMENT AND ACTIVITIES

Overall, the Summer population is less than 25 percent of the academic year population, and that ratio is not expected to change substantially with implementation of the Campus Master Plan. Historically, housing occupancy has been much lower—below 10 percent that of the academic year—even when the use of residence halls for conferences and Summer programs is added to students living on campus during the summer. Also, the Summer population on campus varies significantly from day-to-day and week-to-week as Summer programs vary in size and length over about two and a half months. Some academic courses are offered in concentrated formats as short courses, and faculty conducting research may not be on campus daily.

PROJECTED HOUSING CAPACITY

SJSU currently provides undergraduate student, graduate student, faculty, staff, and occasional visitor housing at the Main Campus and nearby locations in the facilities listed in Table 2-6. Total housing capacity is estimated at approximately 5,200 beds, although occupancy varies from term to term.

Table 2-6 Existing Housing Capacity for Students, Faculty, and Staff

Facility	Occupants	Bed Capacity	Completion Date
Washburn	Students	260	1960
Joe West	Students	663	1967
Campus Village A	Junior and Senior Undergraduate Students, Graduate Students, Faculty, Staff	203	2005
Campus Village B	Non-first-year Undergraduate Students	1,638	2005
Campus Village C	Students	643	2005
Campus Village 2	Students	990	2016

Facility	Occupants	Bed Capacity	Completion Date
International House	Students	71	1976
Spartan Village on the Paseo	Students	700	2024
Off-Campus Houses	Faculty and Staff	14	N/A

Source: SJSU 2024.

Approximately half of the students and more than one-third of the faculty currently live more than a 30-minute commute from the Main Campus. SJSU leadership has emphasized that the provision of student housing is essential to the University's enrollment goals and student success. The University can manage rents and provide sustained programming for student success in housing on campus. The Campus Master Plan includes a goal to provide enough housing on campus to serve 20 percent of all students regularly on or adjacent to campus. To help meet this goal, the Campus Master Plan designates additional space for approximately 2,100 new beds which, when added to SJSU's existing housing capacity, would increase the total student housing capacity to approximately 7,270 beds. These additional beds would increase the percent of students living on campus to 19 percent with implementation of the Campus Master Plan, as shown in Table 2-7. In addition, the redevelopment of the Alquist Building (as explained in greater detail below) would provide up to 500 workforce housing units that could be occupied by graduate students (in addition to faculty and staff). If 450 of these units be occupied by graduate students, the percent of students living within SJSU properties would increase to 22 percent.

Table 2-7 Student Enrollment

	Fall Headcount for AY 2018-2019	Fall Headcount for AY 2022-2023	Fall Headcount under Campus Master Plan	Net Change from Fall 2018	Net Change from Fall 2022
Student Enrollment[1]					
Fall Headcount	35,475	35,809	44,000	8,525	8,191
Living On Campus	4,450	5,170[1]	7,270	2,820	2,100[1]
Full-time Commuter	22,153	19,928	23,130	977	3,202
Part-time Commuter	6,225	7,334	7,100	875	(234)
Not On Site	2,647	3,377	6,500	3,853	3,123

[1] Adjusted to include 700 beds as part of Spartan Village on the Paseo, which became operational in Fall 2023.

Source: SJSU 2024.

2.5 PROJECT OBJECTIVES

The following objectives of the Campus Master Plan have been identified to support the underlying purpose of the Campus Master Plan in advancement of the University's academic mission, vision, and values by guiding the physical development of the campus and to accommodate changes in enrollment:

- Support and advance the University's educational mission by guiding the physical development of the campus to accommodate gradual student enrollment growth up to a future on-campus enrollment of 27,500 FTES (37,500 headcount) while preserving and enhancing the quality of campus life.
- Expand campus programs, services, facilities, and housing to support and enhance the diversity of students, faculty, and staff.
- Optimize the use of existing acreage within the Main and South campuses and promote compact and clustered development of academic/administrative facilities where possible.
- Renovate or demolish buildings that are inefficient in terms of operation, maintenance, and user comfort due to age and that have critical deferred maintenance issues.

- Replace demolished buildings with higher density, mixed-use buildings that consolidate and integrate colleges and student support spaces, while maintaining the campus character and history.
- Improve access and permeability between the campuses and their surroundings, including between the City of San José and the University, as well as the promotion of cross-disciplinary synergies between complementary academic, student/faculty support, and housing programs.
- Enhance the physical interface between the University and the surrounding communities to further integrate and engage the University with the community.
- Increase and modernize on-campus and campus-adjacent (i.e., within a walkable distance [0.25 mile] of either the Main or South campuses) housing for students to serve at least 20 percent (7,500 student beds) of projected on-campus student enrollment to enliven existing housing and activate those parts of campus.
- Provide and enhance the campus environment with appealing open space, more gathering places, engaging outdoor activity areas and a strong pedestrian orientation.
- Further enhance a modal shift from vehicles to more pedestrian, bicycle, and transit use through the provision of additional on-campus opportunities for alternative transportation (e.g., bicycle lanes/parking, additional transit stops, and enhanced safety measures for bicyclists and pedestrians) in a manner consistent with local and regional alternative transportation improvements.
- Advance campus-wide environmental sustainability and make progress toward goals of carbon neutrality and climate resilience through replacement of aging and inefficient buildings and infrastructure with new/renovated buildings and infrastructure that meet or exceed CSU Sustainability Policy requirements.

2.6 ELEMENTS OF THE CAMPUS MASTER PLAN

The Campus Master Plan is a long-range planning document that guides the development and use of campus lands to accommodate projected growth in student enrollment and in fulfillment of SJSU's academic mission. As shown below, the University anticipates enrollment growth, and the Campus Master Plan provides for the anticipated increase in demand for academic facilities, additional housing, recreation and athletics facilities, and student support facilities and services on campus through 2045. The project would include the demolition and replacement of approximately 1,065,000 GSF of existing academic, administrative, housing, and support facilities to allow the campus to add density in both the Main and South campuses while maintaining and increasing the amount of open space on the Main Campus. Approximately 1,400,000 GSF of academic, research, and administrative space and an additional 400,000 GSF of student support space would be added. This includes approximately 900,000 GSF of new student housing space to accommodate the 2,100 new student beds and up to 1,000,000 GSF of new housing at the Alquist Building site. The new housing development at the site of the Alquist Building would provide up to 1,000 residential units with up to 500 units for faculty, staff, and graduate students. In total, approximately 3,700,000 GSF of net new construction, 1,065,000 GSF of replacement, and 1,600,000 GSF of renovation would occur within the Master Plan Area.

In terms of assignable square feet (ASF), an additional 750,000 ASF of academic and administrative, and an additional 225,000 ASF of support space would be developed. In addition, 650,000 ASF of existing aging or obsolete academic, administrative, and support space would be demolished and replaced with new facilities.

The proposed Campus Master Plan Map for SJSU is shown in Figures 2-7, 2-8, and 2-9.

2.6.1 Land Use

The Campus Master Plan Land Use Map (Figure 2-10) shows the planned land uses within the Master Plan Area by category. Land use categories include academic mixed-use facilities, campus life facilities, residential facilities, open space, operational support, and athletic fields and facilities, all of which are defined below. The map illustrates the location, adjacency, and scale of facilities and improvements that are planned to be developed as part of the proposed Campus Master Plan. The Campus Master Plan maintains the basic land use pattern for both the Main and South campuses while strengthening the open space framework, creating new communal areas and paseos, and adding capacity.

MAIN CAMPUS

The vision for the Main Campus under the Campus Master Plan is centered on the experience of primary open spaces, which influenced site selection for new development and defined how spaces are framed and shaped by building footprints. Implementation of the Campus Master Plan at the Main Campus would add over five acres of new usable open space by removing surface parking lots, reducing vehicle circulation and building taller structures on much smaller footprints. The Campus Master Plan focuses new development on the Main Campus around the following four areas and incorporates phasing and interim relocation of some activities to make the most significant changes possible.

- The Main Campus Edge, located along San Fernando Street, would be transformed with new taller buildings that symbolize SJSU's leadership as an innovative and creative public University.
- An entrance and view onto Tower Lawn, located in the northwest quadrant of the Main Campus, would be created to preserve and enhance this historic core of the Main Campus.
- The New University Housing area, located in the southeastern quadrant of the Main Campus, would expand Campus Village to offer more opportunities for students to live and dine on campus.
- The Main Campus Core would be strengthened with more active plazas, paseos, and activities set off by signature architecture.

Land uses within the Main Campus would include:

1. Academic Mixed Use. These facilities are the primary locations for formal teaching and learning at SJSU. Facilities are focused on instruction and research activities and include space for student support and administrative purposes. Academic mixed-use facilities include classrooms and laboratories, research facilities, faculty offices, advising and other services that support student success. The term "mixed use" emphasizes the integration of administrative and student support services with the academic programs they serve.
2. Campus Life. These include facilities that support indoor and outdoor social interaction and recreation, health and wellness, entertainment and events, clubs and organizations, on-campus retail, food and beverage service, and informal study space.
3. Residential. This includes student housing with supporting space for dining services, recreation, and study. These facilities are funded and operated by the SJSU Housing auxiliary.
4. Open Space. This land use provides distinct nodes throughout the campus for active and passive outdoor activities, located primarily along the campus's internal circulation network and within clusters of buildings, and oriented towards pedestrian and bike travel (where appropriate) through the Main Campus.
5. Operational Support. This land use provides for facilities handling public safety, parking, infrastructure and other support operations, including the existing Main Campus Central Plant and corporation yards. Certain uses (e.g., parking facilities) would continue to be built and managed through an auxiliary.

SOUTH CAMPUS

As noted above, the SJSU's 62-acre South Campus supports SJSU athletics, recreational sports, intramurals, sport clubs, special events, and some academic classes and research. In addition, this campus hosts other large events. The vision for the South Campus under the Campus Master Plan is to expand the South Campus identity beyond athletics and parking so as to integrate it more fully as part of SJSU. This would involve improving the connections between the Main and South campuses and locating more academic programs and support services for future programming on the South Campus. The primary connection within the South Campus would be provided via a realigned Stadium Way, which extends in an east-west direction between 7th Street and 10th Street. A new central gathering space would be located on Stadium Way.

San José State University

Master Plan Enrollment: 27,500 FTE

Master Plan approved by the Board of Trustees: July 1965, December 1965
Master Plan Revision approved by the Board of Trustees: July 1967, April 1968, July 1973, July 1975, November 1979, September 1980, May 1983, July 1983, November 1984, March 1985, January 1987, June 1989, November 1990, September 1991, January 1993, December 1998, January 2002, November 2015, Revised Date: April 2025

North Main Campus

001. Automated Bank Teller Facility
002. Engineering A
003. Student Union
004. Central Plant
005. Engineering B
006. Spartan Memorial
007. Faculty Office Building
008. Building C
010. Building D
12A. Corporation Yard Offices
12B. Corporation Yard Trades Building
013. Building F
014. Building G
015. Building J
019. Associated Students House
020. Washington Square Hall
021. Dwight Bentel Hall
025. Morris Dailey Auditorium
027. Computer Center
030. Administration
031. Art & Design
033. Instructional Resource Center
034. Dudley Moorhead Hall
035. Engineering
036. Sweeney Hall
038. Health Building
039. Industrial Studies
044. Music
045. Yoshihiro Uchida Hall
046. SPX East
047. SPX Central
048. Science
049. Hugh Gillis Hall
052. Duncan Hall
053. North Parking Facility
53A. Student Services Center
054. South Parking Facility
055. West Parking Facility
059. Clark Hall
071. Central Classroom Building
072. Tower Hall
078. MacQuarrie Hall
089. Washburn Hall (Student Residence)
090. Joe West Hall (Student Residence)
091. Dining Commons
092. Boccardo Business Classroom Building
92T. Business Tower
100. Event Center
100A. Modular A
100B. Modular B
112. Interdisciplinary Science Building
115. Spartan Recreation and Aquatic Center
116. Student Wellness Center
133. UPD Building
134. Dr. Martin Luther King, Jr. Library
135. Child Development Center
140F. Modular F
151. Campus Village A
151A. Campus Village Garage
152. Campus Village B
153. Campus Village C
156. Campus Village Phase 2
200. Campus Village 3 (Student Residence)
201. Campus Village 4 (Student Residence)
300. Building L
360. International House
900. Alquist Redevelopment
901. Spartan Village on the Paseo
926. Faculty Staff Housing
927. Faculty Staff Housing
928. Hammer Theater

South Main Campus

9B. Modular Building B
016. Building M
017. Facilities Operations
018. Legacy Center
022. Golf Hitting Bays
062. Field House
095. Art Foundry
117. Stadium
118. Practice Fields
119. Tennis Complex
122. Softball Center
123. Tennis / Softball Facility
124. Storage Building
125. Simpkins Stadium Center
127. Tennis Stadium Court
128. Concession Buildings
129. Simpkins Center Storage Building
130. Training/Locker Facility
130A. Bally Hut
132. Simpkins Administration Building
141. Koret Center
142. Spartan Athletic Center
146. Baseball Batting Structure
147. South Campus Garage
148. Recreation Field
162. Golf Driving Range
163. Soccer Field
400. Stadium Field
401. Beach Volleyball
402. Beach Volleyball
403. Viewing Platform
404. Baseball Field
405. Athletic Performance Center
406. Multipurpose Practice Facility
407. Baseball Stadium
408. Golf Clubhouse
700. Stadium Way Gateway

LEGEND:
Existing Facility / *Proposed Facility*

NOTE: Existing building numbers correspond with building numbers in the Space and Facilities Data Base (SFDB)

Other Facilities in Santa Clara County

205. University House - Not shown on map (1690 University Ave, San José)

19010021.10 GRX 006

Source: SJSU 2024.

Figure 2-7 San José State University Proposed Campus Master Plan Legend

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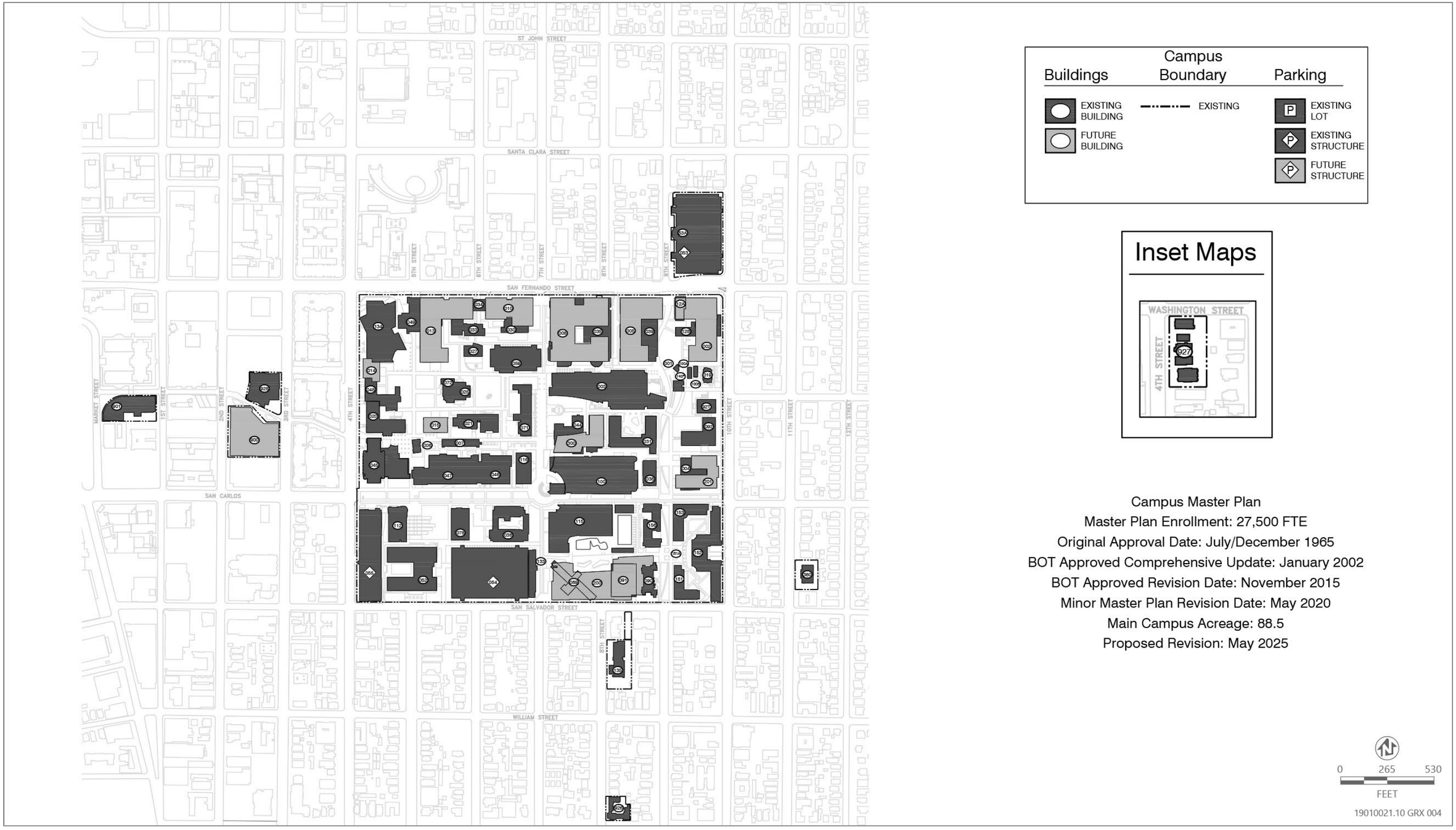
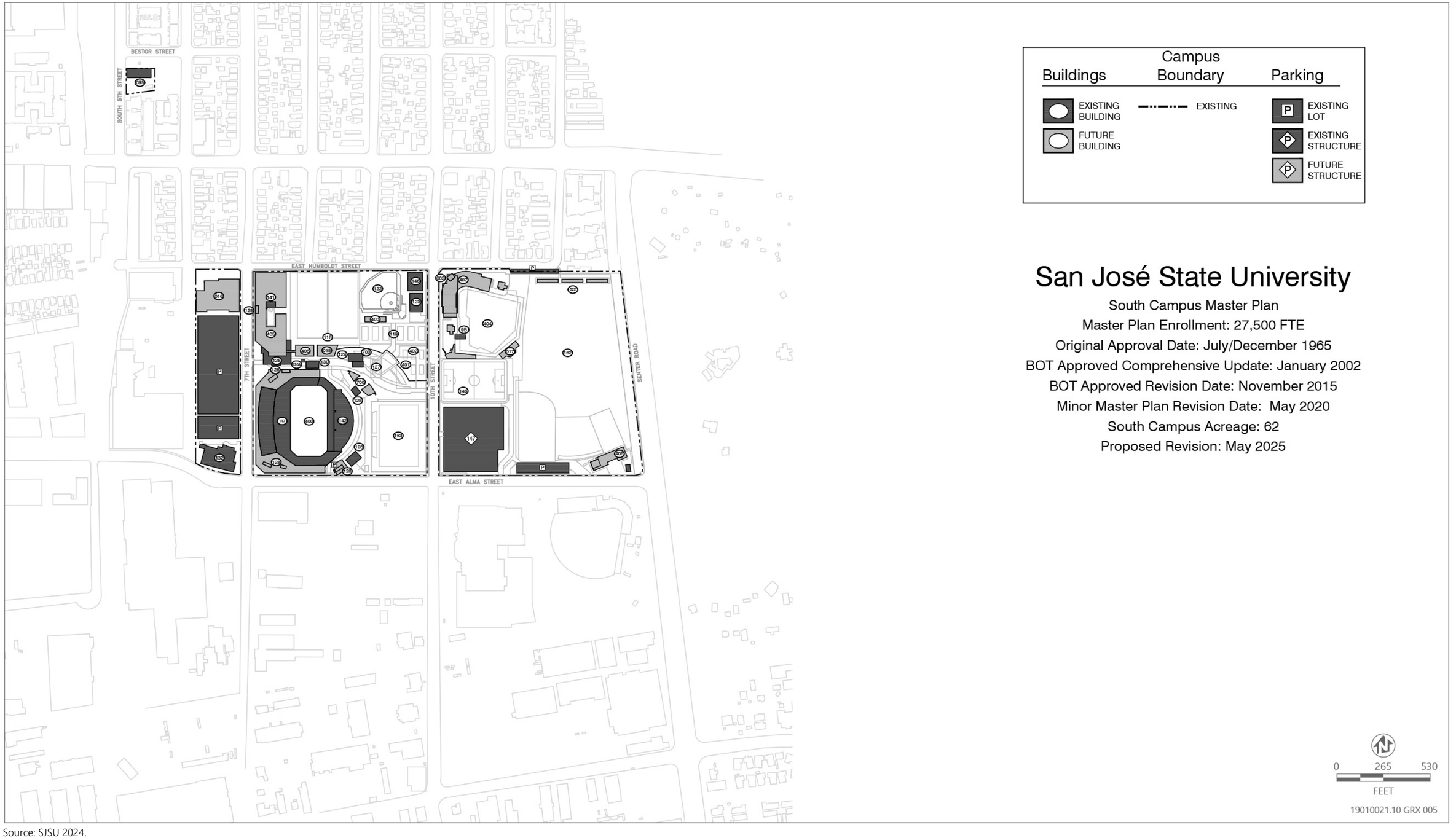


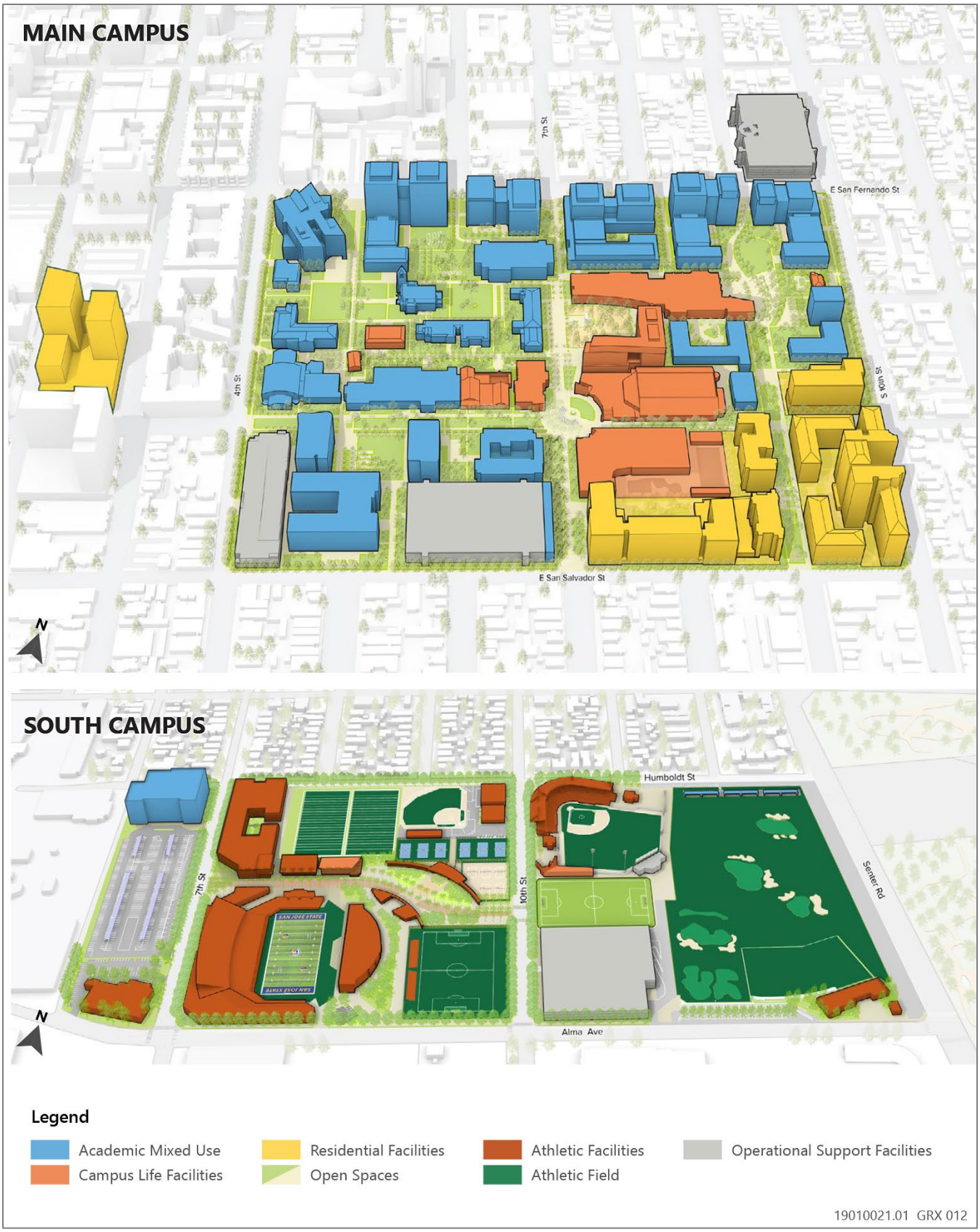
Source: SJSU 2024.

Figure 2-8 San José State University Proposed Campus Master Plan – Main Campus



Source: SJSU 2024.

Figure 2-9 San José State University Proposed Campus Master Plan – South Campus



Source: SJSU 2024.

Figure 2-10 Proposed Land Uses by Type for Main and South Campuses

Land uses within the South Campus would include:

1. **Academic Mixed Use.** Within the South Campus, these facilities would focus on instruction and research activities with additional space for student support and administrative purposes. These may include classrooms, research facilities, faculty offices, advising and other services that support student success.
2. **Athletic Fields and Facilities.** The South Campus would continue to serve as the hub for organized athletic programs at SJSU, including Division I and intramural programs. Facilities currently provided within the South Campus would be enhanced to provide greater connectivity and additional capacity for athletics under the Campus Master Plan, including football, soccer, tennis, baseball, softball, beach volleyball, and golf programs. In addition, SJSU could consider partnerships and shared-use facilities with local/regional entities.
3. **Open Space.** Within the South Campus, this land use provides common areas to serve one or more facilities, including along Stadium Way.

Operational Support. Similar to the Main Campus, this land use within the South Campus provides for facilities handling public safety, parking, infrastructure and other support operations, including solar photovoltaic (PV) facilities.

2.6.2 Total Space Requirements

The following provides an overview of the proposed building program under the proposed Campus Master Plan. Existing campus academic facilities provide approximately 7,860,000 GSF of space for University operations, including housing. The Campus Master Plan projects future demand for approximately 10,500,000 GSF (an increase of approximately 2,690,000 GSF) of academic, administrative, housing, and student support facilities based on the proposed increase in student enrollment. The Campus Master Plan proposes an increase in institutional support activities and services including indoor and outdoor classrooms and laboratories, faculty offices, and facilities for study, research, and scholarship. The net new GSF in the Campus Master Plan includes approximately 400,000 GSF of student support space (e.g., for the Associated Students, Student Union, and athletic/sports facilities), as well as nearly 1,400,000 GSF of instruction, research, and instructional support space. This includes 900,000 GSF of new student housing space to accommodate 2,100 new student beds and another 1,000,000 GSF of new housing development at the Alquist Building site. In total, approximately 3,700,000 GSF of net new construction, 1,065,000 GSF of replacement space, and 1,600,000 GSF of renovation would occur within the Master Plan Area. This would accommodate new modes of teaching and learning as well as other services, including campus food services, lounge and study space, technology and power, and athletic facilities.

The Campus Master Plan also involves demolition and replacement of approximately 1,065,000 GSF of existing academic, administrative, housing, and support facilities to allow the campus to add density in both the Main and South campuses while maintaining and increasing the amount of open space on the Main Campus. Approximately 1,600,000 GSF of existing facilities would be renovated or remodeled to provide the needed functionality for the evolving academic programs and enrollment needs at SJSU.

Existing and projected academic, administrative, housing, and support space demands, based on 27,500 FTES, are summarized in Table 2-8.

Table 2-8 Total Space Requirements

	Space Required[1]
Future Capacity Required (based on 27,500 FTES)[2]	10,552,942 GSF
Current Built Capacity (based on 2015 Inventory)[2]	7,863,583 GSF
New Construction	3,689,359 GSF
Replacement	1,065,133 GSF
Total Construction (Rounded)	**4,750,000 GSF**
Renovation (Rounded)	**1,600,000 GSF**

[1] Totals shown in this table may not add due to rounding.

[2] Does not include square footage associated with Spartan Village on the Paseo, which is reflected as a cumulative project (see Chapter 4, "Cumulative"). The projected growth for building/facility space is presented in Table 2-9.

Table 2-9 Space Growth Projections

Enrollment Year	Total GSF (Rounded)	Total Cumulative GSF (Rounded)
2025-2029	*1,839,000*	*1,839,000*
2030–2034	*966,000*	*1,805,000*
2035–2039	*632,000*	*2,437,000*
2040–2045	*1,075,000*	*3,512,000*
Independent of Phasing (2024-2045)	*243,000*	*3,750,000*
Campus Master Plan Projections	***4,750,000***	***4,750,000***

[1] Totals shown in this table may not add due to rounding.

2.6.3 Academic, Administrative, and Student Support Space Requirements

With respect to academic, administrative, and student support space, existing campus academic facilities provide approximately 3,181,000 GSF of space for University academic programs. The Campus Master Plan projects future demand for approximately 4,570,000 GSF (an increase of approximately 1,389,000 GSF) of academic, administrative, and student support facilities based on the proposed increase in student enrollment (headcount). Proposed new academic facilities include, among other things, potential near-term engineering buildings (Engineering A and Engineering B), a new operations building within the South Campus, a new campus life building (Building J), and new academic and administrative buildings (Building D and Building G). Within the near term, academic, administrative, and student support facilities would largely be built within the Main Campus.

The Campus Master Plan proposes an increase in institutional support activities and services including indoor and outdoor classrooms and laboratories, faculty offices, and facilities for study, research, and scholarship. With the proposed increase in student enrollment, student support services (e.g., lounge and study space) would also need to be expanded. The Campus Master Plan also involves demolition and replacement of a little under 1,000,000 GSF of existing academic, administrative, and student support facilities to allow the campus to add density while maintaining and increasing the amount of open space on the Main Campus. Existing and projected academic, administrative, and student support space demands, based on 27,500 FTES, are summarized in Table 2-10.

Table 2-10 Academic, Administrative, and Student Support Space Requirements

	Space Required
Future Capacity Required (based on 27,500 FTES)	4,569,655 GSF
Current Built Capacity (based on 2015 Inventory)	3,180,754 GSF
New Construction	1,388,901 GSF
Replacement	932,623 GSF
Total Construction (Rounded)	**2,321,000 GSF**

2.6.4 Housing

STUDENT HOUSING

A major goal of the Campus Master Plan is to provide additional student housing for students regularly on campus, through the provision of 7,270 beds within the southeastern portion of the Main Campus. This may include specialty student housing. The Campus Master Plan includes the designation of space for approximately 2,100 new student beds (a 40% increase above existing conditions) and the modernization of existing residential facilities. The new student housing may include a mix of both student dormitories and apartments. The dormitories are intended to

primarily serve first- and second-year students. The new housing would include dining facilities, activity centers, and other amenities, making the campus more attractive to students at all hours, which would also reduce the need for student residents to have cars because more amenities and entertainment would be available on campus and within walking and biking distance.

FACULTY/STAFF HOUSING

The Campus Master Plan includes redevelopment of the Alquist Building, which is located approximately one block west of the Main Campus and would provide up to 500 units of housing for faculty, staff, and graduate students to the University. An additional 500 units of market-rate housing would be provided as part of the Alquist development, which could also be available for purchase by faculty/staff. With respect to the Alquist Building Redevelopment, SJSU is obligated by the California Department of General Services (DGS), from whom the property was acquired, to pursue and progress towards planning, design, and redevelopment of the Alquist Building with residential and other uses in a timely fashion (conditional upon CEQA compliance). Under this alternative, SJSU would not be able to fulfill its obligation to DGS.

2.6.5 Athletic and Recreational Facilities

Primarily within the South Campus, the Campus Master Plan provides for the renovation of existing athletic and recreational facilities and for construction of new facilities on campus. The following outlines proposed new construction and renovation of recreation and athletic facilities in the Campus Master Plan:

- **CEFCU Stadium (117):** This existing CEFCU Stadium would be renovated to provide replacement seating, improved access, and additional services on the west, north, and south sides of the stadium. This would include updated bathrooms, offices and other support space, updated concessions and amenities, formal signage at S. 7th Street and E. Alma Avenue regarding the South Campus, and other improvements to the perimeter for a stadium with the capacity for approximately 30,000 seats.
- **Provident Credit Union Event Center (100):** The renovation of the Provident Credit Union Event Center on the Main Campus, which includes basketball and other indoor sports and recreational facilities, would include the front and side facades.
- **Athletic Training Facility (405):** This new athletics training facility includes approximately 70,000 GSF for multiple sports and recreation including offices, athletics storage, locker rooms, and a field house. The facility is anticipated to be approximately 2 stories in height (up to 35 feet above ground level).
- **Legacy Center (018):** This new building includes approximately 6,500 GSF for a community event space at the end of the existing Football Practice Field. This facility would be one story in height.
- **SJSU Baseball Stadium (407):** This development would involve the reconstruction of the existing baseball stadium to allow for seating for up to 6,500 visitors and potentially shared use with other baseball teams. Construction would involve demolition of the existing modular buildings and field house, reorientation of the existing field, and construction of new bleachers and support facilities (e.g., restrooms, ticketing, and concessions).
- **Facilities Operations Building (017):** Adjacent to the baseball stadium and as part of the Campus Master Plan, SJSU would provide a new operations building that would serve facilities at the South Campus. It would be designed to store back-of-house equipment used for the maintenance, repair, cleaning, security, and operations of the entire South Campus. Appropriate fencing (for visual screening purposes) and access to the baseball stadium and golf complex would be provided.
- **Stadium Way Sports Gateways (700):** Gateways to the north and south of South Campus Plaza would define the edges of the plaza with curved walls. Gateways would include ticketing and concessions windows and provide a shared entrance to serve Beach Volleyball, Tennis and Softball.
- **Golf Lodge (408):** Under the Campus Master Plan, existing golf facilities within the South Campus would be improved to provide a 11,500 GSF, single-story golf center and hitting bays at the northern end of the golf course. The golf center would include a pro-shop, offices, workout room, locker rooms, and lounge areas. High-

intensity lighting, angled down and away from off-site uses would be provided at the hitting bays, as well as solar photovoltaic panels and related equipment to reduce electrical demands.

Additionally, within the Main Campus, reorientation and redevelopment of existing uses would allow for the creation of additional open space (more than 5 acres). This open space would be available for the congregation, engagement, and collaboration of students, visitors, faculty, and staff; and limited athletic and recreation use by students.

2.6.6 Mobility Improvements

The Campus Master Plan calls for infrastructure and related policies and programs that together are intended to provide for the safe and efficient movement of pedestrians, bicycles and other micromobility, public transportation, and vehicles around campus, while also encouraging a more complete shift to an active transportation approach—one that emphasizes walking, biking, and public transportation over personal vehicles. The Campus Master Plan continues SJSU's efforts to move away from auto dependency to a more pedestrian-oriented and multimodal environment. The overarching circulation principle is to further develop and implement this modal shift. The City and other regional transportation agencies similarly support multimodal and active transportation approaches.

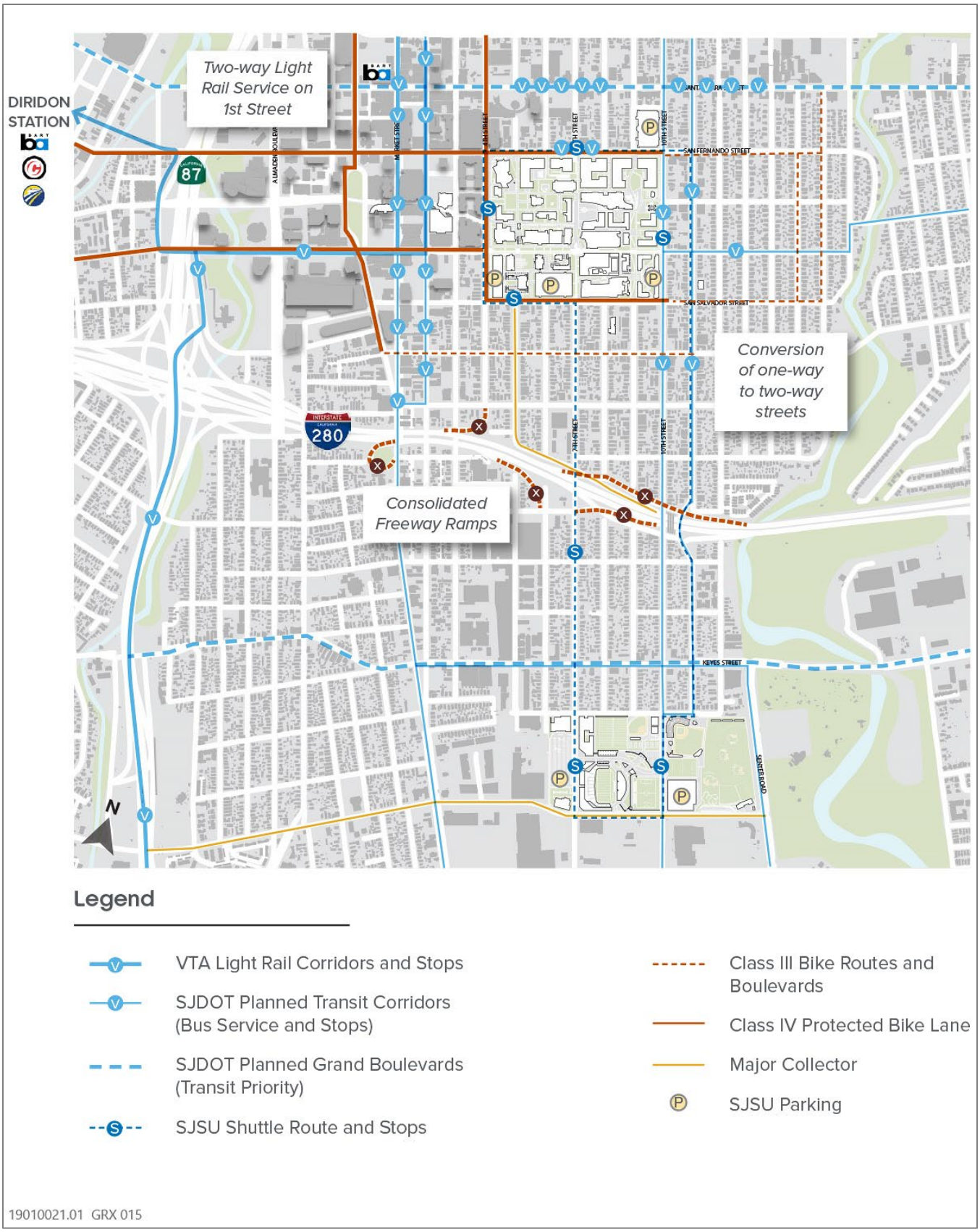
The Campus Master Plan includes the following guiding principles related to the campus's circulation network:

- Improve accessibility and universal design.
- Support multi-modal transportation.
- Anticipate shifts in transportation.
- Support first-last mile connections to both campuses. First-last mile connections include travel by bicycle, on foot, and with other micromobility devices.
- Improve pedestrian safety on campus.
- Support micromobility (bicycling and rolling using wheelchairs, skateboards, scooters, and other devices).
- Provide convenient and safe drop off and loading zones.
- Improve access between the Main and South campuses.

Major new facilities and improvements, including bicycle facilities, pedestrian crossings, and signage, would be constructed in conjunction with the major new developments they would serve within both the Main and South campuses. Additionally, planned pedestrian improvements would be provided as part of the Campus Master Plan at 7th Street along East San Fernando Street and East San Salvador Street, and additional SJSU Shuttle stops and micromobility parking and docking stations would be provided throughout the Master Plan Area to enhance connections within and between the Main and South campuses. Planned mobility improvements within and adjacent to the Main Campus are shown in Figure 2-11. The Campus Master Plan would also not involve the reorientation or expansion of the existing roadway network to and through campus but would provide enhanced connections to campus and gateways for pedestrians, bicyclists, and transit riders.

PARKING

Currently, the campus provides approximately 8,400 parking spaces on campus with over 5,300 parking spaces in three parking structures within the Main Campus, 1,500 parking spaces within the recently developed South Campus parking garage, approximately 800 spaces within the South Campus Park & Ride lot, and 1,000 parking spaces within other Main Campus parking facilities. It is SJSU's intent to discourage students, faculty, and staff from driving single-occupancy vehicles to campus to reduce carbon emissions and to allow investment in the construction of programmable space (e.g., academic, administrative, student support, and campus life space, as well as housing) instead of new parking spaces. The Campus Master Plan proposes no net increase in parking spaces.



Source: SJSU 2024.

Figure 2-11 Proposed Mobility Improvements in and around the Master Plan Area

2.6.7 Utilities and Infrastructure

The Campus Master Plan emphasizes sustainability as a major goal in the design and operation of infrastructure to serve the expanded campus. In alignment with the Campus Master Plan, SJSU would complete an update to the Utilities Master Plan for the Master Plan Area. Currently, the Main Campus has its own utilities master plan, which was last updated in 2013, and addresses energy, water, and information technology infrastructure. To the extent feasible, the Campus Master Plan includes infrastructure projects, such as the relocation of the existing Central Plant to Building A.

As outlined in the Campus Master Plan and as will be further detailed in the Utility Master Plan, utility infrastructure improvements would provide modernization and enhancements to the existing campus utility systems to serve new facilities, including drainage, water, sewer, solid waste, energy, fire and security alarms, and information technology. The Campus Master Plan would require new infrastructure to deliver domestic water, collect wastewater, and manage storm drainage, particularly to service new development on the Main Campus.

This EIR generally assumes that up to 1 linear mile of new utility line construction/replacement would occur per year as part of Campus Master Plan implementation. While ensuring quality operational performance of these systems, the utility improvements would also conserve water, conserve energy, reduce carbon emissions, and reduce utility costs.

ENERGY

The Campus Master Plan places increasing emphasis on using renewable and other carbon-free energy sources (while reducing dependence on fossil fuels) and on designing and retrofitting existing facilities for more energy-efficient operations. In addition to purchasing electrical energy from Pacific Gas & Electric Company, SJSU anticipates implementing projects such as solar PV systems with related equipment where feasible, including building rooftops.

The existing Central Plant (a cogeneration facility built) in 1984 lies at the heart of many of the SJSU energy systems (e.g., steam, chilled water, natural gas, and electricity). In addition to delivering 70 percent of campus electricity, cogeneration also provides heating (via steam) and cooling (via absorption chillers). Although in reasonably good condition, replacement of the Central Plant is anticipated to be necessary within the next 10 years and as part of Campus Master Plan implementation (Phase 2). It is anticipated that the future system would replace steam with hot water. Refer to Sections 3.5, "Energy," 3.7, "GHG Emissions," and 3.16, "Utilities and Service Systems" for further clarification.

WATER

SJSU's water for on-campus uses is derived from water supplies provided by San José Water Company (SJW), which are delivered to campus by the SJW's water supply infrastructure. Ongoing conservation efforts, such as the use of water-efficient fixtures, have resulted in significant reductions in per capita water demands despite campus growth.

SJSU also participates in SJW's South Bay Water Recycling Program. The recycled water system reduces SJSU nonpotable water demands within the Main Campus and is the primary water source for nearly all irrigation needs, Cogeneration Plant cooling towers, and toilet and urinal flushing in buildings constructed since 2003. The South Campus uses recycled water for 99 percent of landscape irrigation needs and toilet and urinal flushing. Refer to Section 3.16, "Utilities and Service Systems," for further clarification.

WASTEWATER

The SJSU sanitary sewer system consists of campus-owned laterals that connect from campus buildings to City of San José sewer mains located along the boundaries of the Master Plan Area and ultimately to the San José-Santa Clara Regional Wastewater Facility for treatment. Ongoing conservation efforts, such as installation of ultra-low-flow plumbing fixtures, have resulted in significant reductions in wastewater volumes despite campus growth. Refer to Section 3.16, "Utilities and Service Systems," for further clarification.

STORM DRAINAGE

The region's rainy season occurs in the winter months, from October through March. Storm water runoff is collected in a series of storm drain lines located throughout the Main and South campuses that connect to City of San José infrastructure and is conveyed to either Coyote Creek or the Guadalupe River. The majority of the Main Campus drains into Guadalupe River and the South Campus drains into Coyote Creek. SJSU, in accordance with the Clean Water Act and State Water Resources Control Board and Regional Water Quality Control Board requirements, detains and diverts stormwater flows on-campus to on-campus infrastructure (e.g., catch basins, drainage inlets, and area drains). No net increase in permeable versus impermeable surfaces would occur within the Master Plan Area as part of the Campus Master Plan. Further and in compliance with applicable regulations, all new development under the Campus Master Plan would be designed and constructed such that runoff volume velocity, and water quality would not exceed existing levels and thus existing stormwater facilities would be adversely affected. Refer to Section 3.9, "Hydrology and Water Quality," for further information.

SOLID WASTE

SJSU maintains a contract with a private hauler for collection and disposal of solid waste, recycling, and composting of yard and food waste. Currently, the majority of solid waste requiring disposal and associated with SJSU is handled at the Newby Island Sanitary Landfill in the City of Milpitas. SJSU is in the process of developing a Zero Waste Management Plan that will outline strategies and actions to achieve the goals of achieving 90 percent diversion or higher and zero waste certification by the US Zero Waste Business Council. Through implementation of SJSU's Zero Waste Management Plan and compliance with CSU Sustainability Policy requirements, the need for solid waste disposal capacity would continue to decrease under the Campus Master Plan. Refer to Section 3.16, "Utilities and Service Systems," for further information.

FIRE ALARM AND SECURITY SYSTEMS

Fire alarm systems for Master Plan Area are comprised of a proprietary monitoring station augmented with central station monitoring and alarm systems in each building. Security systems for both the Main and South campuses consist of approximately 159 panic button alarms and more than 25 intrusion alarm systems. These systems rely on compatible and effective telecommunications infrastructure.

Telecommunications infrastructure has converged on fiber optic and ethernet technologies which present challenges keeping legacy campus systems operational.

INFORMATION TECHNOLOGY

SJSU's Information Technology (IT) division provides all the underlying communications and data services that support the University. SJSU IT partners with Facilities Development & Operations (FD&O) when constructing or renewing telecommunications infrastructure to ensure code and campus plan compliance. The SJSU physical IT infrastructure is built around a dual data center architecture. The primary data center is currently in the Computer Center building, and the alternate data center is in MacQuarrie Hall. All local campus buildings are connected via fiber to these two buildings. There are two Internet links, one at each data center. Off premise cloud services represent a large portion of IT services and applications and will grow over time. In addition, the South Campus is connected via a WAN circuit.

2.6.8 Smart Growth and Sustainability

The Campus Master Plan incorporates goals and principles as part of its Design Principles (refer to Chapter 4, Principles LA-8, BD-15 through BD-19, MO-1 through MO-8, and UI-1 through UI-9), including the compact development form within the Main Campus that is intended to reduce the reliance on vehicles and improve the efficiency of infrastructure and energy use. In addition to the pronounced shift away from cars toward alternative

modes of transportation, including walking, biking, and public transit, the Campus Master Plan emphasizes use of renewable energy sources, including solar energy; water reclamation; and waste recycling.

The Campus Master Plan requires that new facilities and campus infrastructure be environmentally sound and energy efficient and that they showcase advancements in sustainable technology. This includes designing new facilities to meet Leadership in Energy and Environmental Design (LEED) standards with a goal of achieving LEED Gold (in exceedance of CSU's Sustainability Policy requirements); continually monitoring, maintaining, and updating energy systems to ensure that SJSU operates in the most efficient manner possible; and upgrading or replacing outdated technology and systems, as needed. Refer to Sections 3.5, "Energy"; 3.7, "Greenhouse Gas Emissions and Climate Change"; 3.14, "Transportation"; and 3.16, "Utilities and Service Systems" for further information regarding the University's sustainability initiatives.

SJSU has undertaken many sustainability-oriented endeavors. Indicators used to measure improvements in sustainability include:

- energy use – British thermal units per square foot of building and percentage of electricity from renewable resources;
- transportation – percentage of students living on campus, number of bike rack spaces, parking permits sold per capita, public transit ridership, fossil fuel usage avoided by EV charging, and percentage of fleet vehicles using alternative fuel;
- water resources - total water by source, total water by use, nitrates in groundwater monitoring wells, and pollutants in wastewater;
- land use and development – percentage of campus square footage in energy efficient buildings;
- greenhouse gases (GHG) – percentage below 1990 baseline and percentage of electricity from non-GHG emitting sources;
- procurement – percentage of recycled content paper;
- solid waste and recycling – percentage of solid waste diverted from landfills and per capita landfill disposal; and
- curriculum – number of sustainability courses, majors, and minors.

These indicators are monitored by the SJSU to ensure that the University meets or exceeds the CSU Sustainability Policy goals to:

- reduce GHG emissions to 80 percent below 1990 levels by 2040 to achieve carbon neutrality by 2045;
- pursue energy procurement and production to reduce energy capacity requirements from fossil fuels, enhance electrical demand flexibility, and promote energy resilience using available economically feasible technology for on-site renewable generation, microgrids, and other fossil fuel-free energy storage solutions;
- procure 60 percent of electricity needs from renewable sources by 2030;
- reduce landfill bound waste to 80 percent of total campus waste by 2040 and move to zero waste;
- reduce water use by 10 percent by 2030, as compared to a 2019 baseline;
- purchase food from sustainable sources; and
- integrate sustainability across the curriculum (CSU 2022).

2.6.9 Campus Master Plan Phasing

As noted above, Campus Master Plan implementation is expected to extend from adoption of the Campus Master Plan through 2045. Currently project phasing of the Campus Master Plan is as follows:

- **Phase 1:** 2025 through 2029
- **Phase 2:** 2030 through 2035
- **Phase 3:** 2035 through 2039
- **Phase 4:** 2040 through 2045

Buildings proposed for development/renovation under the Campus Master Plan are listed by phase in Table 2-11 and shown in Figures 2-7 and 2-8 above.

Table 2-11 Campus Master Plan Projects

Phase	Project Name and Description	Size	Campus Location
1	**Art (Building 31)** Interior renovations to the building would be conducted to modernize the facility.	40,504 GSF	Main Campus
1	**Duncan Hall, Phase 1 (052)** This multi-phase project would involve the renovation and modernization of Duncan Hall.	86,429 GSF	Main Campus
1	**North Parking Garage (053)** The existing North Parking Garage (NPG) would be renovated to accommodate FD&O offices, trades and University fleet. The existing Student Services Center (SSC) (Building 53A) program and services would be moved online or to another on-campus facility like the Student Union (Building 53) or Clark Hall (Building 59).	98,225 GSF	Main Campus
1	**Clark Hall (059)** Interior renovations to the building would be conducted to modernize the facility.	32,071 GSF	Main Campus
1	**Joe West Hall Renovation (090)** The existing Joe West Residence Hall would be updated. In addition, open space/landscaping improvements would be constructed.	130,000 GSF	Main Campus
1	**Event Center (100)** The front entrance of the Event Center (EC) would be renovated to include reconfigured space for athletics and student services. Improvement to the San Carlos Plaza at Paseo de San Carlos and Paseo de César Chávez would also be conducted.	110,000 GSF	Main Campus
1	**Paseo de San Carlos (CC)** Improvements to Paseo de San Carlos would include development of a separated pathway for bicycles and other micromobility devices, as well as additional landscaping and design measures intended to enhance the aesthetic and functionality of the paseo.	1 acre	Main Campus
1	**Engineering B (005)** This project would construct a new high-rise engineering building with laboratories. This project would replace the existing Industrial Studies Building (Building 12B). The project would also include improvements to the 9th Street paseo within the Main Campus.	391,200 GSF	Main Campus
1	**Building J (015)** This project would add a low-rise addition to campus life programming and may serve as a multi-cultural center.	22,400 GSF	Main Campus
1	**Campus Village 3, Phase 1 (200)** This phased project would add a new residence hall to the Campus Village with a new dining common, supporting recreation space, and student services. Under Phase 1, housing, dining, and student support services would replace the existing Washburn Hall (Building 89).	408,162 GSF	Main Campus
1	**Facilities Operations Building (17)** This project would construct a new operations building that would consolidate existing operations within the South Campus and allow for the demolition of existing operations facilities that are located within the future realignment of Stadium Way.	10,000 GSF	South Campus

Phase	Project Name and Description	Size	Campus Location
1	**Alquist Redevelopment (900)** This project would involve the construction and operation of up to 1,000 residential units at the site of the former Alquist Building, along Paseo de San Antonio. Of the proposed residential units, it is assumed that approximately half would be workforce housing intended for faculty, staff, and graduate students, while the remaining half would be market-rate housing.	1,000,000 GSF	Main Campus
1	**Stadium Way Realignment, Phase 1 (700)** Phase 1 of the realignment of Stadium Way focuses on the half of Stadium Way adjacent to 10th Street. The project includes demolition of Modular C, Storage Building [Building 124], Tennis Stadium Court [Building 127], and the Training/Locker Facility [Building 130]. Stadium Way is a pedestrianized concourse that realigns Stadium Way to the south of where it is currently located within the central portion of South Campus.	1.5 acres	South Campus
1	**Spartan Legacy Center (018)** This project would include offices, conference rooms, and displays and minor adjustments to the Practice Field.	6,500 GSF	South Campus
2	**Washington Square Hall (020)** The existing Science Building (Building 48) would be demolished, and require façade renovation of Washington Square Hall next to Tower Lawn (TL). As part of the project, the loading dock on Paso de San Antonio would be removed and other improvements to 4th Street would be implemented to make 4th Street more pedestrian-oriented.	73,095 GSF	Main Campus
2	**Engineering Renovation (035)** The existing engineering building would be renovated to allow for temporary relocation of academic/administrative uses. This project also includes replacement of surface parking adjacent to it with a new pedestrian entrance that is an extension of Paseo de César Chávez to San Fernando Street.	186,000 GSF	Main Campus
2	**Duncan Hall, Phase 2 (052)** Additional renovations and upgrades to Duncan Hall would be conducted. Phase 2 assumes half of the total renovation.	86,429 GSF	Main Campus
2	**Boccardo Business Classroom Building (092)** Renovations would be conducted to raise the grade of the plaza. Modifications to the existing entrances/exits and façade of the ground floor adjacent to the plaza would also occur.	8,371 GSF	Main Campus
2	**Beach Volleyball Complex (119A and 119B)** This project would involve the development of a new beach volleyball complex with raised bleachers and a gateway from Stadium Way and South Campus Plaza to the volleyball, tennis, and softball complexes.	1 acre	South Campus
2	**Engineering A and Central Plant (002)** A new high-rise, mixed-use engineering building would be constructed in the northeast corner of the Main Campus. It would include engineering laboratories and renovation of the existing plaza and paseo. A new Central Plant that would serve the entirety of the Main Campus would be located in the basement of Building A to replace the existing Central Plant (Building 4). This project includes the demolition of the Corporation Yard Offices and Trades (Buildings 12A and 12B), Modular Buildings (Buildings 100A, 100B, and 100F), and the automated bank teller facility.	342,400 GSF	Main Campus
2	**Building D (010)** As part of Phase 2, the existing Administration building (Building 30) would be replaced with a new high-rise, mixed-use building with laboratories and further extension of Paseo de César Chávez at San Fernando Street.	292,800 GSF	Main Campus
2	**Building G (014)** A new low-rise, mixed-use building would provide additional academic, administrative, and support facilities, providing a place for convening, displaying, and co-working on 4th Street next to the Dr. Martin Luther King, Jr. Library. This project also includes improvements to Tower Lawn.	31,020 GSF	Main Campus

Phase	Project Name and Description	Size	Campus Location
2	**Campus Village 3, Phase 2 (200)** This project is the second phase of the residence hall. Under Phase 2, new residential units would be added and the new Dining Commons would be expanded to replace the existing Dining Commons (Building 91). Phase 2 also includes the construction of a landscaped recreation amenity deck over the service entrance between Campus Village 3 and Jose West Hall.	300,000 GSF	Main Campus
2	**Stadium Way Sports Gateways and South Campus Plaza (700)** The Stadium Way Sports Gateways will define the South Campus Plaza near 10th Street and would include an entry to Beach Volleyball, Tennis and Softball to the north of the plaza and Soccer and the Stadium to the south of the plaza. The construction of South Campus Plaza would require the removal of the existing Tennis Stadium Court (Building 127) and Concession Building (Building 128).	1.5 acres	South Campus
3	**Duncan Hall (052)** Additional renovations and upgrades to Duncan Hall would be implemented.	86,429 GSF	Main Campus
3	**South Parking Garage (054)** The South Parking Garage (Building 54) would be renovated to provide a new pedestrian entrance and an extension of Paseo de César Chávez at San Salvador Street. Vehicular access to the parking garage would be relocated to the west and south sides of the facility.	218,657 GSF	Main Campus
3	**MacQuarrie Hall (078)** The existing building would be renovated to include classroom upgrades and circulation and landscape improvements to the edges of the building. This project includes improvements to the Paseo de San Carlos that introduce a separated pathway for bicycles and other micromobility devices to the center of the paseo.	104,392 GSF	Main Campus
3	**Paseo de San Antonio (DD)** Improvements to Paseo de San Antonio would be included with scope of Building J.	2 acres	Main Campus
3	**Practice Field (118)** The Practice Field would potentially be modified to better accommodate the realignment of Stadium Way.	2 acres	South Campus
3	**Building F (013)** A new high-rise, mixed-use building would be provided with laboratories and performance spaces. Additional open space would be provided, including an outdoor performance space.	551,400 GSF	Main Campus
3	**CEFCU Concessions (117)** At the CEFCU Stadium, new concessions and associated fencing along the west side of South Campus Plaza and the entrance to CEFCU Stadium.	4,400 GSF	South Campus
3	**Athletic Performance Center (405)** This project involves a new two-story athletics training facility with offices, athletics storage, and locker rooms to support multiple SJSU sports programs.	70,000 GSF	South Campus
3	**Multipurpose Practice Facility (406)** This project would include development of a new field house with storage and support spaces and minor adjustments to the Practice Field.	6,500 GSF	South Campus
4	**Sweeney Hall (036)** Sweeney Hall would be renovated to include updated classrooms and teaching spaces. Additional open space/landscaping considerations would also be implemented.	101,932 GSF	Main Campus
4	**Duncan Hall (052)** Additional renovations and upgrades to Duncan Hall would be conducted.	86,429 GSF	Main Campus
4	**Paseo de César Chávez Extension (BB)** Between the edges of the Main Campus on 7th Street and San Salvador Street, the pedestrianized areas of Paseo de César Chávez would be extended to the campus edges. This would involve the removal of surface parking and driveway entrances that are existing in those areas.	2 acres	Main Campus

Phase	Project Name and Description	Size	Campus Location
4	**Bally Hut (130A)** This project would include information technology infrastructure for the South Campus. The site would be used for the realignment of Stadium Way.	342 GSF	South Campus
4	**Building C (008)** A new high-rise, mixed-use building would be provided with laboratory and academic spaces. A new courtyard and improvements to the pedestrian/bicycle path adjacent to the Student Union would be provided.	550,200 GSF	Main Campus
4	**Campus Village 4 (201)** Following removal of the existing Central Plant, a new residence hall with open space improvements along the 9th Street Paseo and Paseo de San Carlos would be constructed.	296,600 GSF	Main Campus
4	**Building L (300)** A new high-rise, mixed-use building would be constructed to include student services, dining, performance spaces, meeting spaces, classrooms, and offices. Additional open space improvements adjacent to the development and within the Central Plaza are part of the project.	228,000 GSF	Main Campus
N/A	**Morris Dailey Auditorium (025)** Interior renovations to the building would be conducted to modernize the facility.	10,358 GSF	Main Campus
N/A	**Tower Hall (072)** Interior renovations to the building would be conducted to modernize the facility.	7,857 GSF	Main Campus
N/A	**Stadium (117)** Renovation of Stadium would involve the replacement of existing stands on the west side of the stadium and access/circulation improvements around the stadium.	137,200 GSF	South Campus
N/A	**Tennis Complex Raised Bleachers (403)** New raised bleachers would be provided between the Softball Field and Tennis Courts to serve both programs.	2 acres	South Campus
N/A	**Simpkins Athletics Administration Building Parking Lot (132)** The existing parking lot would be reconfigured to allow for the consolidation and security of the SJSU vehicle fleet.	2 acres	South Campus
N/A	**Building M (016)** A new academic mixed-use building would be provided with classrooms, laboratory space, and meeting rooms.	200,000 GSF	South Campus
N/A	**Baseball Stadium (407)** The existing baseball stadium would be redeveloped in cooperation with the City of San José minor league team and would provide approximately 6,500 bleacher seats, a renovated field, and new concessions.	24,570 GSF	South Campus
N/A	**Golf Center (408)** A new Golf Center would be provided with a pro-shop, offices, locker rooms, and lounge areas along the southern edge of the existing golf facilities within South Campus.	11,500 GSF	South Campus
N/A	**Golf Hitting Bays (022)** New golf hitting bays for the Kinesiology department would be added along the northern edge of the existing golf facilities within South Campus.	6,840 GSF	South Campus

2.7 INTENDED USES OF THE EIR

Pursuant to CEQA Guidelines Section 15121, an EIR is an informational document used by a public agency to analyze and disclose the potential environmental effects resulting from a proposed project, to identify alternatives, and to disclose possible ways to reduce or avoid significant environmental effects. The CSU Board of Trustees is the lead agency responsible for certification of this EIR as adequate under CEQA and the related approval of the proposed

Campus Master Plan. This EIR could also be relied upon by state or federal responsible agencies with permitting or approval over any project-specific action to be implemented in connection with the proposed project.

This EIR provides both a program-level analysis of the Campus Master Plan and a project-level analysis of proposed near- and mid-term projects. The project-level analysis has been prepared for those projects that would be implemented within the foreseeable future (within the next 10 years) and for which enough detailed development information is available. As individual projects are proposed for implementation, each would be individually reviewed for consistency with the Campus Master Plan EIR and approved for implementation by the CSU Board of Trustees or its designee. Project changes, changes in a project's circumstances, or the potential for new or more severe impacts may require additional environmental review, as necessary. Any additional CEQA environmental review for these future projects would occur after the CSU Board of Trustees approval of the Campus Master Plan and certification of this EIR. As discussed in Section 2.6.8, identifying the individual development projects in this EIR allows for future streamlining such that implementation of future projects under the Campus Master Plan may qualify for preparation of a lower level of CEQA documentation (e.g., a categorical exemption or an addendum to this EIR) or a tiered analysis based on this EIR, as applicable.

2.8 ANTICIPATED PUBLIC APPROVALS

The CSU Board of Trustees is the lead agency for this EIR and has sole authority to consider and approve the Campus Master Plan, certify the EIR, and adopt the Mitigation Monitoring and Reporting Program, Findings of Fact, and Statement of Overriding Considerations (if required). Table 2-12 lists agencies from which permits or approval of certain aspects of a particular Campus Master Plan project may be required. This EIR, and any environmental analysis relying on this EIR, is expected to be used to satisfy CEQA requirements of the listed responsible and/or trustee agencies. Further, this analysis is anticipated to provide useful information for any federal agency that may issue a permit in support of Campus Master Plan development.

Table 2-12 Anticipated Permits and Approvals for Campus Master Plan Implementation

Agency	Permit/Approval
Lead Agency	
California State University Board of Trustees	▶ Approval and adoption of the Campus Master Plan ▶ Approval of conceptual plans, development agreements, and schematic plans for development partnerships ▶ Approval of schematic plans for future facilities and improvements ▶ EIR certification
Other Agencies	
California Department of Transportation	▶ Encroachment permits for any improvements within Caltrans right-of-way
Division of the State Architect	▶ Certification of access compliance
City of San José	▶ Encroachment permits for work within city streets and rights-of-way ▶ Building permits and inspections for off-campus properties that do not meet the criteria for SJSU permitting authority
Bay Area Air Quality Management District	▶ Air quality construction and operational permits for new/modified stationary sources
San Francisco Bay Regional Water Quality Control Board	▶ Stormwater discharge permits
Santa Clara County Department of Environmental Health	▶ Permitting related to commercial kitchens, food service facilities, and aquatic facilities
Santa Clara County Valley Transportation Authority	▶ Approval of any future regional bus service improvements

Appendix B:
SJSU Trip Generation Memorandum

FEHR PEERS

Memorandum

Date: September 25, 2023

To: Chris Shay, San José State University
Chris Mundhenk, Ascent Environmental

From: Garvit Goyal, Mark Soendjojo, Mackenzie Watten, and Daniel Rubins, Fehr & Peers

Subject: San José State University Campus Master Plan: Transportation Analysis – Existing Conditions Vehicle Trip Generation Methods

SJ23-2209

The vehicle trip generation approach and technical methods were tailored for the Project because of the size of the SJSU campus and the unique travel behavior of the Main Campus and South Campus under Existing Conditions. In establishing Existing Conditions tailored for the Project, the Project vehicle trip generation is based on observed Existing Conditions SJSU travel characteristics using a campus-specific vehicle trip generation rate expressed in vehicle trips per FTE. Specifically, the daily and peak hour vehicle trip generation rates for the Main Campus and South Campus were derived using StreetLight data and comparable college campuses, as there were no relevant 2019 counts that could be used. This memorandum summarizes the vehicle trip generation method for this project.

Summary of StreetLight Data Used

StreetLight is a Big Data source that uses location-based data (LBS) to estimate traffic behavior and vehicle trip generation. This high-quality volume data is derived from multiple days of observations (details noted later). Without this data source it would not have been possible to create a local trip generation estimate of either the SJSU Main Campus or South Campus. Two forms of StreetLight data were reviewed for this analysis:

- Standard StreetLight data: The standard StreetLight data pull that includes vehicle trips to or from pre-set geographies ("zones")
- Fehr & Peers VMT+: VMT+ uses the same data source as the standard StreetLight data pull, and includes additional information provided by StreetLight, including trip purpose and residence classification.

The standard StreetLight data was used to derive the vehicle trip generation rates from the traffic volumes, while the VMT+ device data was used to derive the resident vehicle trip rates from the trip purpose and residence classification to support calculation of the vehicle trip adjustments.

Data and Specifications

This section summarizes the specifications for the data extracted, and the data processing steps for the two analyses listed above.

Standard StreetLight data

- Analysis Zones: Trip information was extracted for all trips to or from the SJSU Main & South Campuses. The SJSU Campuses are defined as:
    - The SJSU Main Campus Analysis zone is bounded by the 4th Street to the west, 10th Street to the east, E San Fernando Street to the north, and E San Salvador Street to the south. The analysis zone also includes the North Parking Garage on 10th Street.
    - The SJSU South Campus Analysis Zone is bounded by 6th Street to the west, Senter Road to the east, E Humboldt Street to the north, and E Alma Avenue to the south.
- Days of Year: Spring Semester 2019 (January 22, 2019, to May 24, 2019)
- Days of Week: Core weekdays (Tuesday, Wednesday, and Thursday)
- Time Periods of Day: All Day (24 hours), AM Peak Hour (8:00 AM to 9:00 AM), PM Peak Hour (4:00 PM to 5:00 PM)
- Streetlight Output Type: Vehicle Trips (Streetlight all vehicles volume)

For each time period, the vehicle trip information is averaged across the days of week. Subsequently, the data was summarized to obtain trip information for trips to or from the SJSU Campuses (Main and South). The obtained trip information is used to estimate vehicle trip generation rates listed in **Table 1**.

Table 1: SJSU Campus Vehicle Trip Generation for Existing Conditions

			AM Peak Hour	AM Peak Hour	AM Peak Hour	PM Peak Hour	PM Peak Hour	PM Peak Hour
Location	**Campus Population[1] (FTE)**	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Main Campus[2]	30,194	41,100	2,460	740	3,200	1,150	2,080	3,230
South Campus[2]		2,220	100	50	150	60	90	150
Campus Trip Total		**43,320**	**2,560**	**790**	**3,350**	**1,210**	**2,170**	**3,380**
Vehicle Trip Generation Rates per Campus Population (Vehicle Trips / FTEs)								
Campus Vehicle Trip Rate	30,194	**1.43**	**0.08**	**0.03**	**0.11**	**0.04**	**0.07**	**0.11**

Notes:
1. Campus population is defined as full-time equivalent and includes students, faculty, and staff and uses the unit of FTEs.
2. Average mid-week (Tuesday to Thursday) vehicle trips between January 22, 2019, and May 24, 2019. The morning peak hour occurs from 8:00 to 9:00 AM, and the evening peak hour occurs from 4:00 to 5:00 PM.

Source: Fehr & Peers, 2023.

The vehicle trip rate derived in **Table 1** was used for calculating the project trip generation.

Fehr & Peers VMT+ Data

- Analysis Zones: Trip information was extracted for all trips to or from the SJSU Main & South Campuses. The SJSU Campuses are defined as:
    - The SJSU Main Campus Analysis zone is bounded by the 4th Street to the west, 10th Street to the east, E San Fernando Street to the north, and E San Salvador Street to the south. The analysis zone also includes the North Parking Garage on 10th Street.
    - The SJSU South Campus Analysis Zone is bounded by 7th Street to the east, Senter Road to the west, E Humboldt Street to the north, and E Alma Avenue to the south.
- Days of Year: March 1, 2019, to April 30, 2019
- Days of Week: All Days (Monday through Sunday)
- Time Periods of Day: All Day (24 hours)

VMT+ Data estimates average trip length and vehicle trips per day segmented by trip purpose and residence classification and was used to estimate vehicle trips per day for campus residents, workers, and visitors, as documented in **Table 2**.

Table 2: Vehicle Trips per Device per Day from VMT+

Residence Classification	Vehicle Trips per Device per Day
Resident[1]	1.19
Worker[2]	1.04
Visitor[3]	1.10

Notes:

1. A resident is defined as a device that spends most evenings and nights (defined as 7 pm to 8 am) in the zone of interest (Main Campus / South Campus).
2. A worker is defined as a device that spends the most time on weekdays (defined as 11 am to 4 pm Monday to Friday) in the zone of interest that is not home.
3. A visitor is defined as a device that goes to a zone of interest, but is neither a resident or worker.

Source: Fehr & Peers, 2023.

The vehicle trip rates in **Table 2** were used in the calculation of the vehicle trip adjustments, specifically for on campus students compared to commuter students. The standard StreetLight data was used to derive the overall vehicle trip generation rate based on the traffic volumes, whereas the VMT+ data was used to calculate the vehicle trip adjustments for on campus (resident) students and commuter (worker) students.

Appendix C:
Residential Vehicle Trip Generation Rate Comparison

Table C-1: Residential Vehicle Trip Generation Rate Comparison

		AM Peak Hour	AM Peak Hour	AM Peak Hour	PM Peak Hour	PM Peak Hour	PM Peak Hour
Land Use	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
StreetLight Residential Trip Generation Rates per DU (Vehicle Trips / DU)[2]							
StreetLight Residential Vehicle Trip Rates	6.71	0.19	0.25	0.44	0.30	0.29	0.59
Downtown San José Residential Trip Generation Rates per DU (Vehicle Trips / DU)							
Bo Town[4]	4.45	0.07	0.24	0.31	0.22	0.14	0.36
Fountain Alley[5]	4.45	0.07	0.24	0.31	0.22	0.14	0.36
ITE Residential Trip Generation Rates per DU (Vehicle Trips / DU)[6]							
ITE Code 220 (Multifamily Housing – Low-Rise, Not Close to Rail Transit, General Urban / Suburban) Trip Generation Rates	6.74	0.10	0.30	0.40	0.32	0.19	0.51
ITE Code 222 (Multifamily Housing – High-Rise, Not Close to Rail Transit, General Urban / Suburban) Trip Generation Rates	4.54	0.07	0.20	0.27	0.20	0.12	0.32
ITE Code 222 (Multifamily Housing – High-Rise, Close to Rail Transit, Center City Core) Trip Generation Rates	0.82	0.04	0.06	0.10	0.10	0.04	0.14
City of San José Travel Model Residential Trip Generation Rates per DU (Vehicle Trips / DU)[7]							
Model Trip Generation Rates	4.53	0.05	0.26	0.31	0.26	0.12	0.38

Notes:

1. Number of dwelling units.
2. Average mid-week (Tuesday to Thursday) vehicle trips between January 22. 2019 and May 24, 2019. The morning peak hour occurs from 8:00 to 9:00 AM, and the evening peak hour occurs from 4:00 to 5:00 PM.
3. Number of dwelling units taken from homes.com and corporatehousing.com
4. Trip rates based on data shown in Table 5 of the Bo Town Local Transportation Analysis (Fehr & Peers, 2022).
5. Trip rates based on data shown in Table 4 of the Fountain Alley Local Transportation Analysis (Fehr & Peers, 2022).
6. Trip rates taken from Institute of Transportation Engineers Trip Generation Manual, 11th Edition (2021), using the average rates for daily, AM and PM peak hour trips.
7. Trip rates taken from the City of San José Travel Model.

Source: Fehr & Peers, 2024.

Appendix D:
City of San José Travel Demand Model Validation

FEHR PEERS

Hexagon Transportation Consultants, Inc.

Draft Memorandum

Date: April 15, 2021
To: Agustin Cuello Leon, City of San Jose
From: At van den Hout
Subject: Summary of 2020 CSJ Model Update, 2015 Validation Results

Introduction

Hexagon Transportation Consultants, Inc., has completed the calibration and revalidation of the City of San Jose Travel Forecasting Model (CSJ model). The current CSJ model, which is a refinement of the VTA Bi-County Travel Forecasting Model (VTA model), was validated in 2017 against 2015 traffic counts and transit ridership data based on land use data from ABAG *Projections* 2013 (P'13). Travel forecasts developed for future years, were also based on ABAG's P'13 land use forecasts.

In January 2020, the VTA updated the 2015 land use and demographic data based on ABAG *Projections* 2017 (P'17). The 2015 land use data set was developed with input from the County's local jurisdictions, including the City of San Jose. The 2015 land use data set from ABAG P'13 and ABAG P'17 are significantly different for many areas of the region. ABAG's P'13 2015 land use assumptions were *forecasted* while ABAG's P'17 land uses for 2015 were based on actual data. In addition, the United States Census Bureau released the 2011-2015 journey to work data from the American Community Survey (ACS) while the MTC collected transit ridership data from household and transit on-board surveys and developed a comprehensive database of transit trips for each transit operator in the Bay Area Region. The Caltrans Household Travel Survey (CHTS) is the most recent data source for observed non-work trips.

The ABAG P'17 2015 land use data, the ACS, the CHTS and the MTC transit survey were used to recalibrate the CSJ workers per household and auto-ownership model, the home-based work and non-work trip distribution models, and the work and non-work mode choice models for the year 2015.

Land Use Update

As mentioned previously, VTA updated the land use data for the entire modeled area from ABAG's P'13 to ABAG's P'17. For counties outside of Santa Clara County, VTA directly applied the ABAG data without making any adjustments. For areas within Santa Clara County, VTA allocated ABAG's 2015 base year land uses of population, housing, employed residents, and jobs by industry type from the larger MTC traffic analysis zones (TAZs) to the smaller TAZs in the VTA model (there are a total of 1,490 TAZs inside Santa Clara County). Household and population data were allocated based on Census data. Employment data were allocated based on a myriad of information sources, including the California Employment Development Department and ESRI Business Location Data. VTA worked with local jurisdictions to ensure the allocation of jobs and households represented base year 2015 conditions. Since the CSJ model has a finer grained zone system in the San Jose West Urban Village area, VTA's TAZ land use data was further disaggregated to these smaller zones. To maintain consistency with the regional projections, the countywide total number of households and jobs were kept within the margins of errors allowed by ABAG.

Table 1 presents a summary of the number of housing units, population, employed residents and jobs for each City in Sana Clara County.

Table 1
2015 Land Use Data Santa Clara County Cities

City	Households	Population	Employed Residents	Jobs
Campbell	13,110	31,910	18,520	25,380
Cupertino	18,710	54,510	25,960	34,520
Gilroy	17,820	61,760	28,810	23,800
Los Altos	12,960	35,550	17,860	17,060
Los Altos Hills	3,070	15,030	4,790	2,140
Los Gatos	13,390	32,980	18,090	17,600
Milpitas	25,820	86,500	41,290	47,070
Monte Sereno	980	2,730	1,260	560
Morgan Hill	15,020	46,660	23,620	15,960
Mountain View	33,780	78,840	46,830	93,780
Palo Alto	31,030	85,640	42,130	118,180
San Jose	321,160	1,016,090	519,750	418,720
Santa Clara	45,000	126,050	66,020	130,970
Saratoga	10,600	29,850	15,010	2,600
Sunnyvale	60,050	158,210	86,430	87,050
Rest	4,650	14,080	7,600	5,110
County	**627,150**	**1,876,390**	**963,970**	**1,040,500**

In addition, upon review of VTA's 2015 land use data, minor changes were made to some of the socio-economic and demographic data at several TAZ's in San Jose, including updates to the university enrollment numbers to reflect the on campus student population at the major universities.

Model Calibration

Model calibration refers to estimating and adjusting the model parameters for each model step (auto ownership, trip generation, trip distribution, mode choice) based on household survey data and other data sources. During calibration, adjustments are made to parameters such as auto ownership, trip generation Rates, distribution factors and modal choice constants to match observed data more closely.

Workers and Vehicles Per Household Model Calibration

Important inputs to the trip generation and mode choice models include the number of workers per household and the number of vehicles owned by households, both of which are estimated by the "workers and vehicles per household model". With the new 2015 socio-economic data, the workers and vehicles per household model was recalibrated using data from the 2017 ACS. Tables 2.1 through 2.5 show the observed and modeled vehicles by the number households and auto ownership. The output from the model closely resembles the observed workers and auto ownership characteristics at the county level.

Table 2.1
2015 Observed Workers and Vehicles by Household

County	Households with zero workers and			Households with one worker and			Households with two workers and		
	0 autos	1 auto	2+ autos	0 autos	1 auto	2+ autos	0 autos	1 auto	2+ autos
San Francisco	43,373	29,842	8,904	43,811	68,780	27,014	22,075	48,265	66,708
San Mateo	7,689	23,499	19,562	3,891	41,820	49,682	2,322	12,639	100,692
Santa Clara	19,103	51,836	47,936	8,582	98,996	133,017	4,238	23,045	243,698
Alameda	31,935	56,845	52,047	17,053	96,471	99,666	6,661	30,746	177,646
Contra Costa	14,338	40,486	37,846	5,500	54,055	85,524	2,031	12,998	136,819
Solano	5,372	16,474	15,819	1,968	19,704	32,594	709	3,975	50,737
Napa	1,717	5,762	5,093	509	6,374	9,587	282	1,445	18,275
Sonoma	6,220	25,811	19,458	2,052	28,076	38,897	970	5,054	63,520
Marin	3,454	13,081	10,812	1,254	18,208	22,265	463	3,466	31,843
Total	**133,201**	**263,636**	**217,477**	**84,620**	**432,484**	**498,246**	**39,751**	**141,633**	**889,938**

Table 2.2
2015 Modeled Workers and Vehicles by Household

County	Households with zero workers and			Households with one worker and			Households with two workers and		
	0 autos	1 auto	2+ autos	0 autos	1 auto	2+ autos	0 autos	1 auto	2+ autos
San Francisco	45,856	30,350	9,018	44,292	68,092	26,570	21,769	46,615	64,209
San Mateo	7,703	23,880	19,896	4,027	43,794	55,067	2,433	10,784	93,201
Santa Clara	19,049	52,222	48,952	8,208	95,815	130,739	4,020	22,112	237,515
Alameda	33,184	57,309	52,057	17,310	95,913	98,441	6,718	30,260	172,968
Contra Costa	14,848	41,558	38,670	5,523	53,687	84,529	2,030	12,780	133,882
Solano	5,348	16,376	15,724	1,936	19,460	32,220	695	3,888	49,594
Napa	1,810	6,058	5,326	514	6,442	9,622	279	1,426	17,916
Sonoma	6,377	26,452	19,948	2,036	27,828	38,473	951	4,944	62,004
Marin	3,587	13,710	11,387	1,253	18,205	22,334	437	3,258	30,215
Total	**137,762**	**267,915**	**220,978**	**85,099**	**429,236**	**497,995**	**39,332**	**136,067**	**861,504**

Table 2.3
2015 Observed Workers and Vehicles by Household [Percentages]

County	Households with zero workers and			Households with one worker and			Households with two workers and		
	0 autos	1 auto	2+ autos	0 autos	1 auto	2+ autos	0 autos	1 auto	2+ autos
San Francisco	12%	8%	2%	12%	19%	8%	6%	13%	19%
San Mateo	3%	9%	7%	1%	16%	19%	1%	5%	38%
Santa Clara	3%	8%	8%	1%	16%	21%	1%	4%	39%
Alameda	6%	10%	9%	3%	17%	18%	1%	5%	31%
Contra Costa	4%	10%	10%	1%	14%	22%	1%	3%	35%
Solano	4%	11%	11%	1%	13%	22%	0%	3%	34%
Napa	4%	12%	10%	1%	13%	20%	1%	3%	37%
Sonoma	3%	14%	10%	1%	15%	20%	1%	3%	33%
Marin	3%	12%	10%	1%	17%	21%	0%	3%	30%

Table 2.4
2015 Modeled Workers and Vehicles by Household [Percentages]

County	Households with zero workers and			Households with one worker and			Households with two workers and		
	0 autos	1 auto	2+ autos	0 autos	1 auto	2+ autos	0 autos	1 auto	2+ autos
San Francisco	13%	9%	3%	12%	19%	7%	6%	13%	18%
San Mateo	3%	9%	8%	2%	17%	21%	1%	4%	36%
Santa Clara	3%	8%	8%	1%	15%	21%	1%	4%	38%
Alameda	6%	10%	9%	3%	17%	17%	1%	5%	31%
Contra Costa	4%	11%	10%	1%	14%	22%	1%	3%	35%
Solano	4%	11%	11%	1%	13%	22%	0%	3%	34%
Napa	4%	12%	11%	1%	13%	19%	1%	3%	36%
Sonoma	3%	14%	11%	1%	15%	20%	1%	3%	33%
Marin	3%	13%	11%	1%	17%	21%	0%	3%	29%

Table 2.5
2015 Percent Modeled – Percent Observed Workers and Vehicles by Household

	Households with zero workers and			Households with one worker and			Households with two workers and		
	0 autos	1 auto	2+ autos	0 autos	1 auto	2+ autos	0 autos	1 auto	2+ autos
San Francisco	0.8%	0.2%	0.0%	0.2%	-0.1%	-0.1%	-0.1%	-0.4%	-0.6%
San Mateo	0.0%	0.2%	0.2%	0.1%	0.8%	2.1%	0.0%	-0.7%	-2.7%
Santa Clara	0.0%	0.2%	0.3%	0.0%	-0.2%	0.0%	0.0%	-0.1%	-0.3%
Alameda	0.3%	0.2%	0.1%	0.1%	0.0%	-0.1%	0.0%	0.0%	-0.6%
Contra Costa	0.2%	0.3%	0.3%	0.0%	0.0%	-0.1%	0.0%	0.0%	-0.6%
Solano	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	-0.3%
Napa	0.2%	0.5%	0.4%	0.0%	0.0%	-0.1%	0.0%	-0.1%	-1.0%
Sonoma	0.1%	0.4%	0.3%	0.0%	0.0%	-0.1%	0.0%	0.0%	-0.6%
Marin	0.1%	0.7%	0.6%	0.0%	0.1%	0.2%	0.0%	-0.2%	-1.4%

Trip Generation Models

No changes were made to VTA's trip generation models.

Trip Distribution Model Calibration

The trip distribution model connects the trip ends estimated by the trip generation process. The trip distribution models of the CSJ model were recalibrated by trip purpose. The home-based work trip distribution model was recalibrated against targets developed from the ACS 2013-2017 journey to work data, which reports the flow of workers in the Bay Area. The ACS represents the best available data for home-based work trip calibration. The ACS data was summarized at the 34-super district level for the nine Bay Area counties. The home-based work trip distribution model calibration was performed by applying k-factor adjustments to match the observed commuter flows.

Tables 3.1 and 3.2 show the observed and modeled county-to-county home-based work trips for 2015. Table 3.3 presents the ratio of modeled to observed trips. A value less than one in Table 3.3 means that the model is under-estimating trips for a given interchange. On the other hand, a value greater than one indicates that the model is over-estimating trips for a given interchange. The blank cells are county pairs with relatively low travel activity (fewer than 5,000 daily home-based work person trips, or about 0.08% of all the trips in the region) and it would not be meaningful to assess the model's performance based on those pairs.

Table 3.1
2015 Observed Home-Based Work Person Distribution

County	San Francisco	San Mateo	Santa Clara	Alameda	Contra Costa	Solano	Napa	Sonoma	Marin	Santa Cruz	Monterey	San Benito	San Joaquin	Total
San Francisco	544,190	78,640	45,570	41,420	8,620	1,690	620	2,980	15,700	340	570	10	60	**740,410**
San Mateo	126,280	343,750	97,980	25,690	4,360	750	320	500	2,300	2,330	700	90	130	**605,180**
Santa Clara	22,710	72,500	1,261,230	76,210	6,320	520	160	1,520	790	11,240	8,020	3,600	310	**1,465,130**
Alameda	133,760	54,480	114,890	819,750	73,830	4,230	670	2,800	9,910	3,080	1,800	260	6,610	**1,226,070**
Contra Costa	74,570	14,850	18,020	154,910	495,190	17,080	3,300	2,960	17,950	390	1,160	100	6,420	**806,900**
Solano	10,310	2,250	1,880	12,620	28,110	208,270	20,590	6,180	8,620	60	210	10	2,480	**301,590**
Napa	1,670	620	520	1,300	2,680	7,750	86,050	5,440	2,030	30	40	10	80	**108,220**
Sonoma	5,480	850	1,010	2,290	1,090	1,290	5,600	343,210	21,430	250	90	60	50	**382,700**
Marin	32,770	2,870	1,450	5,650	3,120	870	900	10,280	144,200	60	320	10	30	**202,530**
Santa Cruz	290	1,830	26,170	2,080	350	60	90	230	90	151,890	11,320	1,580	10	**195,990**
Monterey	90	260	6,900	630	140	30	210	120	50	13,010	262,560	2,470	20	**286,490**
San Benito	30	70	13,820	190	70	0	60	40	160	1,680	4,800	18,570	10	**39,500**
San Joaquin	1,980	2,430	10,190	39,160	8,720	1,370	180	190	170	100	150	20	333,950	**398,610**
Total	**954,130**	**575,400**	**1,599,630**	**1,181,900**	**632,600**	**243,910**	**118,750**	**376,450**	**223,400**	**184,460**	**291,740**	**26,790**	**350,160**	**6,759,320**

Table 3.2
2015 Modeled Home-Based Work Person Distribution

County	San Francisco	San Mateo	Santa Clara	Alameda	Contra Costa	Solano	Napa	Sonoma	Marin	Santa Cruz	Monterey	San Benito	San Joaquin	Total
San Francisco	546,040	80,110	44,570	41,480	7,890	830	240	2,820	15,740	210	440	10	10	**740,390**
San Mateo	126,660	343,870	98,750	26,010	3,810	360	70	310	2,330	2,340	640	20	30	**605,200**
Santa Clara	23,300	72,310	1,262,670	76,400	5,870	300	120	530	930	11,160	7,650	3,810	110	**1,465,160**
Alameda	133,020	53,800	114,750	823,960	75,450	4,360	1,110	2,910	10,060	3,000	1,740	160	1,780	**1,226,100**
Contra Costa	72,750	14,290	17,920	153,920	496,530	17,530	4,190	3,250	18,430	370	1,150	110	6,470	**806,910**
Solano	9,980	2,110	2,210	12,290	27,700	209,300	20,580	6,420	8,410	240	570	90	1,670	**301,570**
Napa	1,460	490	650	1,400	2,850	7,760	85,670	5,500	1,950	50	380	20	50	**108,230**
Sonoma	5,170	920	1,510	2,230	860	1,160	5,460	342,850	20,750	220	1,390	70	100	**382,690**
Marin	32,080	2,800	1,370	5,960	3,280	960	860	10,860	144,070	20	230	10	10	**202,510**
Santa Cruz	540	1,840	26,470	2,130	240	10	30	70	60	152,540	11,130	940	10	**196,010**
Monterey	1,190	570	6,620	670	140	40	170	260	180	12,560	261,590	2,510	10	**286,510**
San Benito	230	230	13,360	210	30	10	20	50	40	1,620	4,690	19,010	0	**39,500**
San Joaquin	1,730	2,060	8,790	35,260	7,950	1,290	230	640	470	130	140	40	339,900	**398,630**
Total	**954,150**	**575,400**	**1,599,640**	**1,181,920**	**632,600**	**243,910**	**118,750**	**376,470**	**223,420**	**184,460**	**291,740**	**26,800**	**350,150**	**6,759,410**

Table 3.3
2015 Home-Based Work Person Trips: Modeled / Observed [Observed Trips > 5,000]

County	San Francisco	San Mateo	Santa Clara	Alameda	Contra Costa	Solano	Napa	Sonoma	Marin	Santa Cruz	Monterey	San Benito	San Joaquin
San Francisco	1.00	1.02	0.98	1.00	0.92				1.00				
San Mateo	1.00	1.00	1.01	1.01									
Santa Clara	1.03	1.00	1.00	1.00	0.93					0.99	0.95		
Alameda	0.99	0.99	1.00	1.01	1.02				1.02				0.27
Contra Costa	0.98	0.96	0.99	0.99	1.00	1.03			1.03				1.01
Solano	0.97			0.97	0.99	1.00	1.00	1.04	0.98				
Napa						1.00	1.00	1.01					
Sonoma	0.94						0.98	1.00	0.97				
Marin	0.98			1.05				1.06	1.00				
Santa Cruz			1.01							1.00	0.98		
Monterey			0.96							0.97	1.00		
San Benito			0.97									1.02	
San Joaquin			0.86	0.90	0.91								1.02

For trips not related to work, the dataset collected in 2013 CHTS served as the calibration targets, as it contains the most comprehensive data for non-work trips in the region. Table 3.4 and Table 3.5 present the 2015 observed and modeled county-to-county person trips for the non-work trip purposes, respectively, while Table 3.6 shows the ratio of modeled trips to observed trips.

Table 3.4
2015 Observed Non-Work Person Trip Distribution

County	San Francisco	San Mateo	Santa Clara	Alameda	Contra Costa	Solano	Napa	Sonoma	Marin	Santa Cruz	Monterey	San Benito	San Joaquin	Total
San Francisco	1,663,740	96,440	27,180	45,360	20,610	2,540	250	3,730	16,690	630	40	0	220	1,877,430
San Mateo	141,150	1,537,080	161,390	16,440	2,010	1,480	30	140	1,440	4,150	110	40	200	1,865,660
Santa Clara	13,030	88,320	4,106,160	28,340	1,390	340	250	390	30	39,870	5,700	2,320	570	4,286,710
Alameda	95,310	62,870	153,010	2,531,840	78,280	5,570	1,850	400	1,890	13,690	140	70	2,670	2,947,590
Contra Costa	53,350	8,480	19,830	184,250	1,698,510	15,860	4,520	1,450	9,570	1,550	90	0	22,960	2,020,420
Solano	5,520	1,210	6,130	9,520	23,900	675,060	10,250	3,070	2,330	1,350	570	0	11,220	750,130
Napa	4,780	660	2,680	2,110	1,820	9,210	264,460	3,900	1,900	880	370	0	70	292,840
Sonoma	15,930	4,630	11,150	4,900	1,920	6,950	5,890	882,220	12,720	1,460	610	0	0	948,380
Marin	45,170	1,650	2,350	7,340	4,100	2,150	4,000	12,550	469,150	1,480	630	0	20	550,590
Santa Cruz	60	570	18,340	460	50	0	0	0	0	605,760	5,340	210	0	630,790
Monterey	200	20	11,420	270	30	0	0	10	0	28,090	878,680	14,850	0	933,570
San Benito	40	10	12,060	80	10	0	0	0	0	3,340	20,800	83,960	0	120,300
San Joaquin	90	1,810	22,280	6,900	1,540	170	10	0	0	0	0	0	1,214,340	1,247,140
Total	2,038,370	1,803,750	4,553,980	2,837,810	1,834,170	719,330	291,510	907,860	515,720	702,250	913,080	101,450	1,252,270	18,471,550

Table 3.5
2015 Modeled Non-Work Person Trip Distribution

County	San Francisco	San Mateo	Santa Clara	Alameda	Contra Costa	Solano	Napa	Sonoma	Marin	Santa Cruz	Monterey	San Benito	San Joaquin	Total
San Francisco	1,645,790	107,430	28,440	49,980	22,060	1,570	370	3,390	16,790	810	60	0	260	1,876,950
San Mateo	148,460	1,512,740	175,760	17,930	2,330	330	110	220	2,080	4,770	90	120	250	1,865,190
Santa Clara	14,730	96,630	4,089,200	30,880	2,540	240	40	10	630	40,970	6,250	2,360	520	4,285,000
Alameda	98,480	64,480	162,930	2,507,870	83,510	6,570	1,640	920	4,150	13,230	200	140	2,680	2,946,800
Contra Costa	55,160	10,610	20,050	190,960	1,682,540	17,470	7,200	1,290	9,630	1,090	160	0	24,090	2,020,250
Solano	5,770	1,470	5,880	13,280	26,410	672,430	9,400	2,930	3,190	1,460	580	0	7,360	750,160
Napa	3,700	300	1,370	4,060	3,240	11,970	260,560	4,850	1,560	880	350	0	60	292,900
Sonoma	17,720	4,540	3,050	6,010	3,910	6,010	9,030	883,580	12,820	1,430	570	0	20	948,690
Marin	48,100	2,900	3,700	8,070	5,140	2,500	3,160	10,590	464,840	1,070	490	0	70	550,630
Santa Cruz	90	1,330	18,610	150	10	0	0	0	0	604,420	5,550	190	0	630,350
Monterey	200	60	11,570	270	30	0	0	30	10	28,850	881,990	8,910	10	931,930
San Benito	20	40	11,100	80	10	0	0	10	0	2,630	16,490	89,740	0	120,120
San Joaquin	160	1,230	22,320	8,260	2,440	250	20	60	40	660	300	0	1,216,950	1,252,690
Total	2,038,380	1,803,760	4,553,980	2,837,800	1,834,170	719,340	291,530	907,880	515,740	702,270	913,080	101,460	1,252,270	18,471,660

Table 3.6
2015 Non-Work Person Trips: Modeled / Observed [Observed Trips > 5,000]

County	San Francisco	San Mateo	Santa Clara	Alameda	Contra Costa	Solano	Napa	Sonoma	Marin	Santa Cruz	Monterey	San Benito	San Joaquin
San Francisco	0.99	1.11	1.05	1.10	1.07				1.01				
San Mateo	1.05	0.98	1.09	1.09									
Santa Clara	1.13	1.09	1.00	1.09						1.03	1.10		
Alameda	1.03	1.03	1.06	0.99	1.07	1.18				0.97			
Contra Costa	1.03	1.25	1.01	1.04	0.99	1.10			1.01				1.05
Solano	1.05		0.96	1.39	1.11	1.00	0.92						0.66
Napa						1.30	0.99						
Sonoma	1.11		0.27			0.86	1.53	1.00	1.01				
Marin	1.06			1.10				0.84	0.99				
Santa Cruz			1.01							1.00	1.04		
Monterey			1.01							1.03	1.00	0.60	
San Benito			0.92								0.79	1.07	
San Joaquin			1.00	1.20									1.00

For both work and non-work trip purposes, there is relatively close agreement between the modeled and observed county-to-county flows, particularly for interchanges in the primary nine-county area between Santa Clara County and other counties.

Mode Choice Model Calibration

The home-based work and non-work mode choice models were recalibrated based calibration targets (observed trips) derived from MTC's regional transit on-board and household surveys conducted mostly between 2013 and 2017. Mode choice calibration involved adjusting the modal constants for each mode of travel and trip purpose. A comparison of the observed and modeled home-based work and non-work trips (which includes the educational trips) is presented in Table 4.1

Table 4.1
2015 Observed and Modeled Regional Home-Based Work and Non-Work Trips by Mode

Mode	Home Based Work		Non Work		Total		Modeled - Observed			
	Observed	Modeled	Observed	Modeled	Observed	Modeled	Home Based Work	Non Work	Total	Error
Drive Alone	4,086,900	4,087,400	7,959,600	7,962,900	12,046,500	12,050,300	500	3,300	3,800	0.03%
SR 2	585,000	584,300	2,440,000	2,440,400	3,025,000	3,024,700	-700	400	-300	-0.01%
SR 3+ /passenger	202,600	202,200	3,831,900	3,828,100	4,034,500	4,030,300	-400	-3,800	-4,200	-0.10%
Walk	195,300	195,400	1,998,300	2,004,000	2,193,600	2,199,400	100	5,700	5,800	0.26%
Bike	64,300	64,400	280,400	279,900	344,700	344,300	100	-500	-400	-0.12%
Transit	673,200	673,500	541,200	536,400	1,214,400	1,209,800	300	-4,900	-4,600	-0.38%
BART	282,900	282,200	98,900	96,000	381,800	378,200	-700	-2,900	-3,600	-0.94%
Commuter Rail	44,200	44,100	9,400	9,500	53,600	53,600	-100	100	0	0.00%
LRT	82,000	82,700	80,700	80,200	162,700	162,900	700	-500	200	0.12%
Express Bus	22,400	22,200	6,000	5,700	28,400	27,900	-200	-300	-500	-1.76%
Local Bus	234,600	235,200	345,200	344,400	579,800	579,600	600	-800	-200	-0.03%
Ferry	7,100	7,100	1,000	500	8,100	7,600	0	-500	-500	-6.17%
All Modes	**5,807,400**	**5,807,200**	**17,051,400**	**17,051,800**	**22,858,800**	**22,859,000**	**-200**	**400**	**200**	**0.00%**

Overall, the CSJ model matches the observed conditions very well. With the exception of Express Bus and Ferry, the modeled trips are all within one percent of observed trips.

Model Validation

Model validation refers to comparing the model outputs (traffic or transit volumes) to observed conditions (traffic or transit ridership counts). During validation, adjustments are primarily made to model inputs, such as the roadway network, peak-hour trip tables and base year land uses, rather than calibrated parameters such as trip generation rates or distribution factors.

Highway and Transit Model Validation Process

Model validation is the process of adjusting parameters until the model closely matches observed travel patterns and demand. Validation involves testing the model's predictive capabilities (ability to replicate observed conditions, within reason) before it is used to produce forecasts. The modeled outputs and observed travel data are compared, and the model's parameters are adjusted until the outputs fall within an acceptable range of error. Validation tests compare the model's base year peak-hour traffic forecasts and daily transit ridership projections to peak-hour traffic counts and observed transit boardings using statistical measures and threshold criteria. During the validation process, adjustments were made to the regional peak hour factors, to centroid connectors that load traffic from the zones onto the network, and to the coding of the capacity and speeds of roadway facilities to better reflect their travel characteristics.

Network Updates

As part of the model validation process additional refinements were made to the 2015 highway and transit networks, which are listed below.

- Corrections were made to the number of lanes, capacity, and speed coding to more accurately represent the characteristics of the roadway system in the larger San Jose area.
- Headways and travel time factors of several VTA bus routes were updated based data from the latest VTA model
- VTA light rail travel speeds were updated.
- More refined coding of ACE and Caltrain service and mode of access at the Santa Clara and San Jose Rail Stations.

Peak-Hour Highway Model Validation

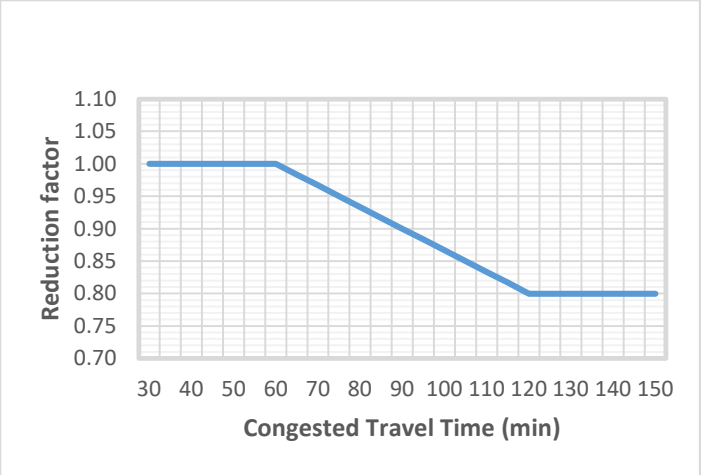
The CSJ model was validated against commonly used validation targets, recommended by the Federal Highway Administration (FHWA), the California Department of Transportation (Caltrans) and other agencies. Listed below are types of validation test that were performed to assess the accuracy of the model's peak hour highway assignments by comparing the model outputs with observed traffic counts.

1. **Facility Type**: The volumes on roadway links for which counts are available should be within x percent of the counts, where the value of x varies by facility type.
2. **Maximum Desirable Deviation Screenlines**: The FHWA suggests that at least 75 percent of the screenline volumes should be within the maximum desirable deviation, which ranges from approximately 17 to 64 percent depending on total screenline volume (the larger the volume, the less deviation is permitted).
3. **Maximum Desirable Deviation Roadways**: The FHWA suggests that at least 75 percent of the roadway links for which counts are available should be within the maximum desirable deviation, which ranges from approximately 15 to 68 percent depending on total roadway volume (the higher the volume, the less deviation is permitted).
4. **Coefficient of Determination**: The coefficient of determination (R^2) should be greater than 0.77
5. **Correlation Coefficient**: The correlation coefficient between the actual ground counts and the modeled traffic volumes should be greater than 88 percent.
6. **Root Mean Square Error**: The Root Mean Square Error (RMSE) should not exceed 40 percent.
7. **Intersection Turning Movements**:
    a. 50% of all intersection major turning movements must be within 20% of traffic counts.
    b. 30% of all intersection secondary turning movements must be within 20% of traffic counts.

    A major turning movement is defined as over 1,000 vehicles per hour, and a secondary turning movement is defined as 500-1,000 vehicles per hour.

During model validation, it appeared that the CSJ model overestimated traffic on some facilities and underestimated traffic on other facilities. Overestimated traffic is often the result of assigning long distance regional trips. These long distance trips in congested corridors would result in people shifting their trip to the shoulder hours of the peak. In the model, this phenomenon of "peak-spreading" is dealt with in two ways: (1) by adjusting the peak-hour (diurnal) factors between geographical areas and (2) by applying factors to account for peak-spreading when highway congestion levels become unreasonable due to the application of constant peak-hour factors to both the validation and forecasts year.

This peak-spreading process applies reduction factors for trip interchanges that (a) are very long and (b) experience significant congestion. The rational for applying these peak-spreading factors is that the long trips through congested corridors cannot be made within the peak hour. A portion of the trips would shift to the shoulder hours when the congestion levels increase. Reduction factors were applied to AM and PM peak-hour trips for those zone pairs where the congested travel time is at least 60 minutes. The factor is capped at 0.80



Reduction Factor = MAX (0.80, 1.20+(0.80-1)/(2-1)(Congested Travel Time/60))*

Although these reduction factors were not derived from empirical data, the rational is not much different from applying different diurnal factors to trip tables between counties or super districts during the validation process, except that this procedure is a function of the level of congestion, which increases in the forecast years, and therefore result in more reasonable forecasts.

Peak Hour Model Validation Results

Summary tables and a narrative of the peak-hour highway model validation tests are presented below.

1. Validation by Facility Type

The Federal Highway Administration and Caltrans recommend error limits for total error by functional classification or type of road. Table 5.1 presents the CSJ model validation relative to 2015 traffic counts by facility type. The tables show that all validation targets were met or exceeded.

Table 5.1
Highway Validation by Facility Type

Facility Type	AM Peak Hour					PM Peak Hour				
	Traffic Count	Model Volume	Count	Target	Target Met?	Traffic Count	Model Volume	Count	Target	Target Met?
Freeways	233,645	235,646	1%	+/- 7%	Yes	255,343	251,482	-2%	+/- 7%	Yes
Arterials	1,830,145	1,820,869	-1%	+/- 10%	Yes	1,943,966	1,924,561	-1%	+/- 10%	Yes
Collectors	76,518	64,553	-16%	+/- 25%	Yes	84,922	68,916	-19%	+/- 25%	Yes
Ramps	60,831	62,996	4%	+/- 25%	Yes	60,664	65,959	9%	+/- 25%	Yes
All Facilities	**2,201,139**	**2,184,064**	**-1%**	**+/-5%**	**Yes**	**2,344,895**	**2,310,918**	**-1%**	**+/-5%**	**Yes**

2. Screenline Validation

Screenlines are imaginary lines, often along natural or man-made physical barriers (e.g., rivers, railroad tracks) that have a limited number of crossings. Screenlines should “cut” the entire study area, intercepting all travel across them, thereby eliminating issues about individual route choice. Use of a system of

screenlines allows systematic comparison of total model estimated versus observed travel in different parts of the modeled area. However, they do not ensure that traffic is being assigned to the correct routes across each screenline. The modeled area of the CSJ model includes 21 screenlines - see Figure 1. Table 5.2 shows that the targets at 40 of the 42 (or 95%) screenlines are met in both the AM and the PM peak hours.

Table 5.2
Highway Validation at Screenlines

Northbound/Westbound										
	AM Peak Hour					PM Peak Hour				
Screen Line #	Count	Model	Acceptable Deviation	Modeled Deviation	Target Met?	Count	Model	Acceptable Deviation	Modeled Deviation	Target Met?
A - A	5,706	4,883	36%	14%	YES	3,783	3,574	41%	6%	YES
B - B	6,360	6,725	35%	6%	YES	3,532	2,928	41%	17%	YES
C - C	5,287	6,041	37%	14%	YES	3,267	2,698	42%	17%	YES
D - D	3,286	3,809	42%	16%	YES	2,428	3,005	45%	24%	YES
E - E	4,692	6,029	38%	28%	YES	3,964	3,312	40%	16%	YES
F - F	6,726	6,681	34%	1%	YES	3,877	3,267	40%	16%	YES
G - G	7,556	7,882	33%	4%	YES	4,979	4,110	38%	17%	YES
H- H	3,788	4,352	40%	15%	YES	2,547	3,571	45%	40%	YES
I - I	6,203	7,612	35%	23%	YES	5,001	6,233	37%	25%	YES
J - J	4,455	5,498	39%	23%	YES	1,413	2,475	51%	75%	NO
K - K	6,166	6,603	35%	7%	YES	4,047	3,715	40%	8%	YES
L - L	2,030	2,015	47%	1%	YES	2,596	2,461	45%	5%	YES
M - M	4,289	4,679	39%	9%	YES	2,297	2,010	46%	12%	YES
N - N	3,340	3,981	42%	19%	YES	1,519	1,719	50%	13%	YES
O - O	5,500	5,617	36%	2%	YES	2,870	2,690	44%	6%	YES
P - P	7,491	7,201	33%	4%	YES	3,721	1,850	41%	50%	NO
Q - Q	7,515	8,963	33%	19%	YES	5,008	5,741	37%	15%	YES
R - R	5,402	5,524	37%	2%	YES	2,674	1,529	44%	43%	YES
S - S	2,474	4,042	45%	63%	NO	3,593	2,709	41%	25%	YES
T - T	4,977	4,730	38%	5%	YES	3,505	2,306	41%	34%	YES
U - U	1,910	1,445	48%	24%	YES	1,998	1,331	47%	33%	YES
TOTAL	**105,153**	**114,312**		**9%**		**68,619**	**63,234**		**8%**	

Southbound/Eastbound										
	AM Peak Hour					PM Peak Hour				
	Count	Model	Acceptable Deviation	Modeled Deviation	Target Met?	Count	Model	Acceptable Deviation	Modeled Deviation	Target Met?
A - A	3,177	2,912	42%	8%	YES	5,447	4,918	37%	10%	YES
B - B	3,225	2,234	42%	31%	YES	5,748	6,226	36%	8%	YES
C - C	2,306	2,092	46%	9%	YES	3,868	5,288	40%	37%	YES
D - D	2,588	2,211	45%	15%	YES	3,082	3,638	43%	18%	YES
E - E	2,737	2,296	44%	16%	YES	4,886	5,503	38%	13%	YES
F - F	2,688	2,307	44%	14%	YES	5,966	6,286	36%	5%	YES
G - G	4,921	3,398	38%	31%	YES	7,433	7,851	33%	6%	YES
H- H	2,427	2,713	45%	12%	YES	4,229	4,003	39%	5%	YES
I - I	3,645	4,566	41%	25%	YES	5,889	7,682	36%	30%	YES
J - J	1,320	1,584	52%	20%	YES	4,597	4,804	38%	5%	YES
K - K	3,123	2,391	43%	23%	YES	6,841	6,287	34%	8%	YES
L - L	2,434	2,076	45%	15%	YES	2,712	2,863	44%	6%	YES
M - M	2,479	1,873	45%	24%	YES	4,522	5,116	39%	13%	YES
N - N	1,268	1,587	52%	25%	YES	3,327	4,154	42%	25%	YES
O - O	2,442	1,709	45%	30%	YES	5,292	5,225	37%	1%	YES
P - P	3,000	1,429	43%	52%	NO	6,312	6,546	35%	4%	YES
Q - Q	4,325	4,385	39%	1%	YES	7,162	8,516	34%	19%	YES
R - R	1,846	1,255	48%	32%	YES	4,361	5,205	39%	19%	YES
S - S	2,103	2,046	47%	3%	YES	3,904	3,996	40%	2%	YES
T - T	3,116	1,865	43%	40%	YES	4,317	4,586	39%	6%	YES
U - U	2,229	1,795	46%	19%	YES	2,363	2,434	46%	3%	YES
	57,399	**48,724**		**15%**		**102,258**	**111,127**		**9%**	

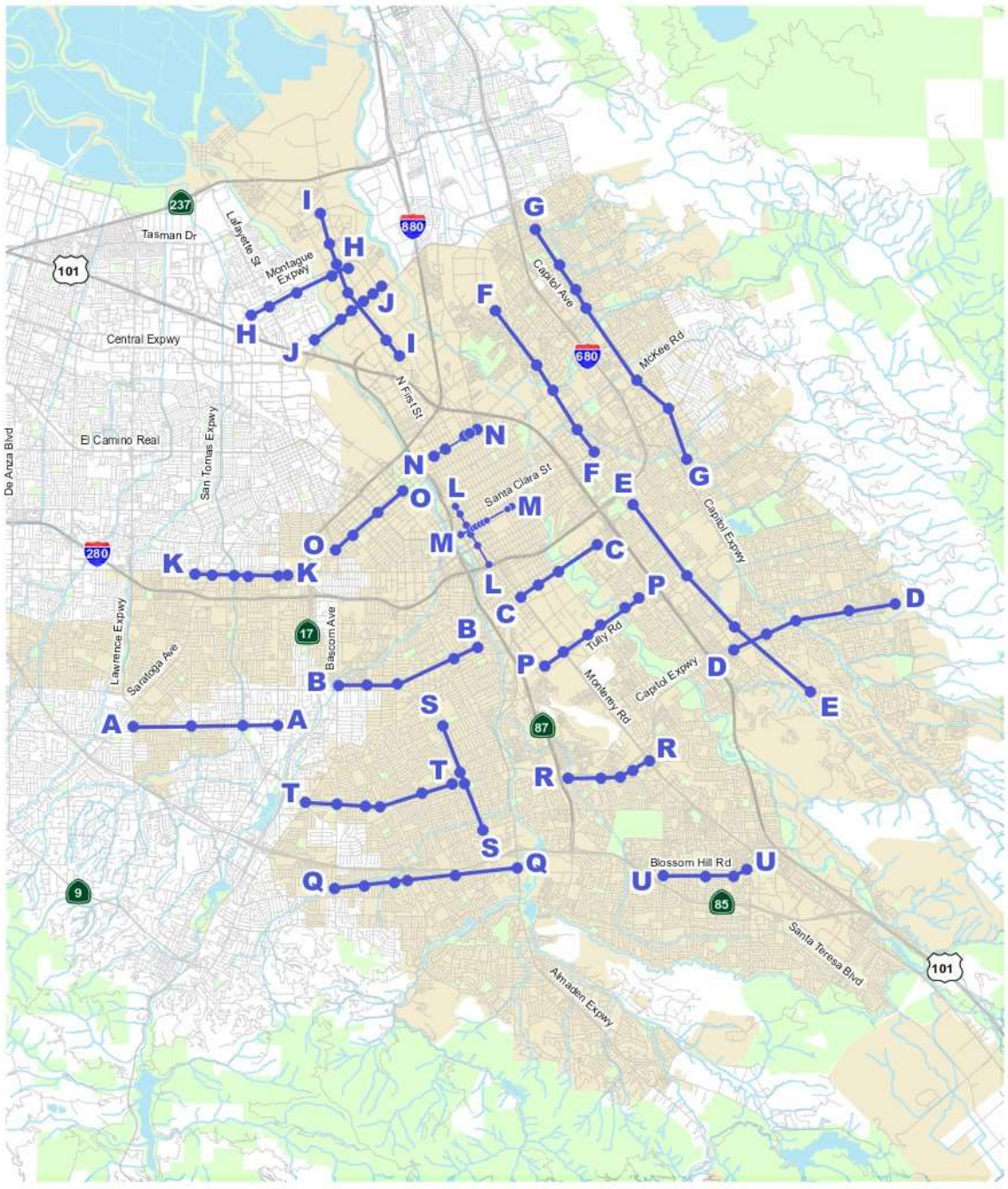


Figure 1
San Jose Screenlines

HEXAGON

NORTH
Not to Scale

3. Roadway Validation

The model was also tested by comparing individual link volumes with the counts, using FHWA suggested target that 75% of the modeled volumes are within the maximum desirable deviation. The comparison was made at 1,267 roadway segments with AM and PM peak hour counts. In the AM peak hour, 978 (or 77%) of the modeled volumes met the target while in the PM peak hour, 980 (or 77%) of the modeled volumes met the target of 75%. See Table 5.3 below.

Table 5.3
Highway Validation at Roadways

Time Period	Count Locations	Maximum Deviation	Modeled Volumes within Acceptable Deviation	Modeled Deviation	Target Met?
AM Peak-Hour	1,267	75%	978	77%	Yes
PM Peak-Hour	1,267	75%	980	77%	Yes

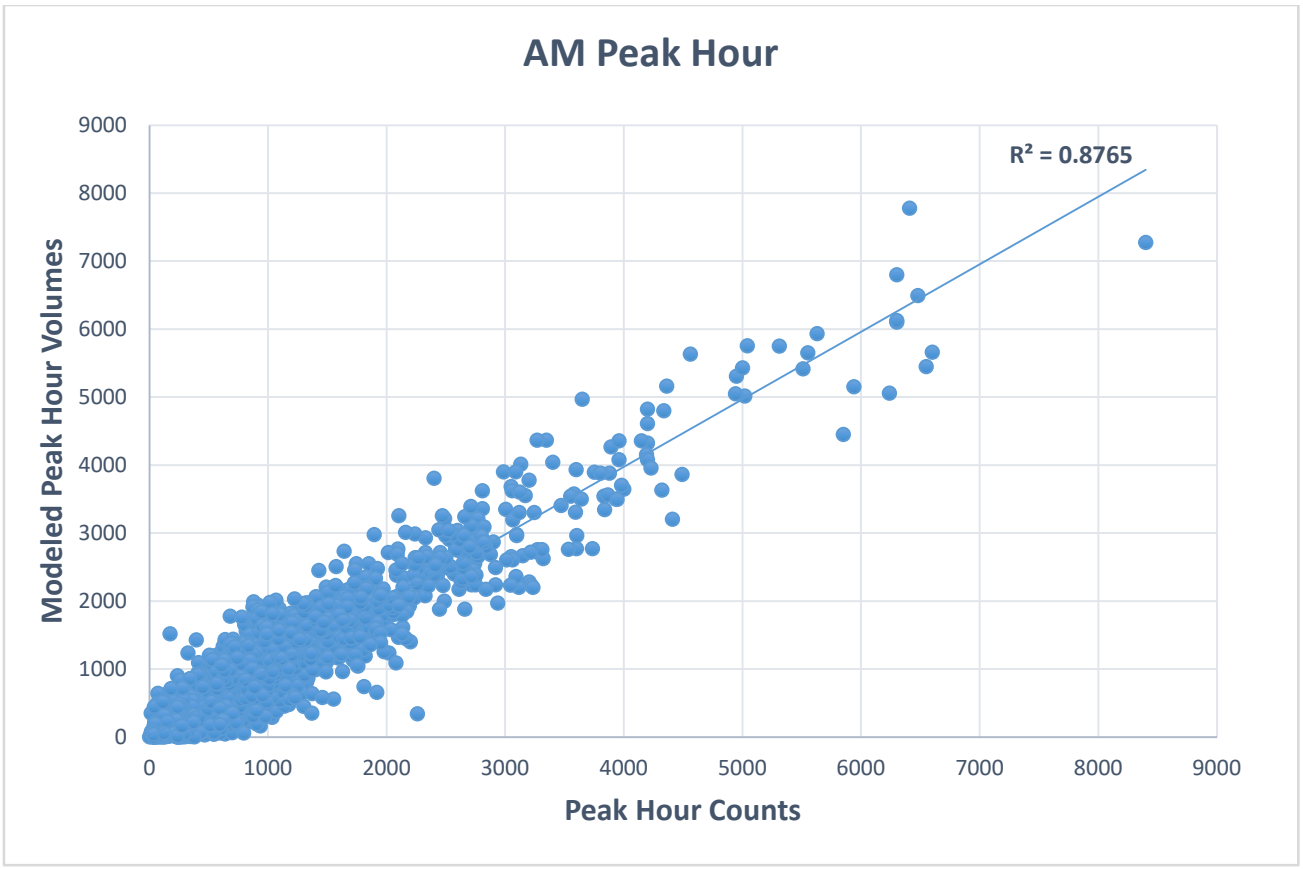
4. Coefficient of Determination

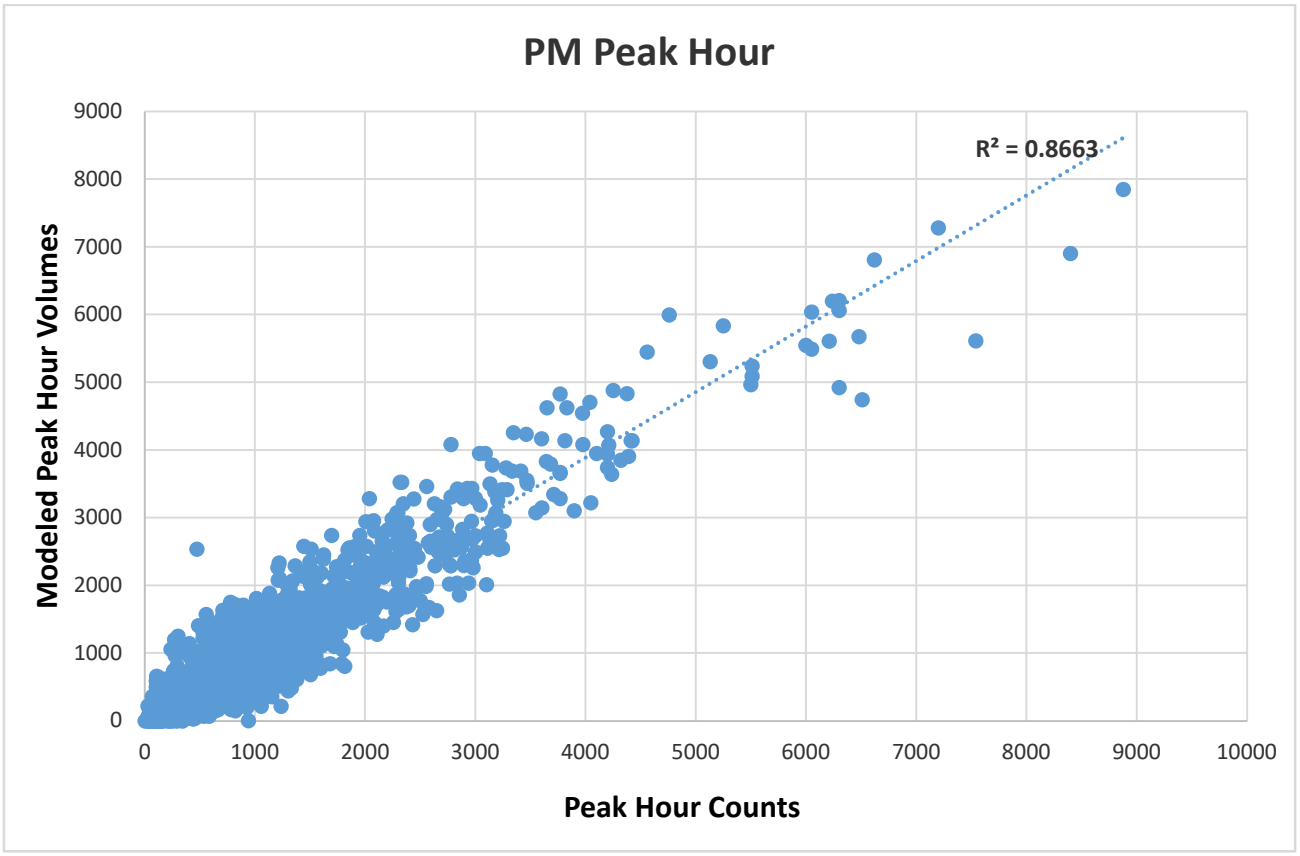
The coefficient of determination or linear regression (R^2) is an indication of the relationship between the traffic counts and the model estimated values. The model fits the count data well if the differences between the counts and the modeled volumes are small. The higher the coefficient, the better the modeled volumes compare with the counts. The target coefficient (R^2) is 77%. As shown in Table 5.4, the model exceeds this target for both peak-hours.

Table 5.4
Coefficient of Determination

Time Period	Coefficient of Determination [R^2]	Target	Target Met?
AM Peak-Hour	88%	77%	Yes
PM Peak-Hour	87%	77%	Yes

Scatter plots of the AM and PM peak-hour regression analysis are shown on the next page.


AM Peak Hour
R² = 0.8765
Modeled Peak Hour Volumes
Peak Hour Counts
0
1000
2000
3000
4000
5000
6000
7000
8000
9000


PM Peak Hour
R² = 0.8663
Modeled Peak Hour Volumes
Peak Hour Counts
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

5. Correlation Coefficient

The correlation coefficient estimates the correlation (strength and direction of the linear relationship) between the actual traffic counts and the estimated traffic volumes from the model. The target for this test is that the coefficient should be at least 88%. Table 5.5 shows that the model's coefficients for both the AM and PM peak hour model assignments are 96% and 95% respectively, thereby exceeding the targets.

Table 5.5
Correlation Coefficient

Time Period	Correlation Coefficient	Target	Target Met?
AM Peak-Hour	94%	88%	Yes
PM Peak-Hour	93%	88%	Yes

6. Percent Root Mean Square Error

Percent root mean square error (RMSE) is the square root of the model volume minus the actual count squared divided by the number of counts. It is a measure similar to standard deviation in that it assesses the accuracy of the entire model. As shown on Table 4, the model results easily meet the required target value of 40%.

Table 5.6
Percent Root Mean Square Error

Time Period	%RMSE	Target	Target Met?
AM Peak-Hour	35%	40%	Yes
PM Peak-Hour	34%	40%	Yes

7. Intersection Turning Movements

Table 5.7 shows the validation statistics of the model estimated turning movements compared to the counts. The table shows that, in the AM peak hour, there are 102 turning movement counts greater than 1,000 and 53 modeled turning movement volumes (or 52%) fall within the 20% deviation. For the PM peak hour these numbers are 101, 55 and 54%, respectively. Similar statistics are shown for the secondary turning movements. The table shows that the validation criteria of the major and secondary turning movements are met for both the AM and PM peak hours.

Table 5.7
Intersection Turning Movement Validation

Time Period	Major Turning Movements (TM)					Secondary Turning Movements (TM)				
	TM > 1,000	TM within Deviation	% TM within Deviation	Target	Target Met?	500 > TM < 1,000	TM within Deviation	% TM within Deviation	Target	Target Met?
AM Peak-Hour	102	53	52%	50%	Yes	227	77	34%	30%	Yes
PM Peak-Hour	101	55	54%	50%	Yes	251	83	33%	30%	Yes

Average Daily Traffic and VMT Model Validation

The VTA model uses the sum of the traffic assignments of four time periods to estimate daily traffic volumes. Trip tables are developed for the morning (5:00 AM – 9:00 AM), midday (9:00 AM-3:00 PM), afternoon (3:00 PM – 7:00 PM) and night (7:00 PM – 5:00 AM) time periods and these trip tables are then assigned to the highway network. The traffic volumes of the four traffic assignments are added together to estimate the daily traffic volumes. It was found that this method did not result in accurate estimates of daily traffic when compared to observed 24- hour counts. As was done with the 2017 CSJ model, estimating daily traffic volumes are calculated by applying factors to the AM and PM peak-hour traffic assignments. It was found that applying a factor of 6.5 times the sum of the AM and PM peak hour assignment volumes gave the best results. Table 6 below shows the comparison of observed and estimated daily traffic volumes by facility type. The estimated volumes compare very well for the freeways and arterials but less so for collector streets. There is a very strong correlation between the daily counts and the daily model estimated volumes. Regression analysis of daily traffic volumes at 379 locations shows a 92% correlation between observed and estimated volumes.

These daily volumes and the roadway segment distances were then used to calculate and compare model estimated and observed VMT's. As shown in Table 6, the model estimated daily volumes are very close to the actual counts.

Table 6
Average Daily Traffic and VMT Validation

Facility Type	Average Daily Volumes			Daily Vehicle Miles Traveled		
	Counts	Modeled	Ratio	Counts	Modeled	Ratio
Freeways	3,259,254	3,212,950	0.99	1,239,069	1,290,657	1.04
Arterials	2,486,400	2,520,967	1.01	512,314	513,326	1.00
Collectors	153,400	118,593	0.77	36,008	24,913	0.69
All Facilities	**5,899,054**	**5,852,509**	**0.99**	**1,787,391**	**1,828,896**	**1.02**

Transit Model Validation

The CSJ model was validated against observed transit ridership. The transit validation focused on comparing:

- Systemwide estimated ridership by transit mode (BART, Caltrain, ACE, Capital Corridor, VTA LRT, VTA Express Bus and VTA Local Bus),
- Daily ridership at high volume VTA routes, and
- Daily boardings at the Diridon, Tamien, Capitol and Blossom Hill Caltrain Stations.

Recommended validation target for transit ridership comparisons is that the difference between observed and modeled boardings for each transit submode (i.e., ridership on all VTA's local bus routes or on the LRT system) should be within 10%. There are no validation targets for boardings at individual rail stations.

Tables 7, 8, and 9 present comparisons of observed and estimated transit ridership. Overall, the model estimates existing transit ridership levels very well.

Table 7
Comparison of Daily Transit Trips by Operator

Transit Mode	Daily Boardings			
	Observed	Modeled	Difference	
BART	432,402	427,424	-4,978	-1%
VTA LRT	37,079	38,095	1,016	3%
Guadalupe LRT [901]	21,813	18,879	-2,934	-13%
Tasman LRT [902]	14,430	18,442	4,012	28%
Almaden LRT [900]	836	774	-62	-7%
Caltrain	58,245	57,643	-602	-1%
Capitol	2,722	2,491	-231	-8%
ACE	4,942	4,967	25	1%
VTA Express Bus	5,973	5,992	19	0%
VTA Local Bus	106,980	125,681	18,701	17%
VTA Local Bus Serving San Jose	92,456	99,943	7,488	8%
Total	**648,342**	**662,293**	**13,951**	**2%**

Table 8
Comparison of Daily Boardings at CSJ Caltrain Stations

	Daily Boardings			
Caltrain	Observed	Modeled	Difference	
Diridon	4,260	4,514	254	6%
Tamien	1,069	991	-78	-7%
Capitol	42	57	16	37%
Blossom Hill	110	184	74	67%
Total	**5,480**	**5,745**	**265**	**5%**

Table 9
Comparison of Daily Boardings at High Volume VTA Routes

VTA Routes with >	Daily Boardings			
3,000 Boardings	Observed	Modeled	Difference	
Route 22/522	21,199	21,662	464	2%
Route 23	8,682	9,357	676	8%
Route 25	7,518	5,974	-1,544	-21%
Route 66	7,054	7,020	-34	0%
Route 68	5,481	5,091	-390	-7%
Route 70	5,401	4,769	-632	-12%
Route 26	3,953	3,836	-117	-3%
Route 64	3,830	4,097	268	7%
Route 181	3,522	3,503	-19	-1%
Route 77	3,492	3,984	493	14%
Total	**70,129**	**69,293**	**-836**	**-1%**

Average VMT per Capita and per Job

Hexagon updated VMT per Capita and VMT per Job calculations for the zones in the modeled region. The zonal data was aggregated by geographical area to calculate the VMT values for the Region, the City of San Jose, Downtown San Jose, and Santa Clara County. As per Senate Bill 743 Guidelines, VMT per capita was calculated for home-based productions only while the VMT per job was calculated using only the home-based work attractions. The resulting VMT data for these geographical areas is shown in Table 10 below.

Table 10
Average VMT per Capita and per Job

Area	Residential VMT [1]	Total Population	Residential VMT per Capita [2]	Employment VMT [3]	Jobs	Employment VMT per Job [4]
City of San Jose	13,617,822	1,016,087	13.40	6,758,646	418,721	16.14
Downtown	127,711	12,896	9.90	466,555	37,328	12.50
Santa Clara County	24,897,791	1,876,379	13.27	18,336,636	1,040,498	17.62
Region	103,274,366	7,521,857	13.73	62,212,836	3,762,956	16.53

[1] Residential VMT = Home-Based Trip Productions * Distance
[2] Residential VMT per Capita = Residential VMT / Population
[3] Employment VMT = Home-Based Work Trip Attractions * Distance
[4] Employment VMT per Job = Employment VMT / Jobs

The residential VMT per capita for the City of San Jose is 0.33 miles lower than the region but 0.13 miles higher than the county average. The Citywide employment VMT per job is slightly less (0.39 miles) than the region and 1.48 miles, or about 8%, below the countywide average. As expected, the VMT's of the land uses in downtown San Jose, are lower compared to the City average because of the proximity to transit and the concentration of complementary land uses.

Appendix E: Regional Transportation Plan/Sustainable Community Strategy Plan Consistency

FEHR PEERS

Table E-1: Plan Bay Area 2050 Consistency Evaluation

		Consistency Evaluation	Consistency Evaluation	Consistency Evaluation	
	Plan Bay Area 2050 Strategy	Supports	Obstructs	Does not Obstruct	Explanation
	Housing Strategies				
H1	**Further strengthen renter protections beyond state law.** Building upon recent tenant protection laws, limit annual rent increases to the rate of inflation, while exempting units less than 10 years old.			X	Project policies do not affect renter protections.
H2	**Preserve existing affordable housing.** Acquire homes currently affordable to low and middle-income residents for preservation as permanently deed-restricted affordable housing.	X			**The Project will add housing for students, faculty, and staff (UH-1). The Project also includes policies to expand housing partnerships especially for affordable housing (UH-4)**
H3	**Allow a greater mix of housing densities and types in Growth Geographies.** Allow a variety of housing types at a range of densities to be built in Priority Development Areas, select Transit-Rich Areas, and select High-Resource Areas.	X			The Project will add housing for students, faculty, and staff (UH-1). The Project also includes policies to expand housing partnerships especially for affordable housing (UH-4)
H4	**Build adequate affordable housing to ensure homes for all.** Construct enough deed restricted affordable homes to fill the existing gap in housing for the unhoused community and to meet the needs of low-income households.	X			The Project will add housing for students, faculty, and staff (UH-1). The Project also includes policies to expand housing partnerships especially for affordable housing (UH-4)
H5	**Integrate affordable housing into all major housing projects.** Require a baseline of 10-20% of new market-rate housing developments of five units or more to be affordable to low-income households.	X			The Project will add housing for students, faculty, and staff (UH-1). The Project also includes policies to expand housing partnerships especially for affordable housing (UH-4)

		Consistency Evaluation	Consistency Evaluation	Consistency Evaluation	
	Plan Bay Area 2050 Strategy	**Supports**	**Obstructs**	**Does not Obstruct**	**Explanation**
H6	**Transform aging malls and office parks into neighborhoods.** Permit and promote the reuse of shopping malls and office parks with limited commercial viability as neighborhoods with housing for residents at all income levels.			X	The Project will not affect this policy,
H7	**Provide targeted mortgage, rental and small business assistance to Equity Priority Communities.** Provide assistance to low-income communities and communities of color to address the legacy of exclusion and predatory lending, while helping to grow locally owned businesses.	X			The Project continues to support EPC communities by offering financial aid that can be used for on-campus housing.
H8	**Accelerate reuse of public and community-owned land for mixed-income housing and essential services.** Help public agencies, community land trusts and other non-profit landowners accelerate the development of mixed-income affordable housing.			X	The Project will not affect this policy.
	Economic Strategies				
EC1	**Implement a statewide universal basic income.** Provide an average $500 per month payment to all Bay Area households to improve family stability, promote economic mobility and increase consumer spending.			X	The Project does not affect this policy.
EC2	**Expand job training and incubator programs.** Fund assistance programs for establishing new businesses, as well as job training programs, primarily in historically disinvested communities.			X	The Project does not directly affect this policy but continues to support academic programs and research.

		Consistency Evaluation	Consistency Evaluation	Consistency Evaluation	
	Plan Bay Area 2050 Strategy	**Supports**	**Obstructs**	**Does not Obstruct**	**Explanation**
EC3	**Invest in high-speed internet in underserved low-income communities.** Provide direct subsidies and construct public infrastructure to ensure all communities have affordable access to high-speed internet.			X	The Project does not affect this policy.
EC4	**Allow greater commercial densities in Growth Geographies.** Allow greater densities for new commercial development in select Priority Development Areas and Transit-Rich Areas to encourage more jobs to locate near public transit.			X	The Project will not affect this policy.
EC5	**Provide incentives to employers to shift jobs to housing-rich areas well served by transit.** Provide subsidies to encourage employers to relocate offices to housing-rich areas near regional rail stations.			X	The Project will not directly affect this policy but will provide increased housing on campus.
EC6	**Retain and invest in key industrial lands.** Implement local land use policies to protect key industrial lands, identified as Priority Production Areas, while funding key infrastructure improvements in these areas.			X	The Project will not affect this policy.
EN7	**Expand commute trip reduction programs at major employers.** Set a sustainable commute target for major employers as part of an expanded Bay Area Commuter Benefits Program, with employers responsible for funding incentives and disincentives to shift auto commuters to any combination of telecommuting, transit, walking and/or bicycling.	X			The Project continues and expands existing commute trip reduction programs.
EN8	**Expand clean vehicle initiatives.** Expand investments in clean vehicles, including more fuel-efficient vehicles and electric vehicle subsidies and chargers.	X			The Project encourages EV use by adding EV charging parking facilities (MO-1).

		Consistency Evaluation	Consistency Evaluation	Consistency Evaluation	
	Plan Bay Area 2050 Strategy	**Supports**	**Obstructs**	**Does not Obstruct**	**Explanation**
EN9	**Expand transportation demand management initiatives.** Expand investments in programs like vanpools, bikeshare, carshare and parking fees to discourage solo driving.	X			The Project includes a policy to create a TDM Plan (MO-1).
	Transportation Strategies				
T1	**Restore, operate, and maintain the existing system**. Commit to operate and maintain the Bay Area's roads and transit infrastructure while overseeing pandemic-related cuts to total transit service hours.			X	The Project will not significantly affect the existing system.
T2	**Support community-led transportation enhancements in Equity Priority Communities.** Provide direct funding to historically marginalized communities for locally identified transportation needs.			X	The Project will not affect this policy.
T3	**Enable a seamless mobility experience.** Eliminate barriers to multi-operator transit trips by streamlining fare payment and trip planning while requiring schedule coordination at timed transfer hubs.	X			The Project will work with transit operators to support a seamless mobility experience (MO-1, MO-2, MO-3).
T4	**Reform regional transit fare policy.** Streamline fare payment and replace existing operator specific discounted fare programs with an integrated fare structure across all transit operators.			X	The Project will not affect this policy.
T5	**Implement per-mile tolling on congested freeways with transit alternatives.** Apply a per-mile charge on auto travel on select congested freeway corridors where transit alternatives exist, with discounts for carpoolers, low-income residents, and off-peak travel; and reinvest excess revenues into transit alternatives in the corridor.			X	The Project will not affect this policy.

		Consistency Evaluation	Consistency Evaluation	Consistency Evaluation	
	Plan Bay Area 2050 Strategy	**Supports**	**Obstructs**	**Does not Obstruct**	**Explanation**
T6	**Improve interchanges and address highway bottlenecks**. Rebuild interchanges and widen key highway bottlenecks to achieve short- to medium-term congestion relief.			X	The Project will not directly affect this policy but will help to improve congestion by reducing vehicle trips.
T7	**Advance other regional programs and local priorities.** Fund regional programs like motorist aid and 511 while supporting local transportation investments on arterials and local streets.			X	The Project will not affect this policy.
T8	**Build a Complete Streets network.** Enhance streets to promote walking, biking and other micro-mobility through sidewalk improvements, car-free slow streets, and 10,000 miles of bike lanes or multi-use paths.	X			The Project will enhance streets on campus to promote walking, biking, and other micro-mobility (MO-1, MO-4, MO-7).
T9	**Advance regional Vision Zero policy through street design and reduced speeds.** Reduce speed limits to between 20 and 35 miles per hour on local streets and 55 miles per hour on freeways, relying on design elements on local streets and automated speed enforcement on freeways.	X			The Project includes policies to improve safety (MO-4, MO-5.
T10	**Enhance local transit frequency, capacity and reliability.** Improve the quality and availability of local bus and light rail service, with new bus rapid transit lines, South Bay light rail extensions, and frequency increases focused in lower-income communities.	X			The Project will work with transit operators to improve transit services (MO-2).
T11	**Expand and modernize the regional rail network.** Better connect communities while increasing frequencies by advancing the Link21 new transbay rail crossing, BART to Silicon Valley Phase 2, Valley Link, Caltrain Downtown Rail Extension and Caltrain/High-Speed Rail grade separations, among other projects.	X			The Project will work with transit operators to plan for future rail development and to maximize transit access to the campus. (MO-2).

		Consistency Evaluation	Consistency Evaluation	Consistency Evaluation	
	Plan Bay Area 2050 Strategy	**Supports**	**Obstructs**	**Does not Obstruct**	**Explanation**
T12	**Build an integrated regional express lanes and express bus network.** Complete the buildout of the regional express lanes network to provide uncongested freeway lanes for new and improved express bus services, carpools, and toll-paying solo drivers.			X	The Project will not affect this policy.
	Environmental Strategies				
EN1	**Adapt to sea level rise.** Protect shoreline communities affected by sea level rise, prioritizing low-cost, high-benefit solutions, and providing additional support to vulnerable populations.			X	The Project does not affect this policy.
EN2	**Provide means-based financial support to retrofit existing residential buildings.** Adopt building ordinances and incentivize retrofits to existing buildings to meet higher seismic, wildfire, water, and energy standards, providing means-based subsidies to offset associated costs.	X			The Project involves plan to retrofit older building to ensure they meet seismic, wildfire, water, and energy standards
EN3	**Fund energy upgrades to enable carbon neutrality in all existing commercial and public buildings.** Support electrification and resilient power system upgrades in all public and commercial buildings.	X			The Project includes several policies to achieve carbon neutrality by 2045 (UI-5).
EN4	**Maintain urban growth boundaries.** Using urban growth boundaries and other existing environmental protections, focus new development within the existing urban footprint or areas otherwise suitable for growth, as established by local jurisdictions.	X			The Project focuses growth within the Project area.

		Consistency Evaluation	Consistency Evaluation	Consistency Evaluation	
	Plan Bay Area 2050 Strategy	**Supports**	**Obstructs**	**Does not Obstruct**	**Explanation**
EN5	**Protect and manage high-value conservation lands.** Provide strategic matching funds to help conserve and maintain high-priority natural and agricultural lands, including but not limited to, Priority Conservation Areas and wildland-urban interface areas.			X	The Project will not affect high-value conservation lands.
EN6	**Modernize and expand parks, trails, and recreation facilities.** Invest in quality parks, trails and open spaces that provide inclusive recreation opportunities for people of all backgrounds, abilities, and ages to enjoy.			X	The Project will not affect existing parks but provides lawn space for recreational activities on campus.
EN7	**Expand commute trip reduction programs at major employers.** Set a sustainable commute target for major employers as part of an expanded Bay Area Commuter Benefits Program, with employers responsible for funding incentives and disincentives to shift auto commuters to any combination of telecommuting, transit, walking and/or bicycling.	X			The Project continues and expands existing commute trip reduction programs.
EN8	**Expand clean vehicle initiatives.** Expand investments in clean vehicles, including more fuel-efficient vehicles and electric vehicle subsidies and chargers.	X			The Project encourages EV use by adding EV charging parking facilities (MO-1).
EN9	**Expand transportation demand management initiatives.** Expand investments in programs like vanpools, bikeshare, carshare and parking fees to discourage solo driving.	X			The Project includes a policy to create a TDM Plan (MO-1).

Source: MTC Plan Bay Area 2050 Consistency Checklist, 2024; Fehr & Peers, 2024.