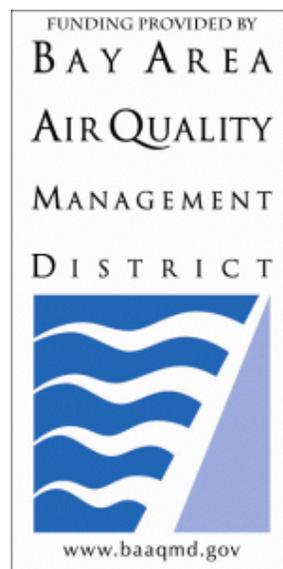


SJSU Associated Students Transportation Solutions Fall 2019 Commute Survey Report



AS-SJSU Transportation Solutions Fall 2019 Student Commute Survey Report

1. Introduction

Associated Students, Transportation Solutions (TS) completed its nineteenth annual survey, administered at the end of Fall 2019. This was an online survey and was administered through Survey Monkey.

The survey was carried out from November 1st through 15th and was sent to 36,681 enrolled students including Regular Session, Open University, and Special Session. 4,149 participated at a response rate of 11.3%.

2. Survey Design

The survey format was changed from previous years and used skip and branching logic features to create custom paths for survey takers. The use of the feature permitted TS to develop additional questions for specific sub-groups, preventing biases from non-targeted participant's responses, improving the survey experience by showcasing applicable questions for each subgroup. There was one major and one minor branching point established in the survey.

2019 was the first year we asked students to indicate if they lived on campus. The major branch diverted participants that responded that they live in on-campus housing (i.e. non-commuting students) (Q7) from the commute-survey block to the department-awareness block. The minor branch diverted self-identified non-alternative transportation riders from alternative-transportation related questions to drive-alone related questions. Of the total 4,149 respondents, 414 respondents were directed away from the commute-related questions because they indicated that they live on campus. The remaining 3,735 respondents completed the commute related questions and were included in the analysis.

3. Analysis

In 2018, the total alternative transportation usage was calculated to include public local (VTA) and regional transit, bicycling, carpool/vanpool, get dropped off, non-ride-hail related drop offs (Uber/Lyft), and VTA Access (paratransit). In 2019, we included bike and scooter share usage, and added drive to VTA Park & Ride lot as a commute option, totaling to 47.6%. It does not include walking, skateboards, or manual scooters. Extrapolated over the population of 36,681, the total alternative transportation users were estimated at 17,240.

In previous surveys, the VTA ridership to campus included the proportion of students who selected VTA as their primary commute mode to campus which equaled to 27.8%. In 2019, we added students who drove to a VTA Park & Ride Lot and those who took BART and transferred to VTA Express Bus 181. The total VTA ridership was when but did not drive to a VTA park and ride lot or take BART is 27.8%, extrapolated to 10,197. The Santa Clara Valley Transportation Authority (VTA) ridership to campus was 32.4%, or 11,885 riders. This includes students who made their whole trip via VTA bus, light rail, or Access (paratransit), as well as students who drove to a VTA park and ride lot and took VTA to campus, and students who rode BART and then transferred to the VTA 181 Express bus. However, the total ridership is slightly higher when taking into account the VTA Park & Ride and VTA transfer from BART. 6.9% rode regional transit, extrapolated to 2,531. Regional transit includes BART, Caltrain, Altamont Corridor Express, Amtrak, and the Highway 17 Express. The percentage of students who walk/skateboard/manual scooter was at 10.6%, extrapolated to 3,888.

3.1 Total Alternative Transportation Usage

Figure 1 below shows the trends for total alternative transportation use (includes local and regional transportation, carpool/vanpools, non-ride-hail related drop offs, bicycling, drive to VTA park and ride, and bike- and scooter share usage) and VTA ridership (excluding driving to VTA park and ride and transferring to VTA from BART) over the past 10 years.

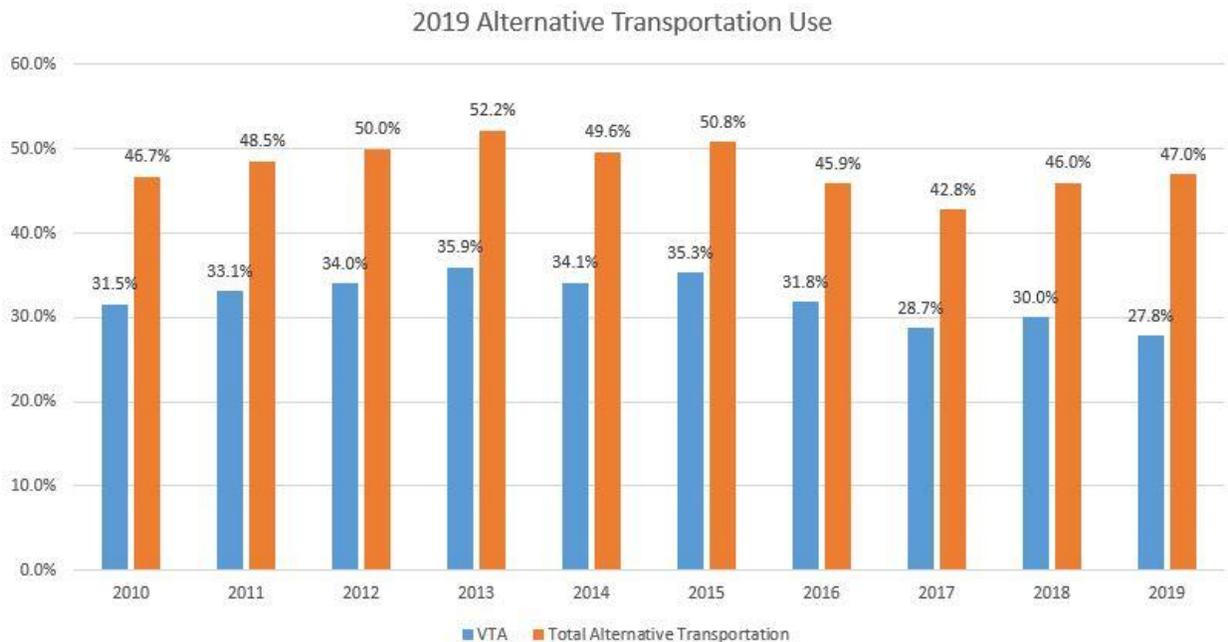


Figure 1 Total Alternative Transportation and VTA Usage

3.2 Bicycle Ridership

- a) **Bicycle Ridership:** In 2019, 2.5% of the population biked to campus. This extrapolates to 917 students. Figure 2 below shows bicycle ridership to campus over the last 10 years.

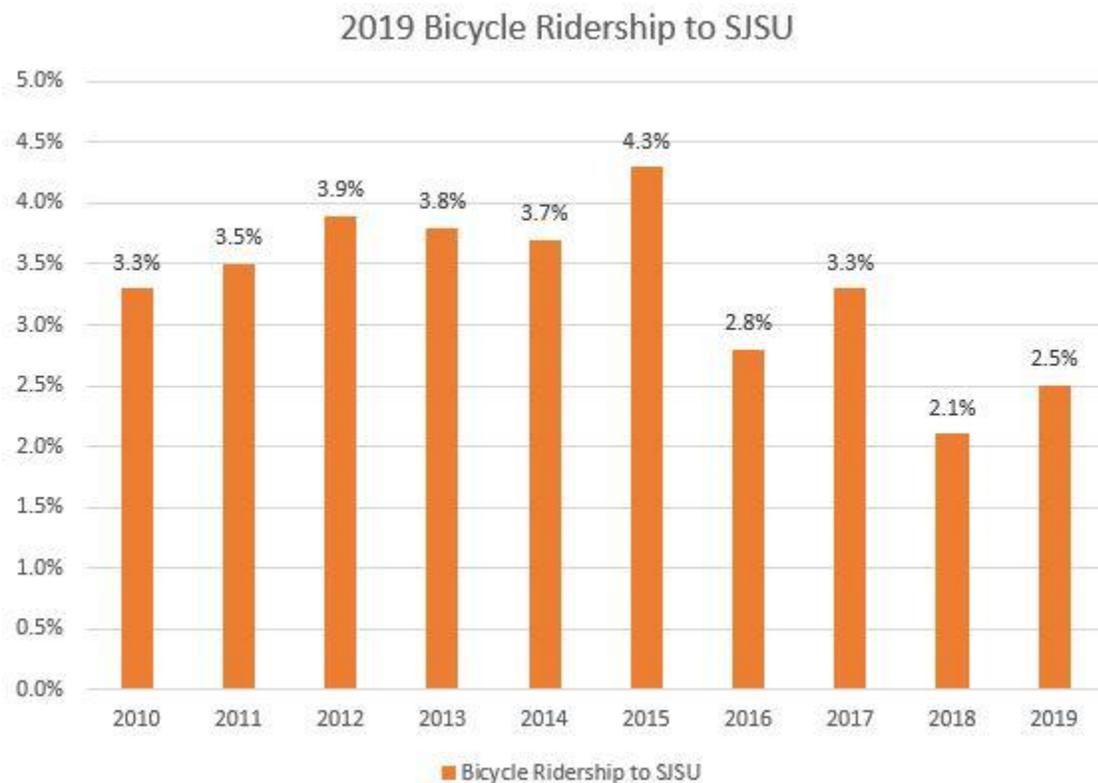


Figure 2 Bicycle Ridership

b) **Commute Distance:** Figure 3 below shows the biking distance to campus in Fall 2019. The average biking distance was 2.58 miles. This was calculated by using Question 10 and filtering for those who responded that their primary commute mode was bicycling and Question 11 by taking the median value for each distance category in the survey (such as 3.5 miles for a student who said they travel 2 to 5 miles, or .25 for a student who traveled less than .5 miles), and calculating the average distance using that number.

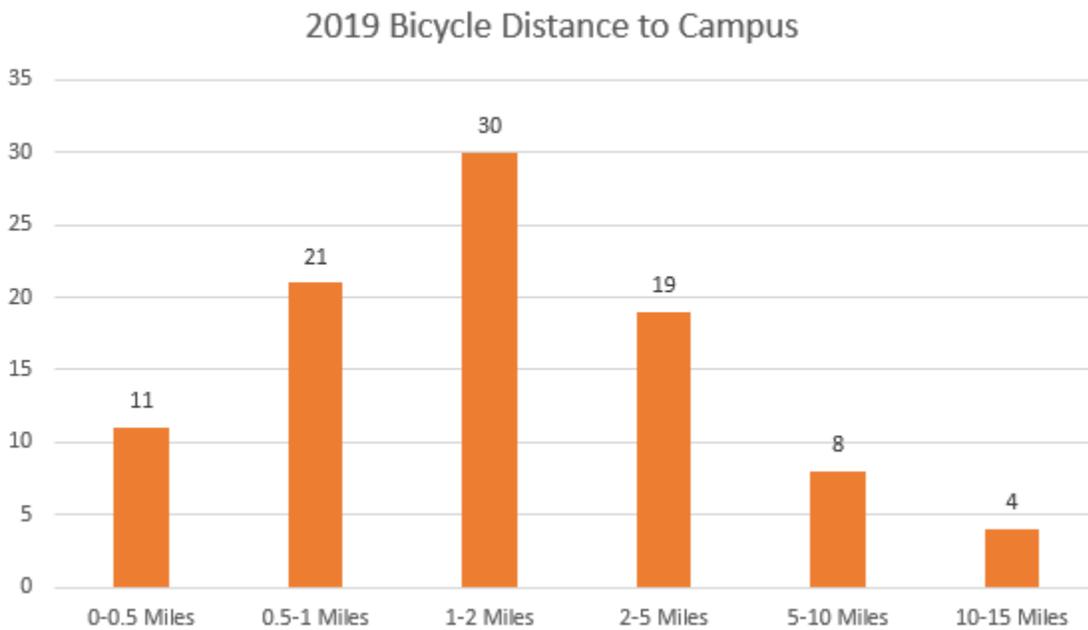


Figure 3 Bicycle Distance to Campus

3.3 Drive Alone

Solo-driving (includes drive alone, and drive alone to SJSU Park & Ride) increased by 1.8%, from 39.4% in 2018 to 41.2% in 2019. This extrapolates to 15,113 students. Figure 4 below shows the drive-alone rate over the past 10 years.

2019 Drive Alone Rate

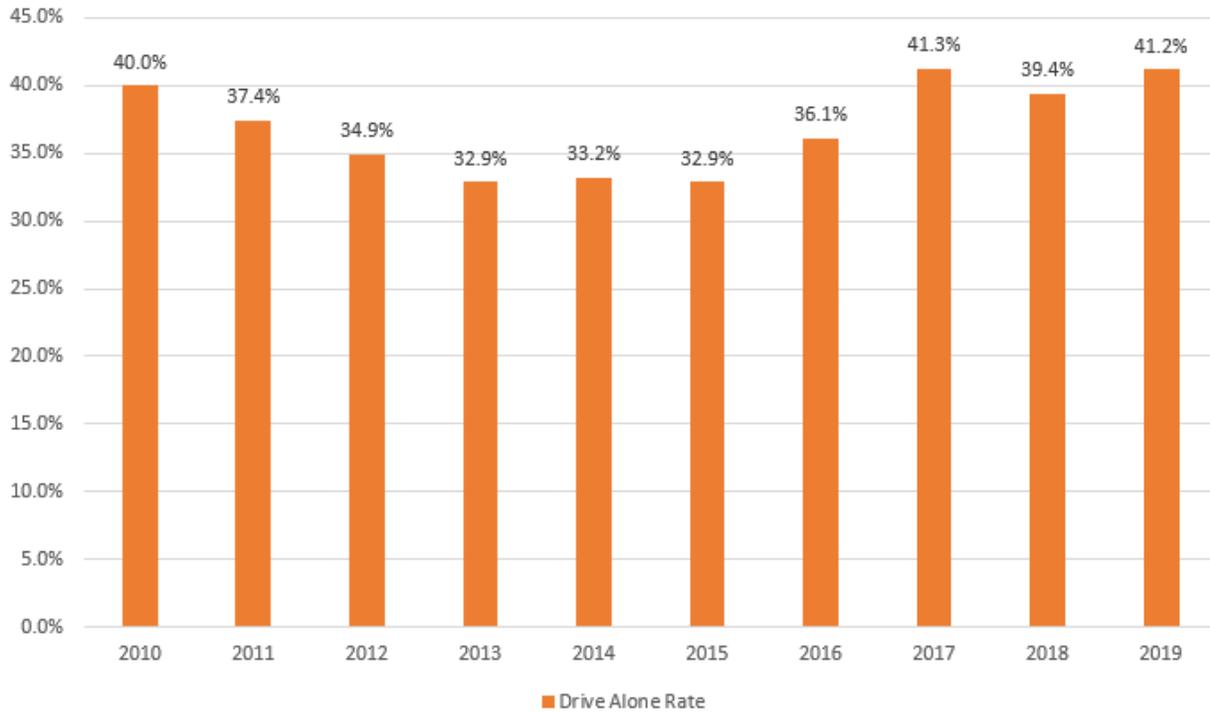


Figure 4 Drive Alone Rate

3.4 Commute Mode Split

Table 1 below illustrates the usage rate for the primary commute mode used by respondents for their journey to campus.

Commute Mode	Percentage of Respondents (n=3,735)
Bicycle	2.5%
Electric scooter/E-Bike	0.6%
Carpool	4%
Drop Off	3.5%
Ride Share	0.7%
Motorcycle	0.5%
Drive alone	35.4%
Drive alone to SJSU Park and Ride	5.8%

Drive alone to VTA Park and Ride	1.8%
VTA Light Rail	10.8%
VTA Bus	16.7%
VTA Access	0.3%
Bay Area Rapid Transit	2.7%
Caltrain	1.9%
Altamont Corridor Express	1.6%
Amtrak	0.1%
Highway 17 Express	0.8%
Monterey-Salinas Transit	0.0%
Walk	9.3%
Skateboard/manual scooter	1.3%

Table 1 Commute Mode Split

Figure 5 includes Commute Mode by category. Drive alone includes students who drove to the SJSU Park and Ride lot. VTA includes students who drove alone to a VTA Park and Ride lot, but does not include students who transferred from BART to VTA. Those students are counted under Regional Transit.

2019 Commute Mode to Campus

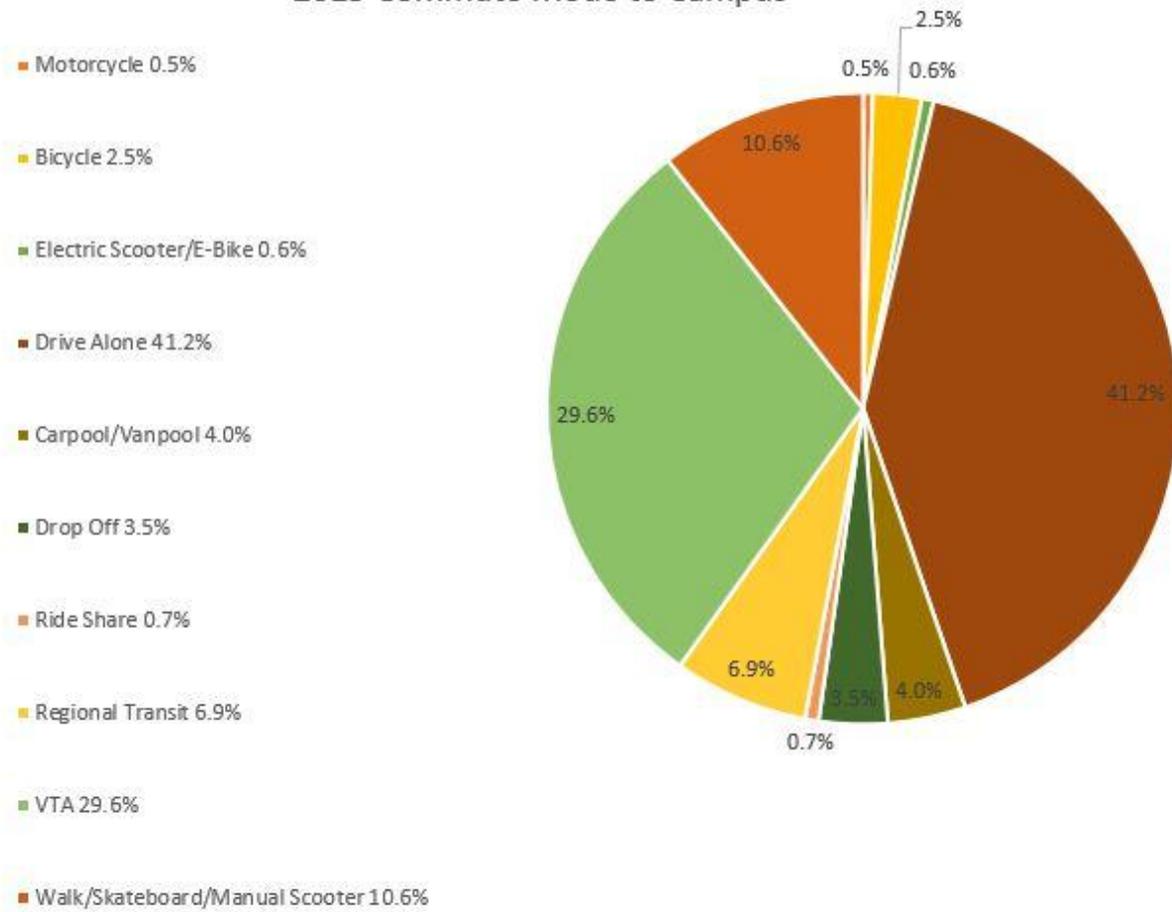


Figure 5 Commute Mode to Campus

3.5 Commute Distance, Time, and Frequency

- a) **Commute Distance:** The average one-way trip distance (home to campus) was 14.6 miles. This was calculated by taking the median value for each distance category (Question 11) in the survey (such as 3.5 miles for a student who said they travel 2 to 5 miles), and calculating the average distance using that number. Students traveling about 100 miles (7 out of 3,735) were excluded as outliers, as were students who reported under 10 miles for regional transit, such as .75 miles for Amtrak. Table 2 below lists the average one-way trip distance for each type of commuter mode.

- b) **Commute Time:** Average time of commute (based on how much time students budget, Question 14) was 50.1 minutes. This was calculated by taking the median value for each time category in the survey (such as 126 minutes for a student who said they budget 121 to 130 minutes), and calculating the average time using that number. All students who reported budgeting 181 or more minutes were calculated as 181 minutes, as there were too many to exclude as outliers.

Commute Mode	2019 Average One-Way Commute Distance (mi)
Altamont Corridor Express (ACE)	46
Amtrak	30.8
BART	30.6
VTA Park and Ride	17
Bicycle	2.58
Caltrain	37.8
Carpool/Vanpool	20.5
Dropped Off	11.1
Drive Alone	19.4
e-scooter sharing service (e.g., Lime, Bird, etc.)	2.4
Highway 17 Express	34.6
Ride Share/Taxi	9.5
Motorcycle/Moped	14.1
SJSU Park and Ride	17.3
Skateboard/Manual Scooter	1.5
VTA Bus	8.2
VTA Light Rail	11.3
Walk	0.9
All Transportation Modes	17.5

Table 2 Commute Distance to Campus

Figure 6 below shows the average one-way trip distance for each type of commuter mode.

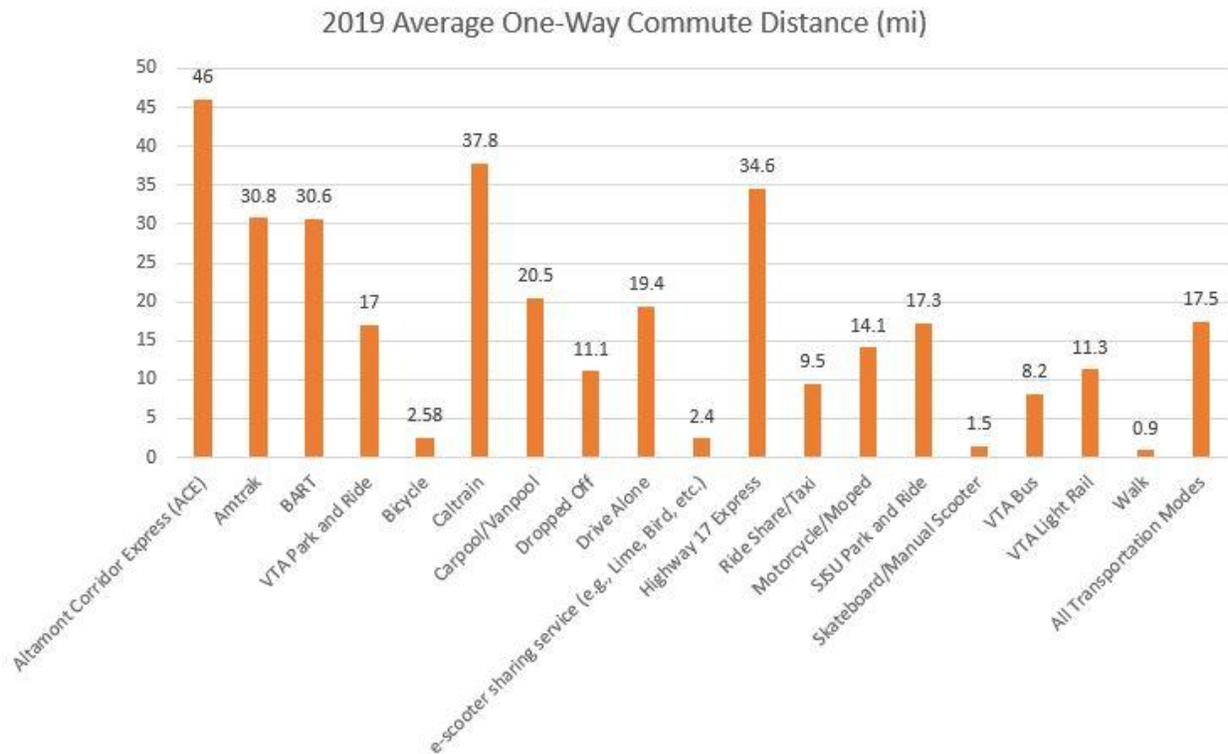


Figure 6 Average Distance to Campus

c) **Commute Frequency:** The overall average frequency of travel using alternative transportation was 3.96 days/week, and the average frequency of travel by driving alone was 3.5 days/week. Alternative transportation includes both local public (i.e. VTA) and regional transportation, drive to VTA Park and Ride, carpool/vanpool, non-ride-hail related drop offs, bicycling, and bike- and scooter share usage. It does not include walking, skateboards, or manual scooters. Table 3 below shows the average commute frequency days per week and per semester. A semester is typically 16 weeks.

Transportation Mode	Average Weekly Commute Days	Average Commute Days per semester
Altamont Corridor Express (ACE)	3.4	54.4
Amtrak Capitol Corridor	3.6	57.6
BART	3.7	59.2
Caltrain	3.5	56
Hwy 17 Express	3.4	54.4

VTA Bus	4.1	65.6
VTA Light Rail	3.9	62.4
Carpool	3.7	59.2
Drop Off	4.0	64
Uber/Lyft	3.5	56
Bicycle	4.1	65.6
Electric Scooter/E-Bike	4.2	67.2
Drive-alone	3.5	56
Drive to SJSU Park & Ride	3.7	59.2
Walk	4.4	70.4
Skateboard/Manual scooter	4.9	78.4
Motorcycle	3.7	59.2
VTA Park and Ride	3.8	60.8

Table 3 Average Commute Frequency

3.6 Additional Survey Results

- a) VTA ridership (including bus, light rail, Access, BART + VTA Express 181, and VTA park and ride) among new students was at 32.2% (Question 3 x Question 10).
- b) 27.2% of the commuters who “always have access to a car” and 77.8% who “sometimes have access to a car” chose to take alternative transportation to campus (Q3xQ5). VTA ridership among “always have access to a car” was 16.1%, and among “sometimes have access to car” was 52.4%.

4 TS Effectiveness

The overall trips reduced among new and continuing student commuters: Total transit (32.8%) plus half of carpool (1.8%) = 34.6% or 12,692.

By filtering for students who responded that they use transit or carpool/vanpool as their primary commute mode (Question 10), and how often they have access to a car (Question 8) we observed that 33.6% always have access to a car and 28.9% sometimes have access to a car for getting to SJSU; Therefore, $12,692 \times 31.3\% = 3,973$ chose not to drive. The total number of automobile trips per day reduced = $3,973 \times 2$ one-way trips per day = 7,946.

Mode of travel prior to use of Transportation Solutions services – Using the results of Questions 28 and 10, along with additional filtering, allowed us to calculate what the student commute mode was before the student began using TS services and after using TS services. The mode of transportation before and after using TS services is summarized in Table 4 below.

The TS effectiveness in reducing drive-alone rate in 2019 was 4.8%. See the drive alone rate before and after using TS Services in Table 4. The total trips reduced per day was calculated by taking the population 36,681 x 4.8% decrease in drive-alone = 1,761 cars x 2 trips/day = 3,522 trips/day.

Transportation Mode	Before	After	Net Change
Bicycle	4.2%	2.9%	-1.3%
Electric scooter/E-Bike	0.7%	0.4%	-0.3%
Carpool	3.4%	1.8%	-1.6%
Dropped Off	16.4%	0%	-16.4%
Uber/Lyft	3.3%	0%	-3.3%
Drive alone (including to SJSU Park & Ride and motorcycle)	15.6%	0%	-15.6%
VTA bus/light rail/Access/Park and Ride	39.8%	76.6%	+36.8%
Regional train/ bus (including Caltrain, Hwy 17 Express, ACE, Amtrak, MST)	6%	14.7%	+8.7%
I live on/near campus, walk/skateboard/manual scooter	10.5%	3.7%	-6.8

Table 4 Commute Mode Before and After Using TS Services