



San Francisco State University 2018 Transportation Survey Results Final Report

July 2018



2018 Transportation Survey Results | Final
San Francisco State University

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1 EXECUTIVE SUMMARY

In October 2007, the City and County of San Francisco and San Francisco State University (SF State) entered into a memorandum of understanding (MOU) to address the impact on the City and County of San Francisco from the implementation of the University's campus master plan and anticipated increase in enrollment on the campus. The MOU identifies a number of measures that the University must take, including the establishment of a traffic monitoring and mitigation program.

In response to the requirements of the MOU, SF State has conducted an online transportation survey and cordon count at least every three years beginning in April 2008 with subsequent surveys taking place in April 2011, April 2014, and April 2016. This report summarizes the results of a survey and cordon count conducted on May 2, 2018. There was a 17 percent response rate to the survey. Survey data are used to track a number of key factors such as mode split, peak hour vehicle trips, peak hour Muni ridership, and greenhouse gas (GHG) emissions.

Key Findings

Key findings from the 2018 transportation survey include the following:

- **Mode Choice:** The University's drive-alone mode share increased slightly this year after declining steadily over the first three surveys and flattening out in 2016. Ride-hail services and taxis now account for a notable share of trips to campus, with five percent of respondents reporting that they used such a service for the SF State end of their trips. Non-motorized modes saw the sharpest declines, while transit ridership stayed roughly flat overall.
- **Vehicle Trips:** The cordon count showed an 11 percent increase in vehicle trips relative to 2014 (the first year in which the current nine cordon count locations were used). The count also showed slightly lower vehicle activity in the AM hours and higher activity in the PM hours, relative to 2014.
- **Residential Locations:** Average distances between residential locations and campus have been steadily increasing in recent years, making average commutes longer and walking, biking, or taking transit to campus harder. This may be, in part, a result of sharp increases in housing prices, especially in the core of the Bay Area, since SF State started regular transportation data collection efforts in 2008.
- **Ride-Hail Services:** Ride hail services did not exist in 2008, but a full nine percent of survey respondents reported using a ride-hail service or taxi for at least one leg of their trips to campus in 2018. Most ride-hail service users reported using the fare-splitting versions of those services (e.g. Uber Pool or Lyft Line), so a large share of ride-hail users may have been sharing rides with other passengers for at least a portion of their trips (though fare-splitting services technically do not *always* find multiple riders along a

given route). Vehicles with ride-hail service decals accounted for roughly 10 percent of this year's cordon count vehicle trips, though nearly 60 percent of them crossed a count location without a passenger in the car (which could either mean they were arriving on-campus to pick up passengers or were simply SF State affiliates' personal cars that are used as ride-hail vehicles during affiliates' spare time). The cordon count only showed ride-hail *passengers* accounting for three percent of total person trips through the nine cordon points, with a plurality of them entering or exiting campus through the one-way loop between Tapia Drive's intersections with Holloway Avenue and Font Boulevard.

- **Gator Pass:** In September 2017, the University inaugurated the Gator Pass, which gives students unlimited Muni rides and a 25 percent discount on BART trips to or from the Daly City station. While transit ridership held steady between 2016 and 2018, a majority of non-freshman students reported that the pass has made them ride Muni and/or BART more frequently, and a large majority reported that the pass has improved their commutes.

2 INTRODUCTION

In 2007, San Francisco State University developed its campus master plan to accommodate a 25 percent increase in its student population through infill and renovation of its compact campus. Many community members raised concerns that campus growth would result in traffic congestion and parking scarcity.

Nelson\Nygaard helped SF State and the City and County of San Francisco negotiate a Memorandum of Understanding (MOU) in October 2007. The MOU includes the University's "fair share" funding commitment to address the impacts of campus growth on the surrounding neighborhood and the transportation network. The University committed to almost \$2 million in transit improvements, along with an extensive list of programs and projects to minimize vehicle trips.

The MOU includes the establishment of a traffic monitoring and mitigation program to determine whether the University's expanded Transportation Demand Management (TDM) efforts are successfully minimizing or avoiding new peak hour trips. As part of the traffic monitoring and mitigation program, the University was required to conduct a baseline cordon count and intercept survey no less than 12 months after the certification of the master plan EIR. Furthermore, additional cordon counts must be conducted at intervals of no more than every three years, and no later than when enrollment grows by 1,000 students by headcount.

In fulfillment of the requirements, SF State conducted the baseline cordon count and intercept survey on the main campus at 1600 Holloway Avenue on Wednesday, April 30, 2008. A Wednesday was selected to ensure that the cordon count and intercept survey would be representative of a typical day on campus, when classes are in session and most affiliates are on campus. The cordon count covered 15 vehicle, pedestrian, and bicycle entry points to campus. Intercept surveys were conducted at seven entrances to campus, and a total of 1,400 surveys were completed.

A subsequent cordon count was conducted on Wednesday, April 27, 2011. The second cordon count covered 16 vehicle, pedestrian, and bicycle entry points to campus. In 2014, the cordon count methodology was revised significantly to focus on vehicle entry points to campus. The third cordon count was conducted on Wednesday, April 23, 2014 at nine locations, and the fourth cordon count was conducted on Wednesday, April 6, 2016 at nine locations. This year's count took place on May 2, 2018 and covered the same nine locations.

In addition to the cordon count, the University has conducted online surveys in 2008, 2011, 2014, 2016, and now 2018. The online survey, sent to all University affiliates, replaced the intercept survey, per discussions between the University and the San Francisco Municipal Transportation Agency (SFMTA). An online survey can provide more detailed information on travel behavior than can be collected during an intercept survey (which are generally limited to just a few questions) or cordon count.

This report presents the findings from the online survey and cordon count efforts on Wednesday, May 2, 2018. For the first time this year, the survey also asked for detailed information on travel behavior for those who were not on campus May 2 but traveled to campus within the prior week.

In total, 5,222 University affiliates responded to the online survey between May 3 and May 14. This report provides an in-depth analysis of the cordon count and online survey, with a discussion of methodology and a comparison to the results of prior data-collection efforts. The report concludes with a carbon footprint analysis for commute trips using data gathered from the online survey.

3 ONLINE SURVEY

San Francisco State University conducted an online survey that asked University affiliates how they travel to and from campus. A total of 5,222 University affiliates responded to the survey between May 3 and May 14, 2018. Of those who responded, 3,820 people stated that they were on campus on Wednesday, May 2. Per the MOU, the campus mode split is based solely on the number people who commuted to and from campus on May 2.

SURVEY DESIGN

Survey respondents were asked a series of questions about their commutes and general travel behavior to and from SF State's main campus at 1600 Holloway Avenue. All respondents were asked a number of background questions, such as their primary affiliation with the University and their zip code. Respondents were then asked to provide travel information for up to four segments of their journey to and from campus.

Each portion of a student, faculty, or staff's commute journey was treated as a separate question, and campus affiliates were asked to identify the mode they took for each segment of their trip. For example, someone who drove to BART, and then took the SF State Shuttle from Daly City Station would enter trip information for three segments: driving, BART, and the SF State Shuttle. Similarly, if a respondent transferred from one Muni route to another, they would enter trip information for two segments. If respondents took BART or Caltrain, they were asked to select the route they took and identify their start and end stations. For each segment, respondents were asked to estimate the number of miles they traveled.

Respondents who stated that they drove or carpooled to campus were asked a series of questions related to parking, including their parking location and how much they paid for parking. Respondents were also asked about their arrival and departure time to campus, as well as participation and knowledge of different TDM programs and services.

In 2016, the project team added ride-hail services (also known as transportation network companies, or TNCs) as a mode choice due to the emergence of Lyft and Uber as a travel option. The ride-hail sector has evolved quickly. As such, the 2018 survey included additional questions to probe whether or not the respondent's ride was an Uber Pool, Uber Pool Express, Lyft Line, or Lyft Shuttle. Response options for transit also reflected changes in the network since the last survey, adding new E-Embarcadero Muni route and BART's new Warm Springs station.

Additionally, the 2018 survey asked students about the Gator Pass, a new program that gives SF State students unlimited access to Muni and a 25 percent discount on BART trips to or from the

BART Daly City Station.¹ Survey questions pertaining to the pass asked whether the pass has changed the way students travel and whether the pass improved students' commute experiences.

The survey was deployed using the Qualtrics survey platform. A copy of the online survey instrument is provided in the Appendix A for reference.

Constraints and Limitations

In 2018, a total of 5,222 University affiliates responded to the survey, with 3,820 people (73 percent of respondents) stating that they were on campus on Wednesday, May 2. Only those who stated that they were on campus on May 2 are included in this analysis, unless otherwise noted. The response rate in 2018 (17 percent) is higher than in previous years (9 percent in 2016, 12 percent in 2014, 11 percent in 2011, and 13 percent in 2008). This can at least in part be attributed University's survey marketing and communication effort, which included reminders in various campus publications and a follow-up e-mail several days after the survey launched. For a campus population of 33,490² a minimum of 1,752 responses is needed to generate results at a 99 percent confidence level with a confidence interval of +/-3 percent. The survey responses received exceed this minimum number of survey responses needed for statistical significance.

METHODOLOGY

The online survey collected rich data on trip patterns. Data clean-up and restructuring was necessary to allow for data analysis. This section describes the data clean-up and restructuring processes, including assignment of weights to make the survey response distribution among students, staff, and faculty reflected the distribution of those groups across the campus population as a whole.

Data Clean-up and Data Restructuring

As a first step, duplicates were removed, and data were cleaned to ensure ease of analysis.

The format of the online survey made it possible for respondents to select up to four legs of their trip. A few respondents did not report on the legs of their trip to campus in a logical or feasible way. For example, a total of 42 respondents stated that they arrived on campus via Caltrain or BART. Since that is not physically possible, the last leg of their journey was adjusted. For example, records for respondents with a last-leg mode of Caltrain were adjusted to reflect taking BART from Millbrae to Daly City and then transferring to the SF State Shuttle. Or, for respondents stating that they arrived on campus via BART, their records were adjusted to indicate that either the SF State Shuttle or Muni was their actual arrival mode.³

¹ San Francisco State University (2017). *OneCard/Gator Pass User Agreement*. Retrieved from <https://onecard.sfsu.edu/agreement>

² San Francisco State University (2018). *Fourth Week Enrollment Summary*. Retrieved from https://air.sfsu.edu/sites/default/files/Spring_percent202018_percent20Fourth_percent20Week_percent20Summary.pdf

³ Respondents who stated they arrived by BART or Caltrain were assigned to Muni Route 28 or the SF State Shuttle based on the percentage breakdown of those respondents who said they took BART and selected a mode of arrival of the 28-19th Avenue, the 57-Parkmerced, or the SF Shuttle.

Mode Split

In order to determine the mode split for University affiliates commuting to and from campus, it was necessary to create several new variables. The newly created variables are as follows:

1. Arrival Mode – The “arrival mode” is the mode by which respondents arrived on campus.
2. Mode prior to arrival mode – The “mode prior to arrival mode” is the mode respondents used before their arrival mode. This trip may have occurred on leg 1, 2, or 3 of their trip, depending on the total number of legs. Respondents who used only one mode of transportation to arrive on campus have no recorded “mode prior to arrival mode.”
3. Departure Mode – The “departure mode” is the mode by which respondents left campus, the first leg of the trip from campus.

In addition to creating new variables, the existing data needed to be restructured in order to meet the requirements of the MOU between the University and the City and County of San Francisco. The MOU requires that all respondents who park and walk within 10 minutes of campus be classified as drivers rather than walkers when determining the mode split and peak hour auto trips. The following steps were taken to address this requirement:

1. Respondents with an arrival mode of walking and a mode prior to arrival of driving or carpooling were identified using the arrival mode variable and the mode prior to arrival variable.
2. An arrival mode distance variable was then calculated using the responses given in the survey to the question “Please estimate the distance you travelled in this segment of your trip.” People whose walk segment was a half mile or less were classified with an auto arrival mode. Half a mile was used because the average speed of walkers is three miles per hour, meaning a 10 minute walk is equivalent to approximately a half mile.
3. For people who did not provide a distance, the location where they parked their car was used. Respondents who drove or carpoled and parked on or near campus were asked to select the zone that corresponded to their parking location on a map of the area surrounding campus. The map covered the area bounded by I-280, Lake Merced Boulevard, Sloat Boulevard, Santa Clara Avenue, Victoria Street, and Head Street. Respondents were given 19 zones from which to choose. Using a half-mile radius, the zones that are within a 10-minute walk to campus were identified. Zones where part but not all of the zone is within a 10-minute walk were considered to be within the half-mile radius. Of the 19 zones, only three are not within the half-mile radius.
4. The same steps were then repeated for the trips from campus.

A similar methodology was applied to people whose arrival mode was “walk” and their mode prior to arrival was Muni in order to more accurately determine the number of peak-hour Muni trips, as required by the MOU. The following steps were taken to address this requirement:

1. Using the arrival mode distance variable, respondents whose walk segment was a half-mile or less were reclassified with a Muni arrival mode. For respondents who did not provide an arrival mode distance, the “Muni route taken” was used. People travelling on routes directly serving campus (M-Ocean View, 57-Parkmerced, 18-46th Avenue, 28-19th Avenue, 28R-19th Avenue Rapid, and 29-Sunset) were reclassified with a Muni arrival mode. Persons travelling on any other Muni routes retained “walk” as their arrival mode.
2. The same steps were then repeated for the trips from campus

DEMOGRAPHICS AND RESIDENTIAL LOCATIONS

Campus Affiliations

All survey respondents, regardless of whether they were on campus on May 2, were asked to provide their affiliation with the University. As shown in **Figure 3-1**, a majority of respondents were students, with nearly 25 percent identifying as either a freshman or graduate student and nearly 60 percent identifying as other undergraduates. Just under 20 percent of surveys were taken by faculty, staff, and administrators.

Figure 3-1 Affiliation with San Francisco State University

Affiliation	Number of Respondents	Percentage (n=5,038)
Freshmen	681	14%
Other Undergraduate	2,869	57%
Graduate Student	575	11%
Faculty	369	7%
Staff or Administrator	532	11%
Visitor/Contractor	12	0.2%

Based on the number of surveys that were collected from the campus's sub-groups, a weight was created to ensure that the relative shares of students and faculty/staff in the sample reflected the relative shares of those two broad segments of the campus population as a whole. **Figure 3-2** shows how this weight affected the survey sample. As in past years, the survey oversampled faculty and staff and undersampled students. As such, each student response was given a weight slightly greater than one, while faculty/staff responses were given a slightly lower weight. This is consistent with the approach used in all previous years of the survey. It should be noted weights were only applied to responses from people who stated they were on campus on Wednesday, May 2, as respondents who stated that he or she was not on campus on May 2 was not included in this analysis.

Additionally, data from some questions were scaled to represent SF State's population on a typical day. This was achieved by calculating the share of key sub-groups that reported on the survey that they were on-campus on May 2. The total population of each sub-group was multiplied by the adjustment factor to determine the average daily population of students and faculty/staff. The daily population, shown in **Figure 3-3** was used to estimate total trips and greenhouse gas emissions for each mode.

Figure 3-2 Adjusted Faculty/Staff and Student Responses

	Total Population	Online Responses On Campus May 2	Adjusted Weight	Weighted Response
Students	29,607 (88%)	3,092 (81%)	1.09	3,377 (88%)
Faculty/ Staff	3,883 (12%)	728 (19%)	0.61	443 (12%)
Total	33,490	3,820		3,820

Figure 3-3 Population Scale

Affiliation	Total Population ⁴	Adjustment Factor ⁵	Estimated Daily Population on Campus
Students	29,607	75%	22,193
Faculty/Staff	3,883	80%	3,096
Total	33,490		25,289

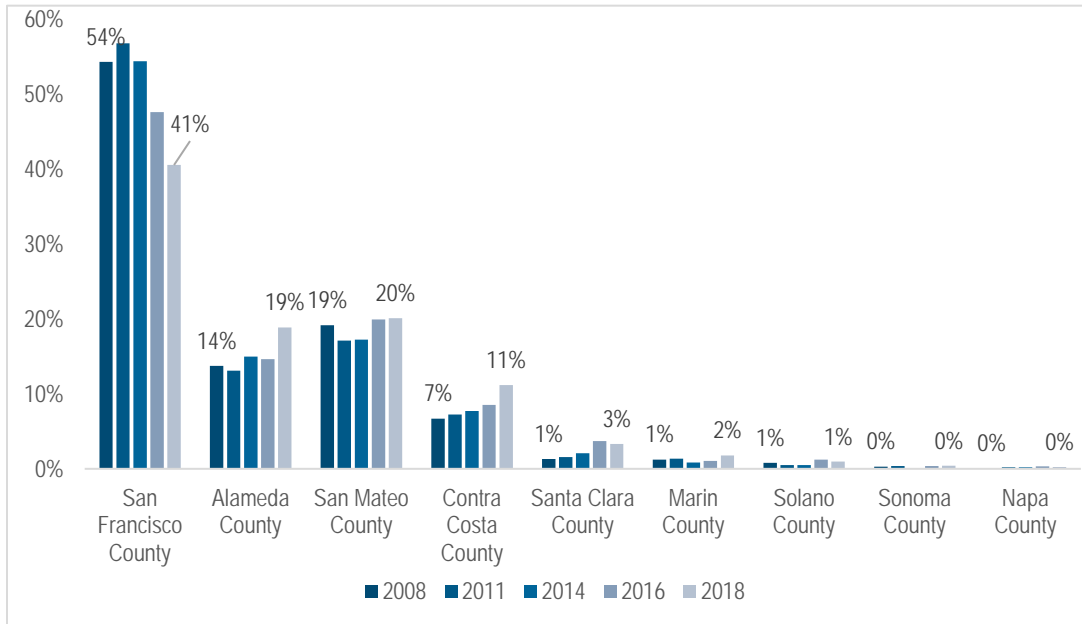
Residential Location

Respondents were grouped by their residential locations based on ZIP code data collected in the survey. As illustrated in **Figure 3-4**, the largest concentration of SF State affiliates live in San Francisco (40 percent). However, over the last decade, the number of respondents reporting their residential location as San Francisco has declined by more than 30 percent since 2008, falling from 54 percent to 41 percent. Over the same period, the number of SF State affiliates living in the East Bay has gone up accordingly, with Alameda and Contra Costa Counties seeing an increase between four and five percentage points since 2008.

⁴ San Francisco State University (2017). *SF State Facts*. Retrieved from <https://puboff.sfsu.edu/sfsufact/archive/1718/students> and <https://puboff.sfsu.edu/sfsufact/archive/1718/facstaff>

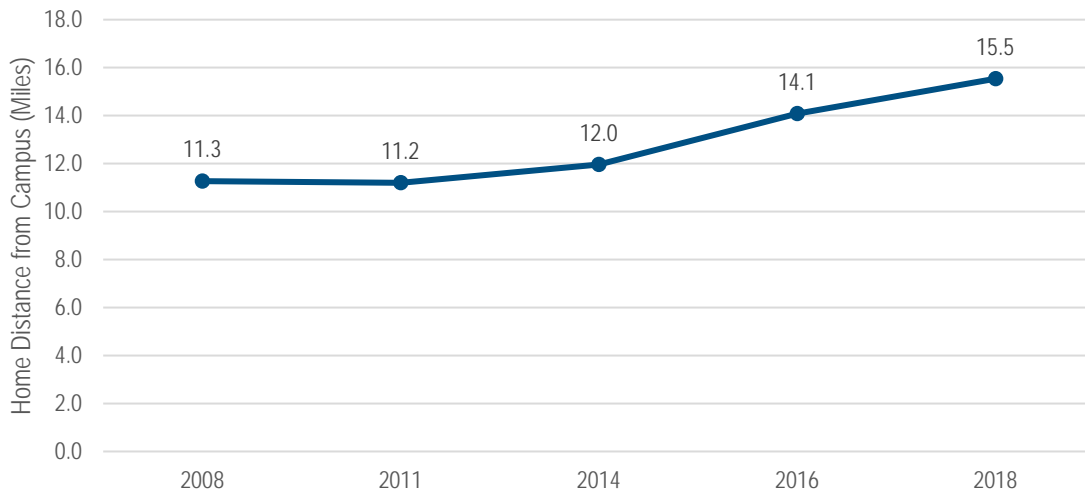
⁵ Adjustment factor determined by survey responses sample. In the 2018 sample, 25 percent of students and 20 percent of faculty or staff said they were not on campus May 2.

Figure 3-4 Residential Location by County, 2008 – 2018



These trends likely reflect changes in the housing market since 2008, with San Francisco County seeing increases in home prices and rents that outpace regional increases. As will be discussed later, this trend is likely having a substantial impact on people’s travel behavior, offsetting some of the effects of the University’s investments in TDM. The average distance between home ZIP codes and SF State has increased steadily over the five survey periods and has risen by 38 percent overall since 2008 (see **Figure 3-5**). In effect, respondents are traveling from about five miles farther away today than they were in 2008. These longer commutes may mean walking, cycling, or taking Muni are no longer viable options for some respondents.

Figure 3-5 Weighted Average Distance from Origin to Campus (Respondents On-Campus May 2)



TRAVEL BEHAVIOR

The following section discusses travel-behavior results from the online survey, focusing on mode split, Muni and BART ridership, and parking preferences. Unless otherwise noted, results shown in this section only include those respondents who stated that they were on campus on Wednesday, May 2, 2018. Weights for the student to faculty/staff ratio were applied for all questions.

Mode Split

Figure 3-6 shows the mode people used to arrive to campus on May 2. Muni was the most common mode, at 31.4 percent, followed by drive-alone at 23.1 percent. The 2018 survey saw a notable shift in the number of people walking or biking to campus. University affiliates used the SF State Shuttle roughly as much as in previous years, as well as other bus providers such as AC Transit, SamTrans, and Golden Gate Transit.

Figure 3-6 Mode of Arrival to Campus

How Online Survey Respondents Got to SF State	2018	2016	2014	2011	2008	% Change Relative to 2008 ⁶
	(n= 3,273)	(n=2,238)	(n=3,013)	(n=2,684)	(n=3,292)	2008 – 2018
Muni	31.4%	31.3%	29.8%	29.4%	30.6%	2.6%
Drove Alone	23.1%	20.1%	19.7%	23.0%	26.0%	-11.2%
SF State Shuttle	17.1%	17.9%	16.7%	18.7%	16.9%	1.2%
Walk	14.0%	17.5%	17.0%	13.7%	12.3%	13.8%
Taxi or Ride-Hail Service	5.3%	1.7%				
Carpool/Vanpool	2.2%	1.8%	3.9%	4.5%	4.9%	-55.1%
Dropped Off / Picked Up	2.2%	2.4%	4.7%	3.0%	2.4%	-8.3%
Other bus provider than Muni (e.g. AC Transit/Golden Gate Transit/SamTrans)	2.2%	2.1%	2.8%	2.0%	1.5%	46.7%
Bicycle	1.4%	3.4%	3.8%	4.1%	3.5%	-60%
Other	0.7%	1.2%	1.0%	0.5%	1.1%	-36.3%
Motorcycle/Moped	0.4%	0.6%	0.4%	1.2%	0.7%	-42.9%

⁶ The percent change is calculated by dividing the difference between the 2018 and 2008 mode shares by the 2008 mode shares. For example, for Muni, we use the following equation: $(31.4\% - 30.6\%) / 30.6\% = -0.3\%$. The number represents the percent change in mode share relative to the 2008 numbers.

The drive-alone rate increased slightly between 2016 and 2018 after steady decreases over the first three survey periods. This change is outside the margin of error, and it may reflect a range of factors, from home location changes noted in the previous section to state-wide and national trends. For example, vehicle travel has increased substantially in the last few years after staying flat between 2008 and 2013, according to data from Caltrans, likely reflecting the steady economic expansion in California after the 2008 economic crisis. Overall, VMT on California roads has increased by 15 percent since 2008.⁷

Other trends may in part reflect changes in the mobility ecosystem in recent years. For example, between 2016 and 2018, bike and walk trips decreased by about five percentage points. This change may in part be attributed to the increased use of Uber and Lyft, which according to the survey, represented 5.3 percent of the arrival mode split. This is on par with national trends showing that commuters are substituting ride-hailing in place of public transit, biking, and walking trips.⁸ The Gator Pass program and its unlimited Muni access may have also caused people who live near campus but along Muni lines that conveniently serve SF State to switch from walking or biking to transit.

Figure 3-7 presents the share of affiliates reporting specific modes for any segment. More than a third of all respondents – students, faculty, and staff – used Muni for at least a portion of their trip and nearly 30 percent of respondents reported taking BART for a portion of their trip. The increase of BART ridership over the last decade may be attributed to a combination of the increase in the number of SF State affiliates living in the East Bay, particularly in Alameda and Contra Costa Counties where residents are well-served by BART, and the introduction of the Gator Pass in the 2017-18 school year.

⁷ Caltrans (2018). *Monthly Vehicle Miles of Travel*. Retrieved from <http://www.dot.ca.gov/trafficops/census/mvmt.html>

⁸ Regina Clewlow, PhD. (2017). *New Research on How Ride-Hailing Impacts Travel Behavior*. Retrieved from <https://www.planetizen.com/features/95227-new-research-how-ride-hailing-impacts-travel-behavior>

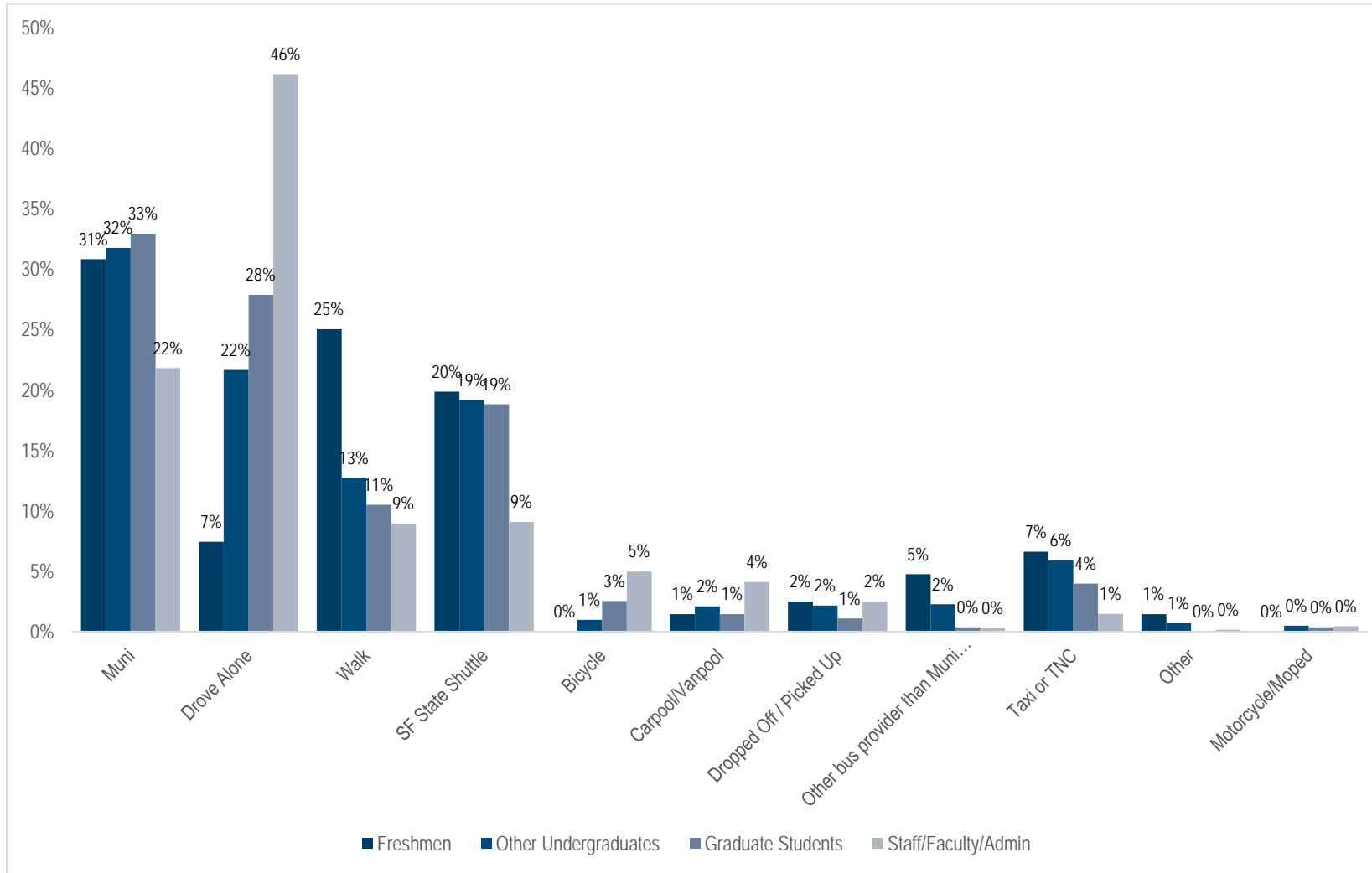
Figure 3-7 All Modes Used to Get to Campus

How Online Survey Respondents Got to SF State	2018 (n=3,304)	2008 (n=3,292)
Muni	36%	36%
Drove Alone	32%	34%
SF State Shuttle	21%	21%
BART	28%	21%
Walk	30%	19%
Bicycle	2%	6%
Carpool/Vanpool	4%	7%
Dropped Off / Picked Up	7%	4%
Other bus provider than Muni (e.g. AC Transit/Golden Gate Transit/SamTrans)	7%	3%
Motorcycle/Moped	1%	1%
Other	2%	2%
Caltrain	2%	1%
Taxi or Ride-Hail Service	9%	

The number of respondents that drove alone for at least a portion of their commute has declined slightly since 2008, from 34 percent to 32 percent. The differential between the share of affiliates driving on their approach to campus and the share using a car for a portion of their trip likely reflects those driving to transit or driving and parking further than a half mile from campus (as noted above, anyone who drove and walked less than a half mile to campus was assigned “drive alone” as their approach mode). A full 9 percent of affiliates reported using a ride-hail service for some portion of their trip. This was an option that did not exist in 2008, and it may at least partially explain declines in some other modes. For example, the share of respondents reporting that they took Muni for at least one link of their trip to campus declined by 2 percent despite the introduction of the Gator Pass, which effectively gives students a substantial discount on a monthly Muni pass. This may, in part, reflect the attractiveness of door-to-door service for certain routes and circumstances.

Figure 3-8 provides a mode split breakdown by campus affiliation for 2018. Muni continues to be the most commonly used mode for all students (whether they are freshman, other undergraduates, and graduate students). While drive alone rates for all students have decreased steadily since 2008, driving alone remains the most popular mode for faculty and staff, with 45 percent arriving to campus in a single-occupant vehicle. Additionally, while carpooling and vanpooling are more popular options amongst faculty and staff, the number of employees choosing to commute in this way has declined by four percentage points since 2008. The use of ride-hail services was most pronounced among younger students, with steady declines as the average age of a particular campus population subgroup rises.

Figure 3-8 Arrival Mode by Affiliation (2018)



Mode Split on Other Days

For the first time, the 2018 survey asked people who were not on-campus on May 2 to report on their journeys to and from campus on a specific day other than May 2 that they were on-campus. **Figure 3-9** compares the mode split of those not on-campus May 2 to those who were on-campus. The sample of people not on-campus May 2 skewed slightly toward drive-alone commuters, with fewer people walking, taking Muni, or taking taxis or ride-hail services. The sample is large enough that it may indicate statistically significant differences in travel behavior. The higher propensity to drive on the other days was despite the sample including a slightly higher share of students (91 percent of those reporting behavior for a day other than May 2 also reported being students, while 87 percent of the May 2 sample was students), who showed a much lower propensity than faculty and staff to drive overall. We lack data on the factors that might explain this difference (e.g. if traffic is lower on days other than Wednesday, that might lead people to have an increased propensity to drive to campus).

Figure 3-9 Arrival Mode Split on Days Other than May 2

Mode	Not On-Campus May 2 (n=1,063)	On Campus May 2 (n=3,273)
Muni	29%	31%
Drove Alone	28%	23%
SF State Shuttle	24%	17%
Walk	7%	14%
Taxi or Ride-Hail Service	3%	5%
Carpool/Vanpool	2%	2%
Dropped Off / Picked Up	2%	2%
Other bus provider than Muni (e.g. AC Transit/Golden Gate Transit/SamTrans)	2%	2%
Bicycle	2%	1%
Other	0%	1%
Motorcycle/Moped	1%	0%

Commute Costs

University affiliates participating in the survey were asked how much they spend each day on their commute to and from campus, regardless of whether they traveled to the main campus on May 2. As displayed in **Figure 3-10**, 25.8 percent reported not spending anything on their commute, while nearly 45 percent reported spending between \$5 to \$14 on their commute, per day.

Figure 3-10 Cost of Commute

Amount Spent on Daily Commute (roundtrip n=3,785)	Percentage
\$0	25.8%
\$1 - \$4	9.4%
\$5 - \$9	23.0%
\$10 - \$14	21.3%
\$15 - \$19	8.8%
\$20 - \$24	5.6%
More than \$25	6.2%

Transit

The two systems included in the Gator Pass program – Muni and BART – are the transit systems that are most heavily utilized by the campus population.

Muni

Figure 3-11 shows ridership levels for the five Muni routes that directly serve the University. The 28-19th Avenue, which travels along 19th Avenue between the Marina and Daly City BART, was the most popular Muni route for SF State commuters (35 percent). The figure shows the 28-19th Avenue and 28R-19th Avenue Rapid separately for 2018 but together for 2008, as Muni Forward included substantial changes for the 28R. While its predecessor line, the 28L, traveled to Daly City BART, the adjusted route now travels to Balboa Park BART. The total ridership for the routes traveling to and from Daly City BART – the 28 in 2018 and both the 28 and 28L in 2008 – stayed roughly the same over the period, but, given that most respondents reporting that they used the 28R were students, the overall increase in ridership on the two lines together may reflect the increased utility of the 28R for rides along 19th Avenue and the reduced barriers to Muni use with the introduction of the Gator Pass.

The 57-Parkmerced has seen substantial ridership increases since 2008, which likely reflects the fact that it now also connects with Daly City BART, making it another convenient transfer option. The second-most heavily traveled route was the M-Ocean View (28 percent). However, the survey data suggest that the M-Ocean View has experienced a decline in ridership over the last decade overall. The share of Muni riders taking the M-Ocean View has declined since 2008, even while Muni ridership overall has stayed relatively flat. This suggests that SF State affiliates were using Muni for different trips in 2018 than they were in 2008, which may reflect the dramatic changes in home locations reviewed earlier. Muni's mode share for trips *from* campus (26%) was also lower than it was for trips *to* campus (31%) in 2018, which also helps explain the drop in estimated Muni ridership overall and estimated ridership on the M-Ocean View specifically. This may reflect the increasing availability of real-time transportation information and of other transportation options like ride-hail services: Those taking transit to campus may simply be taking advantage of the additional flexibility offered by these changes in transportation technology to make different travel choices in each direction.

Figure 3-11 Daily Estimated Number of Muni Trips by Muni Route

Muni Route	2018	2008
M-Ocean View	3,900	6,700
28-19th Avenue*	4,670	4,800
28R-19th Avenue Rapid*	1,360	
29-Sunset	1,940	2,200
57-Parkmerced**	1,020	160
18-46 th Avenue	360	600
Total	13,250	14,460

Note: N = Total Estimated Population On-Campus May 2, 2018. Estimates rounded to the nearest 10.

* As of 2018, the 28R-19th Avenue no longer serves Daly City BART, so ridership was broken out separately for 2018.

** The 57-Parkmerced was called the 17-Parkmerced until Muni Forward route changes that connected it with Daly City BART.

The 2018 survey suggests that the morning peak is between 9 a.m. and 10 a.m. for Muni. This is a shift from 2016, when the peak hour was between 8 a.m. and 9 a.m., but is consistent with 2011 and 2014. **Figure 3-12** and **Figure 3-13** show the estimated number of morning and evening peak-hour trips on each of the five routes that directly serve the campus. The hour reported for the morning reflects the campus peak, while the hour reported for the evening reflects Muni's system-wide peak hour (per the reporting requirements in the MOU). Estimated morning peak and evening peak-hour ridership reached new highs in 2018 with growth seen on the 28 and 28R and on the 57-Parkmerced, as the daily numbers showed as well. Despite declines on the M-Ocean View, total peak-hour ridership on the five lines is up during peak hours relative to 2008, even while Figure 3-11 shows a slight decline in daily ridership. This is somewhat consistent with broader transit-ridership trends – some agencies have reported growing peak-period ridership and declining off-peak ridership in recent years.⁹ It may be at least in part attributable to the competitive advantages of ride-hail services during off-peak periods in particular, when transit frequencies are lower and congestion is less of a drag on private-vehicle travel times than it is during peak periods.

Figure 3-12 and **Figure 3-13** show the trend in peak-hour directional ridership on the M-Ocean View, the 28-19th Avenue, and the 28R-19th Avenue Rapid (though the Muni Forward adjustments to the 28R since the 2016 survey made it serve different markets at either end of the line, the two 28-series lines are combined to enable comparisons across years; as the prior figures showed, the 28 accounts for a majority of the combined ridership). The M-Ocean View outbound, 28/28R southbound, and 28/28R northbound all show consistent higher peak-hour ridership in the morning than in the afternoon, which likely reflects a combination of class schedules and the student-heavy skew of Muni ridership. The trend for the inbound M-Ocean View is less clear, which may reflect the effects of a small sample size for the data upon which this question draws.

⁹ One example, from Boston: <https://www.bostonglobe.com/metro/2017/11/10/declining-ridership-why-and-where/KqeVpQluiuY5jWdb9Dzml/story.html>.

Figure 3-12 AM SF State Peak Hour (Varies by Year) Estimated Muni Trips

Muni Route	Number of trips	
	9:00 AM – 10:00 AM	8:00 AM – 9:00 AM
	2018	2008
M-Ocean View	620	800
18-46 th Avenue	180	70
28-19th Avenue	560	570
28R-19th Avenue Rapid	260	
29-Sunset	430	260
57-Parkmerced	190	20
Total	2,240	1,720

Note: N = Total Estimated Population On-Campus May 2, 2018. Estimates rounded to the nearest 10.

Figure 3-13 PM Muni Systemwide Peak Hour (5 PM to 6 PM) Estimated Muni Trips

Muni Route	Number of trips	
	5:00 PM - 6:00 PM	5:00 PM - 6:00 PM
	2018	2008
M-Ocean View	240	410
18-46 th Avenue	60	40
28-19th Avenue	280	290
28R-19th Avenue Rapid	120	
29-Sunset	270	130
57-Parkmerced	130	10
Total	1,100	880

Note: N = Total Estimated Population On-Campus May 2, 2018. Estimates rounded to the nearest 10.

Figure 3-14 Estimated M-Ocean View Ridership by Direction, AM and PM Peak Hours (n=85)

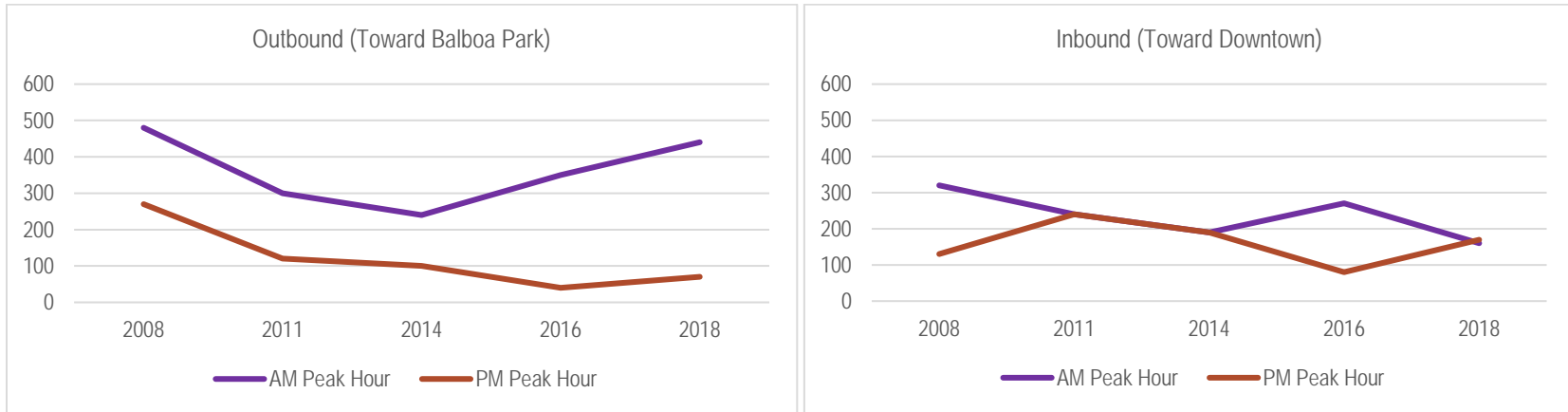
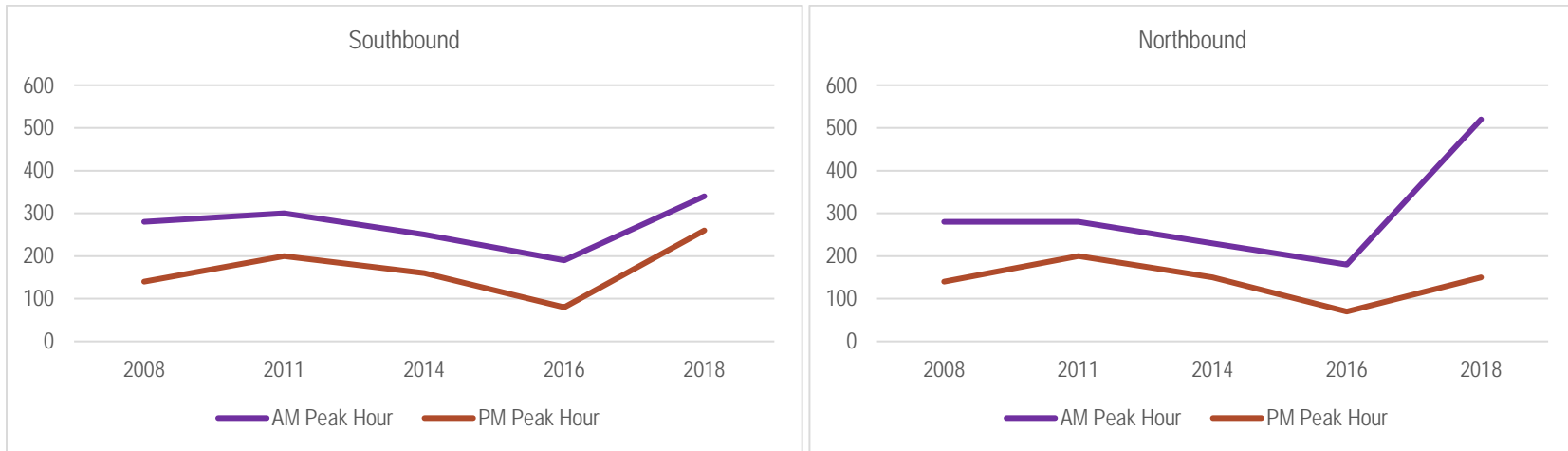


Figure 3-15 Estimated 28-19th Avenue and 28R-19th Avenue Rapid Ridership by Direction, AM and PM Peak Hours (n=112)



BART

As shown in **Figure 3-16**, the majority of survey respondents who take BART live in the East Bay. Fifty-five percent reported living in Alameda County and 32 percent reported living in Contra Costa County. The percentage of respondents who live in San Francisco and take BART has declined considerably in the last two years, from more than 20 percent to 4 percent. This change may also be due to the launch of the Gator Pass, which gives SF State students unlimited access to all Muni routes. This is a substantial advantage over the 25 percent discount for BART rides to Daly City station. It may also reflect the steady decline in San Francisco residents noted earlier.

Figure 3-16 Home County of BART Riders

County	Percentage of Respondents who take BART (n = 851)
Alameda	55%
Contra Costa	32%
San Francisco	4%
San Mateo	10%

Parking

Preferred Parking Locations

On May 2, an estimated 23 percent of commuters arrived to campus via single-occupancy vehicle. As shown in **Figure 3-17**, of those who drove, almost 60 percent parked on campus in either Lot 25, the central parking structure, or other central parking lots (**Figure 3-18** shows the five areas included in Figure 3-17 on a map of the campus and surroundings). While the majority of respondents parked on campus, a portion opted to park on streets adjacent to central campus. About 20 percent of respondents parked just south of campus along Lake Merced Boulevard or in Parkmerced. Streets located beyond Brotherhood Way to the south and Junipero Serra Boulevard to the east were the least favored places to park.

Figure 3-17 Parking Locations of Survey Respondents (n=855)

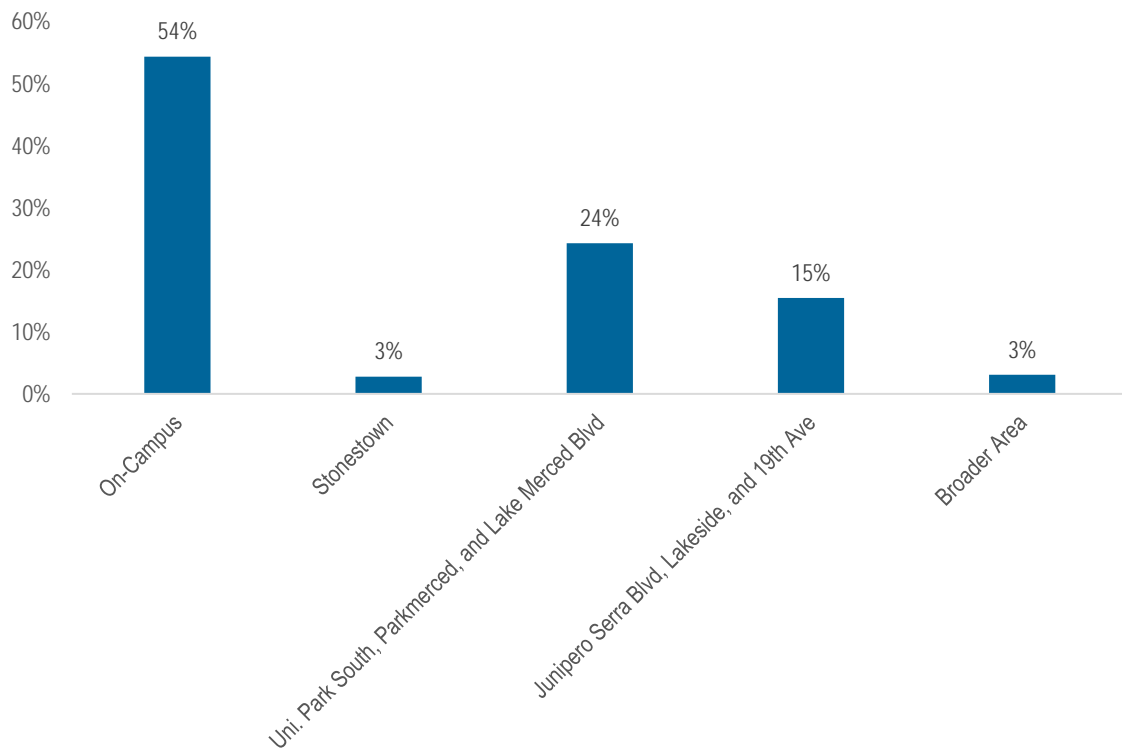
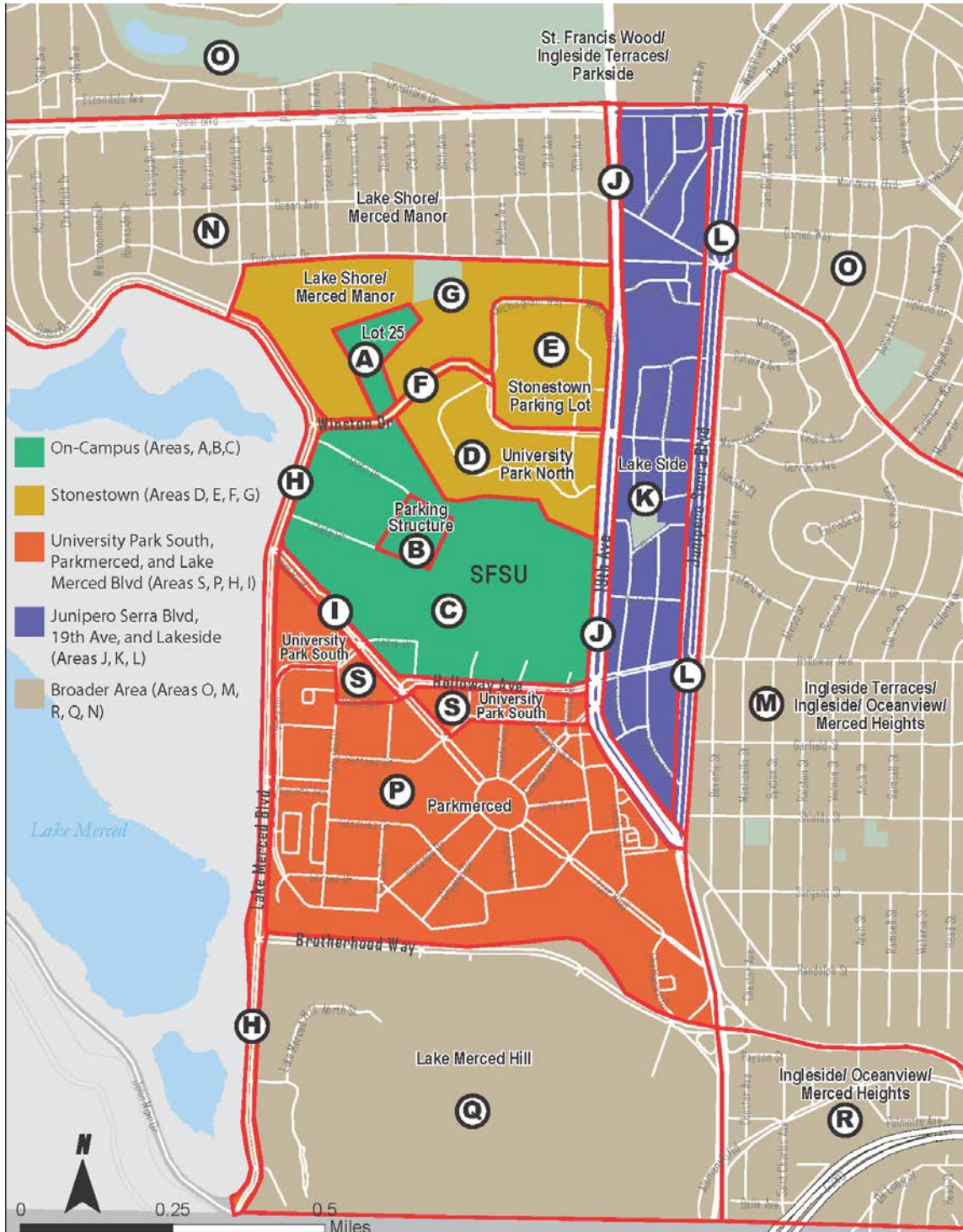


Figure 3-18 Parking Area Reference



Parking Prices

Survey respondents who stated that they drove to campus were asked how much they paid to park. **Figure 3-19** shows that more than 40 percent of campus affiliates did not pay to park, a smaller percentage than in years past. The share of respondents who reported having a parking permit held steady at roughly 25 percent. The distribution of those who paid for parking in another way skewed more expensive than in years past, with a marked shift toward the \$7 to \$10 range per day. This may reflect increases in hourly parking prices that went into effect November 1, 2016, after the 2016 survey. Currently, the non-permit daily parking price is \$8 and the price of faculty and staff semester permits are approximately \$90,¹⁰ which equates to approximately \$1 per day.

Figure 3-19 Parking Costs

Cost Per Day	% of Respondents 2018 (n=852)	% of Respondents 2016 (n=492)	% of Respondents 2014 (n=845)	% of Respondents 2011 (n=1,042)	% of Respondents 2008 (n=1,373)
Free	42%	49%	52%	57%	54%
Less than \$1	0%	1%	1%	1%	1%
\$1 - \$2	1%	1%	2%	4%	4%
\$2 - \$4	1%	1%	3%	6%	7%
\$4 - \$7	3%	13%	20%	18%	20%
\$7 - \$10	27%	11%	0%	1%	1%
More than \$10	2%	1%	1%	1%	1%
SF State Semester/ Yearly Pass	23%	24%	21%	13%	14%

Ride Hail Services

After asking about ride-hail service use for the first time in 2016, the 2018 survey probed further on the use of specific ride-hail services. Specifically, the survey asked if individual ride-hail trip links were made by fare-splitting services (e.g. UberPool or Lyft Line), which are cheaper than standard services (e.g. UberX and Lyft) and, by enabling multiple parties traveling in the same general direction to share a vehicle for at least part of a ride, can be associated with higher vehicle occupancies. As **Figure 3-20** and **Figure 3-21** show, the vast majority of ride-hail users and of individual legs in people's trips to or from campus that used ride-hail services were made using a fare-splitting service.

¹⁰ Source: <https://parking.sfsu.edu/sfsu-parking/parking-permits/staff-permits>

Figure 3-20 Use of Fare-Splitting Services among Ride-Hail Users (n=312)

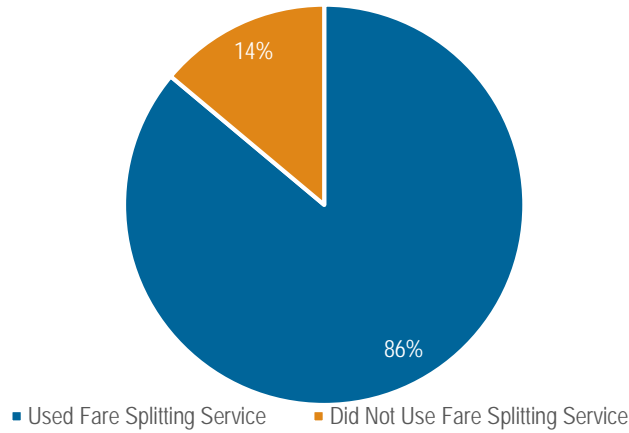
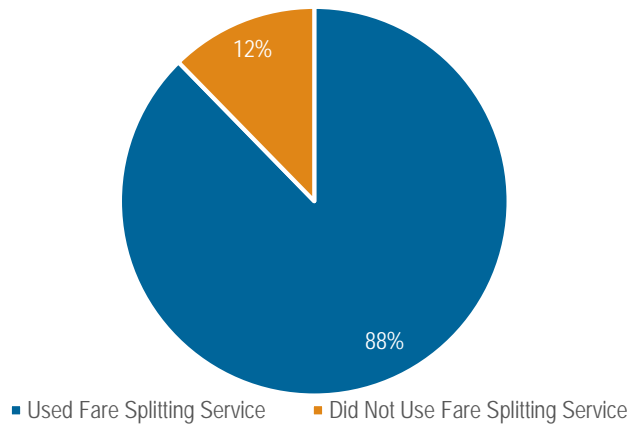


Figure 3-21 Ride-Hail Trip Legs Using Fare-Splitting Services (n=528)



INCENTIVES TO USE OTHER MODES

Programmatic Incentives to Use Non-Driving Modes

The 2018 survey probed to understand how the Gator Pass might be influencing students' commute behavior. As shown in **Figure 3-22**, nearly 60 percent of all students – both graduate and undergraduate – reported that since the launch of the Gator Pass, they use BART, Muni, or both transit systems more frequently. However, when comparing between the two transit agencies, a higher percentage of students stated that they ride Muni more frequently than those that ride BART. This is likely attributed to the fact that the Gator Pass offers unlimited rides on all Muni routes and only affords students a 25 percent discount on BART rides to and from Daly City Station.

Figure 3-22 How the Gator Pass has changed Students' Commute Behavior

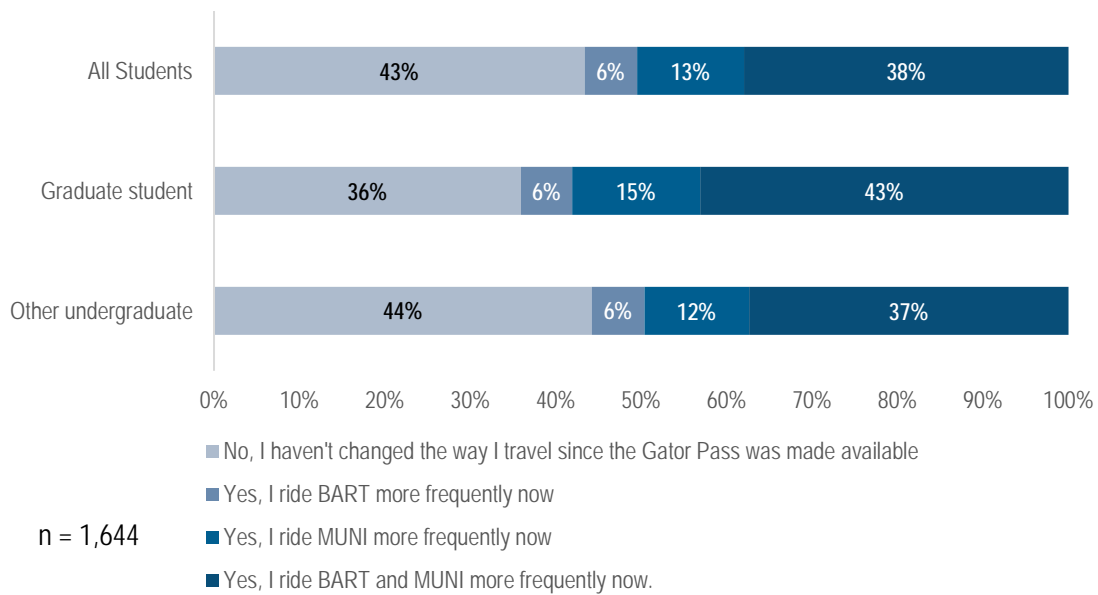
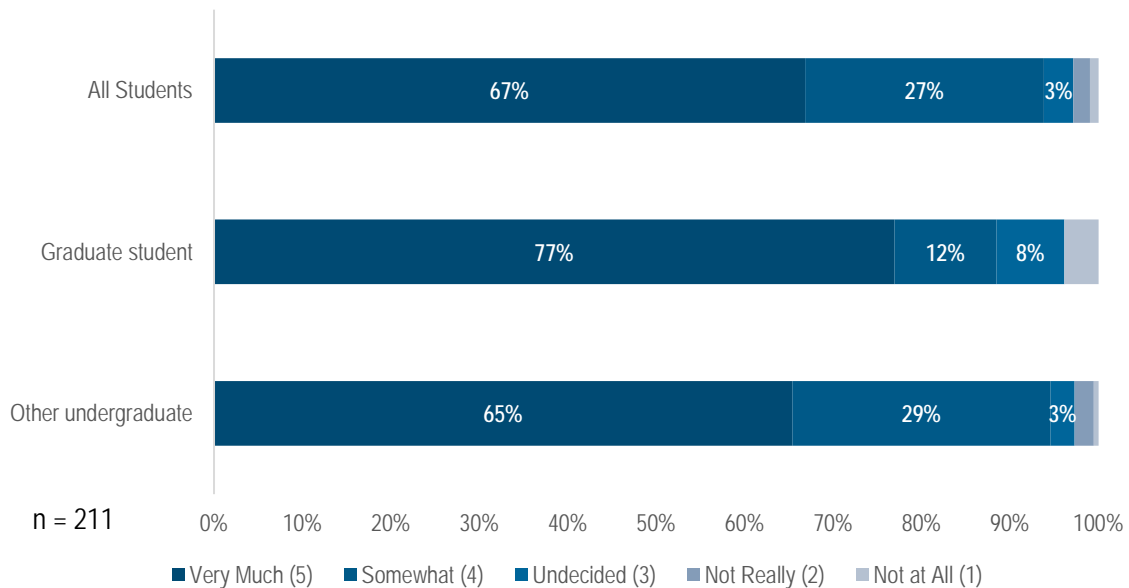


Figure 3-23 shows a smaller sub-set of student responses on the extent to which the Gator Pass has improved commutes. More than 95 percent of respondents (n = 211) confirmed that the Pass has improved their travel to and from campus. Note that there is some potential for response-bias in this question – people with more positive feelings toward the program could have been more motivated to register their positive feelings about it. Still, the overwhelmingly positive responses give a general indication of feelings toward the program.

Figure 3-23 To What Extent has the Gator Pass Improved Your Commute?



Potential Future Transportation Programs

University affiliates participating in the online survey who stated that they drove to campus on May 2 were asked which programs might encourage them to use a mode other than driving alone to get to campus. They were asked to select all programs they found interesting from the list of programs shown in **Figure 3-24**. “Improved buses and trains to campus” was the top choice followed by “Improved shuttle service from BART to University” and “Mobile app to match drivers and riders the night before or morning of my commute.”

Figure 3-24 Programs to Encourage Drivers to Use Alternative Modes

Incentives – (n= 1,730)	Percent of Respondents Making Each Program Selection
Improved buses and trains to campus	26%
Improved shuttle service from BART to the University	17%
Mobile app to match drivers and riders the night before or morning of my commute	15%
None	15%
If nearby free or on-street parking were to be eliminated	10%
If the University were to charge more for parking	5%
Safer bike lanes on city streets	5%
Improved on-campus bike paths and bike parking	4%
Bike share on campus and at BART Stations	3%

4 CORDON COUNT

INTRODUCTION

As part of the University's effort to comply with the MOU, the University sponsored a cordon count on Wednesday, May 2, 2018 to accompany the survey effort. The cordon count provides information on how many and where University affiliates are entering and exiting the campus and at what times of day they enter and exit. This year's count is the fifth count conducted since 2008.

METHODOLOGY

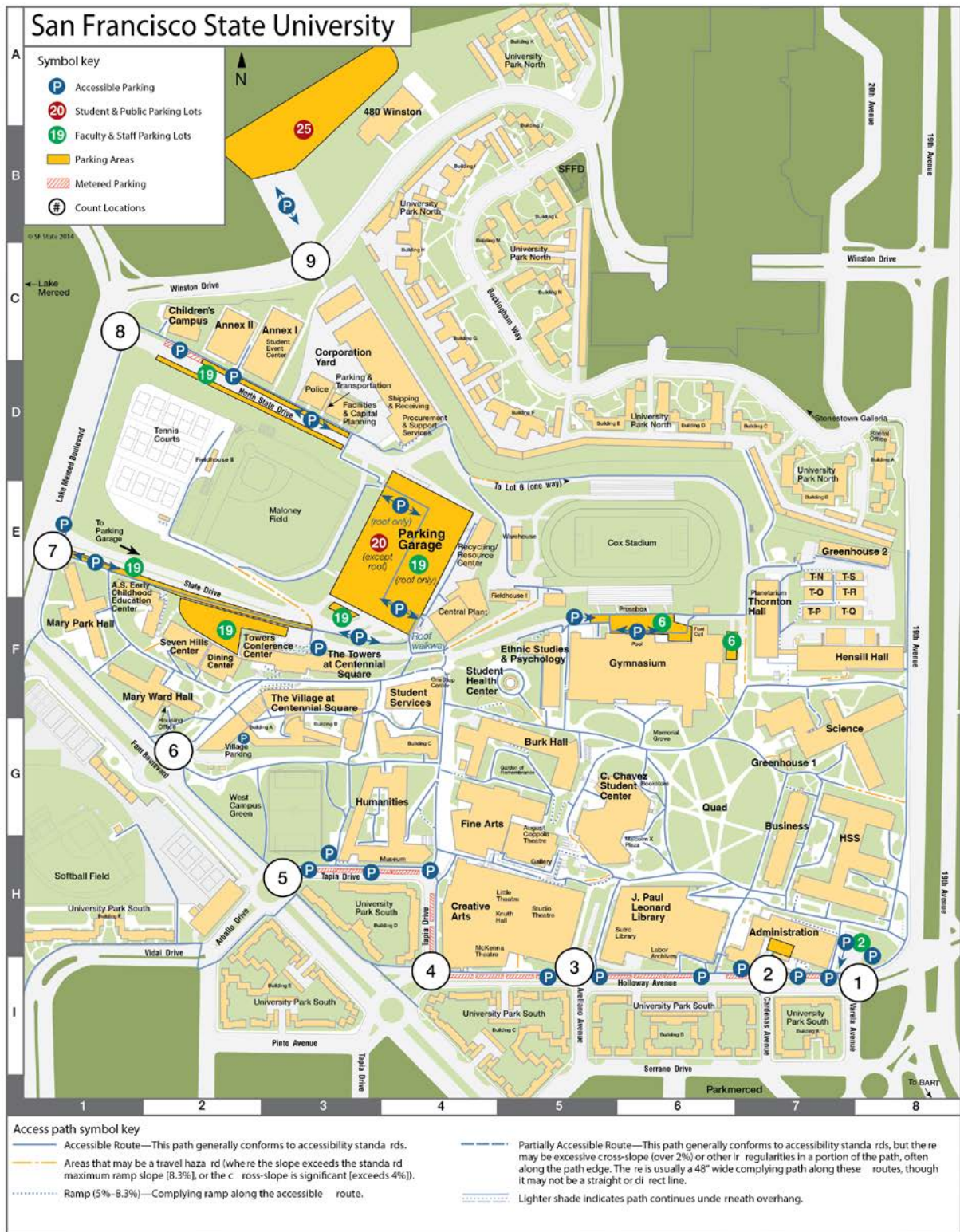
The cordon count was conducted from 7 a.m. to 7:30 p.m. at nine locations around the perimeter of campus. The selected locations are public vehicle access points, providing access to interior roadways and parking facilities. This year's count used the same nine cordon locations as did the 2016 and 2014 counts.

Vehicles were counted in 15-minute increments at each of the nine locations. Surveyors were instructed to distinguish between personal vehicles, carpools (vehicles with two or more persons), motorcycles, and other vehicles. Other vehicles included campus vehicles, delivery trucks, transit vehicles, and security vehicles. At least one surveyor was stationed at each location.

For the first time, the 2018 cordon count differentiated between standard passenger vehicles and those associated with ride-hail services (based on the standard identification signs in vehicle windows). Surveyors also distinguished between ride-hail services by type, separately tallying carpools and single-passenger rides.

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Figure 4-1 Cordon Count Locations



RESULTS

Figure 4-2 shows the number of vehicles that entered and exited the campus at the nine locations. Note that between 2011 and 2014, cordon count locations were amended, reducing the number of sites from sixteen to nine. Consequently, *change over time* is calculated using 2014 as the baseline year, rather than 2008. A total of 10,674 vehicles entered or exited the campus during the 2018 count period, an increase of 11 percent since 2014. All but two cordon locations – Holloway Avenue & Cardenas Avenue and State Drive & Lake Merced Boulevard – saw an increase in the number of vehicles entering and exiting campus.

Figure 4-2 Number of Vehicles Entering and Exiting by Location

Location		2018			2014			% Change in Total
		Entering	Exiting	Total	Entering	Exiting	Total	
1	Holloway Ave & Lot 2	82	79	161	55	59	114	41%
2	Holloway Ave & Lot 1	35	36	71	53	46	99	-28%
3	Holloway Ave & Arellano	66	139	205	82	83	165	24%
4	Holloway Ave & Tapia Dr ¹¹	1,415	1	1,416	1,066	--	1,076	32%
5	Font Blvd & Tapia Dr ¹²	--	1,294	1,294	--	1,027	1,027	26%
6	Font Blvd & Mary Wald Hall	229	303	602	129	121	250	14%
7	State Dr. & Lake Merced Blvd	3,008	2,405	5,413	3,201	2,437	5,638	-4%
8	N. State Dr. & Lake Merced Blvd	562	852	1,414	435	765	1,200	18%
9	Winston Dr. & Lot 25 ¹³	47	51	98	42	37	79	24%
	Total	5,514	5,160	10,674	5,063	4,575	9,638	11%

The emergence of ride-hail services likely explains a portion of the increase in vehicles: Ride-hail vehicles with passengers accounted for 226 and 150 entries and exits respectively during the 2018 count period. Note that the ride-hail vehicle totals captured by the 2018 count may not reflect all ride-hail use, as some people coming to SF State may direct ride-hail drivers to locations just off-campus (e.g. on 19th Avenue or along Holloway Avenue). Note also that the count captured 335 and 336 vehicles entering and exiting respectively that had ride-hail decals but no passengers. More than half of these vehicles entered and exited at the North State Drive and Lake Merced Boulevard count location, though that location is in the far northwest corner of campus, away

¹¹ Vehicles may only enter at Holloway Avenue and Tapia

¹² Vehicles may only exit at Font and Tapia

¹³ Location 9 changed in 2016 from 2014.

from the highest traffic campus buildings. That is an indication that some or many of these vehicles may be those of students or staff who use their cars as to drive for a ride-hail services at times, rather than ride-hail vehicles actively picking up or dropping off a passenger.

As **Figure 4-3** shows, more than 50 percent of all entries and exits occurred at State Drive and Lake Merced Boulevard, which connects to the primary parking facility on campus. The intersections of Holloway Avenue & Tapia Drive and Font Boulevard & Tapia Drive (which, together, create a one-way loop) continued to experience high vehicle activity, absorbing a quarter of all vehicle entries and exits respectively. Nearly a third of the entries and exits of ride-hail vehicles with passengers occurred at Tapia Drive’s intersections with Holloway Avenue and Font Boulevard (the one-way loop), which makes sense given the concentration of important campus destinations in the area.

Figure 4-3 Share of Vehicles Entering and Exiting at Each Location, by Vehicle Type

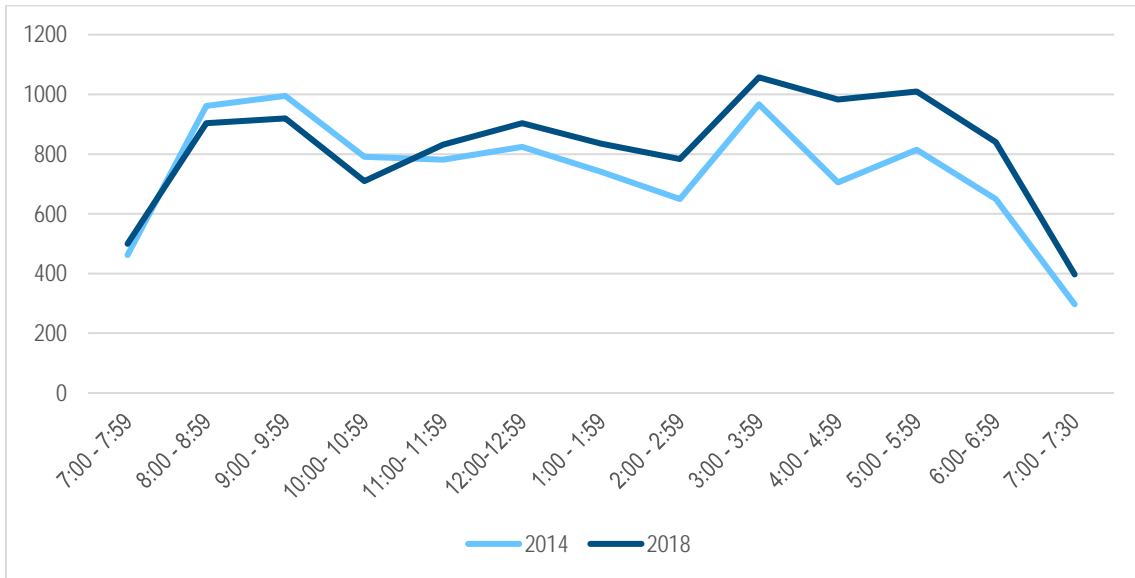
Location	Name	Share of Total	Share of Total	Share of With-Passenger Ride-Hail Entries	Share of With-Passenger Ride-Hail Entries
		In	Out	In	Out
1	Holloway Ave & Lot 2	1%	2%	1%	1%
2	Holloway Ave & Lot 1	1%	1%	0%	0%
3	Holloway Ave & Arellano	1%	3%	0%	3%
4	Holloway Ave & Tapia Dr	26%	0%	34%	0%
5	Font Blvd & Tapia Dr	0%	25%	0%	32%
6	Font Blvd & Mary Wald Hall	5%	6%	20%	31%
7	State Dr. & Lake Merced Blvd	55%	47%	17%	12%
8	N. State Dr. & Lake Merced Blvd	10%	17%	27%	21%
9	Winston Dr. & Lot 25	1%	1%	0%	0%

Though a large share of those using ride-hail services reported using a fare-splitting version of the services (e.g. Lyft Line and UberPool) in the survey, fewer than 20 percent of ride-hail vehicles entering or exiting campus on the count day had two or more passengers in the vehicle. This may reflect lower use of fare-splitting services than the survey data indicate, or it may simply be because SF State’s location on the far west side of San Francisco means it is toward the end of natural fare-splitting routes: Even if there were multiple passengers in a vehicle earlier in its route, many occupants bound for points on the west side other than SF State are likely already out of the vehicle by the time it reaches SF State.

Figure 4-4 shows the number of vehicles entering and exiting by time for the 2014 and 2018 cordon counts. The morning peak hour on May 2 was between 9:00 a.m. and 10:00 a.m. (8.6 percent of all entries and exits for the entire day). This is slightly different from the peak hour for traffic in the area, which according to 511.Org is about 7:45 am to 8:45 am. The campus also experienced a midday rise in vehicle activity. This year, 8.5 percent of all vehicle entries and exits occurred between 12:00 p.m. and 1:00 p.m. The evening peak period for vehicle trips occurred

between 3 p.m. and 4 p.m., with 9.9 percent of vehicle trips occurring during this time period. This occurs before the area’s peak hour, which 511.Org reports as 4:30 p.m. to 5:30 p.m. However, this year’s cordon count suggests that the PM peak may be expanding, with increased vehicle activity starting as early as the 3 p.m. hour and beginning to taper during the 6 p.m. hour.

Figure 4-4 Arrival to Campus by Time of Day (2014 and 2018)



As noted in **Figure 4-5**, the campus saw a decline in the number of vehicles entering and exiting the campus between 7 a.m. and 11 a.m. between 2014 and 2018. However, while there was a shift toward later travel, the cordon count found that select locations are seeing an increase in morning activity. This includes Holloway Avenue & Arellano, Holloway Avenue & Tapia Drive, Font Blvd & Mary Wald Hall, and N. State Drive & Lake Merced Boulevard. Holloway Avenue & Arellano saw significant an increase in morning activity on May 2 relative to 2014 but experienced a decrease in vehicle activity for the remainder of the day. All but two locations – Holloway Ave & Cardenas and Holloway Ave & Arellano – saw heightened vehicle activity between 5 p.m. and 7:30 p.m. Between 2014 and 2018, vehicle activity campus-wide increased by 28 percent during this time period.

Figure 4-5 Percent Change in the Count of Vehicles Entering and Exiting, 2014 to 2018

Location		7:00 AM - 9:00 AM	9:00 AM - 11:00 AM	11:00 AM - 1:00 PM	1:00 PM - 3:00 PM	3:00 PM - 5:00 PM	5:00 PM - 7:30 PM
1	Holloway Ave & Lot 2	-12%	-36%	75%	45%	244%	67%
2	Holloway Ave & Lot 1	-42%	-38%	-38%	-57%	-14%	-11%
3	Holloway Ave & Arellano	425%	-31%	-38%	-14%	-33%	-32%
4	Holloway Ave & Tapia Dr	15%	27%	44%	11%	37%	57%
5	Font Blvd & Tapia Dr	-10%	17%	14%	22%	40%	57%
6	Font Blvd & Mary Wald Hall	65%	3%	96%	165%	281%	279%
7	State Dr. & Lake Merced Blvd	-20%	-22%	-6%	4%	15%	13%
8	N. State Dr. & Lake Merced Blvd	60%	22%	30%	38%	-7%	5%
9	Winston Dr. & Lot 25	-14%	-18%	31%	117%	-11%	75%
	Total	-1%	-9%	8%	16%	22%	28%

When counting vehicles entering and exiting campus, surveyors noted whether vehicles were private vehicles, vehicles with ride-hail decals, motorcycles, or other vehicles such as campus vehicles, delivery trucks, or security vehicles. Surveyors also noted the number of people in each car. **Figure 4-6** provides a count of vehicles by vehicle type for every hour of the cordon count.

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Figure 4-6 Count of Persons Entering and Exiting by Mode and by Hour

Time	Non-Ride-Hail Drive Alone		Non-Ride-Hail Carpool		Ride-Hail Driver Only		Ride-Hail One Passenger		Ride Hail Two or More Passengers		Motorcycle		Other		Total	% of Trips
	Enter	Exit	Enter	Exit	Enter	Exit	Enter	Exit	Enter	Exit	Enter	Exit	Enter	Exit		
7:00 - 7:59	262	54	91	55	36	22	21	5	11	0	2	0	11	18	588	4.7%
8:00 - 8:59	516	100	180	53	57	41	22	8	9	2	7	1	20	20	1,036	8.3%
9:00 - 9:59	476	197	200	68	41	37	19	2	6	0	9	0	5	11	1,071	8.5%
10:00- 10:59	365	142	118	59	30	36	10	9	8	2	5	6	42	10	842	6.7%
11:00- 11:59	368	233	79	50	37	51	15	9	8	9	2	3	31	44	939	7.5%
12:00-12:59	363	329	104	80	28	46	13	15	14	2	4	1	10	8	1,017	8.1%
1:00 - 1:59	336	294	136	92	21	38	5	16	4	0	3	4	17	5	971	7.8%
2:00 - 2:59	248	347	93	131	19	13	12	13	6	4	7	5	10	39	947	7.6%
3:00 - 3:59	369	508	104	113	13	7	16	15	7	8	0	4	10	16	1,190	9.5%
4:00 - 4:59	281	445	100	209	18	12	15	13	16	21	35	5	11	14	1,195	9.5%
5:00 - 5:59	214	570	110	230	16	19	14	12	7	11	2	6	2	5	1,218	9.7%
6:00- 6:59	221	419	121	214	11	11	13	4	2	0	2	4	1	4	1,027	8.2%
7:00 - 7:30	87	218	53	96	8	3	5	2	9	6	1	0	0	0	488	3.9%
Total	4,106	3,856	1,489	1,450	335	336	180	123	107	65	79	39	170	194	12,529	100.0%
% of Total Entries/Exits	65%	64%	23%	24%	5%	6%	3%	2%	2%	1%	1%	1%	3%	3%		
	64%		23%		5%		2%		1%		1%		3%			

5 CARBON EMISSIONS

INTRODUCTION

San Francisco State University has been committed to pursuing greenhouse gas (GHG) emissions reductions since 2007, and this commitment was underscored in August 2012 when President Les Wong signed the American College & University Presidents Climate Commitment.¹⁴

After signing the Climate Commitment, the University created an inventory of GHG emissions from 1990 to 2006 and has conducted subsequent GHG inventories with data through 2015. These inventories showed that commuting accounts for almost 49% of the total emissions generated by the campus. Recognizing the important role that transportation plays in GHG emissions and the potential for reducing GHG emissions through changes in travel behavior, the periodic transportation monitoring surveys the University has executed since 2008 have been designed to provide data to help inform efforts to reduce the University's carbon footprint.

This chapter provides the latest in this series of analyses of GHG emissions resulting from commute trips to and from campus. GHG emissions were measured in carbon dioxide equivalents (CO₂-e), which is a total of all GHGs converted into CO₂ at a rate based on the gas' impact on ozone depletion.

METHODOLOGY

The online survey was designed in part to enable the University to calculate emissions related to transportation. For each leg of their commute journeys, respondents were asked to provide both the mode they used and, for certain modes, an estimate of the distance they traveled. The average distance traveled by students and staff on each mode in each direction (to and from campus) was calculated, and each resulting value was multiplied by the share of students and staff who took each mode on May 2, 2018 and, in turn, by the estimated number of total students and staff who were on-campus on May 2. This produced estimates of total miles traveled to and from campus on each mode that day.

Carbon intensities (pounds of emissions per vehicle mile traveled measured in pounds of CO₂-e) were then calculated for each mode (assumptions are listed in the following section). The product

¹⁴ Second Nature. *The Presidents' Climate Leadership Commitments*. Retrieved from <http://secondnature.org/climate-guidance/the-commitments/>

of distance traveled on each mode and the mode's carbon intensity provide the total emissions attributable to the SF State commute for that mode on a given day.

$$\text{Miles} \times \text{CO}_2\text{-e/mile} = \text{CO}_2\text{-e (for each mode)}$$

Using the daily CO₂-e inventory, an annual CO₂-e inventory was determined.¹⁵

Note that the approach to calculating passenger miles was adjusted this year to simplify it. To ensure that the estimate for 2018 could be compared, apples to apples, to all past years, the team reviewed all past emissions calculations and recalculated past values.

Assumptions

The following assumptions were used in creating the emissions inventory for SF State:

- For all modes except BART, only tailpipe emissions are counted. Other emissions, such as those associated with fuel production and refining, vehicle manufacture, construction and maintenance of roadway/guideway, etc., are excluded. It should be noted that, taken together, these add approximately 30% (bus) to 60% (private motor vehicle) to a mode's average per-mile emissions (Chester & Horvath, 2008). In the one exception to this, emissions from the production of electricity used to power the BART system, including stations, trains, and other facilities, was counted, as BART includes these emissions in its own carbon-footprint reporting.
- Average automobile fuel efficiency in 2018 is 25.2 miles per gallon (MPG) (Source: US EPA)
- Electric vehicle usage is assumed to be integrated into the US EPA MPG average fuel efficiency.
- Average carbon coefficients for a typical passenger vehicle in 2018 is 19.4 pounds of CO₂ per gallon (Source: US EPA)
- Bus emissions:
 - Emissions from bus facilities excluded (due to lack of data)
 - Bus fuel efficiency of 4.5 MPG (typical for a 40-seat bus)
 - Trolleybus and Muni Metro light rail operation is assumed to produce zero emissions due to Muni's use of exclusively hydroelectric power for services that use traction power (Source: Muni)
 - This year's inventory keeps the per-passenger calculations from prior years, which were based on Muni surveys on routes which directly serve the SF State campus (calculated per bus average on those lines was 14.4 passengers). Bus emissions divided by average load factor gives per passenger-mile emissions.
 - Bus emissions were calculated from these assumptions to be 0.30 pounds of CO₂-e per passenger mile (Source: Muni)

¹⁵ The annual CO₂ emissions inventory is based on 148 days, per the SFSU team. This is based on the number of school days plus finals in each semester. It does not include vacation weeks, holidays, weekends, or the shorter winter and summer sessions.

- BART pounds of CO₂-e emissions per passenger mile are 0.204. (Source: BART Carbon Calculator¹⁶) Caltrain emissions of 0.07 pounds of CO₂-e per passenger mile. (Source: Calculated based on Caltrain's reported ridership and schedule, calculated total passenger miles, and a basic emissions factor per train mile based on academic literature¹⁷)

Note that the draft of the emissions inventory does not include the SF State Shuttle, as the Nelson\Nygaard team was awaiting additional data to complete the calculation for the shuttle.

RESULTS

On a typical travel day in 2018, University affiliates traveled approximately 785,000 miles commuting to and from SF State. The campus has seen an overall rise in daily passenger miles of more than 40% since 2008, and of approximately 20% in the last two years alone. Passenger miles in single-occupancy vehicles and on BART drove much of the increase in overall passenger miles, with drive-alone passenger miles growing by approximately 75,000 and BART passenger miles by more than 40,000 (see **Figure 5-1**).

These increases reflect trends in residential locations and travel behavior discussed in Chapter 3. **Figure 5-2** through **Figure 5-4** provide additional detail on the nature of these changes for drivers and BART commuters in particular. Figure 5-2 shows the dramatic increases in average round-trip driving distance since 2008. The average driving commute was 50% longer in 2018 than it was in 2008, and it was 11% longer than two years ago. Note that this average reflects self-reported driving distances for anyone who drove at least one link of their trip (including those who only had a short drive to a transit station), so it slightly understates the average round-trip distance of the 23% of affiliates who drove alone all the way to campus.

The aggregate number of drivers has nearly returned to the levels seen in 2008, after steadily declining through 2016. The estimated number of affiliates who drove alone for at least one link fell to its lowest level on record in 2016, but it surged by 25% in the last two years alone, largely because of a jump in drive-alone rates among students, from roughly 23% to 29%. Because students represent nearly 90% of those on-campus on any given day, a large change in behavior like this among the student population in particular will show through to the top-line numbers.

As Figure 5-3 shows, the number of BART riders has steadily grown since 2008, and the average trip length has as well. The number of BART riders grew by a third between 2008 and 2018, and average 2018 BART round trips were 14% longer than they were in 2008. Those numbers grew by 7% and 6% respectively between 2016 and 2018. The share of students who use BART has grown in two waves since 2008, first jumping four percentage points between 2011 and 2014 and then growing by two percentage points between 2016 and 2018 (Figure 5-4). The latter change can likely be attributed, at least in part, to the Gator Pass, though the steady movement in residential locations out of San Francisco and toward Alameda, Contra Costa, and San Mateo counties has likely also played an important role.

¹⁶ <https://www.bart.gov/guide/carbon>

¹⁷ Caltrain Ridership: From <http://www.caltrain.com/Assets/Marketing/caltrain/pdf/2016/2017+Annual+Count+Key+Findings+Report.pdf>; emissions factor: Chester and Horvath, <https://escholarship.org/uc/item/5670921q>, page 9.

Figure 5-1 Total Passenger Miles Traveled Per Day, by Mode (2008 – 2018)

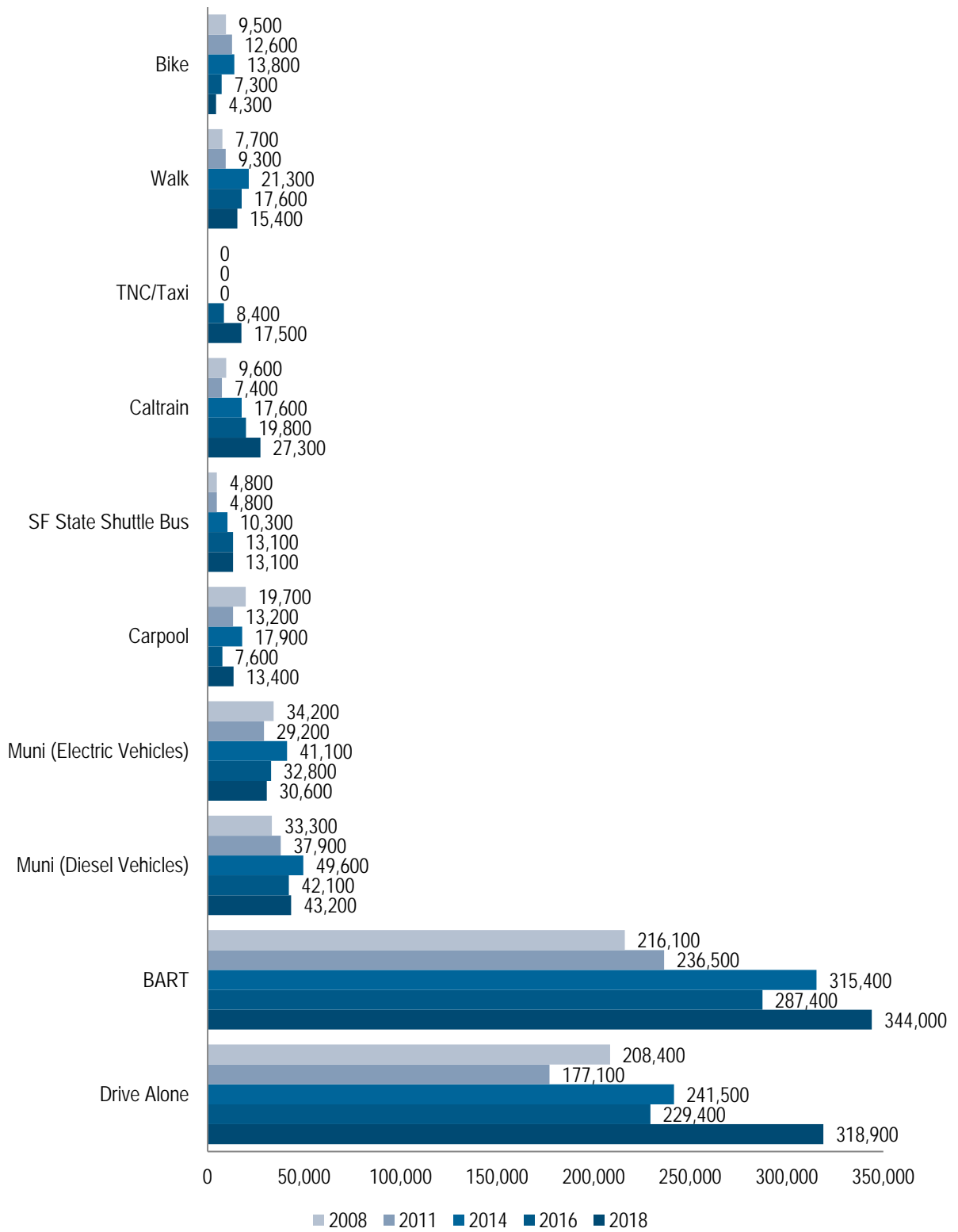


Figure 5-2 Drive Alone: Estimated Number of Commuters to Campus and Average Trip Distance

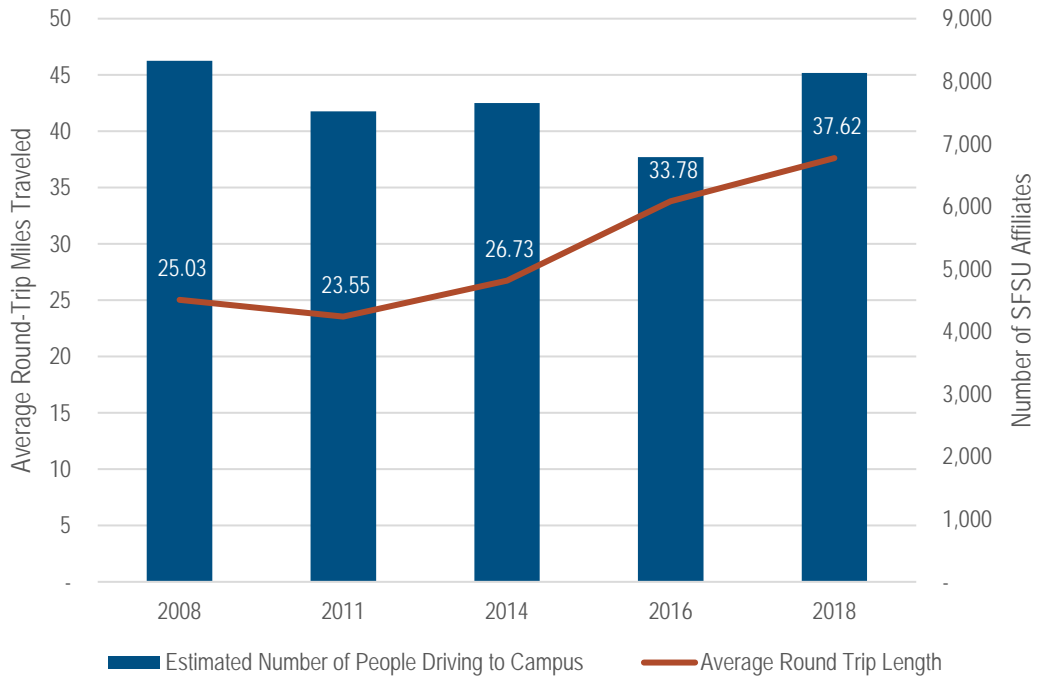


Figure 5-3 BART: Estimated Number of Commuters to Campus and Average Trip Distance

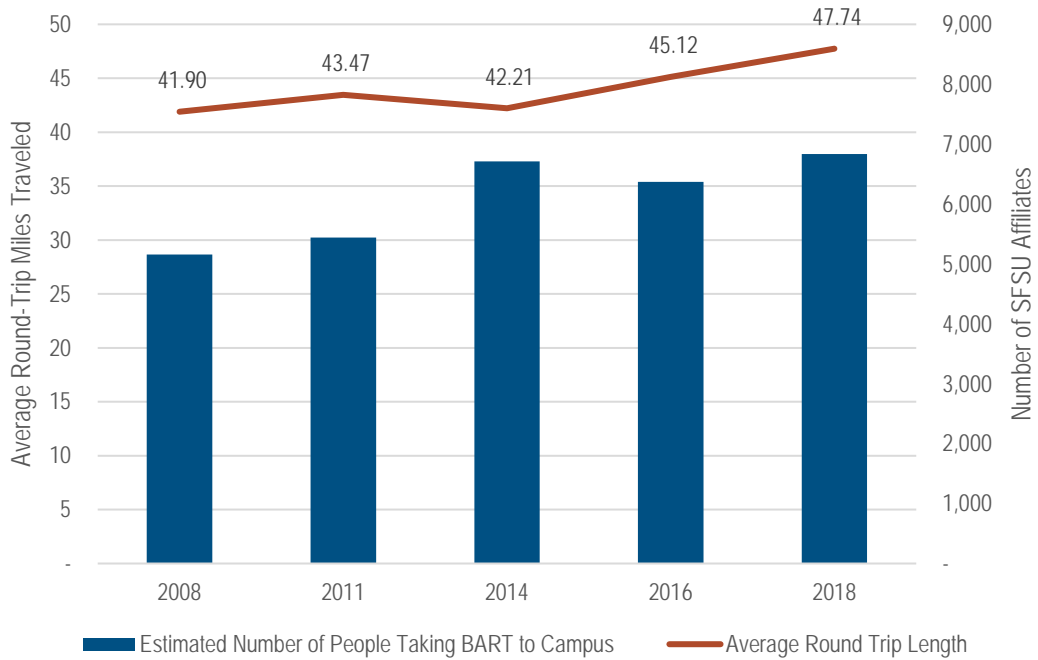
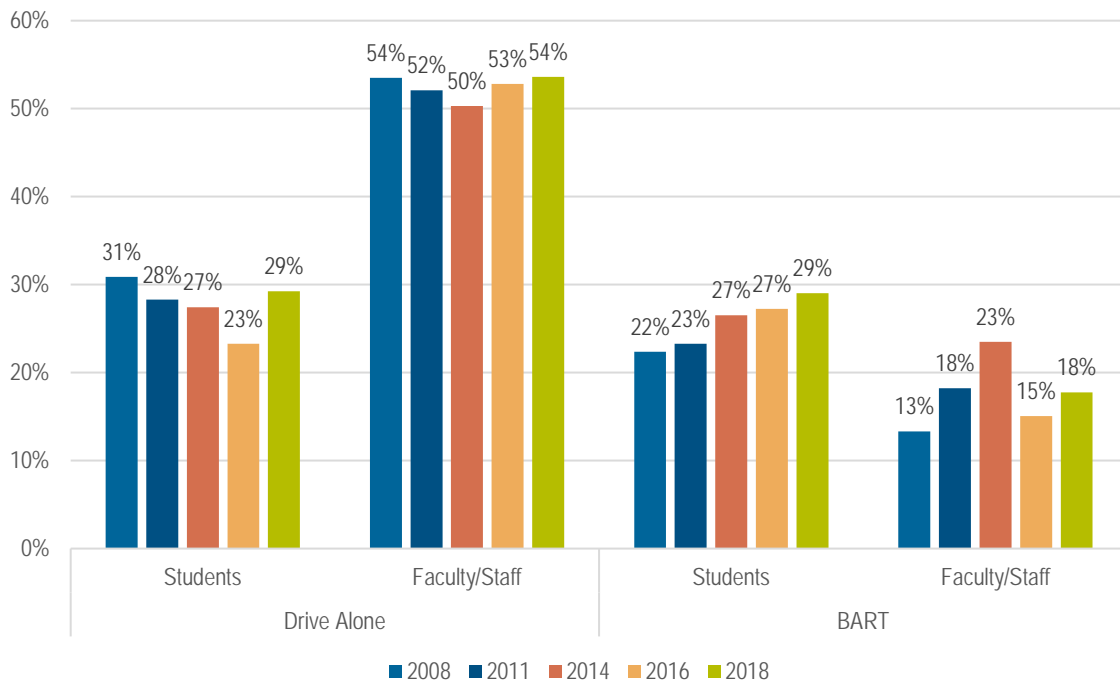


Figure 5-4 Mode Share by Sub-Group



Based on this year’s annual passenger miles, SF State commuters emitted an estimated 24,300 metric tons CO₂-e in the 2017-18 school year, a growth of nearly one-third since 2016 (see **Figure 5-5**). Of course, different transportation modes have very different environmental impacts (see **Figure 5-6**). Though they only represented roughly one-third of SF State affiliates, those who drove alone on a portion of their trips to campus were responsible for more than three quarters of the University’s transportation-related emissions in 2018. BART commuters traveled more than 20,000 more miles than drivers, but they collectively emitted approximately 15% as many metric tons of CO₂ per year. Muni electric vehicles do not produce any CO₂-e emissions given that they use hydroelectric power produced by the Hetch Hetchy water system.

Figure 5-5 Total Estimated Pounds of CO2-e per School Year, by Mode (2008- 2018)

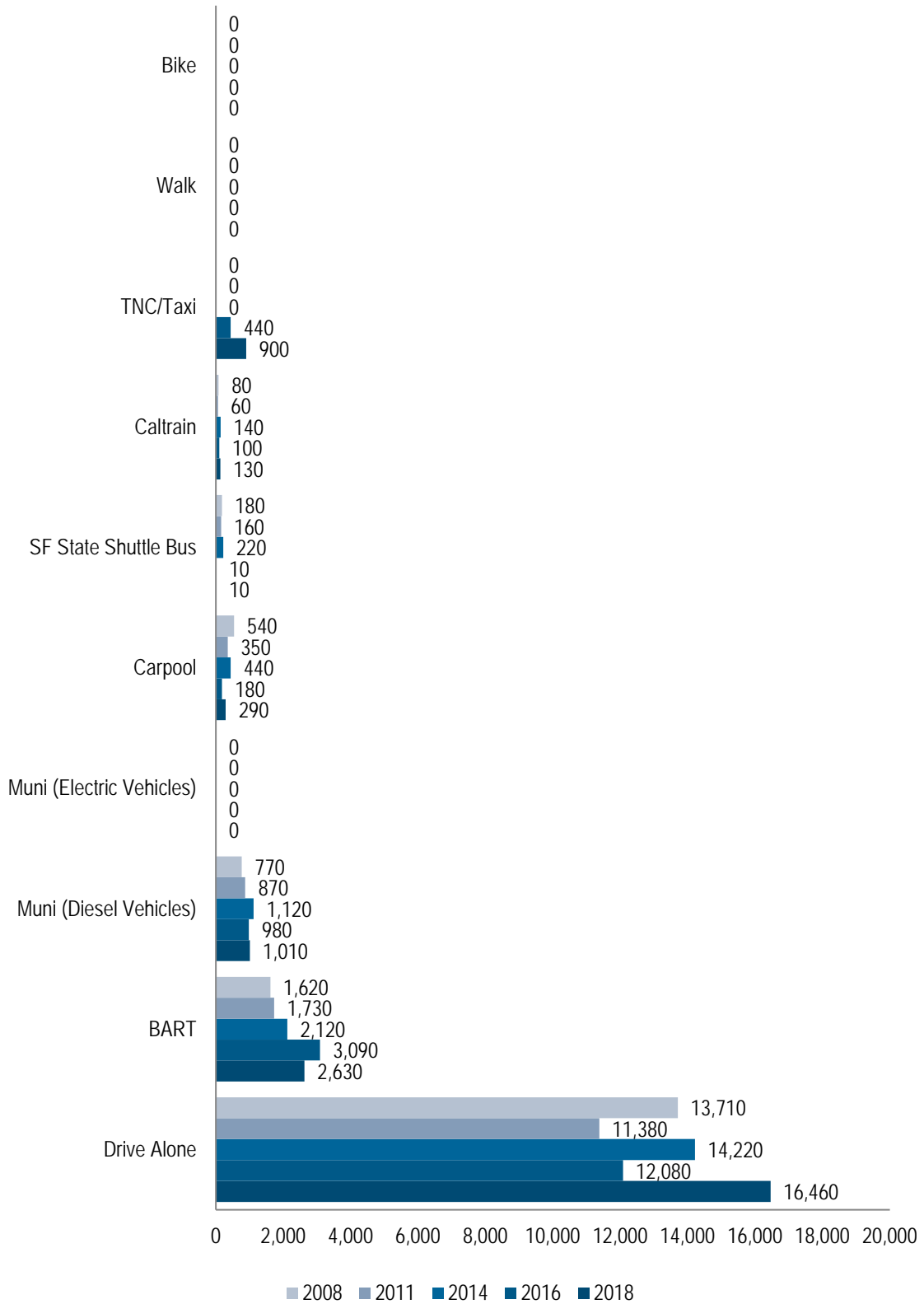
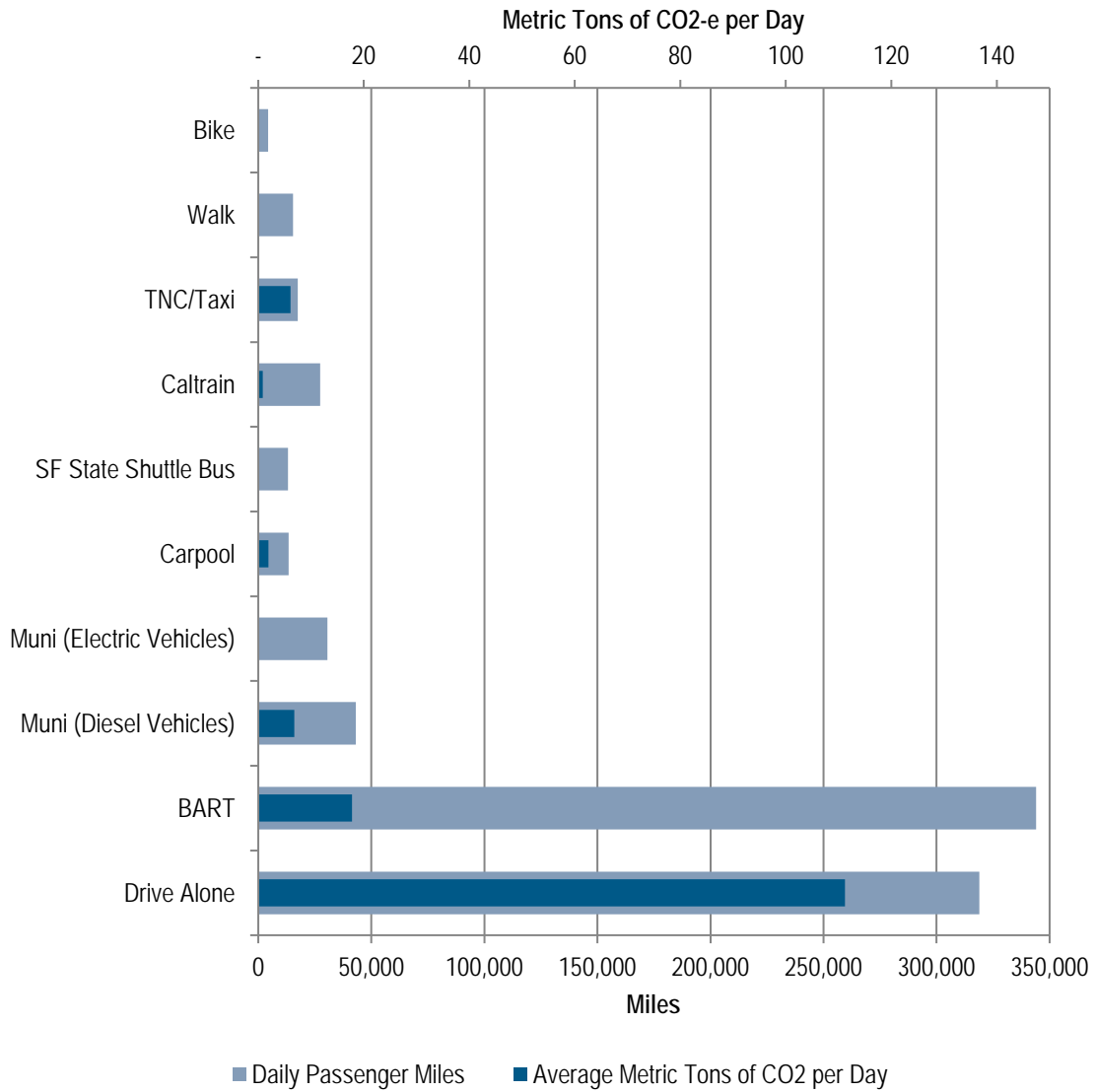


Figure 5-6 Total Estimated Miles Travelled and CO₂ Emissions per Day 2018



CONCLUSIONS

This year's GHG inventory shows very clearly that the Bay Area's land use and housing affordability challenges play an important role in the University's transportation-related carbon impact. While transportation programs like the Gator Pass clearly do have an important effect on behavior, changes in where affiliates live and the modal options available for their longer and longer journeys to campus are also changing the ways people choose to travel to campus.

APPENDIX A: SURVEY INSTRUMENT

ONLINE SURVEY

See attached PDF.

General Information

SF State Transportation Survey

Please complete this survey about your commute and general travel to and from SF State's main campus at 1600 Holloway on Wednesday, May 2, 2018 (Or the most recent weekday you traveled to campus.)

The survey takes about **5 to 10 minutes** to complete, and your response is greatly appreciated. The survey will close on May 11, 2018.

Upon completing the survey you will have an opportunity to enter for a chance to win one of **70 prizes, including a Fitbit, SF State swag, and gift certificates to campus restaurants.**

Thank you for helping us improve the quality of our campus!

What is your primary affiliation with SF State?

- Freshman
- Other undergraduate
- Graduate student
- Staff or Administrator
- Faculty
- Visitor/contractor
- Other - Please Specify

Are you full-time or part-time?

- Full-time
- Part-time
- Not Applicable

On average, how many days a week do you come to the **SF State main campus at 1600 Holloway?**

Where do you live?

- On campus
- Off campus

Specify dorm/apartment

Specify zip code

What is your average cost for your **round trip** commute to and from SF State?
Please round to the nearest dollar.

Were you on campus on **Wednesday, May 2, 2018**?

- Yes
- No

If you were not on campus on Wednesday, May 2, 2018, what weekday were you last on campus?

- Thursday, April 26
- Friday, April 27
- Monday, April 30
- Tuesday, May 1
- Other - Please Specify

Your Trip to Campus

Your Trip to Campus

The following questions are about your trip to the main campus at **1600 Holloway**. You will be asked to describe your commute by indicating the mode of transportation used for each segment of the trip.

For example, your commute might have only one segment if you drove, walked, or biked directly to campus. Or, it might have three segments if you 1) drove and parked at your closest BART station, 2) took BART to Daly City, and 3) took the shuttle to campus.

Please describe your commute to the main campus on **Wednesday, May 2, 2018**.

If you took more than one mode/ have multiple segments, please start the survey by selecting your first segment.

Your Trip to Campus

The following questions are about your trip to the main campus at **1600 Holloway**. You will be asked to describe your commute by indicating the mode of transportation used for each segment of the trip.

For example, your commute might have only one segment if you drove, walked, or biked directly to campus. Or, it might have three segments if you 1) drove and parked at your closest BART station, 2) took BART to Daly City, and 3) took the shuttle to campus.

Please describe your commute based on the most recent day you traveled to campus.

If you took more than one mode/ have multiple segments, please start the survey by selecting your first segment.

For your trip to the main campus, where did you start your trip?

(For example, Main Campus and On-Campus Dorms = 94132).

Zipcode

For your trip to the main campus, what time did you arrive at the main campus?

Please enter time in the following format: HH:MM AM

HH

MM

AM/PM

Select the mode of transportation for your first segment:

- Walk, bike, or other active transport
- Public transportation / shuttle
- Private vehicle (cars, carpool, motorcycle, etc.)
- Taxi, Uber, Lyft, or other on-demand taxi or real-time ride-sharing services known as TNCs

Which mode of transportation did you use?

- Walk
- Bicycle
- Other
- Muni
- BART

- SF State Shuttle
- Caltrain
- Other bus provider than Muni (e.g. AC Transit/Golden Gate Transit/SamTrans)
- Drove Alone
- Dropped Off / Picked Up
- Motorcycle/Moped
- Carpool/Vanpool
- Taxi
- Uber
- Lyft
- Other on-demand taxi or real-time ride-sharing service

Please estimate (in miles) the distance you traveled for this segment of your trip (E.g. If you traveled 1 1/2 miles, enter 1.5)

Specify Muni Line

Please estimate (in miles) the distance you traveled in this segment of your trip (E.g. If you traveled 1 1/2 miles, enter 1.5)

Specify BART start station

Specify BART end station

Specify Caltrain start station

Specify Caltrain end station

Please estimate (in miles) the distance you traveled for this segment of your trip (E.g. If you traveled 1 1/2 miles, enter 1.5)

I was the:

- Passenger
- Driver

Number of people in the carpool/vanpool on **Wednesday, May 2, 2018**:

Please estimate (in miles) the distance you traveled for this segment of your trip (E.g. If you traveled 1 1/2 miles, enter 1.5)

If you took a taxi, Uber, Lyft, or another on-demand taxi or real-time ride-hailing service, did you use a service that matches different riders in the same vehicle? (E.g. Uber Pool, Uber Pool Express, Lyft Line, Lyft Shuttle)

- Yes, I used a shared service like the ones listed above
- No, I did not use a shared service like the ones listed above

Please estimate (in miles) the distance you traveled for this segment of your trip (E.g. If you traveled 1 1/2 miles, enter 1.5)

Your Trip Segments to Campus

On your trip **to** SF State's main campus, what was the mode of transportation for your **second** segment?

For example: If you used BART previously, please use this question to tell us how you got from BART to campus.

- Walk, bike, or other active transport
- Public transportation / shuttle
- Private vehicle (cars, carpool, motorcycle, etc.)
- Taxi, Uber, Lyft, or other on-demand taxi or real-time ride-sharing services known as TNCs
- None

Which mode of transportation did you use?

- Walk
- Bicycle
- Other
- Muni
- BART
- SF State Shuttle
- Caltrain
- Other bus provider than Muni (e.g. AC Transit/Golden Gate Transit/SamTrans)
- Drove Alone
- Dropped Off / Picked Up
- Motorcycle/Moped
- Carpool/Vanpool
- Taxi
- Uber
- Lyft
- Other on-demand taxi or real-time ride-sharing service

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

Specify Muni Line

Please estimate (in miles) the distance you traveled in this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

Specify BART start station

Specify BART end station

Specify Caltrain start station

Specify Caltrain end station

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

I was the:

- Passenger
- Driver

Number of people in the carpool/vanpool on **Wednesday May, 2, 2018:**

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

If you took a taxi, Uber, Lyft, or another on-demand taxi or real-time ride-hailing service, did you use a service that matches different riders in the same vehicle? (E.g. Uber Pool, Uber Pool Express, Lyft Line, Lyft Shuttle)

- Yes, I used a shared service like the ones listed above
- No, I did not use a shared service like the ones listed above

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

On your trip to SF State's main campus, what was the mode of transportation for your third segment?

If you used BART previously, please use this question to tell us how you got from BART to campus.

- Walk, bike, or other active transport
- Public transportation / shuttle
- Private vehicle (cars, carpool, motorcycle, etc.)
- Taxi, Uber, Lyft, or other on-demand taxi or real-time ride-sharing services known as TNCs
- None

Which mode of transportation did you use?

- Walk
- Bicycle
- Other
- Muni
- BART
- SF State Shuttle
- Caltrain
- Other bus provider than Muni (e.g. AC Transit/Golden Gate Transit/SamTrans)
- Drove Alone
- Dropped Off / Picked Up
- Motorcycle/Moped
- Carpool/Vanpool
- Taxi
- Uber
- Lyft
- Other on-demand taxi or real-time ride-sharing service

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

Specify Muni Line

Please estimate (in miles) the distance you traveled in this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

Specify BART start station

Specify BART end station

Specify Caltrain start station

Specify Caltrain end station

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

I was the:

Passenger

Driver

Number of people in the carpool/vanpool on **Wednesday May, 2, 2018:**

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

If you took a taxi, Uber, Lyft, or another on-demand taxi or real-time ride-hailing service, did you use a service that matches different riders in the same vehicle? (E.g. Uber Pool, Uber Pool Express, Lyft Line, Lyft Shuttle)

- Yes, I used a shared service like the ones listed above
- No, I did not use a shared service like the ones listed above

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

On your trip **to** SF State's main campus, what was the mode of transportation for your **fourth** segment?

If you used BART previously, please use this question to tell us how you got from BART to campus.

- Walk, bike, or other active transport
- Public transportation / shuttle
- Private vehicle (cars, carpool, motorcycle, etc.)
- Taxi, Uber, Lyft, or other on-demand taxi or real-time ride-sharing services known as TNCs
- None

Which mode of transportation did you use?

- Walk
- Bicycle
- Other
- Muni
- BART
- SF State Shuttle

- Caltrain
- Other bus provider than Muni (e.g. AC Transit/Golden Gate Transit/SamTrans)
- Drove Alone
- Dropped Off / Picked Up
- Motorcycle/Moped
- Carpool/Vanpool
- Taxi
- Uber
- Lyft
- Other on-demand taxi or real-time ride-sharing service

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

Specify Muni Line

Please estimate (in miles) the distance you traveled in this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

Specify BART start station

Specify BART end station

Specify Caltrain start station

Specify Caltrain end station

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

I was the:

- Passenger
- Driver

Number of people in the carpool/vanpool on Wednesday, May, 2, 2018:

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

If you took a taxi, Uber, Lyft, or another on-demand taxi or real-time ride-hailing service, did you use a service that matches different riders in the same vehicle? (E.g. Uber Pool, Uber Pool Express, Lyft Line, Lyft Shuttle)

- Yes, I used a shared service like the ones listed above
- No, I did not use a shared service like the ones listed above

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

Parking

Did you park on the street or in a parking lot / garage?

- Parking lot / garage
-

- On the street
- I did not drive today.

Where did you park when you came to the main campus on **Wednesday, May 2, 2018?**

- On Campus
- Near Campus
- Near Daly City BART station
- Near another BART station
- Park & Ride lot
- Other - Please Specify

Please choose a zone where you parked (map below)

SF State Vicinity



[Enlarge SF State Parking Zones Image \(New window\)](#)

- A: Lot 25
- B: SF State Parking Structure
- C: SF State Campus, aside from Parking Structure or Lot 25
- D: Buckingham Way
- E: Stonestown Galleria Parking Lot
- F: Winston Drive
- G: Lake Shore / Merced Manor (South of Eucalyptus)
- H: Lake Merced Boulevard
- I: Holloway Avenue or Font Boulevard

- J: 19th Avenue
- K: Lakeside
- L: Junipero Serra Boulevard
- M: Ingleside Terraces / Ingleside / Oceanview / Merced Heights
- N: Lakeshore / Merced Manor (North of Eucalyptus)
- O: North of Sloat Boulevard
- P: Parkmerced
- Q: Lake Merced Hill
- R: Oceanview / Merced Heights
- S: University Park South

How much did it cost you to park on **Wednesday, May 2, 2018?**

- Free
- Less than \$1
- \$1-\$2
- \$2-\$4
- \$4-\$7
- \$7-\$10
- More than \$10
- I have a SF State Semester / Yearly Parking Pass

Which of the following programs, if any, would encourage you to commute to campus via a mode of travel other than driving alone? (Choose all that apply.)

- Improved shuttle service from BART to the University
- Improved on-campus bicycle paths and bicycle parking
- Safer bike lanes on city streets
- Mobile app to match drivers and riders the night before or morning of my commute
- Bike share on campus and at BART stations
- Improved buses and trains to campus (less crowded, more frequent, and more reliable)
- If the University were to charge more for on-campus parking
- If nearby free or on-street parking were to be eliminated
- None
- Other

What are your reasons for driving to campus? Please select up to two options.

- Driving takes less time in comparison to other transportation options
- Driving is more convenient for me
- I have child care or family care responsibilities that require the use of a car
- Transit routes to campus do not run near my home
- Transit schedules don't fit my needs
- Biking to campus would be unsafe and/or uncomfortable for me
- I need access to my own vehicle during the day
- Other - Please Specify

Your Trip Segments From Campus

Your Trip from Campus

The following questions are about your trip from the main campus at **1600 Holloway**. You will be asked to describe your commute away from campus by indicating the mode of transportation used for each segment of your trip.

For example, your trip might have only one segment if you drove, walked, or biked directly from campus. Or, it might have three segments if you 1) took the shuttle to BART, 2) took BART to the East Bay and 3) walked home.

Please describe your trip from campus on Wednesday, May 2, 2018.

If you took more than one mode/ have multiple segments, please start the survey by selecting your first segment.

Your Trip from Campus

The following questions are about your trip from the main campus at **1600 Holloway**. You will be asked to describe your commute away from campus by indicating the mode of transportation used for each segment of your trip.

For example, your trip might have only one segment if you drove, walked, or biked directly from campus. Or, it might have three segments if you 1) took the shuttle to BART, 2) took BART to the East Bay and 3) walked home.

Please describe your commute to the main campus based on the most recent weekday you traveled to Campus.

If you took more than one mode/ have multiple segments, please start the survey by selecting your first segment.

For your trip from the main campus, what time did you depart from the main campus?

Please enter time in the following format: HH:MM AM

HH

MM

AM/PM

Did you use the exact same means of transportation when you *left* the campus on **Wednesday, May 2, 2018**, as you did when *coming to* campus?

If any segment of your trip from campus was different from your trip to campus, please select No.

- Yes
- No

For your trip **from** the main campus, where did you end your trip?

Zipcode

Select the mode of transportation for your **first** segment:

If your next segment is via BART, please use this question to tell us how you got from campus to the BART station.

- Walk, bike, or other active transport
- Public transportation / shuttle
- Private vehicle (cars, carpool, motorcycle, etc.)
- Taxi, Uber, Lyft, or other on-demand taxi or real-time ride-sharing services known as TNCs

Which mode of transportation did you use?

- Walk
- Bicycle
- Other
- Muni
- BART
- SF State Shuttle
- Caltrain
- Other bus provider than Muni (e.g. AC Transit/Golden Gate Transit/SamTrans)
- Drove Alone
- Dropped Off / Picked Up
- Motorcycle/Moped
- Carpool/Vanpool
-

Taxi

- Uber
- Lyft
- Other TNC

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

Specify Muni Line

Please estimate (in miles) the distance you traveled in this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

Specify BART start station

Specify BART end station

Specify Caltrain start station

Specify Caltrain end station

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

I was the:

- Passenger
- Driver

Number of people in the carpool/vanpool on **Wednesday, May 2, 2018**:

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

If you took a taxi, Uber, Lyft, or another on-demand taxi or real-time ride-hailing service, did you use a service that matches different riders in the same vehicle? (E.g. Uber Pool, Uber Pool Express, Lyft Line, Lyft Shuttle)

- Yes, I used a shared service like the ones listed above
- No I did not use a shared service like the ones listed above

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

On your trip **from** SF State's main campus, what was the mode of transportation for your **second** segment?

If your next segment is via BART, please use this question to tell us how you got from campus to the BART station.

- Walk, bike, or other active transport
- Public transportation / shuttle
- Private vehicle (cars, carpool, motorcycle, etc.)
- Taxi, Uber, Lyft, or other on-demand taxi or real-time ride-sharing services known as TNCs
- None

Which mode of transportation did you use?

- Walk
- Bicycle
- Other
- Muni
- BART
- SF State Shuttle
- Caltrain
- Other bus provider than Muni (e.g. AC Transit/Golden Gate Transit/SamTrans)
- Drove Alone
- Dropped Off / Picked Up
- Motorcycle/Moped
- Carpool/Vanpool
- Taxi
- Uber
- Lyft
- Other TNC

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

Specify Muni Line

Please estimate (in miles) the distance you traveled in this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

Specify BART start station

Specify BART end station

Specify Caltrain start station

Specify Caltrain end station

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

I was the:

- Passenger
- Driver

Number of people in the carpool/vanpool on **Wednesday, May 2, 2018:**

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

If you took a taxi, Uber, Lyft, or another on-demand taxi or real-time ride-hailing service, did you use a service that matches different riders in the same vehicle (E.g. Uber Pool, Uber Pool Express, Lyft Line, Lyft Shuttle)

- Yes, I used a shared service like the ones listed above
- No, I did not use a shared service like the ones listed above

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

On your trip **from** SF State's main campus, what was the mode of transportation for your **third** segment?

If your next segment is via BART, please use this question to tell us how you got from campus to the BART station.

- Walk, bike, or other active transport
- Public transportation / shuttle
- Private vehicle (cars, carpool, motorcycle, etc.)
- Taxi, Uber, Lyft, or other on-demand taxi or real-time ride-sharing services known as TNCs
- None

Which mode of transportation did you use?

- Walk
- Bicycle
- Other
- Muni
- BART
- SF State Shuttle
- Caltrain
- Other bus provider than Muni (e.g. AC Transit/Golden Gate Transit/SamTrans)
- Drove Alone
- Dropped Off / Picked Up
- Motorcycle/Moped
- Carpool/Vanpool
- Taxi
- Uber
- Lyft
- Other on-demand taxi or real-time ride-sharing service

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

Specify Muni Line

Please estimate (in miles) the distance you traveled in this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

Specify BART start station

Specify BART end station

Specify Caltrain start station

Specify Caltrain end station

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

I was the:

- Passenger
- Driver

Number of people in the carpool/vanpool on **Wednesday, May 2, 2018:**

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

If you took a taxi, Uber, Lyft, or another on-demand taxi or real-time ride-hailing service, did you use a service that matches different riders in the same vehicle? (E.g. Uber Pool, Uber Pool Express, Lyft Line, Lyft Shuttle)

- Yes, I used a shared service like the ones listed above
- No, I did not use a shared service like the ones listed above

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

On your trip **from** SF State's main campus, what was the mode of transportation for your **fourth** segment?

If your next segment is via BART, please use this question to tell us how you got from campus to the BART station.

- Walk, bike, or other active transport
- Public transportation / shuttle
- Private vehicle (cars, carpool, motorcycle, etc.)
- Taxi, Uber, Lyft, or other on-demand taxi or real-time ride-sharing services known as TNCs
- None

Which mode of transportation did you use?

- Walk
- Bicycle
- Other
- Muni
- BART
- SF State Shuttle
- Caltrain
- Other bus provider than Muni (e.g. AC Transit/Golden Gate Transit/SamTrans)
- Drove Alone
- Dropped Off / Picked Up
- Motorcycle/Moped
- Carpool/Vanpool
- Taxi
- Uber

- Lyft
- Other on-demand taxi or real-time ride-sharing service

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

Specify Muni Line

Please estimate (in miles) the distance you traveled in this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

Specify BART start station

Specify BART end station

Specify Caltrain start station

Specify Caltrain end station

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

I was the:

- Passenger
- Driver

Number of people in the carpool/vanpool on **Wednesday, May 2, 2018**:

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

If you took a taxi, Uber, Lyft, or another on-demand taxi or real-time ride-hailing service, did you a service that matches different riders in the same vehicle? (E.g. Uber Pool, Uber Pool Express, Lyft Line, Lyft Shuttle)

- Yes, I used a shared service like the ones listed above
- No, I did not use a shared service like the ones listed above

Please estimate (in miles) the distance you traveled for this segment of your trip (for instance if you traveled 1 1/2 miles, enter 1.5)

Transportation Patterns Questions

How many additional round-trips did you take to/from campus, other than your commute trip, on Wednesday, May 2, 2018? Please do not include trips taken within the campus.

- 0
- 1
- 2
- 3 or more

What was your primary mode of travel for this round-trip?

- Walk, bike, or other active transport
- Public transportation / shuttle
- Private vehicle (cars, carpool, motorcycle, etc.)

- Taxi, Uber, Lyft, or other on-demand taxi or real-time ride-sharing services known as TNCs

Did this trip occur (arrived or departed Campus) between the hours of 7 a.m. and 9 a.m.?

- No
 Yes

Did this trip occur (arrived or departed Campus) between the hours of 4 p.m. and 6 p.m.?

- No
 Yes

What was your primary mode of travel for **first** round-trip?

- Walk, bike, or other active transport
 Public transportation / shuttle
 Private vehicle (cars, carpool, motorcycle, etc.)
 Taxi, Uber, Lyft, or other on-demand taxi or real-time ride-sharing services known as TNCs

Did your **first** trip (arrived or departed Campus) between the hours of 7 a.m. and 9 a.m.?

- No
 Yes

Did your **first** round-trip occur (arrived or departed Campus) between the hours of 4 p.m. and 6 p.m.?

- No
 Yes

What was your primary mode of travel for your **second** round-trip?

- Walk, bike, or other active transport
 Public transportation / shuttle
 Private vehicle (cars, carpool, motorcycle, etc.)
 Taxi, Uber, Lyft, or other on-demand taxi or real-time ride-sharing services known as TNCs

Did your **second** round-trip occur (arrived or departed Campus) between the hours of 7 a.m. and 9 a.m.?

- No
 Yes

Did your **second** round-trip occur (arrived or departed Campus) between the hours of 4 p.m. and 6 p.m.?

- No
- Yes

What was your primary mode of travel for your **third** round-trip?

- Walk, bike, or other active transport
- Public transportation / shuttle
- Private vehicle (cars, carpool, motorcycle, etc.)
- Taxi, Uber, Lyft, or other on-demand taxi or real-time ride-sharing services known as TNCs

Did your **third** round-trip occur (arrived or departed Campus) between the hours of 7 a.m. and 9 a.m.?

- No
- Yes

Did your **third** round-trip occur (arrived or departed Campus) between the hours of 4 p.m. and 6 p.m.?

- No
- Yes

Do you currently participate or use any of the following programs or services? (Choose all that apply.)

	I wasn't aware of this service	I've heard of this service but have never used it	I occasionally (1-2 times a week) use this service	I frequently (3-5 days a week) use this service
Gator Pass - a multi-purpose ID card available to SF State students providing unlimited access to Muni and a discount on BART rides beginning and ending at Daly City station.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Free round trip transfer on Muni 28/28R from Daly City BART when using Clipper Card	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bike Racks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Free SF State Shuttle	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
511 RideMatch Service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Zipcar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Electric Vehicle Charging Stations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Has the Gator Pass changed the way you travel to/from campus?

- Yes, I ride BART more frequently now
- Yes, I ride MUNI more frequently now
- No, I haven't changed the way I travel since the Gator Pass was made available

How did you typically travel to/from campus before using the Gator Pass?

- Walked, biked, or used other active transportation mode
- Private vehicles (cars, carpool, motorcycle, etc.)
- Public transportation, shuttle
- Taxi, Uber, Lyft, or other on-demand taxi or real-time ride-hailing service known as TNCs

Please rate the extent to which the Gator Pass has improved your commute.

	Not at All (1)	Not Really (2)	Undecided (3)	Somewhat (4)	Very Much (5)
The Gator Pass has improved my commute	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If the University were able to offer additional travel benefits, what programs would appeal to you? Please select up to two options.

- A small additional BART discount for all rides to and from the Daly City BART station
- Extending the 25% BART discount to apply to all rides to and from Balboa Park station
- Access to a bike share program, for example: Ford GoBike
- A transit benefit with SamTrans (San Mateo County transit system)
- A transit benefit with AC Transit (Alameda County transit system)
- Other - Please Specify

For Employees: Have you participated in or used/do you currently participate in or use any of the following programs and services? (Choose all that apply.)

	I wasn't aware of this service	I've heard of this service but never used it	I occasionally (1-2 times a week) use this service	I frequently (3-5 days a week) use this service
Commuter Check Pre-Tax Transit Benefit (pre-tax purchase of transit passes)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vanpool	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Emergency Ride Home Program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pre-Tax Parking Benefit (pre-tax purchase of parking)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Do you know where to go if you have questions about your commute or need other transportation information?

- Yes, and I have used the resources available to me before
- Yes, but I have not used the resources available to me
- No, I do not know what resources are available to me

Which resources have you used to get transportation and commute information? (please check all that apply)

- SF State Website home page
- Parking & Transportation Website
- Word of mouth (Fellow student or Coworker)
- My manager
- Human Resources
- Hiring Materials
- A distribution list that I signed up for
- Digital Screens found around campus
- Other (please specify)

Last Questions

Please provide any additional comments about transportation issues that relate to SF State.

If you would like to be entered for a chance to receive a **Fitbit, SF State swag, or gift certificates to campus restaurants**, please enter your email address. Email addresses will have no purpose other than notifying a participant who has won a prize.”