RESULTS OF THE 2016-17 CAMPUS TRAVEL SURVEY

Institute of Transportation Studies

and

Transportation and Parking Services

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EXECUTIVE SUMMARY

About the Campus Travel Survey

The UC Davis Campus Travel Survey is a joint effort by the Transportation & Parking Services (TAPS) and the National Center for Sustainable Transportation, part of the Institute of Transportation Studies at UC Davis. Since 2007 the survey has been administered each fall by a graduate student at the Institute of Transportation Studies. The main purpose of the survey is to collect annual data on how the UC Davis community travels to campus, including mode choice, vehicle occupancy, distances traveled, and carbon emissions. Over the past ten years, the travel survey results have been used to assess awareness and utilization of campus transportation services and estimate demand for new services designed to promote sustainable commuting at UC Davis. Data from the campus travel survey have also provided researchers with valuable insights about the effects of attitudes and perceptions of mobility options on commute mode choice. This year's survey is the tenth administration of the campus travel survey.

The 2016-17 survey was administered online in October and November 2016, distributed by email to a stratified random sample of 24,029 students, faculty, and staff (out of an estimated total population of 45,380). About 19 percent (4,448 individuals) of those contacted responded to this year's survey, with 16.1 percent actually completing it. For the statistics presented throughout this report, we weight the responses by role (freshman, sophomore, junior, senior, Master's student, PhD student, faculty, and staff) and gender so that the proportion of respondents in each group reflects their proportion in the campus population. The weighting methodology depends on an accurate estimate of the campus population by role and gender. For the 2016-17 survey, campus administrators used a new protocol to estimate faculty and staff population for the campus. The new protocol produced a higher estimate of the number of staff and a lower estimate of the number of faculty in 2016-17 than in 2015-16, meaning that the responses of staff are given more weight and those of faculty less weight in this year's results (see Appendix H: Weighting by role and gender" for more information). This change in protocol affects the comparison of 2016-17 results to 2015-16 results, and the comparisons presented below may not accurately reflect the true changes in travel to campus. The 2017-18 survey will use the new protocol and will thus provide a more accurate estimate of changes from 2016-2017 to 2017-18.

Overview of Results

Overall mode share
On an average weekday, about 84.6 percent of people physically travel to campus (approximately 37,802 people, including those living on campus). Among these, 37 percent bike to get there, 8 percent walk or skate, 30 percent drive alone, 5 percent carpool or get a ride, 19 percent ride the bus, and 1 percent ride the train (see Figure 1). These figures represent the percent of people using each means of transportation as their primary mode (that is, for the greatest share of their distance) from wherever they live to their campus destination, on an average weekday.

Figure 1. Overall mode share, 2016-17
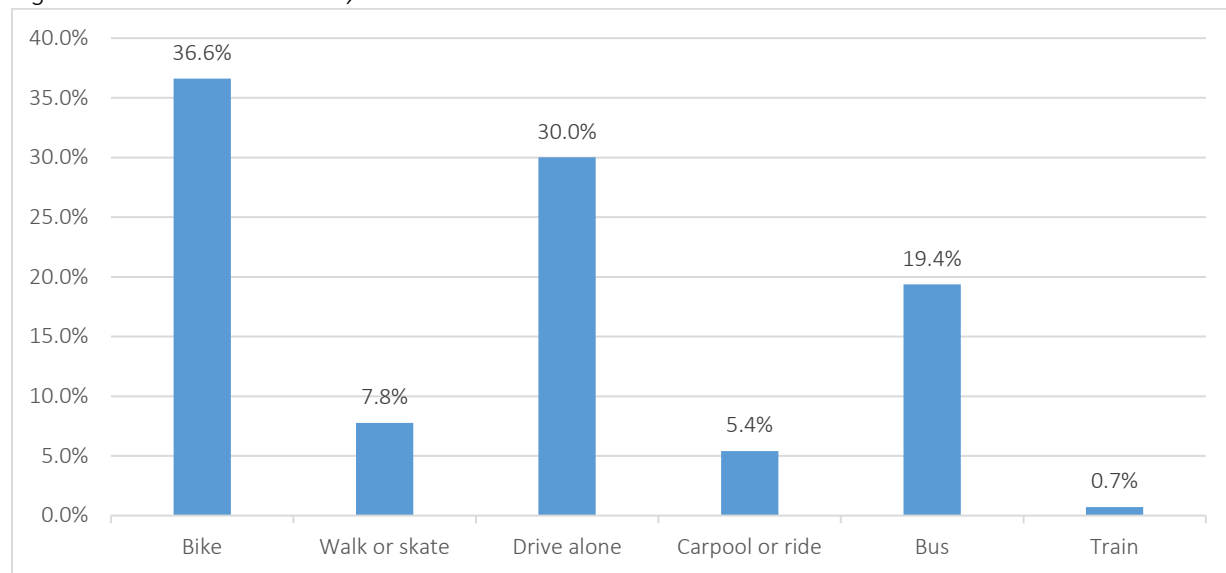
Because some people use different travel modes on different days, the total number of regular bicyclists or transit-riders, for instance, is substantially larger than the number using each mode on any given day. In particular, about 48 percent reported biking as their primary means at least once during the week. Similarly, about 11 percent carpooled or got a ride to campus and 29 percent rode the bus at least once during the week for most of the distance to campus.

Change in mode share, 2015-16 to 2016-17
One of the main purposes of the Campus Travel Survey is to collect comparable data each year in order to assess trends over time. The questions and calculations used to estimate mode share in this year's survey are identical to those used in the 2015-16 survey. However, as described above, the methodology used this year for estimating campus population used in calculating weights for the survey sample differed from the methodology used in 2015-16.   The change in methodology largely explains a notable decrease in the overall share biking to campus of 8.1 percentage points over the estimated biking share for last year (see Table 1). The share of the university population physically traveling to campus on an average weekday was also estimated to have decreased.

Table 1. One year change in overall mode share, 2015-16 to 2016-17

Percentage-point change in share of people doing each on an average weekday							
		Among those physically traveling to campus					
Years of comparison	**Physically travelling**	Bike	Walk or skate	Drive alone	Carpool or ride	Bus	Train
2015-16 to 2016-17	-2.7%	-8.1%	0.6%	6.2%	0.3%	1.1%	-0.1%

Data are weighted for both years by role and gender.

Carbon dioxide-equivalent emissions
Each year, we use data on mode share, vehicle occupancy, and travel distance to estimate the amount of carbon dioxide-equivalent (CO_2e) emitted from commuting to campus. We estimate that travel by UC Davis students and employees to campus generates a total of 393,269 pounds of CO_2e on an average weekday, or 8.7 pounds of CO_2e per capita, compared to 7.2 pounds in 2015-16, 7.8 pounds in 2014-15,

and 7.6 pounds in 2013-14 (see Figure 2). The increase in estimated emissions for 2016-17 reflects the change in the methodology for estimating the campus population, as discussed above.

Figure 2. Daily CO$_2$e emissions per capita, 2009-10 through 2016-17
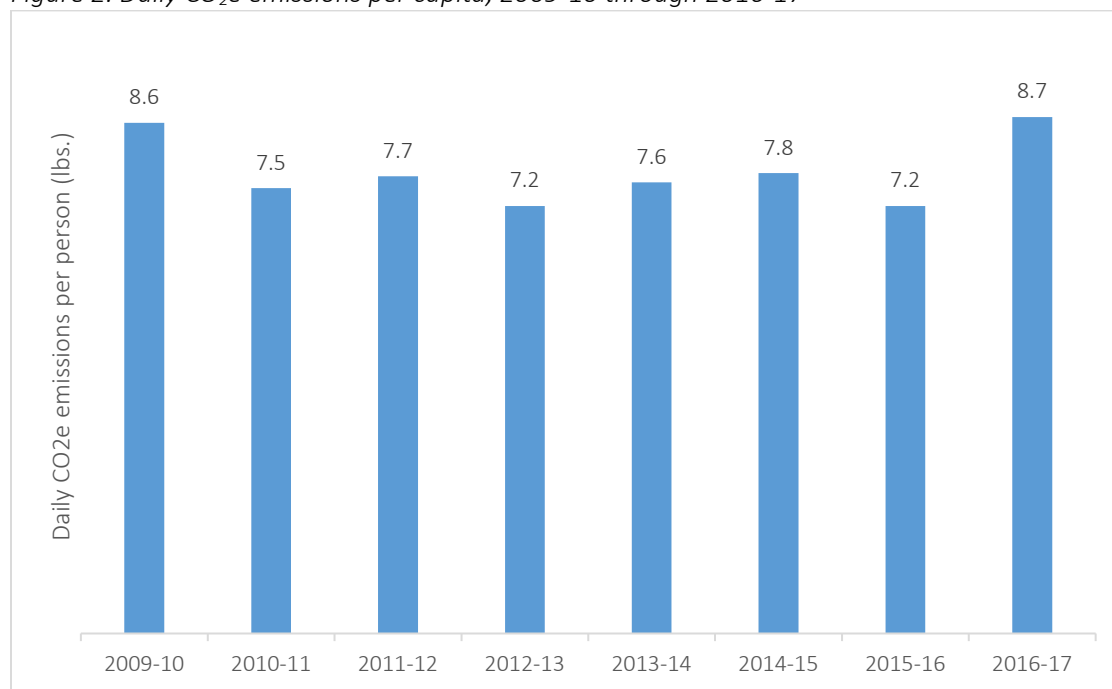
To assess the extent that alternative transportation reduces CO$_2$e emissions, we consider the hypothetical case that everyone were to drive alone to campus but all else were unchanged (e.g. distances and frequency of travel). In this scenario, the campus would produce an additional 14,898 annual metric tons of CO$_2$e, compared to 44,596 tons overall. Figure 3 shows the contribution of each alternative, when compared to driving alone, to the total CO$_2$e emissions avoided.

Figure 3. Annual CO2e emissions avoided
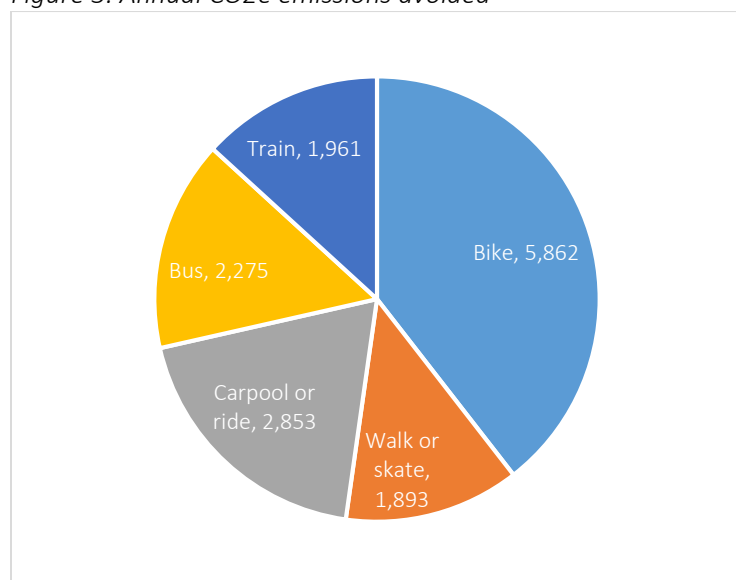
Average Vehicle Ridership

Average vehicle ridership (AVR) is a statistic calculated at each UC campus that represents the ratio of the number of people arriving on campus to the number of personal vehicles brought to campus. If everyone drove by themselves to campus, the campus AVR would be equal to one. Values greater than 1.0 indicate more carpooling or the use of active modes of transportation. The official 2016-17 AVR for non-student employees living off-campus is 1.56 person-arrivals per vehicle-arrival (Table 2). The AVR for the entire campus community is 2.75 excluding on-campus residents and 3.17 including on-campus residents. This means that for every car coming to campus, there are an estimated 3.17 people coming to campus or telecommuting.

Figure 4 shows the differences in AVR between all employees, employees and students living within Davis, and employees and students living outside Davis. As shown, the 2016-17 AVR of those living in Davis is somewhat lower than in the previous year (in part reflecting the change in methodology described above), while the AVR of those living outside Davis has remained relatively constant over time. These results suggest that there is still much progress to be made in providing housing options in Davis for all university affiliates regularly traveling to campus.

Table 2. Average vehicle ridership (AVR) 2009-10 through 2016-17

Role	*Off campus only*							
	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Student	4.28	4.49	5.29	6.05	5.59	5.66	5.13	4.02
Employee	**1.66**	**1.75**	**1.78**	**1.7**	**1.75**	**1.61**	**1.92**	**1.56**
Outside Davis	1.26	1.34	1.39	1.34	1.3	1.27	1.27	1.24
Within Davis	4.99	4.99	5.98	6.24	6.53	7.25	6.15	4.86
Overall	2.83	3	3.26	3.34	3.3	3.23	3.55	2.75
Role	*All (on and off campus)*							
	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Student	5.25	5.53	6.41	7.25	6.74	6.93	6.43	4.85
Employee	1.66	1.75	1.8	1.7	1.75	1.61	1.92	1.56
Outside Davis	1.26	1.34	1.39	1.34	1.3	1.27	1.27	1.24
Within Davis	5.99	6.04	7.14	7.36	7.74	8.75	7.54	5.81
Overall	3.3	3.51	3.78	3.82	3.8	3.77	4.24	3.17

Bold indicates the official AVR statistic reported by UC campuses. See "Appendix D: Calculation of Average Vehicle Ridership (AVR)" for details on AVR calculations.

Figure 4. Average vehicle ridership, 2009-10 through 2016-17
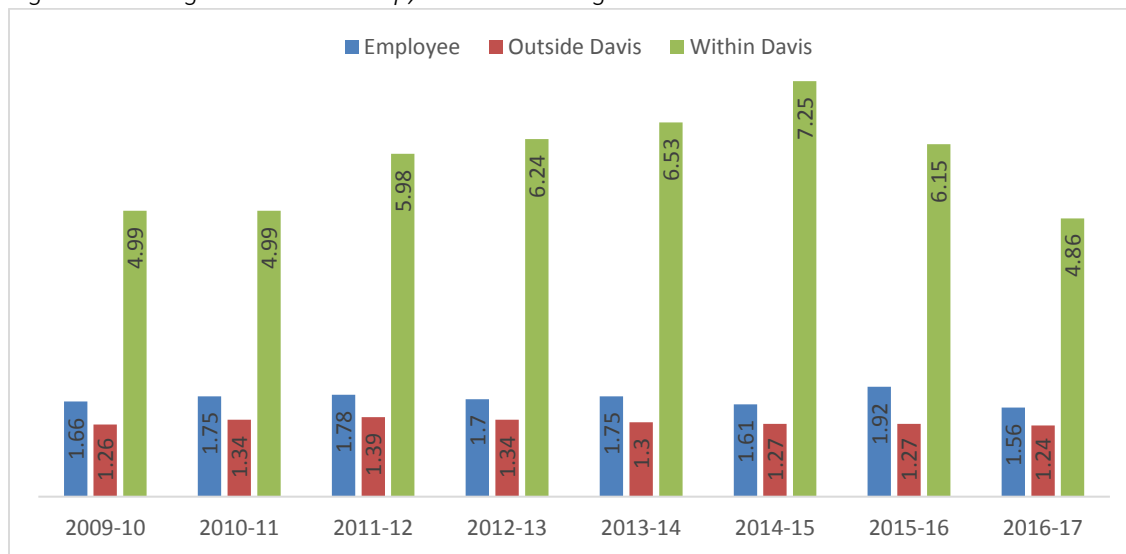
Potential for bicycling

We include a question to assess the potential mode share of biking: "What options are available to you for getting to campus?" Answers to this question might be used as a proxy for the highest potential share of each mode. Figure 5 shows the differences between the share of respondents who consider biking to campus to be an option and the share that actually bikes to campus on an average weekday.

Figure 5. Share who bikes to campus compared to share who considers biking an option, by distance from campus
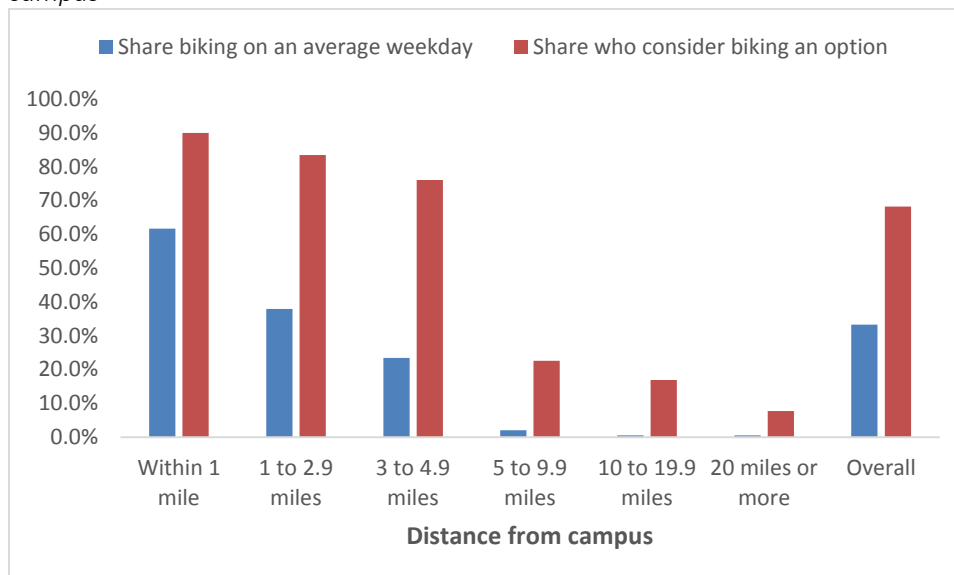
Awareness of TAPS and other transportation services

Several services that promote bicycling are well-known and highly utilized across the campus population. The bike tire air stations and repair stations on campus are the most highly utilized transportation services, with over 50 percent of respondents having used them (Figure 6).Figure 6. Familiarity with TAPS programs
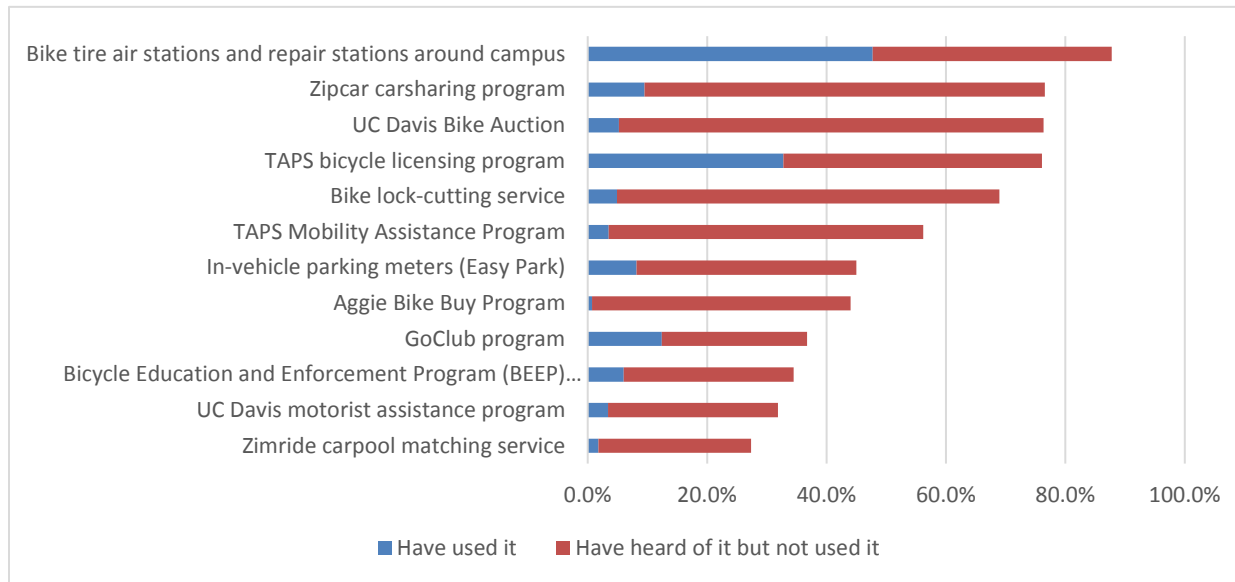
INTRODUCTION

Background

In 2003 the University of California adopted the *UC Policy on Sustainable Practices*, which charges UC campuses with the task of measuring and promoting sustainable commuting. System-wide targets for assessing the sustainability of transportation systems include annual estimation and reporting of Average Vehicle Ridership (AVR) and carbon dioxide equivalent emissions (CO_2e) for each UC campus. The *UC Policy on Sustainable Practices* also lists mechanisms for reducing commute emissions, including the construction of on-campus housing and expansion of Transportation Demand Management (TDM) programs. In addition to the sustainable transportation goals of the University of California, many universities and colleges around the world face additional reasons to promote alternatives to driving. Some concerns include high costs of expanding parking facilities, air pollution, and traffic congestion. It is essential that campus planners and travel demand managers have current and accurate information about commuting at their institutions so that they may implement targeted transportation policies, evaluate the effectiveness of current services, share best practices with other institutions, and track commuting behavior over time.

About the Campus Travel Survey

The UC Davis campus travel survey is a joint effort by the Transportation & Parking Services (TAPS) on campus and the National Center for Sustainable Transportation, part of the Institute of Transportation Studies at UC Davis. Since 2007 the survey has been administered each fall by a graduate student at the Institute of Transportation Studies. The main purpose of the survey is to collect annual data on how the UC Davis community travels to campus, including mode choice, vehicle occupancy, distances traveled, and carbon emissions. Over the past ten years, the travel survey results have been used to assess awareness and utilization of campus transportation services and estimate demand for new services designed to promote sustainable commuting at UC Davis. Data from the campus travel survey have also provided researchers with valuable insights about the effects of attitudes and perceptions of mobility options on commute mode choice. This year's survey is the tenth administration of the campus travel survey. The survey was first administered in the spring of 2006-07 as a pilot effort, with a second survey conducted in the fall of 2007-08 (Congleton, 2009), and eight subsequent surveys conducted in the fall of 2008-09 (Lovejoy, Handy *et al.*, 2009), 2009-10 (Lovejoy, 2010), 2010-11 (Miller, 2011), 2011-12 (Miller, 2012), 2012-13 (Driller, 2013), 2013-14 (Popovich, 2014), 2014-15 (Thigpen, 2015), 2015-16 (Gudz, Heckathorn *et al.*, 2016) and 2016-17 (Heckathorn, 2017). The next administration of the survey is planned for October 2017.

The 2016-17 survey was administered online in October and November 2016, distributed by email to a stratified random sample of 24,029 students, faculty, and staff (out of an estimated total population of 45,380). About 19 percent (4,448 individuals) of those contacted responded to this year's survey, with 16.1 percent actually completing it. For the statistics presented throughout this report, we weight the responses by role (freshman, sophomore, junior, senior, Master's student, PhD student, faculty, and staff) and gender so that the proportion of respondents in each group reflects their proportion in the campus population.

Development of the survey instrument

The content of the survey was based on the previous year's survey, retaining key questions relating to mode choice and residential location, among others. An ongoing attempt to refine question wording has meant that some variables are not directly comparable across years. (See "Appendix A: Survey instrument, 2015-16 Campus Travel Survey" for a full copy of the 2016-17 survey instrument. See "Appendix B: Changes from the 2015-16 survey instrument" for a summary of changes in the 2016-17 survey compared to the 2015-16 survey.) The online survey was prepared and hosted using the Qualtrics Survey software (http://www.qualtrics.com/). Staff at TAPS as well as faculty and students affiliated with the Institute of Transportation Studies provided feedback on survey content and assisted with pre-testing of the online survey.

Sampling procedure

As in previous years, the goal of the sampling procedure was to draw a sufficiently large sample for reliable statistical estimates within the following groups: freshmen, sophomores, juniors, seniors, Master's/professional students, PhD students, faculty, and staff. We used standard statistical techniques to determine the minimum sample size needed for estimates with a +/- 5% margin of error, based on the assumed response rate for each of the groups. In past years, we found that response was higher among some role groups (PhD students, faculty, and staff) and lower among others (seniors and Master's/professional students). Since the 2009-10 implementation of the survey, we have varied invitation rates by stratum to account for these differences, assuming that response rates by stratum in previous years would remain relatively consistent. To ensure that we reached minimum sample size targets even with some variation in response rates, we set the share of the population sampled to 53 percent (24,029 people). (See "Appendix G: Sampling Plan" for more information on this year's sampling plan.)

A stratified random sample of 24,029 was drawn from ostensibly complete lists of UC Davis email addresses maintained at two different departments within the university. The sampling of student email addresses was conducted by the Institutional Analysis branch of the Student Research and Information (SRI) office. Student email addresses were screened based on students' class level and departmental affiliation, including all academic and professional students except medical students, who are not based on the Davis campus. In the case of the student sample, we received a spreadsheet from SRI containing only those names and email addresses of individuals selected for inclusion in the sample. A list of employee (faculty and staff) email addresses was drawn by Payroll Personnel System (PPS) staff from the Accounting and Financial Services office. Employees were screened to exclude those affiliated with the Medical Center or field stations, those without salary, Emeritus faculty, Extension School faculty, temporary employees, and employees without email addresses. PPS staff compiled two separate Excel spreadsheets, one for faculty and one for staff.

Survey administration and recruitment of participants

We invited the randomly selected students, faculty, and staff to participate in the survey via email to their UC Davis addresses. In these emails, faculty and staff recipients were addressed "Dear UC Davis Employee" and students were addressed "Dear UC Davis Student." Each person in the selected sample received an initial email inviting him or her to take the survey. Those individuals who had not completed the survey one week later were sent a reminder email. Those individuals who had not completed the

survey after the second week were sent an additional reminder email the following week. See "Appendix C: Text of the recruitment emails" for copies of these recruitment emails.

Offering a chance to win a desirable prize is thought to increase overall response to a survey. This year, TAPS allocated $1,500 for incentives in the form of 20 $50 Visa gift cards and a grand prize of an Amazon Fire tablet to participate in the survey. Entry into this drawing was mentioned in the initial and follow-up recruitment emails, as well as on the first welcome page of the online survey. On the final page of the survey, respondents were asked to indicate whether it would be okay for us to contact them again (1) with questions about their survey or (2) if they win the drawing, or if instead they preferred not to be contacted. There were 3,374 respondents who indicated they were willing to be contacted if they won the drawing and provided contact information. We assigned each of these respondents a random number and selected the 21 with the lowest values as the winners, who were notified via email on January 6th, 2017 and instructed to pick up their gift cards at the TAPS office.

Response rate

A total of 4,448 respondents at least started the survey (responding to question *Q01*), representing 18.5 percent of those invited. This rate is slightly higher than last year's survey's response rate (15.4 percent). Of those who began the survey, 93 percent (4,132 respondents) completed the survey through question *Q30*, which asked respondents about their mode choice on each day of the reference week. Table 3 shows response rates for this year's survey compared to the previous seven surveys. As shown, overall response rates have gradually declined over time. This decline is likely influenced by two factors: there is an increasing proportion of invited respondents who have taken the survey in previous years and who may not feel the need to take the travel survey again; and the estimated time to complete the survey (as described in the email invite) has increased. In the past two years, the invitations to take the campus travel survey were sent directly from the Provost's email address mentioning explicitly the ways in which the survey data are used and the importance of taking and completing the survey each year. It also assured respondents that the survey would take less than ten minutes to complete.

Table 3. Response rates for 2016-17 versus 2009-10 through 2015-16

Role group	2016-17				2016-17	2015-16	2014-15	2013-14	2012-13	2011-12	2010-11	2009-10
	Assumed population	Number invited	Actual responses	Target response rate	Actual response rate							
Student	33,825	20,516	3,000	10.43%	14.70%	11%	11%	12%	13%	12%	18%	25%
Undergraduate	27,896	15,982	2,203	9.12%	13.87%	11%	10%	11%	12%	11%	17%	24%
Freshman	4,320	3,515	473	10.30%	13.80%	10%	11%	11%	15%	13%	23%	30%
Sophomore	5,026	3,216	482	11.10%	14.99%	13%	12%	12%	13%	12%	16%	26%
Junior	7,768	3,874	612	9.50%	15.84%	12%	12%	13%	14%	13%	18%	22%
Senior	10,782	5,377	636	6.90%	11.83%	9%	8%	9%	10%	9%	12%	19%
Graduate	5,929	4,534	797	15.06%	17.62%	14%	16%	15%	16%	16%	22%	28%
Master's	2,627	2,627	331	12.79%	12.60%	9%	10%	14%	11%	11%	16%	19%
PhD	3,302	1,907	466	18.20%	24.58%	20%	18%	16%	21%	23%	34%	40%
Employee	11,555	3,513	1,132	19.79%	32.85%	23%	14%	22%	18%	19%	29%	34%
Faculty	1,645	1,645	483	19.90%	30.80%	20%	13%	14%	16%	16%	22%	27%
Staff	9,910	1,868	649	19.70%	34.56%	25%	16%	30%	22%	24%	37%	42%
Overall percent	100%	52.95%	17.2% [a]	11.7%	17.2%	14%	11%	13%	14%	13%	20%	27%
Overall	45,380	24,029	4,132	2811	4132	3781	3,507	3,663	3,982	3,116	3,084	3,569

*4,448 people began the survey, but these response rates reflect only those respondents who reported valid mode and gender (4,132)

[a] This actual response rate is based on valid responses for primary mode and gender. These cases are weighted by role and gender and used for the bulk of the analysis.

Table 4 shows the number of valid responses at three key points in the survey: those who answered the first question about role in the university, those who gave valid responses to questions about primary mode and gender, and those whose addresses were successfully geocoded in addition to meeting the previous criteria. As shown, Master's students did not meet the target response rate for a five percent margin of error. Margins of error based on responses by role group are shown later in Table 8. As in previous years, response rates were highest among staff and PhD students, and lowest among undergraduate and Master's students of all years.

Table 4. Number of valid responses by role

Role group	Population	Invited	Target (5% margin of error)	Valid role (started survey)	Mode and gender (weighted for bulk of analysis)	Geocoded (weighted for CO2 emissions, VMT)
Students	33,825	20,516	2,141	3,228	3,000	2,816
Undergraduate	27,896	15,982	1,458	2,324	2,203	2,077
Freshman	4,320	3,515	362	542	473	469
Sophomore	5,026	3,216	357	497	482	445
Junior	7,768	3,874	368	631	612	568
Senior	10,782	5,377	371	654	636	595
Graduate	5,929	4,534	683	904	797	739
Master's	2,627	2,627	336	406	331	300
PhD	3,302	1,907	347	498	466	439
Employees	11,555	3,513	695	1,220	1,132	1050
Faculty	1,645	1,645	327	512	483	453
Staff	9,910	1,868	368	708	649	597
Overall percent	100%	52.95%	11.8%	18.51%	17.2%	16.09%
Overall	45,380	24,029	2,836	4,448	4,132	3,866

Screening respondents for eligibility

While incomplete survey responses were retained in the dataset, cases were excluded based on two criteria: role and office location. In particular, we wanted to include only respondents who are current students or employees affiliated with the campus in Davis (rather than in locations beyond the campus or city of Davis) and whose role at UC Davis is known. Although the sample frame was supposed to only include current students and employees affiliated with the main campus, we have learned that university records are not always accurate, either due to a student or employee's recent change in status or due to ambiguity about the geographic location associated with a nominal departmental affiliation. We have attempted to improve our screening of these exceptions in recent surveys through more explicit questions about roles and office locations.

From the responses to *Q01*, we screened 4 respondents who failed to provide a valid role group (who were then skipped to the end of the survey - see "Appendix A: Survey instrument, 2016-17 Campus Travel Survey"). Regarding office locations, we intended to include in the sample anyone who usually travels to campus regularly, even if temporarily stationed elsewhere-- such as for sabbatical, teaching abroad, field work, a joint appointment at another campus, or on leave (bereavement, maternity, etc.)-- but exclude those whose main work is elsewhere. We believe this is a potential issue for employees and graduate students, but not undergraduate students. Thus we screened graduate student and employee office locations in question *Q08* ("Where is your office, lab, or department? That is, wherever you usually spend your time when you travel to work or school at UC Davis.") There were 121 respondents who indicated that their offices were located outside of Davis. These most commonly included the Graduate School of Management Center in San Ramon and the UC Davis Medical Center in Sacramento. These 121 respondents were redirected to the end of the survey (see Appendix A: Survey instrument, 2016-17 Campus Travel Survey) and are excluded from the analysis.

In addition, we excluded respondents who indicated traveling to campus but failed to provide answers to questions about primary mode used during the reference week, as well as respondents who did not answer whether they traveled to campus during the reference week. Lastly, 20 respondents who were away all week indicated in *Q28* that they do not plan to resume travel to campus. Since our survey targets only those who regularly travel to the UC Davis campus, these respondents were also excluded from the analysis.

Weighting responses by role and gender

For the purposes of analysis, we assume that respondents are roughly similar to the rest of the population within their role group (freshmen, sophomores, etc.) with respect to socio-demographics or other attributes that may matter for transportation choices. For this reason, we weight the sample by role group. In particular, as described above, respondents were assigned to one of eight role groups based on their responses to questions *Q01* through *Q03*: freshmen, sophomores, juniors, seniors (and fifth-years and post-baccalaureate), Master's students (and professional students such as law and business and Ed.D. or CANDEL), PhD students, faculty, or staff (including Post-docs). All results presented in this report are weighted to be representative of the campus population by these role groups. That is, we apply a weight factor to each case in a given role group so that the group's proportion in the sample is the same as their proportion in the overall projected population. In addition, as in previous surveys, the sample is disproportionately comprised of women. Men comprise 28.6 percent of the sample versus 41 percent of the population of undergraduate students, and 37.5 percent of respondents versus 51 percent of the population of graduate students.[1] In addition to weighting by role in the university, we correct for these differences in response rates among men and women in each role group so that the share of men and women in the weighted sample is equal to the share of men and women in each role group in the population.

The weighting methodology depends on an accurate estimate of the campus population by role and gender. For the 2016-17 survey, campus administrators used a new protocol to estimate faculty and staff population for the campus. The new protocol produced a higher estimate of the number of staff and a lower estimate of the number of faculty in 2016-17 than in 2015-16, meaning that the responses of staff

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[1] Figures for the composition of the campus population by gender are drawn from two sources. The student gender split was derived from the Budget and Institutional Analysis document: "Enrollment Visualization: Student Demographics, Fall 2010 to Fall 2016". The faculty and staff gender splits were determined using the Fall 2016 Employee Summary Data from UC Davis Academic Affairs.

are given more weight and those of faculty less weight in this year's results (see Appendix H: Weighting by role and gender" for more information. This change in protocol affects the comparison of 2016-17 results to 2015-16 results, and the comparisons presented in this report may not accurately reflect the true changes in travel to campus. The 2017-18 survey will use the new protocol and will thus provide a more accurate estimate of changes from 2016-2017 to 2017-18.

Although the number of valid responses varies from question to question, we use the same set of weight factors for most variables, based on the distribution of roles among the 4,132 valid responses to question *Q30*, the main question relating to mode choice on each day during the travel week. However, for variables relying on geocoding of respondents' residential location, we generated a separate set of weight factors, based on the 3,866 cases successfully geocoded (by cross-streets and zip code given in questions *Q18* and *Q19*; see "Appendix E: Geocoding and network distances") and with non-missing mode data from question *Q30*. (See "Appendix H: Weighting by role and gender" for more information on weighting and a list of weight factors by role and gender.)

Table 5. Unweighted gender distribution of respondents

Role group	Male	Female	Unweighted sample	Projected population
Undergraduate	28.64%	71.36%	2,203	27,896
Graduate	37.52%	62.48%	797	5,929
Faculty	51.76%	48.24%	483	1,645
Staff	33.28%	66.72%	649	9,910

Table 6. Weighted gender distribution of respondents

Role groups	Male	Female	Weighted sample	Projected population
Undergraduate	41.00%	59.00%	2,540	27,896
Graduate	50.99%	48.98%	540	5,929
Faculty	63.49%	36.36%	150	1,645
Staff	33.41%	66.62%	902	9,910

Table 5 and Table 6 show the difference in gender distribution between the unweighted and weighted results. In previous reports, we have found that women are less likely to bike and more likely to ride the bus than are men. Without correcting for differences in response rates between men and women, the estimated bike mode share might be lower (and bus mode share higher) than they are in the actual population. Other biases may exist if there are other ways that the sample of respondents differs systematically from the rest of the population, though we have few ways of knowing the extent to which it does.

Reference week

The main statistics that we report are based on questions that ask respondents about their travel activity during each of the five weekdays prior to receiving the invitation to complete the survey. We schedule the reference week for approximately the same time each year that the survey is administered, and to coincide with the biannual campus traffic counts of vehicles entering campus, usually conducted the last week in October or the first week in November (see Figure 7 for the full timeline of the survey launch and

reference weeks). This was the fifth year that we asked about weekend travel, so our reference week encompasses seven days rather than five, as in earlier surveys. This year's reference week was October 24-30, 2016 (Monday-Sunday). As with previous years, we followed the initial email with a reminder email a week later to individuals who had not yet participated and an additional reminder email the following week. The reminder emails were sent on Monday, November 7th and Monday, November 14th.

Figure 7. Survey launch and reference week schedule, October- November, 2016

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Oct 24 *Reference week*	25	26	27	28	29	30
31 Initial invitations sent *2nd reference week*	Nov 1	2	3	4	5	6
7 Reminder invitations sent *3rd reference week*	8	9	10	11	12	13
7 Second reminder invitations sent	15	16	17	18	19	20

Table 7 displays weather during the three reference weeks. The Halloween holiday fell on the Monday during which initial invitations were sent. The bicycle commute share is generally lower and the bus commute share is generally higher during days with significant precipitation.

Table 7. Weather during reference weeks

Day	Temperature range	Mean (max) wind speed	Precipitation levels
Week 1: October 24 – 30, 2016			
Monday	55 – 68 ºF	8 (17) mph	0 in.
Tuesday	59 – 68 ºF	7 (15) mph	0.05 in.
Wednesday	53 – 75 ºF	3 (8) mph	0 in.
Thursday	55 – 66 ºF	3 (10) mph	0.39 in.
Friday	59 – 64 ºF	3 (9) mph	0.54 in.
Saturday	57 – 71 ºF	4 (10) mph	0 in.
Sunday	53 – 64 ºF	6 (21) mph	0.13 in.
Week 2: October 31 – November 6, 2016			
Monday	48 – 64 ºF	6 (10) mph	0.1 in.
Tuesday	51 – 64 ºF	6 (9) mph	0.13 in.
Wednesday	44 – 66 ºF	3 (7) mph	0 in.
Thursday	46 – 69 ºF	3 (6) mph	0 in.
Friday	46 – 71 ºF	2 (9) mph	0 in.
Saturday	44 – 69 ºF	2 (8) mph	0 in.
Sunday	57 – 69 ºF	5 (9) mph	0 in.

Week 3: November 7 – 13, 2016			
Monday	53 – 71 ºF	3 (10) mph	0 in.
Tuesday	53 – 73 ºF	3 (8) mph	0 in.
Wednesday	51 – 75 ºF	3 (10) mph	0 in.
Thursday	50 – 73 ºF	2 (7) mph	0 in.
Friday	50 – 71 ºF	1 (9) mph	0 in.
Saturday	51 – 75 ºF	3 (7) mph	0 in.
Sunday	51 – 73 ºF	3 (7) mph	0 in.

Weather data are for Davis, CA, as reported in *Weather Underground*, available online by city and date at http://www.wunderground.com/history/.

FINDINGS

This section summarizes key results from the survey. Data presented in this section are weighted by role and gender, as described above. When "unweighted sample" size is reported it reflects the number of actual respondents in this category; "weighted sample" size reflects the number that would be in each category if the distribution of roles and genders in the sample matched the distribution in the population (so the total number in the weighted sample equals the number in the unweighted sample, but numbers within subgroups may change). "Projected population" size is a projection of the weighted proportions to the full campus population, calculated by multiplying each response by an expansion factor based on role and gender.

Many statistics are presented by role group (freshmen, sophomores, juniors, seniors, Master's students, PhD students, faculty, or staff). Where applicable, some are broken down by students (including freshmen through PhD students), undergraduates (freshmen through senior students), graduate students (Master's and PhD students), employees (faculty and staff), within Davis (those living on campus or elsewhere in Davis among all role groups), and outside Davis (those living outside of Davis among all role groups).

Confidence intervals

Table 8 shows the margin of error of findings for each role group, to the extent that the proportions and figures estimated in the report differ by role group. For statistics about the population as a whole, we are 95 percent confident that our estimates are within 1.5 percent of their true value. These expectations are particularly important for mode share estimates, given that some year-to-year changes are significant, while others are not. For example, when we report later that 36.6 percent of students and employees bike to campus, our margin of error indicates that – to the extent to which the survey results are unbiased – the true share of persons that bike to campus is between 35.1 and 38.1 percent. Master's students have the highest margins of error due to low response rates.

Table 8. Margins of error, by role group

Role groups	Sample Size	Population Size	Margin of Error
Student	3,000	33,825	1.71%
Undergraduate	2,203	27,896	2.00%
Freshman	473	4,320	4.25%
Sophomore	482	5,026	4.24%
Junior	612	7,768	3.80%
Senior	636	10,782	3.77%
Graduate	797	5,929	3.23%
Master's	331	2,627	5.04%
PhD	466	3,302	4.21%
Employee	1,132	11,555	2.77%
Faculty	483	1,645	3.75%
Staff	649	9,910	3.72%
Overall	4,132	45,380	1.45%

Physical travel to campus

Table 9 shows the share of each role group who traveled to campus on each day of the reference week. For those living on campus, "travel to campus" on a given day means the respondent indicated traveling to a campus destination for school or work. Overall, about 91 percent of university affiliates physically traveled to campus on each day Monday through Thursday, with a low of 72 percent traveling to campus on Friday. Faculty travel to campus least often, while sophomores travel to campus most often.

Table 9. Share physically traveling to campus by weekday

Role	Share physically travelling to campus by weekday						Weighted sample	Projected population
	Monday	Tuesday	Wed.	Thursday	Friday	No days		
Student	92.5%	91.4%	92.9%	91.2%	73.6%	2.3%	3,080	33,825
Undergraduate	93.6%	92.3%	94.0%	91.8%	74.9%	2.0%	2,540	27,896
Freshman	94.3%	92.8%	94.1%	91.1%	82.4%	2.5%	393	4,320
Sophomore	95.6%	93.1%	96.2%	92.6%	81.5%	1.3%	458	5,026
Junior	92.9%	91.6%	93.9%	90.2%	74.8%	1.5%	707	7,768
Senior	92.9%	92.3%	93.1%	93.0%	68.9%	2.5%	982	10,782
Graduate	87.4%	86.9%	87.8%	88.3%	67.7%	3.5%	540	5,929
Master's	87.3%	87.5%	88.0%	87.1%	55.8%	4.4%	239	2,627
PhD	87.5%	86.4%	87.6%	89.3%	77.2%	2.7%	301	3,302
Employee	85.8%	86.4%	86.7%	84.7%	67.3%	6.7%	1052	11,555
Faculty	79.3%	79.7%	79.6%	78.7%	63.4%	7.8%	150	1,645
Staff	86.9%	87.5%	87.8%	85.7%	68.0%	6.5%	902	9,910
Overall	90.8%	90.1%	91.3%	89.6%	72.0%	3.4%	4,132	45,380
Weighted sample	3,752	3,723	3,774	3,700	2,976	139	4,132	NA
Projected population	41,207	40,892	41,446	40,638	32,686	1,531	NA	45,380

Results are based on responses to questions *Q20* and *Q21*. Data are weighted by role and gender based on the 4,132 valid responses to questions *Q01*, *Q10*, and *Q20-30* (see Table 53).

In addition to trends by day of the week, there are substantial differences in the frequency of physical travel to campus among those living in different locations (Table 10). Overall, those living in Davis travel to campus more often than those living outside Davis (87 percent versus 78 percent). Master's students living outside of Davis are least likely to travel to campus, with only about 65 percent traveling to campus on an average weekday day. By contrast, 83 percent of Master's students who live off campus in Davis travel to campus on an average weekday. (See Table 14 for the overall percent of people living in each location, by role group.)

Table 10. Physical travel to campus, by role group and residential location

Role	Overall	On campus	West Village	Off campus in Davis	Outside Davis	Weighted sample	Projected population
Student	85.7%	85.9%	83.2%	87.5%	77.1%	2,882	33,825
Undergraduate	86.3%	86.5%	82.9%	87.8%	79.7%	2,377	27,896
Freshman	87.6%	87.8%	60.0%	88.0%	87.4%	368	4,320
Sophomore	87.9%	90.8%	81.9%	88.4%	90.4%	428	5,026
Junior	87.0%	83.1%	79.8%	90.1%	79.2%	662	7,768
Senior	84.6%	79.7%	90.0%	86.0%	76.5%	919	10,782
Graduate	82.7%	78.6%	86.6%	86.4%	69.7%	505	5,929
Master's	79.1%	77.8%	84.4%	82.9%	64.7%	224	2,627
PhD	85.6%	79.2%	96.0%	89.1%	73.9%	281	3,302
Employee	80.6%	100.0%	10.5%	83.3%	79.0%	984	11,555
Faculty	74.6%	100.0%	30.0%	79.1%	67.0%	140	1,645
Staff	81.6%	0.0%	0.0%	84.5%	80.1%	844	9,910
Overall	84.4%	85.9%	82.3%	86.7%	78.2%	3,866	45,380
Weighted sample	3,263	462	136	1943	721	3,866	NA
Projected population	38,298	5,427	1,599	22,809	8,463	NA	45,380

Results are based on responses to question *Q21* (days traveling to campus) and *Q16* (residential location). Shares are calculated by taking the average across groups of the percent of the five weekdays that each individual traveled to campus. See Table 14 for the overall percent living in each location by role group. Data are weighted by role and gender based on the 4,132 valid responses to questions Q01, Q10, and Q20-30 (see Table 53). Only 2 employees and twelve graduate students indicated living in West Village.

About 3.4 percent of the sample did not physically travel to campus on any day during the reference week. These respondents were asked to give the reason they were away all week (Table 11). Employees were more likely to be away all week than students, with work travel and sickness/personal leave being the most common reasons given for being away.

Employees (and not students) who were away from campus just some of the days during the week were also asked to give the reason they did not travel to campus for each weekday they were away (Table 12). 6.7 percent of employees were away all week (Table 11). 20.6 percent of employees did not travel to campus on an average weekday (Table 12). The most common reasons for being away from campus are working from home (telecommuting) and vacation, sickness, or personal leave.

Table 11. Share away from campus all week and reasons given, by role

Role	Share away from campus all week	Of those away from campus all week						Weighted sample	Projected population
		Didn't say	Study abroad or sabbatical	Telecommuting (working from home or another remote location)	Temporary appointment elsewhere	Vacation, sickness, or personal leave	Work or school-related travel or field work		
Student	2.3%	52.8%	11.8%	2.2%	6.2%	14.4%	12.6%	69	762
Undergraduate	2.0%	55.8%	16.1%	0.0%	7.3%	14.8%	6.0%	51	558
Freshman	2.5%	66.7%	13.3%	0.0%	0.0%	20.0%	0.0%	10	108
Sophomore	1.3%	75.0%	0.0%	0.0%	0.0%	12.5%	12.5%	6	66
Junior	1.5%	46.9%	29.7%	0.0%	23.4%	0.0%	0.0%	10	114
Senior	2.5%	50.5%	15.5%	0.0%	5.2%	19.6%	9.3%	24	269
Graduate	3.4%	44.6%	0.0%	8.3%	3.2%	13.3%	30.6%	19	204
Master's	4.4%	42.8%	0.0%	5.7%	5.7%	14.3%	31.5%	10	115
PhD	2.7%	46.8%	0.0%	11.6%	0.0%	12.0%	29.6%	8	89
Employee	6.7%	38.8%	4.3%	5.4%	2.0%	21.9%	27.6%	70	769
Faculty	7.8%	18.3%	13.8%	8.5%	0.0%	12.6%	46.7%	12	128
Staff	6.5%	42.9%	2.4%	4.8%	2.4%	23.8%	23.8%	58	641
Overall	3.4%	45.8%	8.0%	3.8%	4.1%	18.2%	20.1%	139	1531
Weighted sample	139	64	11	5	6	25	28	139	NA
Projected population	1531	701	123	58	62	278	308	NA	1,531

Results are based on responses to question *Q22*. Data are weighted by role and gender based on the 4,132 valid responses to questions Q01, Q10, and Q20-30 (see Table 53).

Table 12. Share of employees not traveling to campus on an average weekday, and reason

Role	Share away from campus on an average weekday	Among those not traveling to campus						Weighted sample	Projected population
		Telecommuting (working from home or remotely)	Work or school-related activities elsewhere	Regularly scheduled day off	Vacation, sickness, or personal leave	Day off as part of a compressed work week	Other		
Employee	20.6%	19.1%	15.1%	15.5%	24.3%	4.3%	21.7%	1052	11555
Faculty	26.1%	45.6%	24.9%	12.9%	6.6%	1.2%	8.7%	150	1645
Staff	19.7%	25.2%	17.4%	14.9%	20.3%	3.6%	18.7%	902	9910
Weighted sample	217	41	33	34	53	9	47	4132	NA
Projected population	2381	454	360	368	580	102	517	NA	45380

Results are based on responses to question *Q23* for individual days absent and on responses to *Q22* for those absent all week; reasons given in Q22 are assumed to apply to all five weekdays. Data are weighted by role and gender based on the 4,132 valid responses to questions Q01, Q10, and Q20-30 (see Table 53).

Destination on campus

Employees and graduate students were asked the location of their office, lab, or department. This was in part to screen out those whose offices or labs were outside of Davis, who are excluded from the sample for this study. Among the included respondents, 80.7 percent reported locations in the central campus area (an estimated 14,103 people), including 85.4 percent of graduate students, 93.7 percent of faculty, and 75.7 percent of staff (Table 13). A total of 7.6 percent of respondents reported office locations in west campus, 5.2 percent in south campus, and 6.5 percent off-campus but within the city of Davis.

Table 13. Destination on campus, among employees and graduate students

Role	Main campus	West campus area (west of SR 113)	South campus (south of I-80)	Off campus but in Davis	Weighted sample	Projected population
Graduate	85.4%	6.6%	5.2%	2.8%	540	5,929
Master's	84.3%	5.4%	7.3%	3.0%	239	2,627
PhD	86.3%	7.5%	3.5%	2.7%	301	3,302
Employee	78.2%	8.1%	5.2%	8.4%	1052	11,555
Faculty	93.7%	2.9%	1.6%	1.7%	150	1,645
Staff	75.7%	8.9%	5.9%	9.6%	902	9,910
Overall	80.7%	7.6%	5.2%	6.5%	1592	17,484
Weighted sample	1,284	121	83	104	1,592	NA
Projected population	14,103	1,324	913	1,144	NA	17,484

Results are based on responses to question *Q08*. Data are weighted by role and gender based on the 4,132 valid responses to questions *Q01*, *Q10*, and *Q20-30* (see Table 53).

Residential location

Since travel behavior varies substantially by residential location, each year respondents are asked about their residential location, defined as the place of residence from which they regularly travel to campus. The four broad categories included are: the on campus area, the West Village apartments, off-campus elsewhere in Davis, and outside of Davis (*Q16*). The results suggest that 13.9 percent live on campus (an estimated 6,320 people), 4.3 percent live in the West Village apartments (1,944 people), 58 percent live elsewhere in Davis (26,301 people), and 23.8 percent live outside of Davis (10,815 people) (Table 14). Individuals who indicated that they live outside of Davis are most likely to live in the nearby cities of Sacramento, Woodland, Vacaville, West Sacramento, Dixon, Elk Grove, and Winters.

Table 14. Residential location by role group

Role	On campus	West Village	Off campus in Davis	Outside Davis	Weighted sample	Projected population
Student	18.7%	5.7%	63.5%	12.2%	2,882	33,825
Undergraduate	20.9%	6.4%	61.8%	10.9%	2,377	27,896
Freshman	92.0%	0.8%	2.5%	4.6%	368	4,320
Sophomore	7.7%	11.9%	73.7%	6.7%	428	5,026
Junior	10.7%	8.3%	67.1%	13.9%	662	7,768
Senior	5.9%	4.6%	76.3%	13.2%	919	10,782
Graduate	8.1%	2.4%	71.1%	18.4%	505	5,929
Master's	8.4%	4.5%	68.4%	18.8%	224	2,627
PhD	7.9%	0.8%	73.2%	18.1%	281	3,302
Employee	0.0%	0.2%	41.8%	57.9%	984	11,555
Faculty	0.3%	0.5%	63.9%	35.2%	140	1,645
Staff	0.0%	0.2%	38.2%	61.7%	844	9,910
Overall	13.9%	4.3%	58.0%	23.8%	3,866	45,380
Weighted sample	538	166	2,241	921	3,866	NA
Projected population	6,320	1,944	26,301	10,815	NA	45,380

Results are based on responses to question *Q16*. Data are weighted by role and gender based on the 4,132 valid responses to questions *Q01*, *Q10*, and *Q20-30* (see Table 53).

Mode split for primary means of transportation

For physical trips to campus, mode choice was determined by responses to the statement, "Please select which means of transportation you used on your way to your first campus destination each day. (If you used more than one means, select whatever you did for most of the distance)" (*Q30*). Thus, modes identified are those used for most of the trip, and only on the way to campus at the beginning of the day. Throughout this report, we refer to answers to this question as a respondent's "primary" mode, meaning what they did for most of the trip to campus. For each respondent, we calculate the share of days out of the five-day week that a given mode was used as a primary mode. (For instance, if someone biked one day of five days traveled to campus, her bike share for the week would be 20 percent.) The overall mode split

represents the average shares across all respondents, which is equivalent to the share of all people using each mode on an average weekday. For the purpose of validating the method we use to calculate mode share, we also asked respondents about the mode they "usually" use to travel to campus. See Table 35 for a comparison of results for "usual" and "primary" modes.

Respondents were asked to report their residential location as the place from which they usually travel to campus. In some cases, respondents may travel to campus from another location (e.g. a family member's residence), resulting in seemingly dissonant primary mode choices. Similarly, someone may report living on campus but traveling by train to campus. Since there are very few cases in which these dissonant modes appear, results are reported as is, and discretion should be used in interpreting these cases.

Table 15 through Table 21 show the overall mode split among those physically traveling to campus on a given weekday. Results are shown by role group and general residential location in Table 15 and by role group for each category of residential location in the next six tables. On an average weekday, we estimate that of those physically traveling to campus, 36.6 percent bike (an estimated 13,840 people), 7.8 percent walk or skate (2,939 people), 35.4 percent arrive by car (13,389 people), and 20.1 percent ride public transit (7,599 people). Freshmen, most of whom live on campus, have the highest rate of bicycling.

Table 15. Share using each mode on an average weekday, by role group (all locations)

Role	Physically travelling	Of those physically traveling to campus						Weighted sample	Projected population
		Bike	Walk or skate	Drive alone	Carpool or ride	Bus	Train		
Student	84.6%	42.8%	9.0%	19.3%	4.3%	24.0%	0.4%	3,080	33,825
Undergraduate	85.5%	41.1%	9.7%	17.7%	3.8%	27.3%	0.3%	2,540	27,896
Freshman	87.6%	67.1%	24.8%	3.2%	1.5%	2.7%	0.6%	393	4,320
Sophomore	86.9%	38.4%	6.9%	12.1%	4.0%	38.4%	0.2%	458	5,026
Junior	85.8%	36.5%	7.0%	21.0%	4.4%	30.4%	0.6%	707	7,768
Senior	83.7%	34.9%	6.6%	24.0%	4.2%	30.1%	0.1%	982	10,782
Graduate	80.6%	51.5%	5.7%	27.4%	7.1%	7.4%	0.9%	540	5,929
Master's	76.2%	49.6%	6.1%	28.7%	6.4%	8.8%	0.4%	239	2,627
PhD	84.1%	52.8%	5.4%	26.5%	7.5%	6.5%	1.3%	301	3,302
Employee	79.4%	17.2%	3.9%	63.4%	8.8%	4.9%	1.7%	1,052	11,555
Faculty	73.9%	35.8%	6.7%	42.7%	9.9%	2.0%	2.8%	150	1,645
Staff	80.3%	14.4%	3.5%	66.5%	8.7%	5.4%	1.5%	902	9,910
Overall	83.3%	36.6%	7.8%	30.0%	5.4%	19.4%	0.7%	4,132	45,380
Weighted sample	3,442	1,260	268	1,033	186	667	25	4,132	NA
Projected population	37,802	13,840	2,939	11,344	2,045	7,326	273	NA	45,380

Results are based on responses to question *Q21* (whether they traveled to campus each day) and question *Q30* (primary means of transportation each day). All mode split percentages are calculated as follows: we first calculate the percent of five weekdays that an individual used a particular mode and then take the average over all respondents. Data are weighted by role and gender based on the 4,132 valid responses to questions *Q01*, *Q10*, and *Q20-30* (see Table 53).

Table 16 shows the mode share among those who live within Davis. This category includes students and employees who live on campus, off campus in Davis, and in the West Village apartments. Staff are the least likely to bike to campus (37 percent) and are most likely to drive alone (41.9 percent) from within Davis, while freshmen are the least likely to do so (0.3 percent). The train is not a feasible means of traveling to campus from within Davis.

Table 16. Share using each mode on an average weekday, from within Davis

Role	Physically travelling	Of those physically traveling to campus						Weighted sample	Projected population
		Bike	Walk or skate	Drive alone	Carpool or ride	Bus	Train		
Student	86.9%	48.8%	9.8%	11.2%	3.6%	26.5%	0.0%	2,530	29,699
Undergraduate	87.1%	46.4%	10.5%	9.9%	3.2%	30.0%	0.0%	2,118	24,861
Freshman	87.6%	70.6%	25.5%	0.3%	1.0%	2.4%	0.1%	351	4,122
Sophomore	87.7%	41.1%	7.2%	7.5%	2.8%	41.4%	0.0%	400	4,690
Junior	88.2%	42.1%	8.4%	11.3%	4.1%	33.9%	0.0%	570	6,692
Senior	85.8%	41.2%	6.9%	14.3%	3.8%	33.7%	0.0%	797	9,357
Graduate	85.6%	61.7%	6.4%	18.0%	5.4%	8.4%	0.0%	412	4,838
Master's	82.4%	59.6%	6.0%	18.5%	5.2%	10.7%	0.0%	182	2,134
PhD	88.2%	63.2%	6.6%	17.7%	5.6%	6.7%	0.0%	230	2,704
Employee	82.9%	39.2%	6.0%	39.6%	8.0%	6.9%	0.0%	414	4,865
Faculty	78.8%	48.4%	9.2%	31.1%	9.9%	1.3%	0.0%	91	1,065
Staff	84.1%	36.8%	5.2%	41.9%	7.5%	8.3%	0.0%	324	3,800
Overall	86.3%	47.5%	9.3%	15.0%	4.2%	23.9%	0.0%	2,945	34,565
Weighted sample	2,542	1,208	237	382	106	607	1	2,945	NA
Projected population	29,835	14,180	2,777	4,479	1,244	7,125	6	NA	34,565

Results are based on responses to questions *Q21* (daily travel) and *Q30* (travel mode). All mode split percentages are determined by calculating the percent of five weekdays that an individual used a specific mode and then taking the average over all respondents. Data are weighted by role and gender based on the 4,132 valid responses to questions *Q01*, *Q10*, and *Q20-30* (see Table 53).

Table 17 shows the mode share among those who live on campus, defined as the area south of Russell Blvd., west of A St., north of I-80, and east of highway 113. Bicycling and walking understandably predominate among the students who live on campus (only a few employees reported living on campus).

Table 17. Share using each mode on an average weekday, from on campus

| Role | Physically travelling | *Of those physically traveling to campus* | | | | | | Weighted sample | Projected population |
		Bike	Walk or skate	Drive alone	Carpool or ride	Bus	Train		
Student	85.9%	68.9%	25.1%	1.4%	1.0%	3.4%	0.1%	538	6,315
Undergraduate	86.5%	69.8%	24.9%	1.0%	0.9%	3.2%	0.1%	497	5,835
Freshman	87.8%	71.4%	26.2%	0.1%	0.8%	1.3%	0.1%	339	3,976
Sophomore	90.8%	67.2%	15.9%	4.5%	0.5%	11.8%	0.0%	33	387
Junior	83.1%	58.4%	32.2%	1.8%	1.5%	5.7%	0.0%	71	833
Senior	79.7%	76.4%	12.1%	3.5%	0.6%	6.9%	0.0%	54	638
Graduate	78.6%	56.4%	27.4%	7.0%	3.0%	5.7%	0.0%	41	480
Master's	77.8%	49.7%	24.3%	14.0%	4.6%	7.4%	0.0%	19	220
PhD	79.2%	61.9%	30.1%	1.1%	1.6%	4.3%	0.0%	22	261
Employee	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	4
Faculty	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	4
Staff	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Overall	85.9%	68.9%	25.1%	1.4%	1.0%	3.4%	0.1%	538	6,320
Weighted sample	462	319	116	6	5	16	0	538	NA
Projected population	5,427	3,739	1,360	75	54	184	3	NA	6,320

Results are based on responses to questions *Q21* and *Q30*. All mode split percentages are determined by calculating the percent of five weekdays that an individual used a particular mode and then taking the average over all respondents. Data are weighted by role and gender based on the 4,132 valid responses to questions *Q01*, *Q10*, and *Q20-30* (see Table 53). Very few employees indicated living within the area considered "on-campus," therefore these mode splits may not be characteristic of all employees living in this area.

Table 18 shows the mode shares among those living in the West Village apartments. Because the sample sizes in most role groups are very low, role-specific mode shares should be interpreted with some degree of caution; however, the overall mode share estimates for West Village are consistent with expectations for travel distances greater than "on campus" locations but generally less than "off campus in Davis" locations.

Table 18. Share using each mode on an average weekday, from West Village

Role	Physically travelling	Of those physically traveling to campus						Weighted sample	Projected population
		Bike	Walk or skate	Drive alone	Carpool or ride	Bus	Train		
Student	83.2%	44.7%	3.6%	3.2%	1.0%	47.5%	0.0%	163	1,918
Undergraduate	82.9%	43.8%	3.4%	2.4%	1.0%	49.4%	0.0%	151	1,773
Freshman	60.0%	93.3%	0.0%	0.0%	0.0%	6.7%	0.0%	3	37
Sophomore	81.9%	40.7%	1.1%	1.1%	1.8%	55.3%	0.0%	51	596
Junior	79.8%	43.0%	6.5%	2.1%	0.5%	48.0%	0.0%	55	647
Senior	90.0%	45.7%	2.5%	4.4%	0.7%	46.8%	0.0%	42	493
Graduate	86.6%	55.1%	6.1%	12.7%	1.1%	25.0%	0.0%	12	145
Master's	84.4%	50.9%	4.3%	16.1%	1.4%	27.2%	0.0%	10	117
PhD	96.0%	70.5%	12.6%	0.0%	0.0%	16.9%	0.0%	2	28
Employee	10.5%	0.0%	33.3%	0.0%	66.7%	0.0%	0.0%	2	25
Faculty	30.0%	0.0%	33.3%	0.0%	66.7%	0.0%	0.0%	1	9
Staff	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1	17
Overall	82.3%	44.6%	3.6%	3.2%	1.1%	47.4%	0.0%	166	1,944
Weighted sample	136	61	5	4	1	65	0	166	NA
Projected population	1,599	714	58	52	17	758	0	NA	1,944

Results are based on responses to question *Q21* (whether they traveled to campus each day) and question *Q30* (primary means of transportation each day). All mode split percentages are calculated as follows: we first calculate the percent of five weekdays that an individual used a particular mode and then take the average over all respondents. Data are weighted by role and gender based on the 4,132 valid responses to questions *Q01*, *Q10*, and *Q20-30* (see Table 53).

Table 19 shows the mode share results for those living off-campus in Davis, but excluding the West Village apartments. Among those living elsewhere in Davis, undergraduate students and staff are less likely to bike than graduate students and faculty. Undergraduate students have high bus ridership rates (37.1 percent), whereas graduate students and employees in Davis who do not bike are more likely to commute by car.

Table 19. Share using each mode on an average weekday, from off-campus within Davis

Role	Physically travelling	Of those physically traveling to campus						Weighted sample	Projected population
		Bike	Walk or skate	Drive alone	Carpool or ride	Bus	Train		
Student	87.5%	43.4%	5.9%	14.7%	4.5%	31.4%	0.0%	1,829	21,466
Undergraduate	87.8%	38.8%	6.4%	13.5%	4.2%	37.1%	0.0%	1,470	17,253
Freshman	88.0%	39.4%	4.5%	7.6%	7.6%	40.9%	0.0%	9	110
Sophomore	88.4%	38.4%	7.2%	8.7%	3.2%	42.5%	0.0%	316	3,706
Junior	90.1%	39.6%	5.1%	13.7%	4.9%	36.6%	0.1%	444	5,212
Senior	86.0%	38.4%	6.8%	15.7%	4.2%	34.8%	0.0%	701	8,226
Graduate	86.4%	62.5%	4.2%	19.3%	5.8%	8.1%	0.0%	359	4,213
Master's	82.9%	61.3%	4.0%	19.1%	5.5%	10.0%	0.0%	153	1,797
PhD	89.1%	63.2%	4.3%	19.5%	6.1%	6.8%	0.1%	206	2,416
Employee	83.3%	39.2%	6.0%	39.7%	8.0%	6.9%	0.0%	412	4,835
Faculty	79.1%	48.3%	9.2%	31.3%	9.8%	1.4%	0.0%	90	1,052
Staff	84.5%	36.8%	5.2%	41.9%	7.5%	8.3%	0.0%	322	3,783
Overall	86.7%	42.6%	6.0%	19.1%	5.1%	27.1%	0.0%	2,241	26,301
Weighted sample	1,943	829	116	371	100	527	0	2,241	NA
Projected population	22,809	9,727	1,358	4,352	1,172	6,183	4	NA	26,301

Results are based on responses to question *Q21* (whether they traveled to campus each day) and question *Q30* (primary means of transportation each day). All mode split percentages are calculated as follows: we first calculate the percent of five weekdays that an individual used a particular mode and then take the average over all respondents. Data are weighted by role and gender based on the 4,132 valid responses to questions *Q01*, *Q10*, and *Q20-30* (see Table 53).

We asked respondents who lived off-campus in Davis to identify which part of Davis they lived in by using a series of maps as references (see "Appendix A: Survey instrument, 2016-17 Campus Travel Survey"). Table 20 shows the mode share for those living off-campus in Davis (excluding West Village apartments) by their location in Davis. The results suggest that mode splits vary substantially by neighborhood. Bicycling to campus is especially prevalent among individuals living in Central and Downtown Davis. Those living in Downtown Davis are much more likely to walk to campus than individuals living elsewhere. Driving to campus is more common from the neighborhoods of West, East, and South Davis, and taking the bus to campus is more common from North and South Davis.

Table 20. Share using each mode on an average weekday, by neighborhood

Neighborhood	Physically travelling	Of those physically traveling to campus						Weighted sample	Projected population
		Bike	Walk or skate	Drive alone	Carpool or ride	Bus	Train		
North	86.7%	33.0%	3.4%	13.5%	3.8%	46.3%	0.0%	479	5,620
South	86.6%	27.6%	4.4%	28.0%	6.0%	33.7%	0.0%	347	4,077
East	84.9%	45.2%	4.9%	25.1%	6.1%	18.7%	0.0%	384	4,508
West	87.3%	37.3%	3.4%	22.7%	7.0%	29.6%	0.0%	404	4,738
Central	88.5%	62.2%	7.0%	10.3%	4.3%	16.1%	0.1%	379	4,454
Downtown	86.1%	63.2%	20.7%	8.8%	2.2%	5.0%	0.0%	174	2,039
Overall	86.7%	42.6%	6.0%	19.1%	5.1%	27.1%	0.0%	2241	26,301
Weighted sample	1,943	829	116	371	100	527	0	2,241	NA
Projected population	22,809	9,727	1,358	4,352	1,172	6,183	4	NA	26,301

Results are based on responses to question *Q21* (whether they traveled to campus each day) and question *Q30* (primary means of transportation each day). All mode split percentages are calculated as follows: we first calculate the percent of five weekdays that an individual used a particular mode and then take the average over all respondents. Data are weighted by role and gender based on the 4,132 valid responses to questions *Q01*, *Q10*, and *Q20-30* (see Table 53).

Table 21 shows the mode share for students and employees who live outside Davis (an estimated 10,815 people). Among those traveling from outside Davis, 78.9 percent commute by car, 9.5 percent carpool or get a ride, 4.9 percent ride the bus, and 3.3 percent ride the train. Carpooling is especially prevalent among sophomores and graduate students, while seniors were the most likely to take the bus from outside of Davis. Freshman were the least likely to drive alone from outside of Davis.

Table 21. Share using each mode on an average weekday, from outside Davis

| Role | Physically travelling | *Of those physically traveling to campus* | | | | | | Weighted sample | Projected population |
		Bike	Walk or skate	Drive alone	Carpool or ride	Bus	Train		
Student	77.1%	1.2%	2.5%	76.0%	9.4%	7.0%	3.7%	351	4,126
Undergraduate	79.7%	1.5%	3.2%	76.4%	7.2%	8.3%	3.2%	259	3,035
Freshman	87.4%	8.5%	7.6%	55.1%	8.5%	8.5%	11.9%	17	198
Sophomore	90.4%	0.0%	6.1%	67.4%	15.4%	8.2%	2.9%	29	336
Junior	79.2%	2.0%	0.0%	81.7%	5.1%	6.7%	4.5%	92	1,076
Senior	76.5%	0.5%	4.1%	78.2%	6.3%	9.6%	0.8%	121	1,425
Graduate	69.7%	0.3%	0.2%	74.6%	16.5%	2.8%	5.6%	93	1,091
Master's	64.7%	0.0%	0.4%	80.4%	16.2%	0.4%	2.5%	42	493
PhD	73.9%	0.5%	0.0%	70.4%	16.7%	4.5%	7.9%	51	598
Employee	79.0%	0.8%	2.2%	80.6%	9.6%	3.6%	3.1%	570	6,690
Faculty	67.0%	5.9%	2.3%	69.6%	10.1%	3.0%	8.9%	49	580
Staff	80.1%	0.4%	2.2%	81.5%	9.6%	3.7%	2.6%	521	6,110
Overall	78.2%	1.0%	2.3%	78.9%	9.5%	4.9%	3.3%	921	10,815
Weighted sample	721	7	17	569	69	35	24	921	NA
Projected population	8,463	82	196	6,675	807	414	283	NA	10,815

Results are based on responses to question *Q21* (whether they traveled to campus each day) and question *Q30* (primary means of transportation each day). All mode split percentages are calculated as follows: we first calculate the percent of five weekdays that an individual used a particular mode and then take the average over all respondents. Data are weighted by role and gender based on the 4,132 valid responses to questions *Q01, Q10*, and *Q20-30* (see Table 53).

Table 22 shows the mode share by role if we include telecommuting as a travel mode, since it is sometimes considered an alternative to physical travel. The denominator for these estimates is the number of people who physically traveled to campus plus those who worked from home on a given weekday, but excluding those who did not travel for another reason. If working from home was indicated as a reason for not traveling to campus the entire week, we assumed that the individual did so on all five weekdays.[2] Faculty are much more likely to report telecommuting during the reference week than staff.

Table 22. Share using each mode on an average weekday, including telecommuting

Role	Physically travelling	Of those physically traveling to campus							Weighted sample	Projected population
		Bike	Walk or skate	Drive alone	Carpool or ride	Bus	Train	Work at home		
Student	84.6%	42.8%	9.0%	19.3%	4.3%	24.0%	0.4%	0.0%	3,080	33,825
Undergraduate	85.5%	41.1%	9.7%	17.7%	3.8%	27.3%	0.3%	0.0%	2,540	27,896
Freshman	87.6%	67.1%	24.8%	3.2%	1.5%	2.7%	0.6%	0.0%	393	4,320
Sophomore	86.9%	38.4%	6.9%	12.1%	4.0%	38.4%	0.2%	0.0%	458	5,026
Junior	85.8%	36.5%	7.0%	21.0%	4.4%	30.4%	0.6%	0.0%	707	7,768
Senior	83.7%	34.9%	6.6%	24.0%	4.2%	30.1%	0.1%	0.0%	982	10,782
Graduate	80.6%	51.5%	5.7%	27.4%	7.1%	7.4%	0.9%	0.0%	540	5,929
Master's	76.2%	49.6%	6.1%	28.7%	6.4%	8.8%	0.4%	0.0%	239	2,627
PhD	84.1%	52.8%	5.4%	26.5%	7.5%	6.5%	1.3%	0.0%	301	3,302
Employee	79.4%	17.2%	3.9%	63.4%	8.8%	4.9%	1.7%	2.5%	1,052	11,555
Faculty	73.9%	35.8%	6.7%	42.7%	9.9%	2.0%	2.8%	7.3%	150	1,645
Staff	80.3%	14.4%	3.5%	66.5%	8.7%	5.4%	1.5%	1.8%	902	9,910
Overall	83.3%	36.6%	7.8%	30.0%	5.4%	19.4%	0.7%	0.6%	4,132	45,380
Weighted sample	3,442	1,260	268	1,033	186	667	25	21	4,132	NA
Projected population	37,802	13,840	2,939	11,344	2,045	7,326	273	229	NA	45,380

Results are based on responses to question *Q21* (whether they traveled to campus each day), question *Q30* (primary means of transportation each day). See footnote regarding student telecommuting. All mode split percentages are calculated as follows: we first calculate the percent of five weekdays that an individual used a particular mode and then take the average over all respondents. Data are weighted by role and gender based on the 4,132 valid responses to questions *Q01*, *Q10*, and *Q20-30* (see Table 53).

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[2] Only employees were asked question *Q23* (reasons for not traveling to campus on particular days of the week), and so only employees could indicate telecommuting on these days.

While Table 15 through Table 22 present estimates for the share using various modes on an average weekday, Table 23 shows the share using each mode as a primary mode at least once during the five-day week. Although 36.6 percent of individuals bike to campus as their primary means of transportation on an average weekday (Table 15), 48 percent bike to campus as their primary means of transportation at least once during the week (Table 23). So while about 16,600 people bike as their primary means of travel on an average day, about 21,900 people are regular bicyclists (at least once per week). The number of regular carpoolers and train-riders is also substantially greater than the average number of people traveling by these modes on a given day, projected to be 5,219 (versus 2,451) and 545 (versus 318) for carpooling and train-riding, respectively.

Table 23. Share using each as a primary mode at least once during the reference week

Role	Physically travelling	Of those physically traveling to campus							Weighted sample	Projected population
		Bike	Walk or skate	Drive alone	Carpool or ride	Bus	Train	Work at home		
Student	84.6%	56.3%	16.2%	30.0%	10.6%	35.9%	0.8%	0.0%	3,080	33,825
Undergraduate	85.5%	54.2%	17.1%	27.1%	9.4%	40.1%	0.6%	0.0%	2,540	27,896
Freshman	87.6%	81.2%	38.5%	4.2%	4.8%	5.6%	1.2%	0.0%	393	4,320
Sophomore	86.9%	53.8%	13.5%	18.2%	10.2%	53.9%	0.2%	0.0%	458	5,026
Junior	85.8%	48.3%	13.4%	32.3%	10.2%	44.6%	1.0%	0.0%	707	7,768
Senior	83.7%	47.3%	12.5%	37.1%	10.2%	44.5%	0.2%	0.0%	982	10,782
Graduate	80.6%	66.7%	11.9%	44.4%	16.6%	15.0%	1.7%	0.0%	540	5,929
Master's	76.2%	66.4%	12.3%	48.3%	13.8%	16.9%	1.2%	0.0%	239	2,627
PhD	84.1%	67.0%	11.6%	41.5%	18.6%	13.6%	2.1%	0.0%	301	3,302
Employee	79.4%	23.0%	6.0%	81.6%	14.2%	7.4%	2.7%	2.5%	1,052	11,555
Faculty	73.9%	50.3%	11.0%	68.0%	18.3%	4.6%	5.4%	7.3%	150	1,645
Staff	80.3%	18.8%	5.2%	83.6%	13.6%	7.9%	2.3%	1.8%	902	9,910
Overall	83.3%	48.2%	13.7%	42.5%	11.5%	29.0%	1.2%	0.6%	4,132	45,380
Weighted sample	3,442	1,659	472	1,462	394	997	42	21	4,132	NA
Projected population	37,802	18,215	5,185	16,060	4,330	10,951	464	229	NA	45,380

Results are based on responses to questions Q20 (whether traveled to campus) and Q30 (primary means of transportation each day). Data are weighted by role and gender based on the 4,132 valid responses to questions Q01, Q10, and Q20-30 (see Table 53).

Comparison of 2016-17 mode share with 2015-16

One of the main purposes of the Campus Travel Survey is to collect comparable data each year in order to assess trends over time. The questions and calculations used to estimate mode share in this year's survey are identical to those used in last year's survey. In addition, the results of each year shown in this analysis are weighted by role and gender to correct for differences in response rates between subsets of the population over time. However, campus administrators used a different protocol to calculate faculty and staff population for the campus this year, as described earlier (See also "Appendix H: Weighting by role and gender" for more information). This change in protocol affects the comparison of 2016-17 results to 2015-16 results, and the comparisons presented below may not accurately reflect the true changes in travel to campus.

Table 24 shows mode share estimates for 2015-16 and 2016-17. Since a different protocol for estimating faculty and staff population was used in this year's survey, a significant change in mode share is apparent between the two years. Specifically, the bike share decreased by about 8 percentage points and the drive alone share increased by about 6 percentage points. This is primarily due to a larger staff population and a smaller faculty population being used to calculate weights for this year's survey. Staff have by far the highest drive alone share of any role, therefore the adjustment in population significantly affected the mode share difference between the two years. Data for both years are weighted by role and gender.

Table 24. Comparison of mode shares, 2015-16 to 2016-17

Role	Physically travelling	Of those physically traveling, share using each mode on an average weekday						Weighted sample	Projected population
		Bike	Walk or skate	Drive alone	Carpool or ride	Bus	Train		
2016-17									
Student	85.7%	43.6%	9.0%	18.3%	4.2%	24.4%	0.4%	2,882	33,825
Undergraduate	86.3%	41.9%	9.7%	16.5%	3.6%	27.8%	0.3%	2,377	27,896
Graduate	82.7%	52.2%	5.4%	26.8%	7.2%	7.6%	0.9%	505	5,929
Employee	80.6%	17.5%	3.9%	62.9%	8.9%	5.0%	1.8%	984	11,555
Outside Davis	78.2%	1.0%	2.3%	78.9%	9.5%	4.9%	3.3%	921	10,815
Within Davis	86.3%	47.5%	9.3%	15.0%	4.2%	23.9%	0.0%	2,945	34,565
Overall	84.4%	37.2%	7.8%	29.1%	5.4%	19.7%	0.8%	3,866	45,380
2015-16									
Student	88.4%	49.9%	8.1%	14.9%	4.0%	22.5%	0.7%	2,969	34,465
Undergraduate	89.2%	48.8%	8.6%	12.7%	3.6%	25.9%	0.4%	2,429	28,191
Graduate	85.0%	54.8%	5.8%	25.5%	5.9%	6.1%	1.9%	540	6,274
Employee	82.5%	27.8%	3.8%	54.1%	9.0%	3.6%	1.6%	820	9,518
Outside Davis	89.2%	2.1%	1.1%	76.6%	11.1%	5.2%	3.9%	517	7,179
Within Davis	91.2%	55.4%	8.3%	11.1%	3.9%	21.2%	0.1%	2,653	36,804
Overall	87.1%	45.3%	7.2%	22.9%	5.0%	18.6%	0.9%	3,789	43,983

Data are weighted for both years by role and gender (see Table 53).

Table 25 shows percentage-point changes in the overall mode share. This past year the rate of bicycling decreased by 8.1 percentage points. A higher share of people drove alone to school in 2016-17 than 2015-16, and a higher share of people took the bus. The share of the campus community physically traveling to campus decreased by 2.7 percentage points.

Table 25. One year change in overall mode share, 2015-16 to 2016-17

Percentage-point change in share of people doing each on an average weekday							
Years of comparison	Physically travelling	*Among those physically traveling to campus*					
		Bike	Walk or skate	Drive alone	Carpool or ride	Bus	Train
2015-16 to 2016-17	-2.7%	-8.1%	0.6%	6.2%	0.3%	1.1%	-0.1%

Data are weighted for both years by role and gender (see Table 53).

Carpooling and ridesharing

Each year we ask those who indicate carpooling (multiple people in a vehicle arriving on campus together) or getting a ride to campus (where the driver continues on to another destination after the drop-off) how many other people were in the vehicle. This data enables us to accurately account for carpooling and ridesharing in our estimation of vehicle-miles traveled from person-miles traveled. The average vehicle occupancies for carpools and rides are shown in Table 26. Among those who carpooled at any point during the reference week, the average number of passengers was 2.6 (including the driver). Most people dropped off on campus were the sole passenger, with an average of 1.5 passengers dropped off per ride to campus (excluding the driver).

Table 26. Average carpool size

Role	*Average occupancy for those that carpooled or got a ride at least once*		*Weighted sample*		*Projected population*	
	Carpool	Ride	Carpoolers	Riders	Carpoolers	Riders
Undergraduate	2.6	1.6	376	254	4,415	2,976
Graduate	2.5	1.1	78	32	921	372
Faculty	2.7	1.2	16	7	186	81
Staff	2.6	1.2	88	38	1,030	448
Outside Davis	2.7	1.6	112	34	1,320	397
Within Davis	2.5	1.5	446	297	5,232	3,481
Overall	2.6	1.5	558	330	6,552	3,878

Vehicle occupancy is based on responses to question *Q31* for those carpooling and to question *Q32* for those who got a ride. Data are weighted by role and gender based on the 4,132 valid responses to questions *Q01*, *Q10*, and *Q20-30* (see Table 53).

Number of vehicles on campus

Estimates of the number of people driving alone, carpooling, and getting a ride can be combined with average vehicle occupancy findings to estimate the total number of vehicles arriving on campus. We estimate the total number of vehicles as the number of people driving alone, plus fractional vehicles

counted in proportion to vehicle occupancy. That is, if a respondent reports arriving in a four-person carpool, we count this as 0.25 vehicles arriving on campus on behalf of that respondent. We weight and expand the sample to project the total number of vehicles for the entire campus population, using the expansion factors shown in Table 53. We estimate that 12,245 vehicles come to campus on an average weekday (Table 27). About 605 of these contain carpools and 486 are vehicles just dropping passengers off.

Table 27. Projected vehicles arriving on an average weekday, by occupancy and role

Role	Projected number of vehicles on an average weekday				Projected population
	Drive alone	Carpool	Ride	Total	
Student	5,296	339	344	5,980	33,825
Undergraduate	3,982	231	270	4,483	27,896
Freshman	105	8	23	137	4,320
Sophomore	512	43	45	601	5,026
Junior	1,362	80	79	1,522	7,768
Senior	2,002	106	122	2,230	10,782
Graduate	1,314	110	74	1,499	5,929
Master's	581	45	29	656	2,627
PhD	733	65	45	843	3,302
Employee	5,857	265	142	6,264	11,555
Faculty	531	36	25	592	1,645
Staff	5,326	229	116	5,672	9,910
Outside Davis	6,675	248	129	7,053	10,815
Within Davis	4,479	348	356	5,183	34,565
Overall	11,154	605	486	12,245	45,380

Results are based on responses to questions *Q21* (days physically traveling to campus), *Q30* (mode of transportation used each day), *Q31* (carpool size), and *Q32* (number given a ride). "Drive alone" includes driving alone in a vehicle as well as driving a motorcycle or scooter. The distinction between carpools and rides is whether the driver's destination is campus: Carpool is defined as "Carpool or vanpool with others also going to campus (either as driver or passenger)" and ride is defined as "Get a ride (someone drops you off and continues on elsewhere)." Data are weighted by role and gender based on the 4,132 valid responses to questions *Q01*, *Q10*, and *Q20-30* (see Table 53).

Average Vehicle Ridership

Average vehicle ridership (AVR) is a statistic calculated at each UC campus as the ratio of the number of people arriving on campus to the number of personal vehicles brought to campus. We use a formula developed by the South Coast Air Quality Management District, intended to count weekday arrivals of employees from off-campus (only) and making adjustments for employees who telecommute, who adopt a compressed work week schedule, or who use a zero-emission vehicle to commute to campus (see "Appendix D: Calculation of Average Vehicle Ridership (AVR)" for details). If everyone drove alone to campus, the campus AVR would be equal to one. Values greater than one indicate more carpooling, bus or train use, or active modes. Among those traveling from off-campus, AVR is estimated to be 2.75 campus-wide, and 1.56 among non-student employees only (Table 28). This means that for every car coming to campus, an estimated 2.75 off-campus people come to campus or telecommute. This ratio is lower than last year, at least in part owing to the change in protocol for estimating the campus population.

Table 28. Average vehicle ridership (AVR) 2009-10 through 2016-17

Role	Off campus only							
	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Student	4.28	4.49	5.29	6.05	5.59	5.66	5.13	4.02
Undergraduate	5.11	5.38	6.42	7.23	6.44	6.33	5.88	4.32
Freshman	4.69	3.26	3.66	5.06	2.31	4.24	2.71	2.52
Sophomore	9.38	8.37	15.93	17.51	10.93	10.64	10.93	6.97
Junior	5.48	5.59	6.24	7.85	6.59	6.64	6.24	4.02
Senior	3.88	4.57	5.26	5.62	5.85	5.31	4.77	3.92
Graduate	2.57	2.79	3.14	3.55	3.57	3.99	3.45	3.11
Master's	2.60	2.73	3.34	3.15	2.76	3.04	3.11	3.07
PhD	2.56	2.82	3.03	3.84	4.32	4.78	3.81	3.13
Employee	**1.66**	**1.75**	**1.78**	**1.70**	**1.75**	**1.61**	**1.92**	**1.56**
Faculty	2.37	2.24	2.76	3.06	3.24	2.81	2.77	2.27
Staff	1.56	1.66	1.65	1.52	1.54	1.49	1.74	1.48
Non-student and student employees	2.20	NA	2.45	2.51	2.58	2.57	2.88	2.29
Outside Davis	1.26	1.34	1.39	1.34	1.30	1.27	1.27	1.24
Within Davis	4.99	4.99	5.98	6.24	6.53	7.25	6.15	4.86
Overall	2.83	3.00	3.26	3.34	3.30	3.23	3.55	2.75
Role	All (on and off campus)							
	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Student	5.25	5.53	6.41	7.25	6.74	6.93	6.43	4.85
Undergraduate	6.36	6.72	8.01	8.77	7.96	7.92	7.60	5.38
Freshman	21.84	32.75	34.61	33.67	15.45	31.58	32.88	27.93
Sophomore	9.53	9.11	16.54	18.88	11.86	11.94	11.62	7.37
Junior	6.04	6.23	6.88	8.30	7.41	7.20	6.68	4.42
Senior	4.09	4.79	5.68	5.96	6.14	5.67	5.07	4.11
Graduate	2.95	3.18	3.45	4.03	3.88	4.40	3.77	3.29
Master's	2.84	2.94	3.57	3.43	2.92	3.35	3.34	3.20
PhD	3.01	3.33	3.39	4.47	4.75	5.28	4.23	3.36
Employee	1.66	1.75	1.80	1.70	1.75	1.61	1.92	1.56
Faculty	2.38	2.24	2.78	3.06	3.24	2.81	2.78	2.28
Staff	1.55	1.67	1.67	1.52	1.55	1.49	1.74	1.48
Non-student and student employees	2.31	NA	2.59	2.64	2.69	2.70	3.02	2.40
Outside Davis	1.26	1.34	1.39	1.34	1.30	1.27	1.27	1.24
Within Davis	5.99	6.04	7.14	7.36	7.74	8.75	7.54	5.81
Overall	3.30	3.51	3.78	3.82	3.80	3.77	4.24	3.17

Bold indicates the official AVR statistic reported by UC campuses. AVR estimates from 2010-11 through 2015-16 are weighted by role and gender. See "Appendix D: Calculation of Average Vehicle Ridership (AVR)" for details on AVR calculations.

Parking permits

Whether or not they reported having a car, all respondents were asked whether they currently have a UC Davis parking permit, and if so which type (question *Q15*). About 21.1 percent of respondents reported having an annual parking permit and 6.4 percent reported having a monthly or quarterly permit: a projected 9,560 and 2,910 people, respectively (Table 30). This year we also asked respondents whether they had a daily parking permit (either purchased or received through the GoClub program) or an in-vehicle EasyPark Personal Parking Meter. About 5.2 percent of the population, or a projected 2,375 people have a daily permit. 1.7 percent of respondents, or a projected 755 people, indicated owning an in-vehicle parking meter.

Table 29. AVR at UC Davis versus other UC campuses
[Table not included in this report.]

Table 30. Share of people with a parking permit, by role

Role	Either annual or monthly/quarterly permit		Annual or multi-year permit		Monthly or quarterly permit		Daily or GoClub daily permit		EasyPark in-vehicle parking meter		Projected population
	Share of sample	Projected population	Share of sample	Projected population	Share of sample	Projected population	Share of sample	Projected population	Share of sample	Projected population	
Student	17.4%	5,895	10.9%	3,684	6.5%	2,211	3.5%	1,194	1.8%	624	33,825
Undergraduate	15.9%	4,424	9.5%	2,649	6.4%	1,775	1.9%	529	1.7%	476	27,896
Freshman	3.5%	152	2.0%	87	1.5%	65	0.2%	7	0.3%	14	4,320
Sophomore	11.4%	571	8.4%	422	3.0%	149	0.5%	25	0.2%	8	5,026
Junior	20.2%	1,571	10.1%	782	10.2%	789	1.3%	103	1.5%	118	7,768
Senior	19.8%	2,130	12.6%	1,359	7.2%	771	3.7%	394	3.1%	336	10,782
Graduate	24.8%	1,471	17.5%	1,035	7.3%	436	11.2%	665	2.5%	148	5,929
Master's	25.1%	659	16.9%	444	8.2%	214	7.9%	207	3.0%	79	2,627
PhD	24.6%	812	17.9%	591	6.7%	221	13.9%	458	2.1%	69	3,302
Employee	56.9%	6,575	50.9%	5,876	6.0%	699	10.2%	1,181	1.1%	131	11,555
Faculty	48.9%	805	45.4%	748	3.5%	58	17.0%	280	1.4%	24	1,645
Staff	58.2%	5,770	51.7%	5,128	6.5%	641	9.1%	901	1.1%	107	9,910
Outside Davis	67.7%	7,327	54.1%	5,855	13.6%	1,472	4.6%	503	0.8%	82	10,815
Within Davis	14.9%	5,143	10.7%	3,706	4.2%	1,437	5.4%	1,872	1.9%	673	34,565
Overall	27.5%	12,470	21.1%	9,560	6.4%	2,910	5.2%	2,375	1.7%	755	45,380

Results are based on responses to question *Q15*. Data are weighted by role and gender based on the 4,132 valid responses to questions *Q01, Q10,* and *Q20-30* (see Table 53).

Ridership by transit provider

If respondents indicated that they rode a bus or a train at any point on their way to campus any day during the prior week, they were asked to indicate which transit service(s) they used ("Check all that apply"). Table 31 and Table 32 show the share of bus and train users who used each service at least once during the reference week. Of the 997 respondents who indicated riding the bus in the past week, most reported using Unitrans at least once, followed distantly by use of Yolobus and the UCD/UCDMC shuttle.

Table 31. Share using specific bus services at least once during the week

Role	Of those riding the bus to campus at least once					Weighted sample	Projected population
	Unitrans	Yolobus	UCD/UCDMC shuttle	Sacramento Regional Transit	UCD/UC Berkeley shuttle		
Undergraduate	94.5%	1.5%	3.1%	0.3%	0.7%	870	9,551
Graduate	89.2%	2.4%	8.4%	0.0%	0.0%	65	717
Faculty	77.1%	9.9%	13.0%	0.0%	0.0%	5	56
Staff	65.2%	10.9%	23.9%	0.0%	0.0%	57	627
Overall	92.5%	2.1%	4.5%	0.3%	0.6%	997	10,951

Results are based on responses to questions *Q29* (whether a bus was ever used) and *Q38* (which bus services). Data are weighted by role and gender based on the 4,132 valid responses to questions *Q01*, *Q10*, and *Q20-30* (see Table 53).

Of the 42 respondents who indicated riding the train in the past week, nearly all rode the Amtrak Capitol Corridor (Table 32). Given the relatively small sample size, the weighted and projected estimates for train service ridership have large uncertainty relative to their estimated size.

Table 32. Share using specific train services at least once during the week

Role	Of those riding the train to campus at least once			Weighted sample	Projected population
	Amtrak	BART	Sacramento Regional Transit		
Undergraduate	86.3%	5.4%	8.3%	12	135
Graduate	100.0%	0.0%	0.0%	7	81
Faculty	100.0%	0.0%	0.0%	6	65
Staff	100.0%	0.0%	0.0%	17	183
Overall	94.6%	2.2%	3.3%	42	464

Results are based on responses to questions *Q29* (whether a train was ever used) and *Q39* (which train services). Data are weighted by role group based on the 4,132 valid responses to questions *Q01*, *Q10*, and *Q20-30* (see Table 53).

Distance from campus

For the purpose of estimating vehicle-miles traveled and carbon dioxide emissions from travel to campus, respondents were asked more detailed information about where they live, including the set of cross-streets nearest where they live and their zip code, if outside of Davis, in questions *Q18* and *Q19*. This information was geocoded in ArcGIS, enabling a variety of spatial analyses (see "Appendix E: Geocoding and network distances" for details on the methodology).

We used the geocoded addresses to estimate the distance respondents travel (along a shortest-time route) to get to campus (in particular, to the Silo) on a daily basis. Table 33 and Table 34 summarize distances traveled by role group, showing that employees tend to travel from farther away than students. The median distance traveled among students is about 1.7 miles, versus 2.9 among faculty and 11 among staff (Table 33).

Table 33. Average distance from campus, by role group

Role	Geocoded	Of those geocoded, distance from campus (miles)				Weighted sample	Projected population
		Mean	Median	Minimum	Maximum		
Student	93.9%	4.55	1.66	0.42	100.55	2,882	33,825
Undergraduate	94.3%	4.05	1.54	0.42	80.99	2,377	27,896
Freshman	99.2%	1.97	0.77	0.77	57.50	368	4,320
Sophomore	92.3%	3.15	1.77	0.67	66.94	428	5,026
Junior	92.8%	5.23	1.77	0.48	80.99	662	7,768
Senior	93.6%	4.47	1.81	0.42	67.83	919	10,782
Graduate	92.7%	6.87	2.01	0.51	100.55	505	5,929
Master's	90.6%	6.95	1.94	0.59	71.87	224	2,627
PhD	94.2%	6.81	2.03	0.51	100.55	281	3,302
Employee	92.8%	13.22	4.46	0.51	101.30	984	11,555
Faculty	93.8%	12.11	2.87	0.51	84.53	140	1,645
Staff	92.0%	13.41	11.00	0.58	101.30	844	9,910
Outside Davis	88.8%	22.88	17.86	0.42	101.30	921	10,815
Within Davis	95.1%	1.71	1.62	0.43	27.21	2,945	34,565
Overall	93.6%	6.76	1.94	0.42	101.30	3,866	45,380
Weighted sample	3,617	NA	NA	NA	NA	NA	NA

Distances are calculated as the shortest-time network distance between respondents' geocoded cross-streets (given in questions *Q18* and *Q19* or contact information provided at the end of the survey) and a centroid on campus near the Silo (see "Appendix E: Geocoding and network distances"). Data are weighted by role and gender group for the 3,866 cases successfully geocoded and with non-missing mode choice data in question *Q30*.

While 88 percent of undergraduates live within 3 miles of campus, only 53 percent of faculty and 29 percent of staff do (Table 34). About 21 percent of the campus population lives more than 10 miles away, and 9 percent more than 20 miles away. Note that the threshold for living within Davis is about 5 miles, and that very few people live 5 to 8 miles from campus, given the agricultural belt that surrounds Davis. That is, once they live outside of Davis, it is likely that they live more than 8 miles away.

Table 34. Cumulative percent of people living within each distance from campus, by role

Distance from campus	Overall	Students		Employees	
		Undergraduate	Graduate	Faculty	Staff
Less than 0.5 miles	0.3%	0.6%	0.0%	0.0%	0.0%
1 mile	21.2%	33.9%	11.8%	4.2%	1.7%
1.5 miles	34.5%	49.8%	28.1%	12.1%	6.0%
2 miles	53.2%	72.2%	49.4%	24.1%	13.7%
2.5 miles	66.0%	84.2%	66.3%	39.1%	22.4%
3 miles	72.6%	88.2%	75.6%	53.4%	29.1%
4 miles	76.6%	90.2%	79.7%	61.8%	36.9%
6 miles	77.9%	90.7%	80.8%	66.0%	38.7%
8 miles	78.2%	90.8%	80.8%	66.9%	39.9%
10 miles	79.4%	90.9%	81.5%	67.5%	45.4%
12 miles	81.9%	91.5%	83.1%	71.1%	55.1%
14 miles	83.6%	91.9%	84.8%	72.2%	62.1%
16 miles	86.1%	92.6%	87.3%	75.7%	69.8%
18 miles	88.7%	93.1%	90.7%	80.8%	77.4%
20 miles	90.8%	94.3%	92.4%	83.0%	82.7%
25 miles	92.7%	95.6%	93.9%	85.9%	86.3%
30 miles	94.9%	97.8%	94.6%	87.9%	90.6%
40 miles	96.0%	98.7%	94.9%	89.0%	93.6%
50 miles	97.3%	99.3%	95.9%	90.7%	96.6%
60 miles	98.2%	99.7%	97.3%	92.3%	98.7%
70 miles	99.3%	99.9%	98.9%	96.9%	99.3%
100 miles	99.9%	100.0%	99.9%	100.0%	99.8%
More than 100 miles	100.0%	100.0%	100.0%	100.0%	100.0%
Weighted sample	3,866	2,377	505	140	844
Projected population	45,380	27,896	5,929	1,645	9,910
Group's percent of the overall population	100.0%	61.5%	13.1%	3.6%	21.8%

Distances are calculated as the shortest-time network distance between geocoded cross-streets (given in questions *Q18* and *Q19* or contact information provided at the end of the survey) and a centroid on campus near the Silo. Data are unweighted. See "Appendix E: Geocoding and network distances" for more details.

Usual mode to campus and between campus destinations

For the purpose of validating the method we use to calculate mode share, we asked respondents about the mode they "usually" use to travel to campus (*Q26*). This variable captures what respondents consider to be their "usual" mode, even if they traveled to campus using a different primary mode during the reference week. In addition, this variable captures the mode usually used by respondents who did not travel to campus during the reference week. For each distance category, Table 35 shows the share "usually" using each mode among those physically traveling to campus. The resulting mode share estimates derived from the "usual" mode question are very close to the estimates derived from the standard "reference week" primary mode questions. This consistency is important, since it indicates the mode share estimates of the Campus Travel Survey adequately capture what respondents consider to be their "usual" travel mode.

Table 35. Usual mode, by distance from campus

Distance group	Physically traveling	Of those physically traveling to campus						Weighted sample	Projected population
		Bike	Walk or skate	Drive alone	Carpool or ride	Bus	Train		
Within 1 mile	93.5%	72.7%	16.7%	2.6%	1.9%	6.1%	0.0%	766	8,991
1 to 2.9 miles	94.9%	45.3%	2.2%	16.4%	2.6%	33.5%	0.0%	2,011	23,603
3 to 4.9 miles	96.4%	27.8%	0.2%	41.3%	7.0%	23.7%	0.0%	189	2,215
5 to 9.9 miles	95.8%	2.6%	0.0%	89.5%	7.9%	0.0%	0.0%	68	795
10 to 19.9 miles	92.2%	0.0%	0.0%	80.5%	10.0%	7.5%	2.1%	477	5,601
20 miles or more	95.1%	0.0%	0.0%	78.8%	10.3%	2.8%	8.1%	356	4,174
Overall	94.4%	39.5%	4.4%	29.6%	4.4%	21.1%	1.0%	3,866	45,380
Weighted sample	3,650	1,430	160	1,073	159	765	37	0	0
Projected population	42,849	16,783	1,875	12,600	1,865	8,978	429	0	45,380

Mode data are based on responses to question *Q26*, and distance data are calculated network distances between the geocoded cross-streets (given in *Q18* and *Q19* or contact information provided at the end of the survey) and a centroid on campus near the Silo (see "Appendix E: Geocoding and network distances"). Data are weighted by role group and gender for the 3,866 cases successfully geocoded and with non-missing mode choice data in question *Q30* (see Table 53).

Vehicle-miles-traveled to campus

For estimates of the number of miles traveled to and from campus, we rely on the calculated distances between respondents' geocoded home locations and a centroid on campus, located at the Silo. We assume respondents take the fastest path to and from campus on the days they report having traveled to campus. This method likely underestimates the true number of miles traveled to and from campus because it does not take into account side trips that respondents might make on the way to or from campus (e.g. stopping at the store, picking up children, or visiting friends), diversions from the shortest

time path for a more pleasant or less congested route, or trips away from campus during the middle of the day (e.g. going to lunch or to an off-site meeting).

We estimate the number of miles traveled to and from campus each day as the doubled network distance between respondents' geocoded home locations and the Silo on campus (as described in "Appendix E: Geocoding and network distances"), multiplied by the percent of weekdays a respondent traveled to campus. Thus, if a person lives 10 miles from campus and traveled to campus all five days, her average daily miles traveled would be 20 miles; by contrast, if she traveled to campus only one day, her average daily miles traveled would be 4 miles. We then attribute miles traveled to each mode based on the share of weekdays a respondent used each mode. Thus, if a respondent biked one day and drove four, we count 20 percent of her miles as bike miles and 80 percent as driving miles. Summed across all respondents, this figure represents the number of miles traveled by each mode on an average weekday.

To estimate the number of miles traveled annually, we first assume that respondents travel the same number of days per week and using the same modes as in the reference week for the entire 36 weeks of the academic year. To estimate summer travel, we rely on responses to questions *Q33* and *Q34* about the number of weeks and average number of days per week traveled to campus during the summer, assuming respondents used the same modes as during the survey reference week throughout the summer. For example, annual miles biked = (distance from campus × 2) × (share of days biked during reference week) × [(36 weeks × 5 days/week) + (weeks traveled to campus during the summer × days/week traveled during summer)]. In order to estimate the daily miles traveled by each person on an average day we calculate a weighted average of summer and academic-year travel.

Vehicle-miles traveled (VMT) is the miles traveled for each vehicle. Since different vehicles traveling to campus have varying occupancy (i.e. car vs bus vs train), person-miles traveled (PMT) accounts for both vehicles used and occupancy per mile. To estimate PMT for any travel in a personal vehicle or public transit vehicle (including driving alone, carpooling, getting a ride, riding a bus, and riding a train), we assume that each vehicle-mile traveled contributes a fractional person-mile equivalent of one divided by vehicle occupancy. We assume that travel by walking, biking, or skating contributes no PMT. Vehicle occupancy for carpooling and getting a ride varies for each respondent, as reported in questions *Q31* and *Q32* for those carpooling/vanpooling or getting a ride, respectively. If a respondent lives 10 miles from campus and traveled in a 3-person carpool all five weekdays, her average daily PMT would be (10 miles × 2) / 3 = 6.67 miles. Vehicle occupancy for those driving alone and for those who got a ride and were the only person dropped off on campus by the person giving them a ride is assumed to be one.

In addition to PMT for personal vehicles, we estimate PMT for buses and trains for the purpose of calculating the carbon dioxide equivalent emissions generated from commuting to campus (see next section). For bus and train occupancy, we assume average occupancy for all trips on those modes. We estimated average bus occupancy based on annual ridership data from Unitrans, since 85% of all bus riders use Unitrans. According to FY 2015-16 figures from Unitrans, Unitrans had an average of about 4.66 passengers per mile.[3] Thus, for someone who lives 10 miles from campus and traveled by bus all five weekdays, average bus PMT per day is (10 miles × 2) / 4.66 ≈ 4.3 person-miles.

We estimate train occupancy based on annual ridership data from Amtrak's Capitol Corridor, since they provide the majority of train rides to campus. According to figures in the Capitol Corridor Business Plan

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[3] Palmere, A. Unitrans Quarterly Report to the City of Davis, April-June 2016.

Update, the Capitol Corridor had an average of 85.7 passengers per mile in FY 2015-16.[4] If a respondent lives 100 miles from campus and traveled by train all five days, her average train PMT per day is estimated to be (100 miles × 2) / 85.7 = 2.33 person-miles.

Our estimates for person-miles traveled, by mode and role, are shown in Table 36 and Table 37.

Table 36. Person-miles-traveled (PMT), daily and annually, by mode group

Mode	Daily		Annually		Share of total PMT	Share of population	Projected population
	Total PMT	PMT per person	Total PMT	PMT per person			
No travel	0	0.0	0	0	0.0%	15.6%	7,082
No vehicle (bike, walk, or skate)	0	0.0	0	0	0.0%	38.0%	17,235
Personal vehicles	321,022	24.3	71,083,768	5,384	98.6%	29.1%	13,204
Drive alone	300,999	27.0	66,741,198	5,984	92.5%	24.6%	11,154
Carpool or ride	20,023	9.8	4,342,570	2,118	6.2%	4.5%	2,050
Bus	4,249	0.6	878,736	117	1.3%	16.6%	7,539
Train	295.0344	1.0	60,229	208	0.1%	0.6%	289
Total	325,565	7.2	72,022,734	1,588	100.0%	100.0%	45,349

Mode groups are the estimated number using each means of transportation on a typical weekday, based on responses to questions *Q21* and *Q30*. Vehicle-miles are calculated as described in the text, drawing on data from questions *Q21, Q30, Q18, Q19,* and the average number of passengers per mile on Unitrans and Amtrak's Capitol Corridor. All data are weighted by role and gender group for the 3,866 cases successfully geocoded (based on *Q18* and *Q19*) and with non-missing mode choice data in question *Q30* (see Table 53).

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[4] Capitol Corridor Joint Powers Authority. Capitol Corridor Intercity Passenger Rail Service Business Plan Update FY 2016-17- FY 2017-18, Appendix C. http://www.capitolcorridor.org/wp-content/uploads/2016/05/CCJPA_Business_Plan_2016-2017.pdf.

Table 37. Person-miles-traveled (PMT), daily and annually, by role group

Role	Daily		Annually		Share of total PMT	Share of Population	Projected population
	Total PMT	PMT per person	Total PMT	PMT per person			
Student	139,882	4.14	27,496,280	813	43.0%	74.5%	33,825
Undergraduate	107,358	3.85	20,887,046	749	33.0%	61.5%	27,896
Freshman	4,886	1.13	890,142	206	1.5%	9.5%	4,320
Sophomore	12,719	2.53	2,377,535	473	3.9%	11.1%	5,026
Junior	41,008	5.28	7,750,856	998	12.6%	17.1%	7,768
Senior	48,745	4.52	9,868,513	915	15.0%	23.8%	10,782
Graduate	32,524	5.49	6,609,234	1,115	10.0%	13.1%	5,929
Master's	15,252	5.81	2,934,981	1,117	4.7%	5.8%	2,627
PhD	17,272	5.23	3,674,252	1,113	5.3%	7.3%	3,302
Employee	185,684	16.07	44,526,453	3,853	57.0%	25.5%	11,555
Faculty	15,067	9.16	3,244,078	1,972	4.6%	3.6%	1,645
Staff	170,617	17.22	41,282,376	4,166	52.4%	21.8%	9,910
Outside Davis	299,370	27.68	66,249,022	6,125	92.0%	23.8%	10,815
Within Davis	26,195	0.76	5,773,712	167	8.0%	76.2%	34,565
On Campus	194	0.03	38,865	6	0.1%	13.9%	6,320
West Village	366	0.19	73,218	38	0.1%	4.3%	1,944
Off Campus	25,635	0.97	5,661,629	215	7.9%	58.0%	26,301
Overall	325,565	7.17	72,022,734	1,587	100.0%	100.0%	45,380

Vehicle-miles are calculated as described in the text, drawing on data from questions *Q21, Q30, Q18, Q19,* and the average number of passengers per mile on Unitrans and Amtrak's Capitol Corridor. All data are weighted (and expanded) by role and gender group for the 3,866 cases successfully geocoded (based on *Q18* and *Q19*) and with non-missing mode choice data in question *Q30* (see Table 53).

Carbon dioxide-equivalent emissions

We estimate the amount of greenhouse gases produced by campus travelers by assuming that each travel mode generates a certain quantity of carbon dioxide-equivalent (CO_2e) emissions per person-mile traveled, and multiplying this quantity by our estimate of miles traveled by each mode on an average weekday. In particular, we assume driving alone generates 1.1 pounds-equivalent of CO_2e per vehicle-mile (regardless of vehicle type), and that carpooling/getting a ride, riding a bus, and riding a train produce some fractional amount of the emissions produced for the entire vehicle, adjusted for the total number of passengers in the vehicle. For carpooling and getting rides, we adjust vehicle occupancies based on those reported by the respondents themselves. For transit, we assume average occupancies apply for all respondents. For Unitrans (about 85% of bus use for the entire campus), we use emissions estimates specific to the Unitrans fuel mix and passenger occupancy. For other bus services and Amtrak we estimate

emissions based on national travel fuel use[5] and emissions averages[67] (Table 38).

This is the fourth year where we estimate two sets of bus emissions, one for Unitrans and one for other bus services. Unitrans emissions are lower than national averages, because of more reliance on compressed natural gas (CNG) rather than diesel fuel for Unitrans buses, and because of the relatively high numbers of riders per bus, on average. In particular, for fiscal year 2016, Unitrans buses consumed 351,215 therms of CNG while providing 885,123 vehicle-miles of service. Assuming 11.7 pounds of carbon per therm of CNG[8] then Unitrans operations generated 4,109,216 pounds of carbon in fiscal year 2016, or 4.64 pounds per vehicle-mile of service, about 3/4th of the national average. These estimates are used to calculate emissions for the portion of the population that used Unitrans, while the national average is used for the bus (other) estimates.

We do not take into account emissions associated with the manufacture of bicycles or vehicles, or of home energy use for those working from home, assuming that biking, walking, skating, working from home, or otherwise not traveling contributes no emissions. As with our estimates of total miles traveled on which these estimates are based, side trips made on the way to or from campus, and any trips made in the middle of the day are not taken into account.

Table 38. Formula for calculating average weekday pounds of CO2e emissions

Mode	Formula
Drive alone	1.1 lbs / mile × aggregated average weekday person-miles traveled (or equivalently, vehicle-miles traveled) by driving alone
Carpool /ride	1.1 lbs / mile × aggregated average weekday carpool/ride person-miles traveled (this is the equivalent of adjusting person-miles by the reported carpool size)
Bus (Unitrans)	4.64 lbs / mile × aggregated average weekday person-miles traveled by bus
Bus (other)	6.3 lbs / mile × aggregated average weekday person-miles traveled by bus
Train	39.96 lbs / mile × aggregated average weekday person-miles by train

Using these assumptions, we estimate that travel to campus generates a total of 403,484 pounds of CO_2e on an average weekday, or 8.9 pounds per person (Table 39), and about 45,754 metric tons of CO_2e annually, or 1.01 metric tons per person (Table 40). Some air quality reporting standards require us to not include Unitrans emissions as part of the aggregate calculation (in these cases the Unitrans emissions are already included elsewhere in the calculation). Tables 41 and 42 show the emissions results if Unitrans is not included. Undergraduate students, particularly freshmen and sophomores, contribute much less to campus-wide CO_2e emissions than their share of the population. Employees, and especially staff, contribute the most CO_2e relative to their share of the campus population, comprising 19.4 percent of the population and contributing 55.5 percent of CO_2e on an average weekday.

To assess the extent that active transportation reduces CO_2e emissions, we consider the hypothetical case that everyone were to drive alone to campus but all else were unchanged (e.g. distances and frequency of

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[5] Neff, J., and M. Dickens. *2016 Public Transportation Fact Book*. Washington, D.C., 2016.
[6] U.S. Energy Information Administration. Carbon Dioxide Emissions Coefficients by Fuel.
   http://www.eia.gov/environment/emissions/co2_vol_mass.cfm.
[7] U.S. Energy Information Administration. United States Electricity Profile 2015.
   http://www.eia.gov/electricity/state/unitedstates/.
[8] Palmere, A. Unitrans Quarterly Report to the City of Davis, April-June 2016.

travel). In this scenario, the campus would produce an additional 14,898 annual metric tons of CO_2e, compared to 45,754 tons overall (Table 43).

Figure 8 shows the contribution of each alternative, when compared to driving alone, to the total CO_2e emissions avoided.

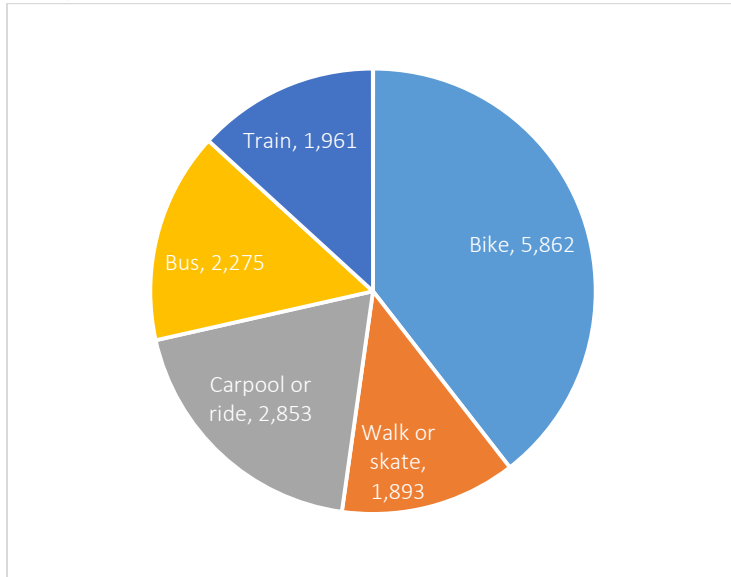*Figure 8. Annual CO2e emissions avoided by using active transportation modes*

Table 39. Daily pounds of CO₂e emitted, by mode and role

Role	Pounds-equivalent of CO$_2$e generated on an average weekday						Average lbs per person	Share of total CO$_2$e	Share of population	Projected population
	Drive alone	Carpool	Ride	Bus	Train	Total CO$_2$e				
Student	145,940	6,694	4,235	17,099	5,779	179,747	5.31	44.5%	74.5%	33,825
Undergraduate	112,438	3,781	3,539	15,957	3,873	139,587	5.00	34.6%	61.5%	27,896
Freshman	4,945	197	343	551	1,029	7,064	1.64	1.8%	9.5%	4,320
Sophomore	11,859	1,421	524	3,501	406	17,711	3.52	4.4%	11.1%	5,026
Junior	43,527	1,124	1,262	5,297	2,205	53,416	6.88	13.2%	17.1%	7,768
Senior	52,107	1,038	1,410	6,608	233	61,396	5.69	15.2%	23.8%	10,782
Graduate	33,502	2,913	696	1,142	1,906	40,159	6.77	10.0%	13.1%	5,929
Master's	15,570	1,542	341	343	355	18,150	6.91	4.5%	5.8%	2,627
PhD	17,933	1,371	355	799	1,551	22,010	6.67	5.5%	7.3%	3,302
Employee	200,303	9,866	2,238	5,319	6,012	223,738	19.36	55.5%	25.5%	11,555
Faculty	16,131	791	303	284	1,856	19,364	11.77	4.8%	3.6%	1,645
Staff	184,172	9,075	1,935	5,035	4,155	204,373	20.62	50.7%	21.8%	9,910
Outside Davis	322,737	14,550	5,019	9,377	11,784	363,467	33.61	90.1%	23.8%	10,815
Within Davis	23,506	2,010	1,454	13,041	7	40,017	1.16	9.9%	76.2%	34,565
On Campus	133	16	41	140	2	332	0.05	0.1%	13.9%	6,320
West Village	158	14	19	936	0	1,126	0.58	0.3%	4.3%	1,944
Off Campus	23,216	1,981	1,393	11,965	5	38,559	1.47	9.6%	58.0%	26,301
Overall	346,243	16,560	6,473	22,418	11,791	403,484	8.89	100.0%	100.0%	45,380

Data are weighted for both years by role and gender (see Table 53).

Table 40. Annual tons of CO₂e emitted, by mode and role

Role	Annual tons of CO₂e emissions						Average tons per person	Share of total CO₂e	Share of population	Projected population
	Drive alone	Carpool	Ride	Bus	Train	Total CO₂e				
Student	16,549	759	480	1,939	655	20,383	0.60	44.5%	74.5%	33,825
Undergraduate	12,750	429	401	1,809	439	15,829	0.57	34.6%	61.5%	27,896
Freshman	561	22	39	62	117	801	0.19	1.8%	9.5%	4,320
Sophomore	1,345	161	59	397	46	2,008	0.40	4.4%	11.1%	5,026
Junior	4,936	128	143	601	250	6,057	0.78	13.2%	17.1%	7,768
Senior	5,909	118	160	749	26	6,962	0.65	15.2%	23.8%	10,782
Graduate	3,799	330	79	130	216	4,554	0.77	10.0%	13.1%	5,929
Master's	1,766	175	39	39	40	2,058	0.78	4.5%	5.8%	2,627
PhD	2,034	155	40	91	176	2,496	0.76	5.5%	7.3%	3,302
Employee	22,714	1,119	254	603	682	25,371	2.20	55.5%	25.5%	11,555
Faculty	1,829	90	34	32	210	2,196	1.33	4.8%	3.6%	1,645
Staff	20,885	1,029	219	571	471	23,176	2.34	50.7%	21.8%	9,910
Outside Davis	36,598	1,650	569	1,063	1,336	41,217	3.81	90.1%	23.8%	10,815
Within Davis	2,666	228	165	1,479	1	4,538	0.13	9.9%	76.2%	34,565
On Campus	15	2	5	16	0	38	0.01	0.1%	13.9%	6,320
West Village	18	2	2	106	0	128	0.07	0.3%	4.3%	1,944
Off Campus	2,633	225	158	1,357	1	4,373	0.17	9.6%	58.0%	26,301
Overall	39,263	1,878	734	2,542	1,337	45,754	1.01	100.0%	100.0%	45,380

Data are weighted for both years by role and gender (see Table 53)

Table 41. Daily pounds of CO2e emitted, by mode and role (not including Unitrans)

Role	Pounds-equivalent of CO₂e generated on an average weekday						Average lbs per person	Share of total CO₂e	Share of population	Projected population
	Drive alone	Carpool	Ride	Bus	Train	Total CO₂e				
Student	145,940	6,694	4,235	5,569	5,779	174,178	5.15	44.3%	74.5%	33,825
Undergraduate	112,438	3,781	3,539	5,014	3,873	134,573	4.82	34.2%	61.5%	27,896
Freshman	4,945	197	343	463	1,029	6,601	1.53	1.7%	9.5%	4,320
Sophomore	11,859	1,421	524	791	406	16,920	3.37	4.3%	11.1%	5,026
Junior	43,527	1,124	1,262	1,809	2,205	51,607	6.64	13.1%	17.1%	7,768
Senior	52,107	1,038	1,410	1,952	233	59,445	5.51	15.1%	23.8%	10,782
Graduate	33,502	2,913	696	555	1,906	39,604	6.68	10.1%	13.1%	5,929
Master's	15,570	1,542	341	42	355	18,108	6.89	4.6%	5.8%	2,627
PhD	17,933	1,371	355	513	1,551	21,497	6.51	5.5%	7.3%	3,302
Employee	200,303	9,866	2,238	4,646	6,012	219,092	18.96	55.7%	25.5%	11,555
Faculty	16,131	791	303	255	1,856	19,109	11.62	4.9%	3.6%	1,645
Staff	184,172	9,075	1,935	4,391	4,155	199,983	20.18	50.9%	21.8%	9,910
Outside Davis	322,737	14,550	5,019	9,169	11,784	354,298	32.76	90.1%	23.8%	10,815
Within Davis	23,506	2,010	1,454	1,046	7	38,971	1.13	9.9%	76.2%	34,565
On Campus	133	16	41	27	2	305	0.05	0.1%	13.9%	6,320
West Village	158	14	19	9	0	1,117	0.57	0.3%	4.3%	1,944
Off Campus	23,216	1,981	1,393	1,011	5	37,549	1.43	9.5%	58.0%	26,301
Overall	346,243	16,560	6,473	10,215	11,791	393,269	8.67	100.0%	100.0%	45,380

Data are weighted for both years by role and gender (see Table 53)

Table 42. Annual tons of CO₂e emitted, by mode and role (not including Unitrans)

Role	Annual tons of CO₂e emissions						Average tons per person	Share of total CO₂e	Share of population	Projected population
	Drive alone	Carpool	Ride	Bus	Train	Total CO₂e				
Student	16,549	759	480	632	655	19,751	0.58	44.3%	74.5%	33,825
Undergraduate	12,750	429	401	569	439	15,260	0.55	34.2%	61.5%	27,896
Freshman	561	22	39	52	117	749	0.17	1.7%	9.5%	4,320
Sophomore	1,345	161	59	90	46	1,919	0.38	4.3%	11.1%	5,026
Junior	4,936	128	143	205	250	5,852	0.75	13.1%	17.1%	7,768
Senior	5,909	118	160	221	26	6,741	0.63	15.1%	23.8%	10,782
Graduate	3,799	330	79	63	216	4,491	0.76	10.1%	13.1%	5,929
Master's	1,766	175	39	5	40	2,053	0.78	4.6%	5.8%	2,627
PhD	2,034	155	40	58	176	2,438	0.74	5.5%	7.3%	3,302
Employee	22,714	1,119	254	527	682	24,845	2.15	55.7%	25.5%	11,555
Faculty	1,829	90	34	29	210	2,167	1.32	4.9%	3.6%	1,645
Staff	20,885	1,029	219	498	471	22,678	2.29	50.9%	21.8%	9,910
Outside Davis	36,598	1,650	569	1,040	1,336	40,177	3.71	90.1%	23.8%	10,815
Within Davis	2,666	228	165	119	1	4,419	0.13	9.9%	76.2%	34,565
On Campus	15	2	5	3	0	35	0.01	0.1%	13.9%	6,320
West Village	18	2	2	1	0	127	0.07	0.3%	4.3%	1,944
Off Campus	2,633	225	158	115	1	4,258	0.16	9.5%	58.0%	26,301
Overall	39,263	1,878	734	1,158	1,337	44,596	0.98	100.0%	100.0%	45,380

Data are weighted for both years by role and gender (see Table 53)

Table 43. Annual tons of CO2e emissions avoided compared to driving alone

Role	Annual tons of CO2e avoided						Average savings/person	Projected population
	Bike	Walk or skate	Carpool or ride	Bus	Train	Total		
Students	4,833	1,081	1,196	1,865	961	9,979	0.30	33,825
Undergraduate	3,614	989	522	1,751	644	7,564	0.27	27,896
Freshman	581	268	28	44	171	1,092	0.25	4,320
Sophomore	652	168	175	402	68	1,464	0.29	5,026
Junior	1,049	145	154	573	367	2,289	0.29	7,768
Senior	1,333	408	165	733	39	2,718	0.25	10,782
Graduate	1,219	91	674	114	317	2,416	0.41	5,929
Master's	465	46	347	41	59	958	0.36	2,627
PhD	754	46	327	72	258	1,457	0.44	3,302
Employees	1,029	813	1,657	410	1,000	4,918	0.43	11,555
Faculty	308	117	199	21	309	958	0.58	1,645
Staff	722	695	1,458	389	691	3,960	0.40	9,910
Outside Davis	353	1,046	2,543	666	1,960	6,612	0.61	10,815
Within Davis	5,510	847	310	1,609	1	8,285	0.24	34,565
On campus	751	273	4	16	0	1,048	0.17	6,320
West Village	248	20	2	119	0	390	0.20	1,944
Off campus	4,511	554	303	1,474	1	6,848	0.26	26,301
Overall	5,862	1,893	2,853	2,275	1,961	14,898	0.33	45,380

Bike savings = 1.1 lbs./mile*annual person-miles biked
Walk or skate savings = 1.1 lbs./mile*annual person-miles walked or skated
Carpool or ride savings = 1.1 lbs./mile*(carpool or ride PMT)
Bus savings = 1.1 lbs./mile – 4.64 lbs./mile*annual bus PMT. "Unitrans" estimates are used to conservatively estimate savings.
Train savings = 1.1 lbs./mile – 39.96 lbs./mile*annual train PMT

Driver's license, car and bicycle access

All respondents were asked whether they have a driver's license as well as if they have access to a bicycle for riding to campus. About 87 percent of those living within Davis have a driver's license, compared to 99 percent of those living outside Davis (Table 44). Car access varies substantially by residential location: only about 53 percent of those living in Davis have access to a car, compared to 94 percent of those living outside Davis. About 68 percent of university affiliates indicated they have the option to bike to campus, and those who live in Davis have substantially higher rates of bike access (85 percent compared to 14 percent for those outside of Davis). Overall, more people consider bicycling to be a feasible option to get to campus (30,866) than those who consider driving to be a feasible option (28,569), though these rates are substantially different among those living outside Davis.

Table 44. Driver's license, car and bicycle access

Role	Driver's license	Access to a car	Access to a bike	Weighted sample	Projected population
Students	86.7%	53.3%	76.1%	2,882	33,825
Undergraduate	86.0%	49.4%	75.9%	2,377	27,896
Freshman	63.2%	12.2%	86.3%	368	4,320
Sophomore	80.5%	37.8%	80.8%	428	5,026
Junior	90.5%	54.4%	71.9%	662	7,768
Senior	94.4%	66.1%	72.4%	919	10,782
Graduate	90.4%	71.8%	76.7%	505	5,929
Master's	88.3%	73.3%	73.9%	224	2,627
PhD	92.1%	70.7%	79.0%	281	3,302
Employees	98.6%	91.1%	44.5%	984	11,555
Faculty	99.2%	90.9%	65.1%	140	1,645
Staff	98.5%	91.1%	41.0%	844	9,910
Outside Davis	99.0%	94.1%	14.3%	921	10,815
Within Davis	86.9%	53.2%	84.8%	2,945	34,565
Overall	89.8%	63.0%	68.0%	3,866	45,380
Weighted sample	3,470	2,434	2,630	3,866	NA
Projected population	40,731	28,569	30,866	NA	45,380

Data are weighted by role and gender based on the 4,132 valid responses to questions *Q01*, *Q10*, *Q13-14,* and *Q20-30* (see Table 53). Car access reflects those respondents who indicated they have the option to drive alone to campus.

Self-reported bicycling aptitude

Question *Q46* asked all respondents to rate their ability to ride a bike, specifying that we were interested in "whether you know how to ride a bike, regardless of whether it is practical or desirable for you to do so as a means of transportation to campus." Approximately 2.7 percent indicated that they cannot ride a bike, and 8.5 percent of respondents indicated that they could but were "not very confident" doing so. Overall, about 89 percent of respondents indicated that they were "somewhat" or "very confident" riding. Among all groups, freshmen are least likely to report being "very confident," and women are substantially less likely to report being "very confident" than men (Table 45).

*Table 45. Self-reported bicycling aptitude, by role group*

Role	Self-rated ability to ride a bike				Weighted sample
	I cannot ride a bike at all because I do not know how.	I can ride a bike, but I am not very confident doing so.	I am somewhat confident riding a bike.	I am very confident riding a bike.	
Student	3.2%	8.6%	23.3%	64.9%	3,080
Undergraduate	3.5%	8.9%	23.8%	63.9%	2,540
Freshman	4.8%	10.1%	32.3%	52.8%	393
Sophomore	1.3%	5.4%	25.9%	67.4%	458
Junior	2.2%	10.4%	24.2%	63.3%	707
Senior	4.9%	8.9%	19.1%	67.1%	982
Graduate	1.9%	7.6%	21.1%	69.5%	540
Master's	2.7%	9.4%	21.4%	66.5%	239
PhD	1.2%	6.2%	20.8%	71.8%	301
Employee	1.2%	8.1%	23.6%	67.1%	1,052
Faculty	0.9%	5.7%	17.5%	75.9%	150
Staff	1.2%	8.5%	24.6%	65.7%	902
Male	1.8%	4.9%	13.8%	79.5%	1,713
Female	3.3%	11.1%	30.1%	55.5%	2,419
Overall	2.7%	8.5%	23.4%	65.5%	4,132

Results are based on responses to questions *Q46*. Data are weighted by role and gender based on the 4,132 valid responses to questions *Q01*, *Q10*, and *Q20-30* (see Table 53).

Potential for bicycling

We include a question to assess the potential mode share of biking. In *Q14*, respondents were asked, "What options are available to you for getting to campus?" Answers to this question might be used as a proxy for the highest potential share of each mode, since those who do not consider a particular mode as viable will be very unlikely to choose it. Figure 9 shows the differences between the share of respondents who consider biking to campus an option and the share that actually bikes to campus on an average weekday. About 85 percent of respondents living less than 5 miles from the center of campus (i.e. living in Davis) consider bicycling an option, with a steep drop in the perceived availability, and corresponding mode share, of bicycling beyond that distance.

Figure 9. Potential for bicycling
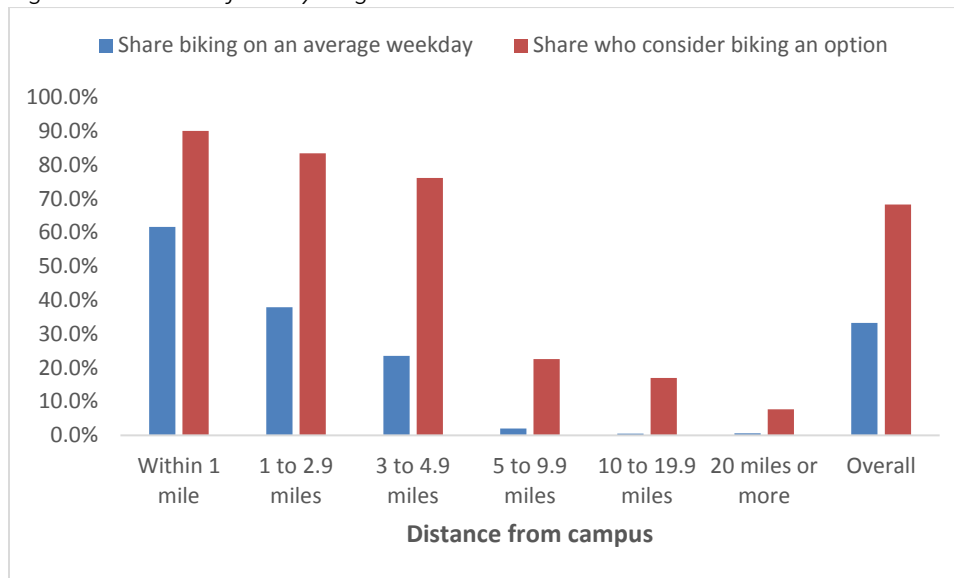
Results are based on responses to questions *Q14*, *Q18*, *Q19*, *Q21*, and *Q30*. Data are weighted by role and gender based on the 4,132 valid responses to questions *Q01*, *Q10*, and *Q20-30* (see Table 53).

Perceptions of bicycle traffic law enforcement and safety biking on campus

In addition to bicycling aptitude, we ask respondents questions about their perceptions of bicycle traffic law enforcement and safety on campus. These questions were presented in the form of statements with Likert-scale responses, and respondents were asked to rate their level of agreement or disagreement with each statement.

About 38 percent of the sample agreed or strongly agreed that, "bicycle traffic laws are adequately enforced on campus" (Table 46). About 32 percent indicated they were neutral or unsure, 16 percent disagreed, and almost 14 percent strongly disagreed. Employees and graduate students are most likely to disagree, while freshmen and sophomores are most likely to agree that there is adequate enforcement.

Table 46. Perceptions of bicycle traffic law enforcement on campus

Role	"Bicycle traffic laws are adequately enforced on campus."					Weighted sample
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	
Student	10.9%	15.6%	31.4%	28.9%	13.2%	3,080
Undergraduate	9.7%	15.6%	31.3%	30.0%	13.4%	2,540
Freshman	4.8%	14.3%	38.2%	31.7%	10.9%	393
Sophomore	9.9%	11.0%	28.5%	34.8%	15.9%	458
Junior	8.4%	13.5%	34.2%	28.7%	15.3%	707
Senior	12.6%	19.8%	27.9%	28.0%	11.8%	982
Graduate	16.2%	15.6%	31.8%	23.8%	12.6%	540
Master's	15.2%	15.9%	33.6%	22.1%	13.2%	239
PhD	16.9%	15.3%	30.5%	25.1%	12.1%	301
Employee	23.6%	16.6%	32.1%	19.8%	7.9%	1,052
Faculty	25.1%	19.1%	27.5%	18.0%	10.2%	150
Staff	23.3%	16.2%	32.9%	20.1%	7.5%	902
Male	14.5%	14.3%	29.1%	27.3%	14.8%	1,713
Female	13.9%	17.0%	33.4%	26.0%	9.7%	2,419
Overall	14.2%	15.9%	31.6%	26.5%	11.8%	4,132

Results are based on responses to question *Q44*. Data are weighted by role and gender based on the 4,132 valid responses to questions *Q01*, *Q10*, and *Q20-30* (see Table 53).

Table 47 summarizes the levels of agreement and disagreement about the safety of biking on campus. While most respondents indicated feeling safe biking on campus, about 20 percent of respondents strongly disagreed or disagreed with the statement, "I feel safe biking on campus." An additional 21 percent indicated they were neutral or unsure about the statement.

Table 47. Perceptions of safety biking on campus

Role	"I feel safe biking on campus."					Weighted sample
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	
Student	6.1%	11.8%	19.0%	34.2%	28.9%	3,080
Undergraduate	6.1%	11.1%	19.6%	34.3%	28.9%	2,540
Freshman	3.1%	11.3%	17.9%	34.9%	32.9%	393
Sophomore	4.6%	9.4%	14.2%	40.8%	30.9%	458
Junior	5.7%	9.8%	25.6%	32.0%	27.0%	707
Senior	8.5%	12.6%	18.5%	32.7%	27.7%	982
Graduate	5.8%	15.4%	15.9%	34.0%	28.9%	540
Master's	7.5%	14.6%	17.2%	34.2%	26.5%	239
PhD	4.5%	15.9%	14.9%	33.8%	30.8%	301
Employee	11.3%	14.8%	26.3%	25.4%	22.1%	1,052
Faculty	8.3%	14.4%	19.3%	28.0%	29.9%	150
Staff	11.8%	14.9%	27.4%	25.0%	20.8%	902
Male	5.0%	7.6%	18.7%	30.7%	38.0%	1,713
Female	9.1%	16.1%	22.4%	32.9%	19.5%	2,419
Overall	7.4%	12.6%	20.9%	32.0%	27.1%	4,132

Results are based on responses to question *Q45*. Data are weighted by role and gender based on the 4,132 valid responses to questions *Q01*, *Q10,* and *Q20-30* (see Table 53).

Awareness of TAPS and other transportation programs

Respondents were presented a list of services and asked to indicate, "It's new to me and I would like to know more," "I've heard of it, but never used it," or "I've used it." Table 48 summarizes the responses for each service, and Table 49 compares responses for the past six years, for those items that appeared on each of the surveys. The most utilized services in 2016-17 were the bike tire air stations, TAPS bicycle licensing program, and the GoClub program.

Table 48. Awareness of transportation services

Service	Have never heard of it	Have only heard of it	Have used it
Bike tire air stations and repair stations around campus	12.3%	40.0%	47.7%
TAPS bicycle licensing program	23.9%	43.3%	32.8%
GoClub program	63.3%	24.3%	12.4%
Bicycle Education and Enforcement Program (BEEP) and bike safety video	65.5%	28.5%	6.0%
TAPS motorist assistance program	68.1%	28.5%	3.4%
Zipcar carsharing program	23.4%	67.1%	9.5%
In-vehicle parking meters (Easy Park)	55.0%	36.8%	8.2%
UC Davis Bike Auction	23.6%	71.1%	5.3%
Bike lock-cutting service	31.1%	64.0%	4.9%
Zimride carpool matching service	72.6%	25.6%	1.8%
TAPS Mobility Assistance Program	43.8%	52.7%	3.5%
Aggie Bike Buy Program	56.0%	43.3%	0.7%

Results are based on responses to question Q41. Data are weighted by role and gender based on the 4,132 valid responses to questions *Q01, Q10*, and *Q20-30* (see Table 53).

Table 49. Awareness of transportation services, 2010-11 through 2016-17

Service	Change 2015-16 to 2016-17	Percent who have heard of it or used it						
		2016-17	2015-16	2014-15	2013-14	2012-13	2011-12	2010-11
Zimride carpool matching service	**-3.1%**	27.4%	30.5%	67.0%	38.3%	41.0%	31.2%	24.2%
TAPS motorist assistance program	**-21.7%**	31.9%	53.6%	79.4%	52.5%	58.6%	51.7%	60.3%
Zipcar carsharing program	**-2.4%**	76.6%	79.0%	90.2%	77.7%	81.9%	75.9%	75.1%
Bike lock-cutting service	**2.6%**	68.9%	66.3%	83.4%	57.6%	62.5%	57.3%	42.7%
GoClub program	**-0.7%**	36.7%	37.4%	68.9%	45.6%	45.4%	42.8%	32.8%
In-vehicle parking meters (Easy Park)	**0.7%**	45.0%	44.3%	67.8%	37.4%	36.1%	34.7%	NA
Emergency Ride Home Program for goClub members	**NA**	NA	NA	NA	24.6%	25.9%	24.5%	23.6%
UC Davis Bike Auction	**2.3%**	76.4%	74.1%	89.2%	78.8%	83.2%	83.9%	86.3%
Bike commuter showers and lockers (ARC)	**NA**	NA	NA	NA	34.8%	36.3%	37.7%	NA
Bicycle Education and Enforcement Program (BEEP) and bike safety video	**0.6%**	34.5%	33.9%	69.6%	31.1%	23.9%	28.3%	NA
Discount transit passes for those without a parking permit	**NA**	NA	NA	NA	24.9%	27.4%	34.8%	32.3%
TAPS Mobility Assistance Program	**4.7%**	56.2%	51.5%	81.0%	33.4%	NA	NA	NA
Aggie Bike Buy Program	**1.5%**	44.0%	42.5%	64.7%	34.1%	30.2%	NA	NA
Bike tire air stations and repair stations around campus	**-3.4%**	87.7%	91.1%	95.4%	91.0%	91.6%	NA	NA
TAPS bicycle licensing program	**-2.7%**	76.1%	78.8%	90.9%	NA	NA	NA	NA

Data for 2016-17 are based on responses to question *Q41*. See Gudz, *et al.* (2016) for results from 2015-16, Thigpen (2015) for results from 2014-15, Popovich (2014) for results from 2013-14, Driller (2013) for results from 2012-13, Miller (2012) for results from 2011-12, and Miller (2011) for results from 2010-11.

ACKNOWLEDGEMENTS

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APPENDICES

Appendix A: Survey instrument, 2016-17 Campus Travel Survey

Below is the full text of the survey instrument, shown without the formatting as it would have appeared to online survey-takers. Notes about the conditional display of questions based on respondents' prior answers are shown in brackets. Answer options that were offered as checkboxes in the online survey (allowing respondents to select more than one response) are denoted here with a ❏. Answer options that were implemented either as radio buttons or as part of a dropdown list in the online survey (allowing respondents to select only one response) are denoted here with a ❍. Questions that were required for respondents to proceed are denoted here with an asterisk. As in past surveys, the dates of the reference week changed after one week.

Welcome to the 2016-17 Campus Travel Survey!

This annual survey is intended for everyone who regularly travels to UC Davis for school or work. This research effort provides campus planners with valuable feedback on how people get to campus and their experiences with various transportation programs. Your feedback is important to us! Participating in this research survey takes 5-10 minutes to complete. Doing so is voluntary, and we assure you that all responses are confidential and the results will only be published in the aggregate, without connection to any individual. You must be at least 18 years old to complete this survey.

We're going to ask you questions in the following areas:

- Your role at UC Davis
- Your travel to and from campus
- Your experience with campus transportation programs and infrastructure
- Some background information about you

To reward you for your time and input, you will be entered into a drawing for twenty $50 Visa debit gift cards and one Amazon Fire Tablet grand prize! If you are unable to complete the survey but would like to be included in the drawing, please email us at travelsurvey@ucdavis.edu to be entered.

Thanks for participating!

Drew Heckathorn, Graduate Student, Institute of Transportation Studies (dheckathorn@ucdavis.edu)
Susan Handy, Professor, Institute of Transportation Studies (slhandy@ucdavis.edu)
Cliff Contreras, Director, Transportation and Parking Services

Section 1. **Role**

First, we have a few questions about your role at UC Davis.

Q01.   **What is your primary role at UC Davis?***
  ○   Undergraduate student (including Post-baccalaureate)
  ○   Graduate student
  ○   Faculty
  ○   Staff
  ○   Visiting scholar
  ○   Post doc
  ○   Recent graduate
  ○   Retiree

[If faculty]
Q02.   **What is your current faculty status?**
  ○   Ladder rank (senate)
  ○   Non-ladder rank (federation)
  ○   Unsure

[If undergraduate student]
Q03.   **What year are you?***
  ○   Freshman
  ○   Sophomore
  ○   Junior
  ○   Senior
  ○   Fifth-year senior
  ○   Post-baccalaureate
  ○   Visiting / exchange student
  ○   Other: _____

[If sophomore, junior, senior, fifth-year, post-bac]
Q04.   Did you transfer to UC Davis from a college, university, or community college?
  ○   Yes
  ○   No

[If graduate student]
Q05.   **What type of graduate program are you in?***
  ○   Master's
  ○   PhD
  ○   Law
  ○   MBA
  ○   Veterinary
  ○   Ed.D. or CANDEL
  ○   Other: _____

[if visiting scholar]

Q06.   What is your campus role? *
○   Freshman
○   Sophomore
○   Junior
○   Senior
○   Master's student
○   PhD student
○   Post-doc
○   Faculty
○   Other: _____

[For graduate and undergraduate students only]
Q07.   As a student, are you also a paid employee of UC Davis?
○   Yes
○   No

[If employee or grad student]
Q08.   Where is your office, lab, or department? (That is, wherever you usually spend your time when you travel to work or school at UC Davis) *
○   Main Campus area (this is most people)
○   On the Davis campus, in the West Campus area (west of SR 113)
○   On the Davis campus, in the South Campus area (south of I-80)
○   Technically off-campus, but within the city of Davis
○   Outside of Davis

[If located outside of Davis, ask this question, then skip to end, to "Optional" page]
Q09.   Where outside of Davis is your office, lab, or department?
         [write-in]

Section 2. **Background information about you**

Next, we have a few questions about you.

Q10.   **I identify as...**
  ❍   Female
  ❍   Male
  ❍   _____ (please specify)

Q11.   **Do you have any temporary or permanent physical conditions that limit your ability to walk, bike, drive, or use public transit?**

	Yes	No
Walk	○	○
Bike	○	○
Drive	○	○
Use public transit	○	○

Q12.   **Where were you born?**
  ❍   In California
  ❍   Outside of California, but in the United States
  ❍   Outside the Unites States, from: _____

Q13.   **Do you currently have a driver's license?**
  ❍   Yes, a CA driver's license
  ❍   Yes, a non-CA driver's license
  ❍   No

Q14.   **What options are available to you for getting to campus, whether or not you use them on a regular basis?**
  ☐   Walk
  ☐   Skate or skateboard
  ☐   Bike
  ☐   Electric bike
  ☐   Motorcycle or scooter
  ☐   Drive alone in a car (or other vehicle)
  ☐   Carpool or vanpool with others also going to campus (either as driver or passenger)
  ☐   Get a ride (the driver continues on elsewhere)
  ☐   Bus
  ☐   Train or light rail

[If has access to a car]
Q15.   **Do you currently have a UC Davis parking permit?**
  ☐   **No**, I don't have one

  Yes, I have (select type):
  ☐   Annual (or multi-year) permit

☐   Monthly or quarter permit
☐   Daily permit
☐   Complimentary GoClub parking permit
☐   EasyPark Personal in-vehicle parking meter

Q16.   Where do you live now?
○   On the UC Davis campus (includes Cuarto and the area east of SR 113, south of Russell Blvd, west of A St, and north of I-80)
○   Off-campus, in the West Village apartments
○   Off-campus elsewhere, in the city of Davis
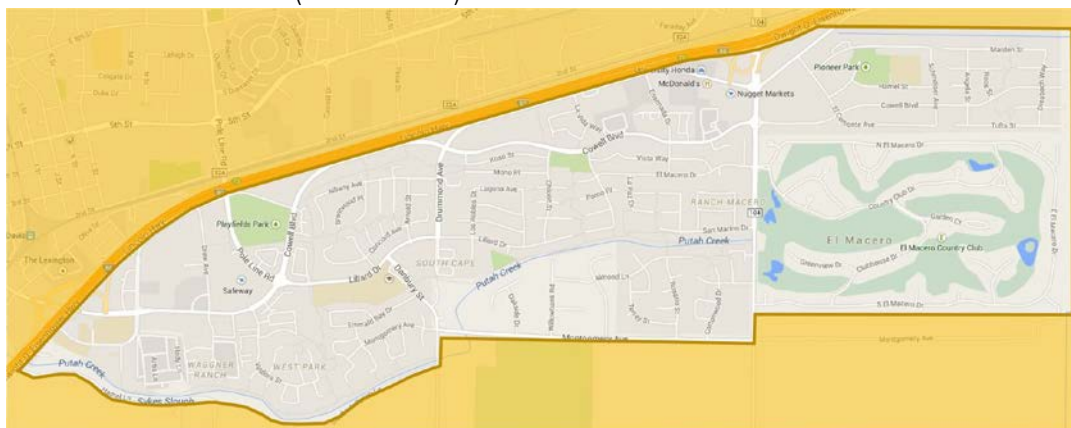○   Outside of Davis

[If resides off-campus in the city of Davis]
Q17.   Which part of Davis do you live in? (scroll down to see all options)
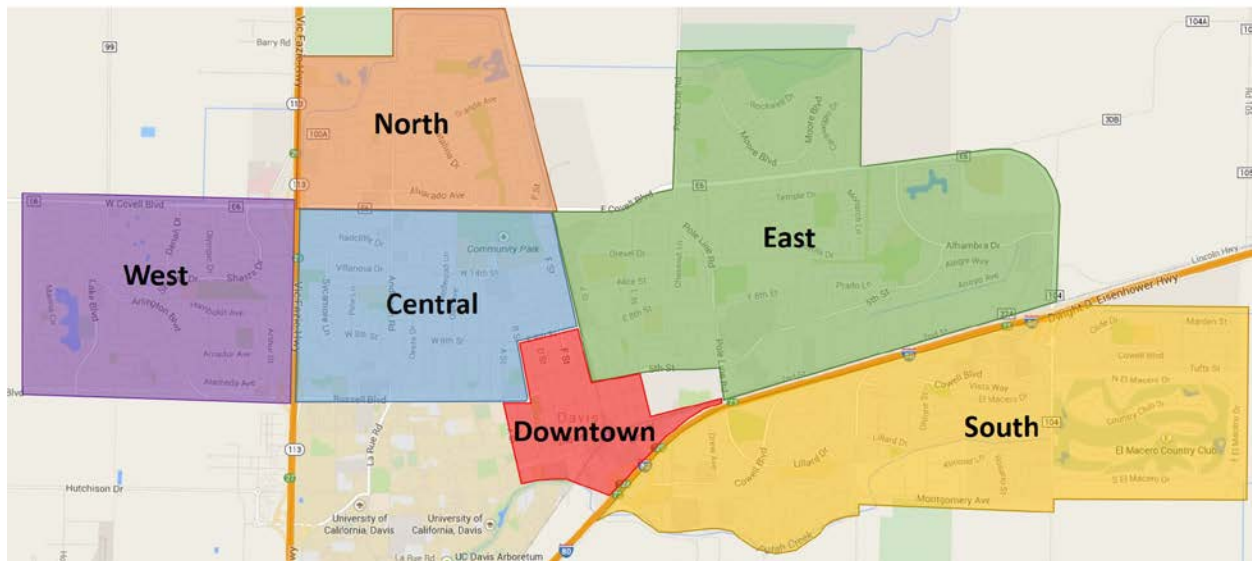
○ North Davis (north of West Covell and west of F St.)
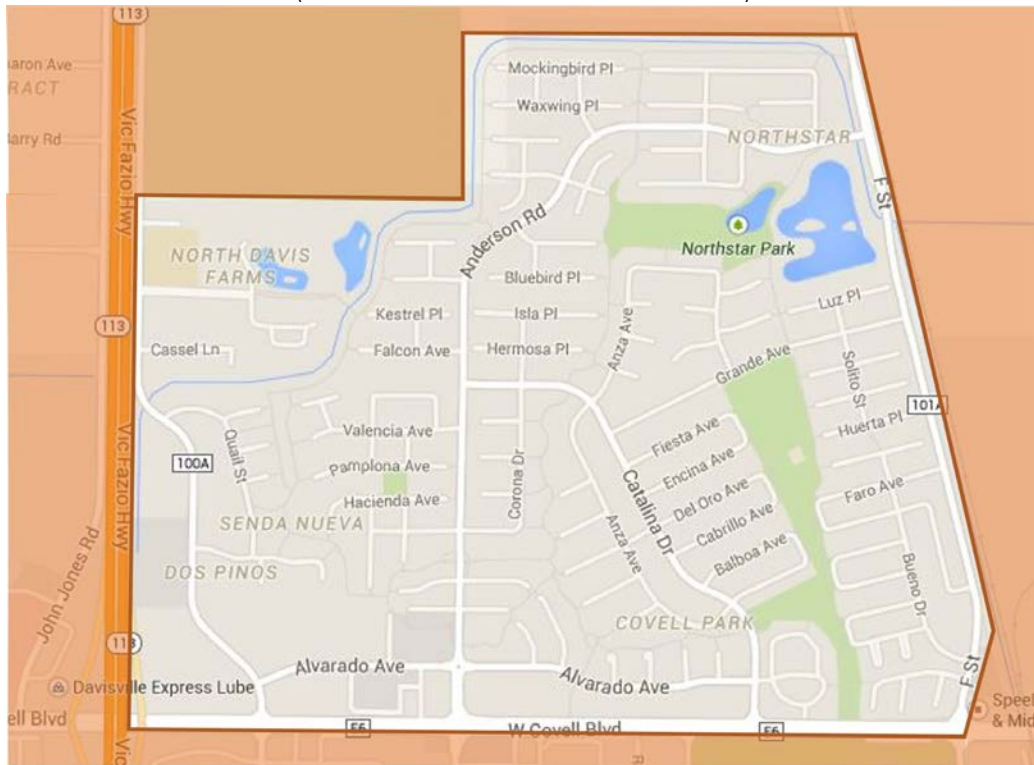
○ South Davis (south of I-80)

○ East Davis (east of H St., except for Old North Davis)
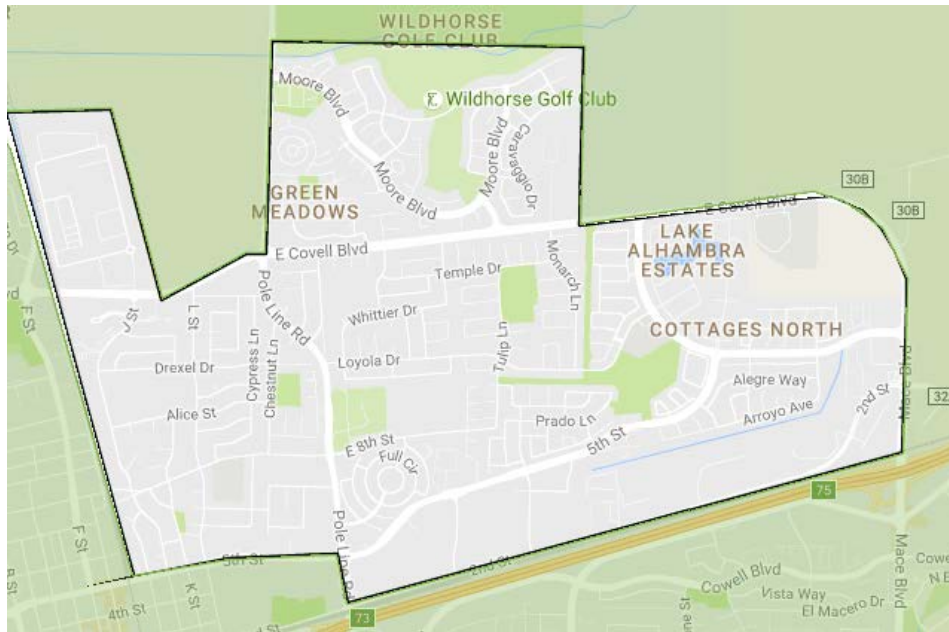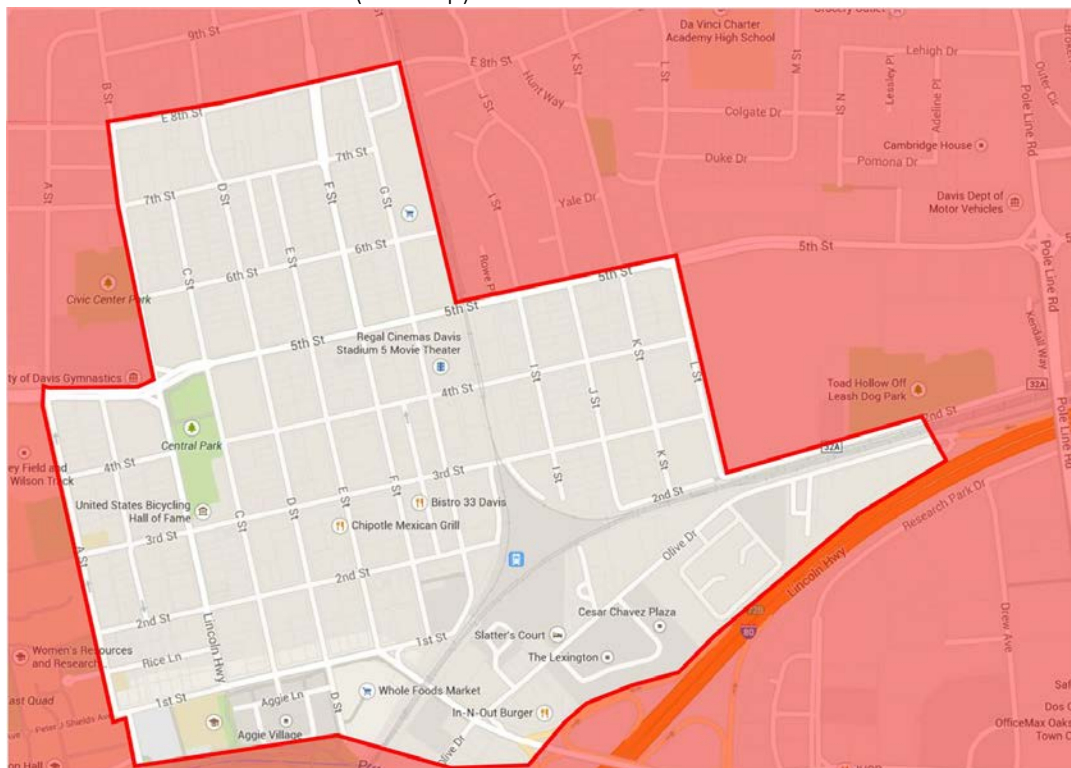
○ West Davis (west of Hwy 113)
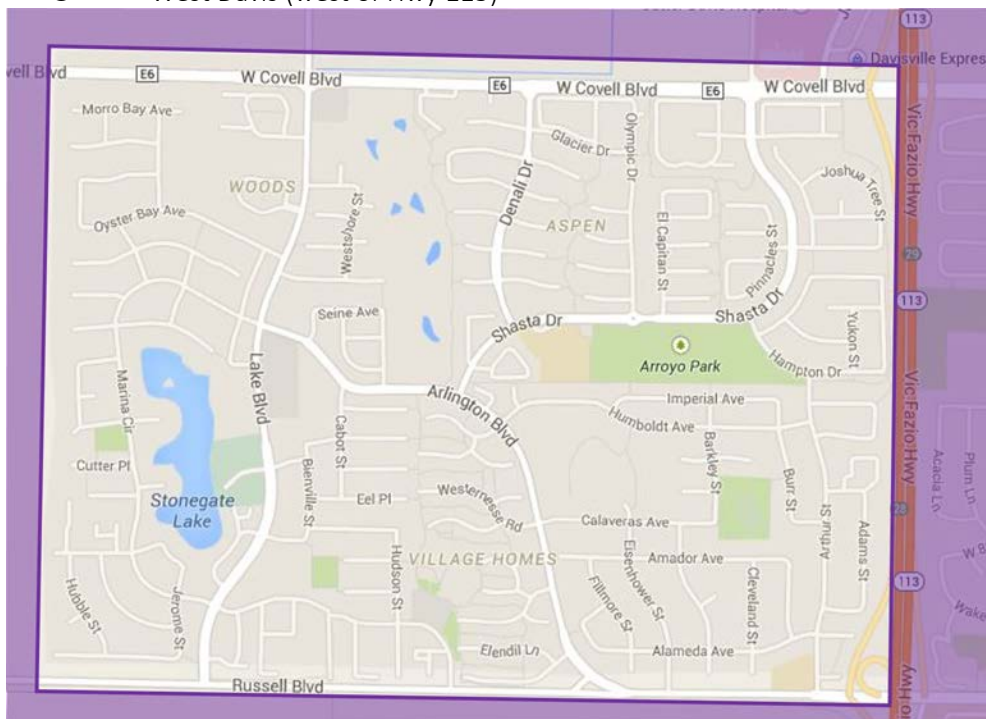
O   Central Davis (see map)
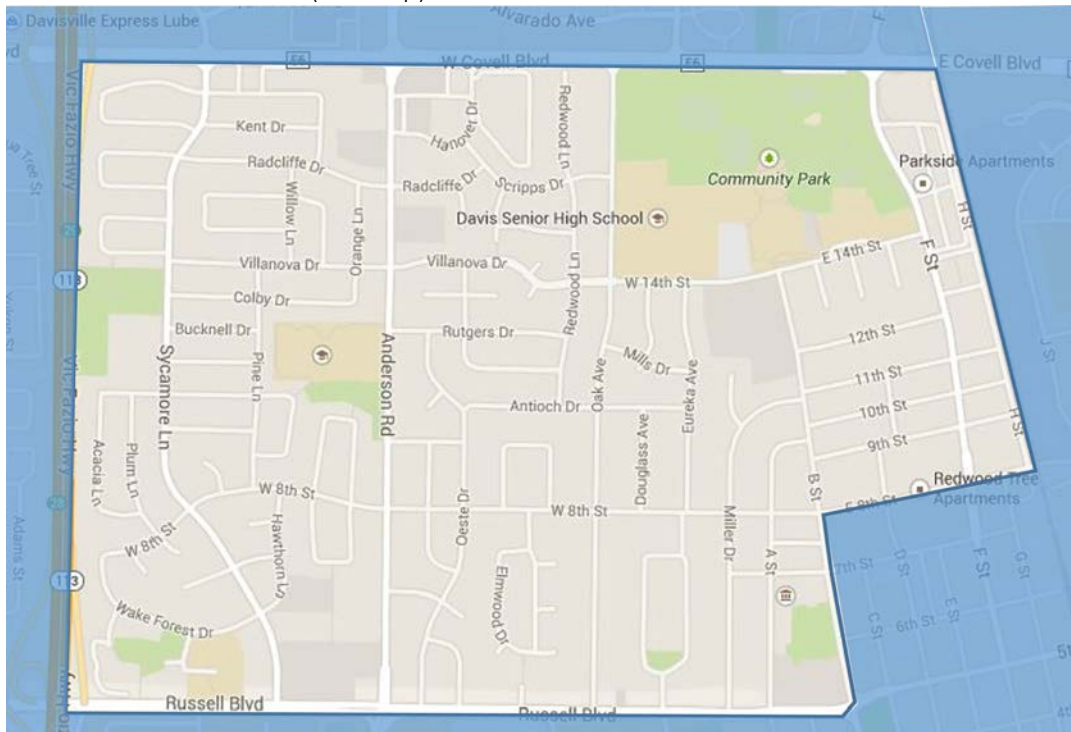
O   Downtown Davis (see map)

O   Not sure
O   Other (my location is not in any of these areas)

[If resides off campus (in Davis or outside of Davis)]

Q18.   What intersection is nearest to your home? (Please answer for where you live locally, when you are traveling to campus on a regular basis. This information will only be used to calculate the approximate distance you travel to campus and to help plan facility needs around campus. It will be kept confidential and will not be used in any other way.)

    Your street: _____

    Nearest cross-street: _____

[If resides outside of Davis]

Q19.   **What is your zip code?**

Each answer must be between 00000 and 99999

    Zip Code: _____

Section 3. Travel to campus - days traveled last week

Consider your activities during the last week, from Monday (Oct. 24) through Sunday (Oct. 30). If you have a day planner, it might be useful to look at the last week's activities as you complete this section.

[If does not work outside of Davis]
Q20.   Did you go somewhere on campus any day last week (Oct. 24 - 30) for school or work? If you live on campus, but went to other campus locations for school or work, please count those trips. If you went to a UC Davis office or lab that is technically off-campus, but within the city of Davis, please count that as well.*
   ○   Yes, I traveled to campus destinations for school or work last week
   ○   No, I was away all week, Oct. 24 – Oct. 30

[If went to campus last week]
Q21.   On which days last week did you go somewhere on campus for school or work? (If you went to a UC Davis office or lab that is technically off-campus, but within the city of Davis, please count that as well.)*
   ☐   Monday
   ☐   Tuesday
   ☐   Wednesday
   ☐   Thursday
   ☐   Friday
   ☐   Saturday
   ☐   Sunday

Section 4. Travel to Campus - Days not traveled last week

[If no travel to campus all week, for all role groups]
Q22.   What was the main reason you did not go to campus destinations last week for school or work?
- ❍   Study abroad or sabbatical
- ❍   Vacation, sickness, or personal leave
- ❍   Work or school-related travel or field work
- ❍   Telecommuting (working from home or another remote location)
- ❍   Temporary appointment elsewhere (internship, visiting scholar, teaching appointment, exchange program, etc.)
- ❍   Other: _____

[For faculty, visiting scholar, staff, post-doc, if travelled to campus between 1 and 4 weekdays of the reference week]
Q23.   What was the main reason you did not travel to work? Please answer for each day individually.
- ❍   Telecommuting (working from home or another remote location)
- ❍   Work or school-related activities elsewhere (field work, meeting, teaching appointment, etc.)
- ❍   Regularly scheduled day off
- ❍   Vacation, sickness, or personal leave
- ❍   Day off as part of a compressed work week (i.e. 4/40, 9/80, or 3/36 schedule)
- ❍   Other

[If no travel to campus all week]
Q24.   Do you expect to resume regular travel to campus for school or work this academic year?
- ❍   Yes
- ❍   No

Section 5. Travel to Campus - Usual travel to campus

Q25.   When you are regularly traveling to campus, about how many days per week do you typically travel to campus for school or work?
- ❍   less than once a week
- ❍   1 day per week
- ❍   2 days per week
- ❍   3 days per week
- ❍   4 days per week
- ❍   5 days per week
- ❍   6 days per week
- ❍   7 days per week

Q26.   What means of transportation do you usually use to travel to campus for school or work? (If you usually use more than one mode of transportation, please select the one you usually use for most of the distance).
- ❍   Walk
- ❍   Skate or skateboard
- ❍   Bike
- ❍   Electric bike
- ❍   Motorcycle or scooter
- ❍   Drive alone in a car (or other vehicle)
- ❍   Carpool or vanpool with others also going to campus (either as driver or passenger)
- ❍   Get a ride (someone drops you off and continues on elsewhere)
- ❍   Bus
- ❍   Train or light rail
- ❍   Taxi services
- ❍   Uber or Lyft Services
- ❍   Other: _____

Q27.   What means of transportation do you usually use to travel between on-campus destinations?
- ❍   Walk
- ❍   Skate or skateboard
- ❍   Bike
- ❍   Electric bike
- ❍   Motorcycle or scooter
- ❍   Drive alone in a car (or other vehicle)
- ❍   Carpool or vanpool (either as driver or passenger)
- ❍   Get a ride (someone drops you off and continues on elsewhere)
- ❍   Bus
- ❍   Other: _____

[if staff]
Q28.   When do you typically arrive on campus?
        [write-in]
        (For example, 8:30 am)

Section 6. Travel to Campus - Modes used last week

Consider how you traveled to campus last week.

[If traveled at least one day last week and will resume travel this year]
Q29.　First think back to the entire week (Monday, Oct. 24 - Sunday, Oct. 30). Please tell us *all* the different means of transportation you used at some point on your way to school or work, from the moment you left home to when you arrived at your first destination on campus -- even if it was just for part of the way -- on any day that week.*

- ☐ Walk
- ☐ Skate or skateboard
- ☐ Bike
- ☐ Electric bike
- ☐ Motorcycle or scooter
- ☐ Drive alone in a car (or other vehicle)
- ☐ Carpool or vanpool with others going to campus (either as driver or passenger)
- ☐ Get a ride (the driver continues on elsewhere)
- ☐ Bus
- ☐ Train or light rail
- ☐ Taxi services
- ☐ Uber or Lyft Services
- ☐ Other: _____

[For any days that respondent traveled]
Q30.　Next, consider each day specifically. Please select which means of transportation you used on your way to your first campus destination each day. (If you used more than one means, select whatever you did for most of the distance.)*

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Walk	O	O	O	O	O	O	O
Skate or skateboard	O	O	O	O	O	O	O
Bike	O	O	O	O	O	O	O
Electric bike	O	O	O	O	O	O	O
Motorcycle or scooter	O	O	O	O	O	O	O
Drive alone in a car (or other vehicle)	O	O	O	O	O	O	O
Carpool or vanpool with others also going to campus (either as driver or passenger)	O	O	O	O	O	O	O
Get a ride (someone drops you off and continues on elsewhere)	O	O	O	O	O	O	O
Bus	O	O	O	O	O	O	O

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Train or light rail	O	O	O	O	O	O	O
Taxi Services	O	O	O	O	O	O	O
Uber or Lyft Services	O	O	O	O	O	O	O

[If carpooled last week]
Q31.   During the times when you carpooled with others last week, how many people on average were in your carpool or vanpool (including yourself)?
- O   2 (you plus one other person)
- O   3 people
- O   4 people
- O   5 people
- O   6 people
- O   7 people
- O   8 people
- O   9 people
- O   10 people
- O   11 people
- O   12 or more people

[If got a ride last week]
Q32.   During the times when you got a ride on your way to campus last week, how many people on average did your driver drop off?
- O   1 (just you)
- O   2 people
- O   3 people
- O   4 people
- O   5 people
- O   6 people
- O   7 people
- O   8 people
- O   9 people
- O   10 people
- O   11 or more people

Section 7. Travel to campus – in the summer

Now consider this past summer, from June 9- September 19, 2016.

[for everyone unless not resuming travel to campus this year]
Q33.   How much time did you spend at UC Davis over the summer? We're interested in the number of weeks you spent last summer traveling to and from campus destinations on a regular basis. Please estimate how many weeks you were on campus at least once a week during this period.

If you went to a UC Davis office or lab that is technically off-campus, but within the city of Davis, please count that as well.

(Note: There were a total of 14 weeks in the academic summer.)
- ❍   All summer / 14 weeks (June 9 – September 19)
- ❍   13 weeks
- ❍   12 weeks
- ❍   11 weeks
- ❍   10 weeks
- ❍   9 weeks
- ❍   8 weeks
- ❍   7 weeks
- ❍   6 weeks (equivalent to just ONE summer session, I or II)
- ❍   5 weeks
- ❍   4 weeks
- ❍   3 weeks
- ❍   2 weeks
- ❍   1 week
- ❍   None

[For any answer other than "None"]
Q34.   During this period, how many days per week were you typically on campus?
- ❍   1 day per week
- ❍   2 days per week
- ❍   3 days per week
- ❍   4 days per week
- ❍   5 days per week
- ❍   6 days per week
- ❍   7 days per week

Section 8. Travel to campus – more details about mode

[If motorcycled, drove alone, carpooled, or got a ride last week]
Q35. **Which type of vehicle did you use to get to campus last week?**
- ⭘ Gasoline or diesel vehicle
- ⭘ Conventional hybrid vehicle (does not plug into the electricity grid)
- ⭘ Plug-in hybrid electric vehicle
- ⭘ All-electric vehicle
- ⭘ CNG fueled vehicle
- ⭘ Biofuel vehicle
- ⭘ Hydrogen fuel cell vehicle

[If lives outside of Davis, motorcycled, drove alone, carpooled, or got a ride last week, or usually drives to campus]
Q36. **When you drive to Davis for school or work, do you park on campus or off-campus?**
- ⭘ On-campus
- ⭘ Off campus

[If park off-campus]
Q37. **How do you get from your parked car to campus?**
- ⭘ Walk
- ⭘ Bike
- ⭘ Skateboard
- ⭘ Bus
- ⭘ Taxi
- ⭘ Lyft or Uber Services
- ⭘ Other: _____

[If rode the bus last week]
Q38. **Which bus service(s) did you use on your way to campus last week?**
- ☐ Unitrans
- ☐ Yolobus
- ☐ UCD / UCDMC Shuttle
- ☐ Sacramento Regional Transit
- ☐ UC Berkeley / UC Davis shuttle
- ☐ Other:

[If rode the train last week]
Q39. **Which train service(s) did you use on your way to campus last week?**
- ☐ Amtrak Capitol Corridor
- ☐ BART
- ☐ Sacramento Regional Transit
- ☐ Other: _____

[If motorcycled, drove alone, carpooled, or got a ride last week]

Q40.	What is the Year, Make (i.e. Honda) and Model (i.e. Civic) of the vehicle you used to get to campus last week?

YEAR	_____

MAKE	_____

MODEL	_____

Section 9. Campus transportation programs, infrastructure, and improvements

Q41.   Are you familiar with any of these campus programs?

	I've never heard of it	I've heard of it, but never used it	I've used it
GoClub program	O	O	O
Aggie Bike Buy Program	O	O	O
Bike tire air stations and repair stations around campus	O	O	O
Bicycle Education and Enforcement Program (BEEP) and bike safety video	O	O	O
Zipcar carsharing program	O	O	O
Zimride carpool matching service	O	O	O
In-vehicle parking meters (Easy Park)	O	O	O
UC Davis motorist assistance program	O	O	O
TAPS Bike lock-cutting service	O	O	O
UC Davis Bike Auction	O	O	O
TAPS Mobility Assistance Program	O	O	O
TAPS bicycle licensing program	O	O	O

Q42.   If you would like to learn more about any of these programs, please follow the link to the TAPS website at the end of the survey.

[if Plug-in hyrbrid electric vehicle or All-electric vehicle]
Q43.   Do you use on-campus electric vehicle charging stations?
  ❍   On-campus
  ❍   Off campus

Section 10. More background information about you – opinions about travel

Not too much further!

Q44.   We'd like to ask about your opinions with respect to travel. There are no right or wrong answers; we want only your true opinions. To what extent do you agree or disagree with the following statements?

	Strongly disagree	Somewhat Disagree	Neutral or Not Sure	Somewhat Agree	Strongly agree
I know how to fix a flat tire.	○	○	○	○	○
Environmental concerns affect the choices I make about my daily travel.	○	○	○	○	○
I like riding a bike.	○	○	○	○	○
Travel time is generally wasted time.	○	○	○	○	○
I can confidently ride next to another bicyclist in the same bike lane.	○	○	○	○	○
I like driving.	○	○	○	○	○
Bicycle traffic laws are adequately enforced on campus.	○	○	○	○	○
I need a car to do many of the things I like to do.	○	○	○	○	○
My schedule makes it hard or impossible for me to use public transportation.	○	○	○	○	○
I can confidently ride a bicycle without my hands on the	○	○	○	○	○

	Strongly disagree	Somewhat Disagree	Neutral or Not Sure	Somewhat Agree	Strongly agree
handlebars.					
I drive more than I want to.	○	○	○	○	○

Q45.   To what extent do you agree or disagree with the following statements? (continued)

	Strongly disagree	Slightly Disagree	Neutral or Not Sure	Slightly Agree	Strongly agree
I feel safe biking on campus.	○	○	○	○	○
I like using public transit.	○	○	○	○	○
I often need to use my own vehicle to travel to different sites during the day.	○	○	○	○	○
I already bicycle as often as I can.	○	○	○	○	○
I drive more than I need to.	○	○	○	○	○
I try to limit my driving as much as possible.	○	○	○	○	○
Getting around is easier than ever with my smartphone.	○	○	○	○	○
I like to arrive on campus with a professional appearance.	○	○	○	○	○
I feel comfortable biking through a roundabout on campus.	○	○	○	○	○
I feel stressed after my trip to campus.	○	○	○	○	○

[If not physically limited from biking]

Q46.   How would you rate your ability to ride a bike? In particular, we are interested in whether you know how to ride a bike, regardless of whether it is practical or desirable for you to do so as a means of transportation to campus.
- ❍   I cannot ride a bike at all because I do not know how
- ❍   I can ride a bike, but I am not very confident doing so
- ❍   I am somewhat confident riding a bike
- ❍   I am very confident riding a bike

Q47.   We are interested in your *familiarity* with and *use* of these *transportation services*. Please check the single most appropriate answer for each service below:

	I have never heard of it	I have heard of it but I've never used it	I have used it…		
			…when traveling away from home	…in Davis	…in Davis AND when traveling away from home
Carsharing (*e.g.* Zipcar, City CarShare)	❍	❍	❍	❍	❍
On-demand ride services (*e.g.* Uber, Lyft)	❍	❍	❍	❍	❍

[If answered "I have used it" to any of the above options for Q47]

Q48.   Please indicate *how often* you use the following transportation services.

	I used it in the past, but I don't use it anymore	I use it less than once a **month**	I use it 1-3 times a **month**	I use it 1-2 times a **week**	I use it 3-4 times a **week**	I use it 5 or more times a **week**
Carsharing (*e.g.* Zipcar, City CarShare)	❍	❍	❍	❍	❍	❍
On-demand ride services (*e.g.* Uber, Lyft)	❍	❍	❍	❍	❍	❍

[If answered "I have used it" to "On-demand ride services (e.g. Uber, Lyft) for Q47]

Q49.   Thinking back to the last trip you made with *Uber/Lyft*, which of the following categories best describes the main purpose of your trip?
- ❍   Commuting to/from school
- ❍   Other school/work-related trip
- ❍   Visiting friends and/or family
- ❍   Shopping/Running errands
- ❍   Traveling to the airport/AMTRAK station/other transportation hub
- ❍   Going to a Restaurant
- ❍   Going to a Bar
- ❍   Other (please specify:_____)

Section 11. **More background information about you – demographic characteristics**

This section asks a few more questions about you. We use this information to help understand travel choices and how the people taking the survey might represent the UC Davis community as a whole. Your answers are confidential and will not be used for any other purposes.

[If grad, faculty, staff, post-doc]
Q50.　How many full years have you been at UC Davis (in any role)?
　　○　　0 (this is my first year)
　　○　　1 year
　　○　　2 years
　　○　　3 years
　　○　　4 years
　　○　　5 years
　　○　　6-10 years
　　○　　11-15 years
　　○　　16-20 years
　　○　　More than 20 years

Q51.　In what year were you born?
[Numerical write-in]
For example: 1980

[Employees and NOT an undergrad]
Q52.　What is your highest level of education completed?
　　○　　No formal education
　　○　　Grade school or junior high school
　　○　　High school diploma or equivalent
　　○　　Associates degree or technical school certificates
　　○　　Four-year bachelor's degree
　　○　　Graduate degree(s)

Q53.　Do you live alone or with other people? Please choose *all* that apply.
　　☐　　I live alone
　　☐　　I live with roommate(s), housemate(s), or in a dorm
　　☐　　I live with family, a partner, or others with whom I share some income -- *we'll call them your household*

[if lives with family, partner or others that share income]
Q54.　If you live with family, a partner, or others with whom you share some income, please indicate how many UNDERLINED OTHER members of your household are in each age category.
　　age under 6: _____
　　age 6-15: _____
　　age 16-17: _____
　　age 18-64: _____
　　age 65 or older: _____

[for all]

Q55.   As you know, California is becoming a more expensive place to live. We want to understand how this is impacting the Davis Community. About how much do you spend on housing per month?

       [numerical write-in]
       help text: "e.g. $800"

Q56.   About what percentage of your monthly budget do you spend on housing?
❍   Under 20 %
❍   20 %
❍   21 – 50 %
❍   Over 50 %

[To undergraduate and graduate students that have access to a car]
Q57.   You indicated that you have access to a car. How much financial support do you receive from your parent(s)/guardian(s) for driving related expenses such as gas, insurance, and vehicle maintenance?
❍   None at all
❍   For some things
❍   For most things
❍   For everything

Section 12. **Optional**

[If indicated that work/school location is outside Davis (in Q07)]
Q58.   Thank you for taking this shortened version of the 2015-16 Campus Travel Survey. Since your office or department is outside of UC Davis, we do not need any further information from you at this time.

[If indicated that recently graduated (in Q01)]
Q59.   Thank you for taking this shortened version of the 2015-16 Campus Travel Survey. Since you are no longer a student at UC Davis, we do not need any further information from you at this time.

[If indicated "retiree" in (Q01)]
Q60.   Thank you for taking this shortened version of the 2015-16 Campus Travel Survey. Since you are no longer an employee of UC Davis, we do not need any further information from you at this time.

Q61.   Researchers at the UC Davis Institute of Transportation Studies are working with UC Davis Transportation and Parking Services to evaluate prospective programs for commuters like you. As part of this research, we'd be interested in inviting select respondents from this survey to participate in commute-related focus group discussions. Is it okay for us to contact you again in the future?
- ❍   No, I prefer not to be contacted again.
- ❍   Yes, to participate in a focus group, with questions about my survey or if I win the drawing.
- ❍   Yes, with question about my survey or if I win the drawing for a $50 gift card.

[If yes, okay to contact]
Q62.   Please provide the following contact information. This information will ONLY be used for the purposes you specified.
    Name: _____
    Campus email address: _____

Q63.   Optional: Is there anything else you would like to tell us about transportation at UC Davis? We welcome any additional comments in the space below.
Write-in:_____

Q64.   Thanks for completing this survey!

We know your time is valuable. The results of this survey will be used both to help the campus improve its transportation system and services and for research purposes.

To learn more about TAPS programs and services, please click [here].

*As in past surveys, the dates of the reference week changed after one week.

Appendix B: Changes from the 2015-16 survey instrument

1. The following sections have been reduced or altered:
   a. Demographics
   b. More background information about you

The reference week was scheduled for a similar week as the previous year's survey, October 19 - 25 (see Figure 7 for additional details).

Appendix C: Text of the 2016-17 recruitment emails

Initial recruitment email:
From: Office of the Provost and Executive Vice Chancellor <campustravelsurvey@qualtrics.com>
To: <...@ucdavis.edu>
Subject: Message from Interim Provost Burtis- 2016-2017 Campus Travel Survey

Dear UC Davis Student [Employee],

You are invited to help shape the future of the UC Davis Community by participating in the 2016-2017 UC Davis Campus Travel Survey. This annual survey provides campus planners and researchers with valuable feedback on how people get to campus and their experiences with various transportation programs. **Your feedback is important for improving the UC Davis Campus Community and shaping the future of transportation on campus.** This year's survey is particularly important as the campus continues updating its Long Range Development Plan. Transportation will be one of the most important issues that will be considered as part of the planning process.

UC Davis Transportation and Parking Services (TAPS) and graduate students from the Institute of Transportation Studies have used the results from this survey to:
- Track changes in the way that people get to campus from year to year
- Prioritize bike infrastructure improvements on campus
- Estimate UCD's greenhouse gas emissions
- Better understand the factors that encourage biking in our community
- Develop new TAPS programs to serve the campus community

Participating in this research survey takes 10 minutes to complete. Doing so is voluntary, and we assure you that **all responses are confidential** and the results will only be published in the aggregate, without connection to any individual. You must be at least 18 years old to complete this survey. We're going to ask you questions in the following areas:
- Your role at UC Davis
- Your travel to and from campus
- Your experience with campus transportation programs and infrastructure
- Some background information about you

To reward you for your time and input, you will be entered into a drawing to **win one of twenty $50 Visa Debit gift cards and one Amazon Fire Tablet grand prize!** If you are unable to complete the survey but would like to be included in the drawing, please email us at travelsurvey@ucdavis.edu to be entered.

To start the survey, click on the link below:
http://travel.its.ucdavis.edu

Thank you for participating in this year's survey.

Sincerely,
Ken Burtis
Interim Provost and Executive Vice Chancellor

Reminder recruitment email:
From: Office of the Provost and Executive Vice Chancellor <campustravelsurvey@qualtrics.com>
To: <...@ucdavis.edu>
Subject: Message from Interim Provost Hexter - 2016-2017 Campus Travel Survey

Dear UC Davis Student [Employee],

Last week you were invited to take the 2016-2017 Campus Travel Survey. If you finished the survey last week, thank you. Your responses have been recorded, and you can disregard the rest of this message. If not, we encourage you to complete the survey today. This annual survey provides campus planners and researchers with valuable feedback on how people get to campus and their experiences with various transportation programs. **Your feedback is important for improving the UC Davis Campus Community and shaping the future of transportation on campus**. This year's survey is particularly important as the campus begins updating its Long Range Development Plan. Transportation will be one of the most important issues that will be considered as part of the planning process.

UC Davis Transportation and Parking Services (TAPS) and graduate students from the Institute of Transportation Studies have used the results from this survey to:
- Track changes in the way that people get to campus from year to year
- Prioritize bike infrastructure improvements on campus
- Estimate UCD's greenhouse gas emissions
- Better understand the factors that encourage biking in our community
- Develop new TAPS programs to serve the campus community

Participating in this research survey takes 10 minutes to complete. Doing so is voluntary, and we assure you that **all responses are confidential** and the results will only be published in the aggregate, without connection to any individual. You must be at least 18 years old to complete this survey. We're going to ask you questions in the following areas:
- Your role at UC Davis
- Your travel to and from campus
- Your experience with campus transportation programs and infrastructure
- Some background information about you

To reward you for your time and input, you will be entered into a drawing to **win one of twenty $50 Visa Debit gift cards and one Amazon Fire Tablet grand prize!** If you are unable to complete the survey but would like to be included in the drawing, please email us at travelsurvey@ucdavis.edu to be entered.

To start the survey, click on the link below:
http://travel.its.ucdavis.edu

Thank you for participating in this year's survey.

Sincerely,
Ken Burtis
Interim Provost and Executive Vice Chancellor

Appendix D: Calculation of Average Vehicle Ridership (AVR)

AVR (average vehicle ridership) is a ratio of the number of person-arrivals to private-vehicle-arrivals. If everyone drove alone to campus, the campus AVR would be equal to one. AVR values greater than 1.0 indicate more carpooling and/or use of active modes of transportation.

To compare AVR statistics on the Davis campus with other UC campuses, we calculate AVR using a standard formula developed by the South Coast Air Quality Management District (AQMD) in "Rule 2202 – On Road Motor Vehicle Mitigation Options."[9] We attempt to adhere to the AQMD formula, although our overall survey methodology deviates to some extent from that prescribed by the AQMD.[10] The AQMD formula excludes weekend travel (considering Monday through Friday only) and excludes on-campus residents (considering travel among off-campus residents only). It includes adjustments for vehicle occupancy and the use of zero-emission vehicles (ZEV).

In particular, we use the following formula:

$$AVR = \frac{Total\ weekly\ arrivals}{weekly\ vehicle\ arrivals} = \frac{arrivals\ by\ all\ modes + employee\ telecommuting\ days + CWW\ days}{drive\ alone\ arrivals + fractionalcarpool\ arrivals}$$

with:

Arrivals by all modes = a count of all respondents arriving by bus, driving, carpooling, getting a ride, walking, biking, skating, and riding transit on Monday, plus the same for Tuesday, Wednesday, etc. through Friday (using *Q30* in the 2016-17 survey).

Employee telecommuting days = a count of respondents telecommuting on Monday, plus those doing so on Tuesday, etc. through Friday. These are based on responses to questions *Q21* and *Q23* for any respondents who traveled some days and telecommuted other days. But for respondents who indicated <u>no</u> travel during any of the five days of the reference week (in *Q20*) and then indicated the reason for no travel was telecommuting (in *Q22*), we assume the respondent telecommuted all five days of the reference week.

Employee CWW days = a count of respondents reporting that they did not travel on Monday because they had a CWW (compressed work week) day off, plus those who did so for Tuesday, Wednesday, etc. through Friday (using responses to questions *Q21* and *Q23*).

Drive-alone arrivals = a count of respondents arriving by driving alone on Monday, plus those doing so on Tuesday, Wednesday, etc. through Friday (using responses to *Q30*). As an adjustment for the use of ZEV vehicles, we exclude from the count any arrivals by a respondent who has indicated using an all-electric or fuel cell vehicle for their travel during the reference week (in question *Q35*).

Fractional carpool arrivals = A count of the fractions of vehicle-arrivals accounted for those arriving in carpools (or getting rides) for each day Monday through Friday. In particular, for each day a respondent carpools (or gets a ride, using *Q30*) we add to the arrival count a fraction equal to one divided by the total

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[9] As of July 2017, this rule is available online (http://www.aqmd.gov/docs/default-source/rule-book/reg-xxii/rule-2202.pdf?sfvrsn=4).

[10] For instance, the AQMD specifies that response to the survey must be 90 percent response rate, whereas we rely on surveying only a sample and weighting the responses.

number of people in the carpool (using *Q31*) or the number of passengers dropped off by the driver (using *Q32*). We exclude from the count any arrivals by a respondent who has indicated using an all-electric or hydrogen vehicle (in question *Q35*).

In all cases, the estimated number of arrivals for the entire campus community is a projection. In particular, we weight (and expand) the sample responses by role and gender based on the 4,132 valid responses to question *Q30* (see Table 53).

We calculate AVR both excluding and including on-campus residents, and by each role group. The AQMD and most other UC campuses exclude on-campus residents and most only calculate AVR for employees rather than for students. The inclusion of student employees can greatly change AVR statistics, though to a different extent at different campuses. We include a question about whether student respondents are also paid employees of UC Davis (question *Q07*) to allow us to estimate AVR including student employees.

Appendix E: Geocoding and network distances

We used the ESRI Streetmap USA dataset to do all of the geocoding and network route assignments. It is based on the TIGER/Line 2000 streets dataset produced by the U.S. Census Bureau, and has been enhanced by ESRI and Tele Atlas. If the exact street was not available, then we geocoded the point to the nearest pre-existing road. In all cases, the differences were minor and expected to be negligible.

Geocoding residential locations
We used address information to geocode points to the ESRI Streetmap USA dataset. First, we used the statistical computing language, R, to filter out empty records. Then we used Microsoft Excel to divide the data into separate tables for each subcategory (On Campus, West Village, Off Campus in Davis, and Outside Davis), and concatenate the street names into a single field. This allowed us to input the data into an appropriate address locator that would be able to automatically geocode as many addresses as possible.

Inputting the data directly into an address locator resulted in successful matching of most addresses. Because there was the potential for a small percentage of addresses to be matched incorrectly by the address locator, we also manually verified that the match address was the same as the input address. We geocoded unmatched addresses by manually placing points in the correct locations, or by modifying the input addresses so that they matched correctly using an automatic address locator.

Network distance
The network route assignments were created using the ArcGIS Network Analyst extension and the ESRI Streetmap USA dataset (the same dataset used to geocode the residential locations). For those living off campus in Davis (excluding West Village) and outside Davis, distances were calculated from the geocoded residential location points to a point located on the UC Davis campus at the corner of Hutchison Drive and California Avenue, near the Silo. The network route assignments were calculated by optimizing for the fastest travel times (based on assumptions about the expected speed of travel on each facility type), which was deemed to produce more realistic routes than optimizing for distance, because it produces routes that favor major roads and highways where possible.

We assign an average distance from campus destinations for all on-campus respondents equal to the mean calculated network distance for on-campus respondents. This distance is equal to 0.77 miles and reflects our best estimate of the average distance from residential locations within the "on campus" area to campus destinations. For the respondents living in the West Village apartments, we assumed that distance from campus is equal to the calculated network distance from the center of the West Village complex to the Silo (traveling along Hutchison Drive). This distance is equal to 1.3 miles and reflects our best estimate of the average distance from residential locations in West Village to campus destinations.

Comparability with results from previous surveys
We used the same procedures to geocode and calculate network distances as were used in the Campus Travel Surveys from 2008-09 through 2015-16, so results from the 2016-17 survey should be comparable with these surveys. Because the 07-08 survey employed a different method both to collect data on the respondents' residential locations (allowing respondents to click on a map versus typing cross streets into a text field); to geocode points; and to calculate network distances, the estimated distances and calculations based on them (miles traveled and emissions) are not comparable to later survey years.

Appendix F: Imputation and valid responses

To make the most out of the available data, the following process was used to impute missing data to question *Q30*, the primary mode used to get to campus for each day of the reference week:

1. Missing answers were only coded for days on which the respondent indicated traveling to campus (*Q21*) but did not indicate a primary mode.
2. In cases where all answers were missing for *Q29* and *Q30*, the answer to *Q29* about "usual mode" was imputed for each day traveled in *Q30*.
3. In cases where only one answer was given for *Q29* (all modes used to get to campus), missing answers to *Q30* were recoded as this answer.
4. In one case where usual mode was listed and only some answers to *Q30* were missing, the missing modes were imputed so that the "usual" mode made up the majority and the "secondary" mode made up the minority of days traveled.

Table 50 shows the number of valid cases for each major step in the data validation process. Starting with 4,448 initial responses who provided a valid role, cases were excluded due to missing or invalid data, resulting in 4,132 responses that had valid answers for role, gender, and whether the individual traveled to campus, and general residential location. These 4,132 cases were selected for the bulk of the weighted analysis in this report, with the remainder using the 3,866 cases that had valid answers for role, gender, whether the individual traveled to campus, and general residential location.

Table 50. Valid responses

Variables (description)	Valid cases (N = 4,448)
Role (8 categories)	4,448
Gender (male/female)	4,305
Traveled to campus	4,236
Physically traveled	4,112
Residential location	4,305
Role + Gender (for weighted analysis)	4,132
Role + Gender + Residential location (for geocoded weighted analysis)	3,866

Appendix G: 2016-17 Sampling Plan

Table 51 and Table 52 show the percent of the campus population invited to take the survey, by role, and the expected response rates based on response rates in previous years. This year, expected response rates varied from four percent among seniors to 25 percent among staff.

Table 51. Sampling plan for 2008-09 through 2016-17, percent invited

Role	2016-17 Population[a]	2016-17 Number invited	2016-17	2015-16[b]	2014-15	2013-14	2012-13	2011-12	2010-11	2009-10	2008-09
							Percent invited				
Students	33,825	20,516	60%	63%	89%	77%	83%	70%	45%	37%	38%
Undergraduate	27,896	15,982	57%	59%	90%	78%	86%	73%	40%	32%	32%
Freshmen	4,320	3,515	81%	58%	100%	88%	100%	71%	55%	41%	39%
Sophomores	5,026	3,216	64%	77%	100%	100%	100%	100%	51%	40%	39%
Juniors	7,768	3,874	50%	48%	64%	59%	68%	57%	35%	29%	31%
Seniors	10,782	5,377	50%	59%	98%	77%	87%	74%	33%	26%	24%
Graduate	5,929	4,534	77%	80%	86%	74%	70%	59%	64%	60%	61%
Masters	2,627	2,627	100%	100%	85%	100%	100%	100%	100%	98%	86%
PhD	3,302	1,907	58%	63%	86%	59%	53%	36%	31%	39%	48%
Employees	11,555	3,513	30%	61%	28%	38%	37%	29%	23%	22%	31%
Faculty	1,645	1,645	100%	100%	100%	89%	100%	100%	71%	63%	78%
Staff	9,910	1,868	19%	48%	15%	24%	21%	13%	12%	13%	20%
Overall percent	100%	-	53%	62%	73%	66%	70%	59%	39%	33%	36%
Overall number	45,380	24,029	-	27,429	30,815	27,798	28,838	23,953	15,704	13,322	14,031

[a] Population figures are based on those provided by the UC Davis Campus Planning department (see chart in Appendix H titled "UC Davis Total On- and Off-Campus Headcount Population - Annual Averages). This consists of a tabulation that included a breakdown of the total number of on-campus faculty (ladder faculty plus other faculty) and on-campus staff (including academic support, senior management, MSP, SSP, and affiliated (Agricultural and Natural Resources, and excluding employees without salary). The Campus Planning department wanted to more accurately reflect the number of employees traveling to campus this year to help support their Long Range Development Plan efforts. Thus, more staff and less faculty were included in this year's population as compared to previous years. "Masters" includes all academic-program masters students, plus professional-program students in Master of Law, JD, MBA (full time and working professional program), Forensic Science, Master of Advanced Study, Master of Preventative Vet Med and post-baccalaureate (teaching credential) students, and excluding all School of Medicine students; "PhD" includes all academic-program doctoral (D1 and D2) students, plus professional-program students in Veterinary Medicine (DVM), excluding all School of Medicine students.
[b] See Gudz, *et al.* (2016) for results from 2015-16, Thigpen (2015) for results from 2014-15, Popovich (2014) for results from 2013-14, Driller (2013) for results from 2012-13, Miller (2012) for results from 2011-12, Miller (2011) for results from 2010-11, Lovejoy (2010) for results from 2009-10, and Lovejoy, *et al.* (2009) for results from 2008-09.

Table 52. Sampling plan for 2008-09 through 2016-17, response rates

Role	2016-17		2016-17	2015-16 [b]	2014-15	2013-14	2012-13	2011-12	2010-11	2009-10	2008-09
	Population[a]	Number invited	Target response	Actual Response							
Students	33,825	20,516	10%	10%	11%	12%	13%	12%	18%	25%	22%
Undergraduate	27,896	15,982	9%	9%	10%	11%	12%	11%	17%	24%	20%
Freshmen	4,320	3,515	10%	11%	11%	11%	15%	13%	23%	30%	22%
Sophomores	5,026	3,216	11%	10%	12%	12%	13%	12%	16%	26%	21%
Juniors	7,768	3,874	10%	10%	12%	13%	14%	13%	18%	22%	22%
Seniors	10,782	5,377	7%	6%	8%	9%	10%	9%	12%	19%	17%
Graduate	5,929	4,534	15%	14%	16%	15%	16%	16%	22%	28%	27%
Masters	2,627	2,627	13%	10%	10%	14%	11%	11%	16%	19%	18%
PhD	3,302	1,907	18%	16%	18%	16%	21%	23%	34%	40%	35%
Employees	11,555	3,513	20%	12%	14%	22%	18%	19%	29%	34%	35%
Faculty	1,645	1,645	20%	13%	13%	14%	16%	16%	22%	27%	30%
Staff	9,910	1,868	20%	11%	16%	30%	22%	24%	37%	42%	39%
Overall percent	100%	-	12%	10%	11%	13%	14%	13%	20%	27%	26%
Overall number	45,380	24,029	2,811	2,834	3,389	3,663	3,982	3,116	3,084	3,569	3,577

[a] Population figures are based on those provided by the UC Davis Campus Planning department (see chart in Appendix H titled "UC Davis Total On- and Off-Campus Headcount Population - Annual Averages). This consists of a tabulation that included a breakdown of the total number of on-campus faculty (ladder faculty plus other faculty) and on-campus staff (including academic support, senior management, MSP, SSP, and affiliated (Agricultural and Natural Resources, and excluding employees without salary). The Campus Planning department wanted to more accurately reflect the number of employees traveling to campus this year to help support their Long Range Development Plan efforts. Thus, more staff and less faculty were included in this year's population as compared to previous years. "Masters" includes all academic-program masters students, plus professional-program students in Master of Law, JD, MBA (full time and working professional program), Forensic Science, Master of Advanced Study, Master of Preventative Vet Med and post-baccalaureate (teaching credential) students, and excluding all School of Medicine students; "PhD" includes all academic-program doctoral (D1 and D2) students, plus professional-program students in Veterinary Medicine (DVM), excluding all School of Medicine students.

[b] See Gudz, *et al.* (2016) for results from 2015-16, Thigpen (2015) for results from 2014-15, Popovich (2014) for results from 2013-14, Driller (2013) for results from 2012-13, Miller (2012) for results from 2011-12, Miller (2011) for results from 2010-11, Lovejoy (2010) for results from 2009-10, and Lovejoy, *et al.* (2009) for results from 2008-09.

Appendix H: Weighting by role and gender

The appropriate weight factor is a ratio of the population share to the sample share for each role group. That is, with N total population, n in the sample, and N_i in role and gender group i in the population (for instance, female freshmen), and n_i of that group i in the sample, we apply the weight factor $W_i = (N_i/N) / (n_i/n)$ to all cases in group i. Applying the weight factors alters the apparent distribution of respondents by role and gender, but the overall sample size is unchanged. In instances where we would like to expand the sample to a projection of the full population, we weight each case by an *expansion* factor E_i, equal to (N_i / n_i). Applying the expansion factors alters both the distribution of respondents by role, and inflates the sample to the size of the population, or 45,380.

Although the number of valid responses varies from question to question (that is, n and n_i), we use the same set of weight factors for most variables, based on the distribution of roles among the n = 4,132 valid responses to question *Q30*, the main question relating to mode choice on each day during the travel week. For variables relying on geocoding of respondents' residential location, we generated a separate set of weight factors, based on the 3,866 cases successfully geocoded (by cross streets and zip code given in questions Q18 and Q19; see "Appendix E: Geocoding and network distances"). Both sets of weights are shown in Table 53.

Since weighting data significantly changes the final results to more accurately reflect real travel behavior for the campus, it is critically important that accurate campus population numbers are used. In prior years' surveys, campus population numbers were retrieved from summary charts accessed from the UC Davis website. However, now that the UC Davis Long Range Development Plan (LRDP) update process is occurring, the UC Davis Campus Planning department requested that this survey utilize the same campus population numbers as the LRDP process (see the chart below titled "UC Davis Total On- and Off-Campus Headcount Population – Annual Averages"). This chart was provided by Matt Dulcich, Director of Environmental Planning at UC Davis.

The method the Campus Planning department uses for calculating the on-campus population is more refined than the numbers used in previous Campus Travel Surveys. For example, Campus Planning includes the "Affiliated (Agricultural and Natural Resources)" employee category which had not been included in prior years. The Campus Planning method also excludes those faculty members from its population numbers who do not regularly commute to campus. Since staff commute by driving alone at a much higher rate than any other role, including more staff and less faculty in the population number has the effect of increasing the overall drive alone mode share. Thus, comparing the results of this year's report to those of previous years must be done with caution and an understanding of this methodology change. The population numbers derived from the Campus Planning department will be used in future years' surveys which will make future year-to-year changes more comparable.

Table 53. Weight factors, applied by role and gender

Role	Gender	Population (N)	Factors by role, gender, and mode				Factors by role, gender, mode, and geocoded			
			Valid responses (n)	Weight factor (Ni/N)/(ni/n)	Expansion factor (Ni/ni)	Weighted sample size	Valid responses (n)	Weight factor (Ni/N)/(ni/n)	Expansion factor (Ni/ni)	Weighted sample size
Freshman	Female	2,549	350	0.663	7.283	232	348	0.624	7.325	217
	Male	1,771	123	1.311	14.398	161	121	1.247	14.636	151
Sophomore	Female	2,965	357	0.756	8.305	270	334	0.756	8.877	253
	Male	2,061	125	1.501	16.488	188	111	1.582	18.568	176
Junior	Female	4,583	406	1.028	11.288	417	377	1.036	12.156	390
	Male	3,185	206	1.408	15.461	290	191	1.421	16.675	271
Senior	Female	6,361	459	1.262	13.858	579	433	1.252	14.691	542
	Male	4,421	177	2.274	24.977	403	162	2.325	27.290	377
Master's	Female	1,287	195	0.601	6.600	117	180	0.609	7.150	110
	Male	1,340	136	0.897	9.853	122	120	0.951	11.167	114
PhD	Female	1,618	303	0.486	5.340	147	286	0.482	5.657	138
	Male	1,684	163	0.941	10.331	153	153	0.938	11.007	143
Faculty	Female	599	233	0.234	2.571	55	217	0.235	2.760	51
	Male	1,046	250	0.381	4.184	95	236	0.378	4.432	89
Staff	Female	6,600	433	1.388	15.242	601	397	1.416	16.625	562
	Male	3,310	216	1.395	15.324	301	200	1.410	16.550	282
Overall	-	45,380	4,132	0.000	10.983	4,132	3,866	0.000	11.738	3,866

[a] Based on valid responses to *Q10* and *Q30*
[b] Based on valid responses to *Q10, Q30* and successful geocoding of home location (from questions *Q18-Q19*)

UC Davis Total On- and Off-Campus Headcount Population		
Annual Averages[1]		
		Projected
	2015-16	**2016-17**
Total On- and Off-campus Population	**58,814**	**60,112**
On-campus Population	44,844	46,040
Off-campus Population[2]	13,970	14,072
		Actual
Student Population	**2015-16**	**2016-17**
Total Student Population	**34,535**	**35,777**
On-campus	32,663	33,825
Off-campus[2]	1,872	1,952
On-campus		
Freshmen	3,988	4,320
Sophmore	4,816	5,026
Junior	7,395	7,768
Senior	10,668	10,782
Graduate & Other Prgms (Masters, Professional, Post Ba	2,302	2,264
Doctoral	3,236	3,302
Self-Supporting[3]	258	363
Total on-campus	**32,663**	**33,825**
Off-campus		
Undergraduate	129	140
Graduate & Other Prgms (Masters, Professional, Post Ba	1,370	1,475
Doctoral	30	30
Self-Supporting[3]	343	307
Total off-campus	**1,872**	**1,952**

Faculty & Staff Population (excludes student employees)	2015-16	Projected 2016-17
Total Faculty & Staff Population[4]	**24,279**	**24,335**
On-campus		
Faculty	1,638	1,645
Staff	9,023	9,040
Affiliated (Agriculture & Natural Resources)	865	870
Without Salary Employees	655	660
Total on-campus	**12,181**	**12,215**
Off-campus		
Faculty	792	800
Staff	10,086	10,100
Affiliated (Agriculture & Natural Resources)	148	150
Without Salary Employees	1,072	1,070
Total off-campus	**12,098**	**12,120**
**Totals may be affected by rounding		

NOTES

1 Annual averages for students represent fall, winter, spring quarter averages
(or semester averages for the School of Law and the School of Veterinary Medicine).
Annual averages for faculty and staff
represent averages of October and April (Oct. and Feb. for 2014-15) snapshot figures for each year.

2 Includes students, faculty and staff at UCDMC, Bodega Bay, Lawrence Livermore Laboratory and other locations outside the City of Davis.

3 Self-supporting programs include such programs as the Working Professional MBA, Forensic Science and Master of Advanced Study. These programs are not state-supported, although several professional programs charge special fees.

4 As of 2011-12, the data source for faculty and staff population data changed from the Campus Payroll Personnel Data Warehouse (PPS) to the Corporate Personnel System (CPS). Along with this data change, slight modifications to the methodology were made. Most notably, employee location is now determined by home department except in the case of some without salary (WOS) employees who have health science related jobs. Also, only 10 percent of the emeriti faculty were included in the WOS headcount for the campus.