Results of the 2013-2014 Campus Travel Survey

September 2014

A Research Report from the National Center for Sustainable Transportation

Natalie Popovich, University of California, Davis

National Center for Sustainable Transportation

ITS UCDAVIS INSTITUTE OF TRANSPORTATION STUDIES

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Disclaimer

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NCST

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Results of the 2013-14 Campus Travel Survey

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RESULTS OF THE 2013-14 CAMPUS TRAVEL SURVEY

Institute of Transportation Studies

and

Transportation and Parking Services

University of California, Davis

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EXECUTIVE SUMMARY

About the Campus Travel Survey

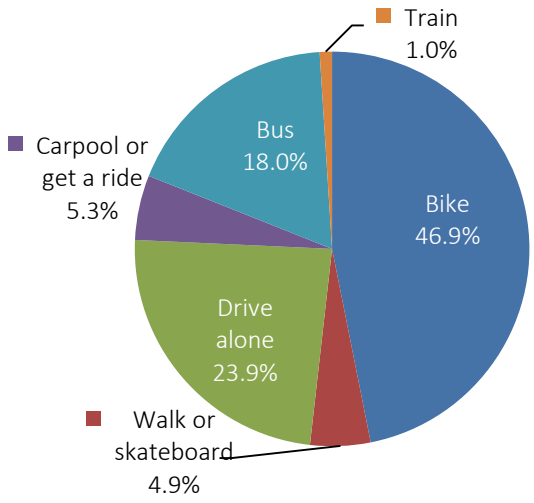
The UC Davis Campus Travel Survey is a joint effort by the Transportation & Parking Services (TAPS) and the Sustainable Transportation Center, part of the Institute of Transportation Studies at UC Davis. Since 2007 the survey has been administered each fall by a graduate student at the Institute of Transportation 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 six 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 seventh administration of the campus travel survey.

The 2013-14 survey was administered online in October 2013, distributed by email to a stratified random sample of 27,798 students, faculty, and staff (out of an estimated total population of 42,115). About 14.5 percent (4,025 individuals) of those contacted responded to this year's survey, with 13.2 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.

Main findings

Overall mode share

Figure 1. Overall mode share, 2013-14



On an average weekday, about 88.3 percent of people physically travel to campus (approximately 37,173 people, including those living on campus). Among these, 47 percent bike to get there, 5 percent walk or skate, 24 percent drive alone, 5 percent carpool or get a ride, 18 percent ride the bus, and 1 percent ride the train. 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.

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 56 percent reported biking as their primary means at least once during the week. Similarly, about 12 percent carpooled or got a ride to campus, 26 percent rode the bus, and almost 2 percent rode the train at least once during the week for most of the distance to campus.

Change in mode share, 2012-13 to 2013-14

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 2012-13 survey. In addition, the results of each year are weighted by role and gender to correct for differences in response rates between subsets of the population over time. Notably, the overall share biking to campus increased by 2.9 percentage points over the last year, while the share riding the bus to campus decreased by 2.4 percentage points. Changes in bus use, biking, and driving alone are statistically significant, while changes in walking and train use are not. The share of the university population physically traveling to campus on an average weekday also increased significantly.

Table 1. One year change in overall mode share, 2012-13 to 2013-14

Percentage-point change in share of people doing each on an average weekday								
Years of comparison	*Among those physically traveling to campus*							Physically traveling to campus
	Bike	Walk	Personal vehicle			Bus	Train	
			Any	Drive alone	Carpool or ride			
2012-13 to 2013-14	2.9% ***	-0.1%	-0.4% *	0.2% ***	-0.6%	-2.4% *	-0.1%	0.3% ***

Data are weighted for both years by role and gender.

* Statistically significant difference with $p < 0.1$ in a two-category $\chi 2$ test of the frequency of those using this mode versus those using any other mode in one year versus the other.

** Statistically significant at $p < 0.05$

*** Statistically significant at $p < 0.01$

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 318,175 pounds of CO_2e on an average weekday, or 7.6 pounds of CO_2e per capita, compared to 7.2 pounds in 2012-13 and 7.7 pounds in 2011-12 (Figure 2).

Figure 2. Daily CO2e emissions per capita, 2008-09 through 2013-14

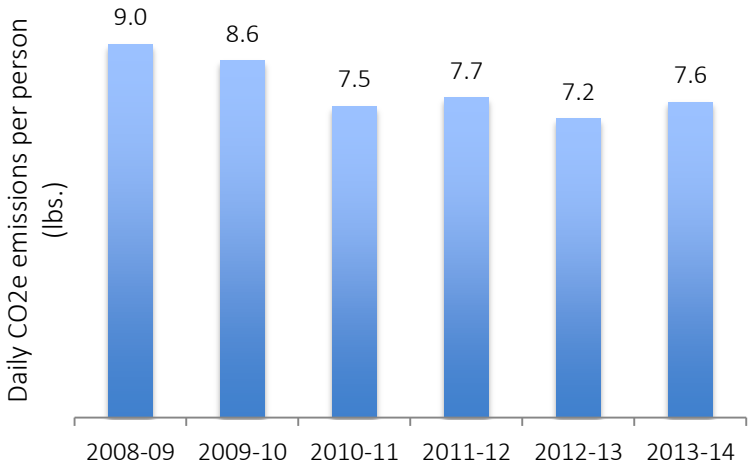
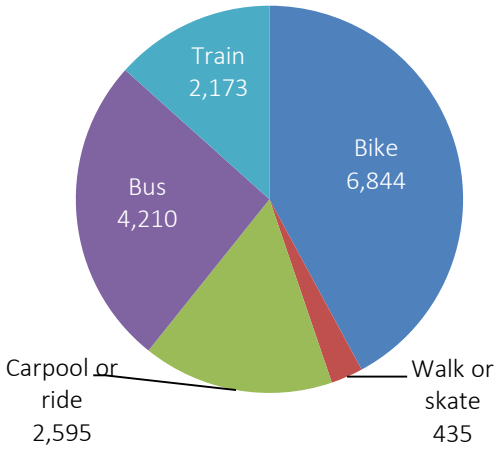


Figure 3. Annual CO2e emissions avoided



To assess the extent that alternative 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 travel). In this scenario, the campus would produce an additional 16,209 annual metric tons of CO_2e, compared to 38,146 tons overall. Figure 3 shows the contribution of each alternative, when compared to driving alone, to the total CO_2e 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 alternative modes of transportation. The official 2013-14 AVR for non-student employees living off-campus is 1.75 person-arrivals per vehicle-arrival (Table 2). The AVR for the entire campus community is 3.30 excluding on-campus residents and 3.80 including on-campus residents. This means that for every car coming to campus, there are an estimated 3.80 people coming to campus or telecommuting.

Table 2. Average vehicle ridership (AVR) 2007-08 through 2013-14

Off-campus only							
	2007-08	*2008-09*	*2009-10*	*2010-11*	*2011-12*	*2012-13*	*2013-14*
Students	1.67	4.76	4.28	4.49	5.29	6.05	5.59
Employees	**1.67**	**1.69**	**1.66**	**1.75**	**1.78**	**1.70**	**1.75**
Outside Davis	1.33	1.32	1.26	1.34	1.39	1.34	1.30
Within Davis	4.60	5.17	4.99	4.99	5.98	6.24	6.53
Overall	2.75	2.99	2.83	3.00	3.26	3.34	3.30
All (on and off-campus)							
Students	5.04	5.91	5.25	5.53	6.41	7.25	6.75
Employees	1.67	1.71	1.66	1.75	1.80	1.70	1.75
Outside Davis	1.33	1.33	1.26	1.34	1.39	1.34	1.30
Within Davis	5.61	6.32	5.99	6.04	7.14	7.36	7.74
Overall	3.20	3.51	3.30	3.51	3.78	3.82	3.80

Bold indicates the official AVR statistic reported by UC campuses. See Appendix D for details on AVR calculations.

Figure 4. Average vehicle ridership, 2007-08 through 2013-14

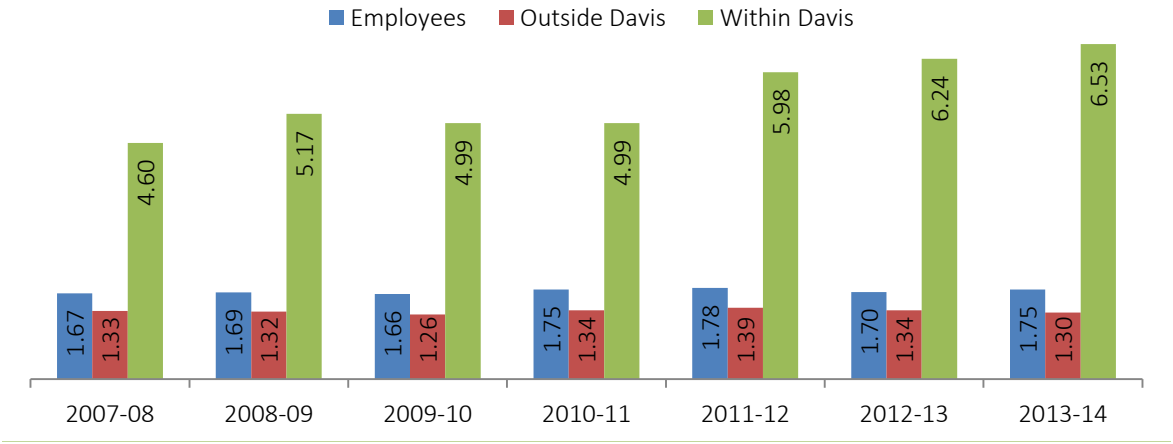
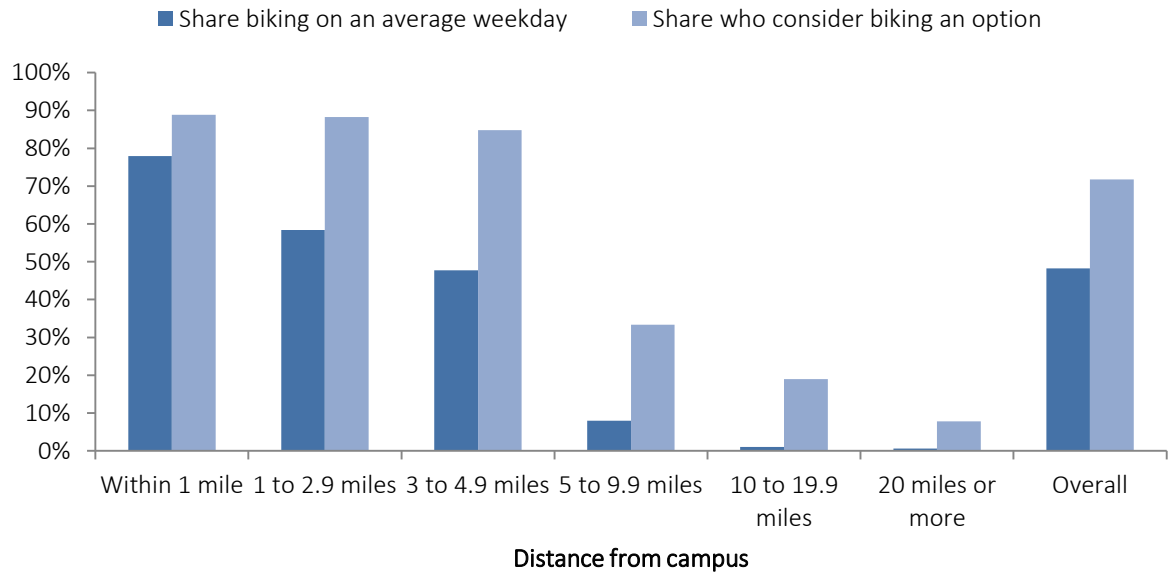


Figure 4 shows the differences in AVR between all employees, employees and students living within Davis, and employees and students living outside Davis. As shown, the 2013-14 AVR of those living in Davis is somewhat higher than in previous years, while the AVR of those living outside Davis has remained relatively constant over time, decreasing slightly this year. 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.

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 an option and the share that actually bikes to campus on an average weekday.

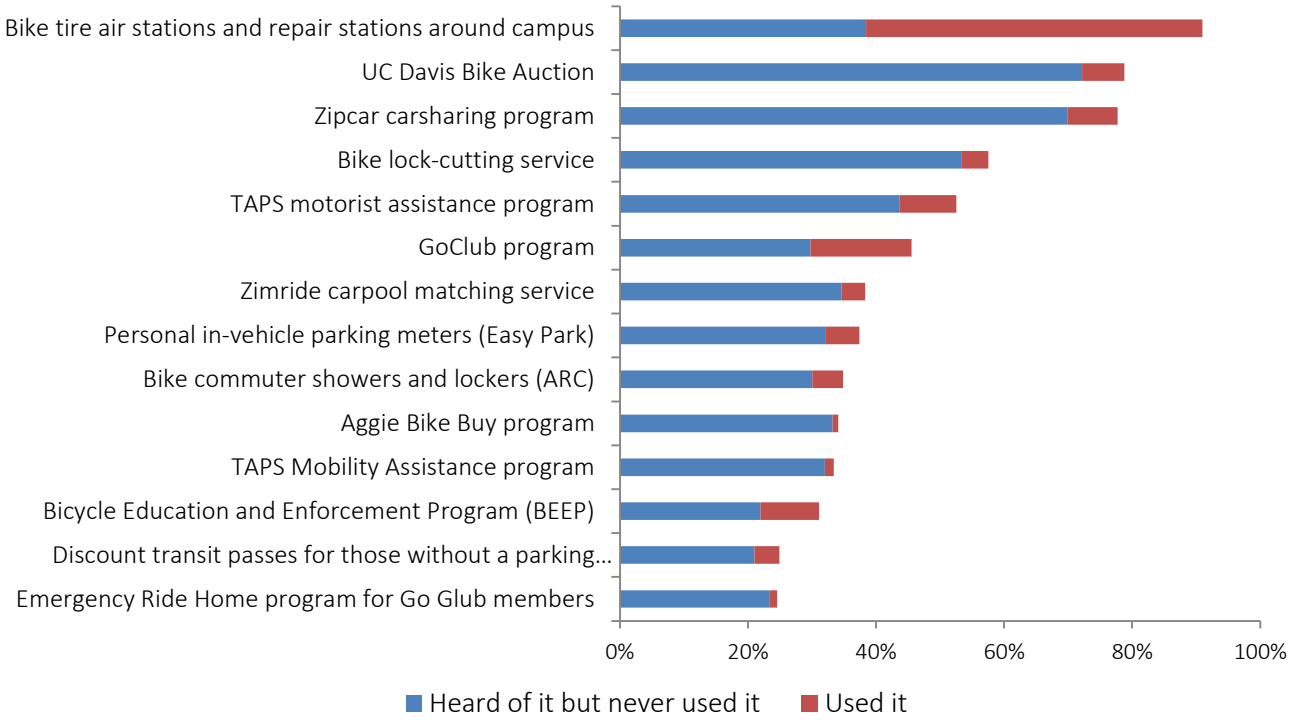
Figure 5. Share who bikes to campus compared to share who considers biking an option, by distance from campus



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 (CO2e) 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 Sustainable Transportation Center, 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 six 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 seventh 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 five 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), and 2012-13 (Driller, 2013). The next administration of the survey is planned for October 2014.

The 2013-14 survey was administered online in October 2013, distributed by email to a stratified random sample of 27,798 students, faculty, and staff (out of an estimated total population of 42,115). About 14.5 percent (4,025 individuals) responded to this year's survey, with about 13.2 percent (3,663) actually completing it. For the statistics we present 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 for a full copy of the 2013-14 survey instrument. See Appendix B for a summary of changes in the 2013-14 survey compared to

the 2012-13 survey.) The online survey was prepared using the Lime Survey software (http://www.limesurvey.org/), hosted using the server virtualization service offered by the office of Information Educational Technology (IET), and administered by Ning Wan and Jeremy Dalbeck. 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 reduced the share of the population sampled to 66 percent (27,798 people), 1,040 fewer than were invited in 2012-13. (See Appendix G for more information on this year's sampling plan.)

A stratified random sample of 27,798 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 Student Affairs Research and Information office (SARI). 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 SARI 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 Data Administration staff using the Campus Data Warehouse. 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. Data Administration staff compiled two separate Excel spreadsheets, one for faculty and one for staff. Since there were more email addresses in each spreadsheet than needed according to the sampling plan, the following procedure was used to draw a random sample from each spreadsheet: since each row contained the email address for one employee, a column was added to each row with a randomly generated number between 1 and 1,000,000. Rows were then sorted by this column of random numbers, and the top 2,299 rows of faculty and 2,210 rows of staff were selected for the respective samples.

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. See Appendix C for copies of these recruitment emails.

As we did for last year's survey, we utilized the server virtualization service offered by Information Educational Technology (IET) at UC Davis, which allows extra computing power to be added if loading time problems arise. In addition to hosting the server computing, IET performed load testing prior to the survey launch under various system configurations until the server demonstrated a capacity to handle the anticipated responses without page loading delays. The 2013-14 survey was administered with no technical difficulties. On Monday, October 28th, nine half-hourly batches were sent out to between 1,963 and 4,301 email addresses until all 27,798 respondents were invited. Reminder invitations were sent out the following Monday, November 4th.

Offering a chance to win a desirable prize is thought to increase overall response to a survey. This year, TAPS allocated $1000 for incentives in the form of 50 gift cards to participate in the survey, which is twice the budget allocated for incentives in the 2012-13 survey. These cards are accepted at more than 200 businesses located in Davis and are expected to appeal to all demographics and roles in the UC Davis community. 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 for a $20 Downtown Davis gift card, or if instead they preferred not to be contacted. There were 2,620 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 50 with the lowest values as the winners, who were notified via email on December 5th, 2013 and instructed to pick up their gift cards at the TAPS office.

Response rate

A total of 4,025 respondents at least started the survey (responding to question *Q01*), representing14.5 percent of those invited. This rate is slightly lower than last year's survey's response rate (15.2 percent). Of those who began the survey, 91.0 percent (3,663 respondents) completed the survey through question *Q27*, 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 six 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. This year, the invitations to take the campus travel survey mentioned 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 2013-14 versus 2007-08 through 2012-13

Role group	2013-14					2012-13	2011-12	2010-11	2009-10	2008-09	2007-08
	Assumed population	Number invited	Actual responses	Target response rate	Actual Response Rate[a]						
Students	30,228	23,289	2,671	9.0%	**11.5%**	13%	12%	18%	25%	22%	23%
Undergraduate	24,671	19,200	2,065	7.5%	**10.8%**	12%	11%	17%	24%	20%	22%
Freshmen	3,916	3,431	368	10.2%	**10.7%**	15%	13%	23%	30%	22%	26%
Sophomores	4,304	4,304	524	7.9%	**12.2%**	13%	12%	16%	26%	21%	22%
Juniors	6,631	3,914	521	9.3%	**13.3%**	14%	13%	18%	22%	22%	21%
Seniors	9,820	7,551	652	4.9%	**8.6%**	10%	9%	12%	19%	17%	20%
Graduate	5,557	4,089	606	16.4%	**14.8%**	16%	16%	22%	28%	27%	24%
Masters	1,963	1,967	268	16.2%	**13.6%**	11%	11%	16%	19%	18%	19%
PhD	3,594	2,122	338	16.4%	**15.9%**	21%	23%	34%	40%	35%	28%
Employees	11,887	4,509	992	15.6%	**22.0%**	18%	19%	29%	34%	35%	45%
Faculty	2,591	2,299	320	10.8%	**13.9%**	16%	16%	22%	27%	30%	37%
Staff	9,296	2,210	672	16.7%	**30.4%**	22%	24%	37%	42%	39%	50%
Overall percent	100%	66%	13.2%	10.11%	**13.2%**	14%	13%	20%	27%	26%	28%
Overall number	**42,115**	27,798	3,663	2,811		3,982	3,116	3,084	3,569	3,577	3,849

*4,025 people began the survey, but these response rates reflect only those respondents who reported valid mode and gender (3,663)

[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 and PhD students and faculty did not meet the target response rates 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 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 CO_2 emissions, VMT)
Students	30,228	23,289	2,107	2,957	2,671	2,537
Undergraduate	24,671	19,200	1,437	2,261	2,065	1,958
Freshmen	3,916	3,431	350	432	368	365
Sophomores	4,304	4,304	353	568	524	494
Juniors	6,631	3,914	364	550	521	489
Seniors	9,820	7,551	370	711	652	610
Graduate	5,557	4,089	670	696	606	579
Masters	1,963	1,967	322	320	268	253
PhD	3,594	2,122	348	376	338	326
Employees	11,887	4,509	704	1,068	992	933
Faculty	2,591	2,299	335	339	320	301
Staff	9,296	2,210	369	729	672	632
Overall percent	100%	66%	10.1%	14.5%	13.2%	12.5%
Overall number	42,115	27,798	2,811	4,025	3,663	3,470

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.

We first excluded 23 duplicate cases that had identical email addresses, leaving 4,032 initial respondents. From the responses to *Q01*, we screened seven respondents who failed to provide a valid role group (who were then skipped to the end of the survey - see Appendix A). 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 thought this was a potential issue for employees and graduate students, but not undergraduate students. Thus we screened graduate student and employee office locations in question *Q07* ("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 68 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 68 respondents were redirected to the end of the survey (see Appendix A) and are excluded from the analysis.

In addition, we excluded 62 cases that indicated traveling to campus but failed to provide answers to questions about primary mode used during the reference week, and an additional 47 cases that did not answer whether they traveled to campus during the reference week. Lastly, 12 respondents who were away all week indicated in *Q23* 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. As in previous surveys, the sample is disproportionately comprised of women. In particular, men comprise 28.3 percent of the sample versus 45 percent of the population of undergraduate students, and 37.6 percent of respondents versus 49.5 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 women in each role group in the population.

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 3,663 valid responses to question *Q27*, 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 3,470 cases successfully geocoded (by cross-streets and zip code given in questions *Q17* and *Q18* or contact information provided at the end of the survey; see Appendix E) and with non-

[1] Figures for the composition of the campus population by gender are drawn from Table 1b "Enrollment by Campus, Level, and Gender: General Campus" and Table 11b "Personnel Headcount by Ethnicity, Personnel Program, and Gender: Davis" from *The University of California Statistical Summary and Students and Staff, Fall 2012.* Faculty composition is draw from the Fall 2012 UC Davis Profile "Instructional Faculty" available on the *UC Davis Facts* website, online at http://legacy-its.ucop.edu/uwnews/stat/statsum/fall2012/statsumm2012.pdf. These population counts include medical (non-Davis campus) affiliates who are excluded from the survey sample. In addition, the employee count includes employed students, who are not included as employees in the survey sample.

missing mode data from question *Q27*. (See Appendix G for more information on weighting and a list of weight factors by role and gender.)

Table 5. Unweighted gender distribution of respondents

Gender (unweighted)	Undergraduate	Graduate	Faculty	Staff
Male	28.3%	37.6%	56.3%	34.8%
Female	71.7%	62.4%	43.8%	65.2%
Unweighted sample	2,065	606	320	672
Projected population	24,671	5,557	2,591	9,296

Table 6. Weighted gender distribution of respondents

Gender (weighted)	Undergraduate	Graduate	Faculty	Staff
Male	55.1%	49.5%	65.0%	40.9%
Female	44.9%	50.5%	35.0%	59.1%
Weighted sample	2,146	483	225	809
Projected population	24,671	5,557	2,591	9,296

Tables 5 and 6 show the difference in gender distribution between the unweighted and weighted results. As described in last year's report, we find 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. This was the first year that we asked about weekend travel, so our reference week encompasses seven days rather than five, as in past surveys.[2] This year's first reference week was October 21-27, 2013 (Monday-Sunday). We sent initial invitations on Monday, October 28th and reminder emails the following Monday, November 4th. The overall timeline of the survey launch and reference week is shown in Figure 7.

[2] Refer to Popovich, 2014a for weekend travel report.

Figure 7. Survey launch and reference week schedule, October- November, 2013

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Oct 21 *1st reference week*	22	23	24	25	26	27
28 Initial invitations sent *2nd reference week*	29	30	31 Halloween	Nov 1	2	3
4 Reminder invitations sent	5	6	7	8	9	10

Table 7 displays weather during the two reference weeks. This year, both reference weeks were notably cooler than in past years. Not only was this one of the driest years in history, but there were significant wind gusts on multiple days, reaching a high of 46 mph. The Halloween holiday fell on the Thursday during which initial invitations were sent, though it is unclear whether this coincidence had an effect on response rates.

Table 7. Weather during reference weeks

Day	Temperature ranges, mean (max) wind speed, and precipitation levels			
	Week 1: October 21-27, 2012		*Week 2: October 28 - November 3, 2012*	
Monday	43 – 84 ºF	3.2 (7) mph	41 – 68 ºF	9.2 (36) mph
Tuesday	43 – 85 ºF	4.1 (6) mph	41 – 67 ºF	5.8 (12) mph
Wednesday	44 – 85 ºF	2.3 (6) mph	38 – 68 ºF	2.3 (7) mph
Thursday	43 – 85 ºF	7.1 (8) mph	38 – 71 ºF	2.1 (4) mph
Friday	39 – 78 ºF	4.3 (9) mph	39 – 76 ºF	1.2 (5) mph
Saturday	39 – 80 ºF	2.3 (7) mph	37 – 76 ºF	3.3 (8) mph
Sunday	41 – 80 ºF	9.6 (46) mph	37–75 ºF	17.7 (38) mph

Weather data are for Sacramento, as reported in the *Farmer's Almanac*, available online by city and date at http://www.almanac.com/weatherhistory.

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 46.9 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 45.4 and 48.4 percent. Graduate students and faculty have the highest margins or error due to low response rates.

Table 8. Margins of error, by role group

Role group	Population	Sample Size	Margin of Error
Students	30,228	2,671	1.8%
Undergraduate	24,671	2,065	2.1%
Freshmen	3,916	368	4.9%
Sophomores	4,304	524	4.0%
Juniors	6,631	521	4.1%
Seniors	9,820	652	3.7%
Graduate	5,557	606	3.8%
Masters	1,963	268	5.6%
PhD	3,594	338	5.1%
Employees	11,887	992	3.0%
Faculty	2,591	320	5.1%
Staff	9,296	672	3.6%
Overall number	42,115	3,663	1.5%

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 90 percent of university affiliates physically traveled to campus on each day Monday through Thursday, with a low of 83 percent traveling to campus on Friday. Faculty travel to campus least often, while freshmen travel to campus most often.

Table 9. Share physically traveling to campus by weekday

Role	*Share physically traveling to campus by weekday*						Weighted sample	Projected population
	Monday	Tuesday	Wednesday	Thursday	Friday	No Days		
Student	93.1%	94.2%	93.9%	93.8%	86.2%	1.4%	2,629	30,228
Undergraduate	94.2%	95.5%	94.7%	95.3%	88.0%	1.3%	2,146	24,671
Freshman	96.5%	96.3%	96.8%	94.6%	92.9%	0.0%	341	3,916
Sophomore	95.6%	96.3%	96.2%	95.6%	93.9%	1.5%	374	4,304
Junior	93.9%	94.3%	94.3%	94.5%	87.3%	1.4%	577	6,631
Senior	92.9%	95.5%	93.5%	96.0%	83.8%	1.6%	854	9,820
Graduate	88.1%	88.4%	90.0%	87.0%	78.1%	2.0%	483	5,557
Masters	90.5%	89.1%	91.3%	88.3%	74.1%	2.0%	171	1,963
PhD	86.8%	88.0%	89.3%	86.2%	80.3%	2.0%	312	3,594
Employee	84.2%	86.7%	86.5%	85.2%	78.9%	4.3%	1,034	11,887
Faculty	80.6%	81.7%	85.2%	80.3%	73.8%	4.8%	225	2,591
Staff	85.2%	88.1%	86.9%	86.6%	80.4%	4.1%	809	9,296
Lives in Davis	93.4%	94.5%	94.4%	93.7%	87.4%	1.7%	2,867	32,498
Outside Davis	81.2%	83.9%	83.0%	83.3%	73.0%	4.1%	796	9,617
Overall	90.6%	92.1%	91.8%	91.3%	84.1%	2.2%	-	-
Weighted sample	3,319	3,374	3,363	3,344	3,081	81	3,663	-
Projected population	38,156	38,788	38,662	38,451	35,419	927	-	42,115

Results are based on responses to questions *Q19* and *Q21*. Data are weighted by role and gender based on the 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

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. Overall, those living in Davis travel to campus more often than those living outside Davis (92 percent versus 80 percent on Monday). Approximately four percent of those living outside Davis did not travel to campus at all during the reference week, compared to 1.7 percent of those living in Davis. Graduate students and faculty living outside of Davis are least likely to travel to campus, with only about 70 percent and 66 percent, respectively, traveling to campus on an average weekday day (Table 10). By contrast, 88 percent of graduate students and 87 percent of faculty 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	91.6%	87.0%	86.9%	90.6%	78.2%	2,630	30,228
Undergraduate	92.8%	86.2%	87.6%	91.3%	82.3%	2,146	24,671
Freshman	95.9%	84.2%	79.9%	96.8%	86.7%	341	3,916
Sophomore	93.6%	96.8%	87.9%	91.4%	91.8%	374	4,304
Junior	92.1%	94.8%	87.8%	91.5%	86.7%	577	6,631
Senior	91.8%	82.6%	87.9%	90.9%	76.4%	854	9,820
Graduate	86.1%	95.7%	76.8%	87.9%	70.0%	483	5,557
Masters	86.7%	91.8%	75.1%	88.5%	68.7%	171	1,963
PhD	85.7%	96.9%	80.0%	87.6%	70.7%	312	3,594
Employee	83.8%	54.9%	69.3%	87.4%	78.6%	1,034	11,887
Faculty	80.0%	n/a	60.0%	86.6%	65.6%	225	2,591
Staff	84.9%	54.9%	80.0%	87.7%	80.7%	809	9,296
Overall	89.4%	86.8%	86.5%	89.9%	78.5%	3,663	42,115
Weighted Sample	3,663	478	143	2,205	837	-	-
Projected Population	42,115	5,499	1,641	25,355	9,620	-	42,115

Results are based on responses to question *Q20* (days traveling to campus) and *Q15* (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 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62). Only three employees and nine graduate students indicated living in West Village.

About 1.8 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). 3.4 percent of employees were away all week (Table 11). 9.5 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 work related travel.

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
		Study abroad or sabbatical	Vacation, sickness, or personal leave	Work or school-related travel or field work	Telecommuting (working from home or remotely)	Temporary appointment elsewhere	Office not on main-campus		
Student	1.1%	41.5%	27.7%	24.2%	6.9%	3.5%	0.0%	29	333
Undergraduate	1.0%	55.9%	23.3%	23.3%	0.0%	0.0%	0.0%	21	247
Freshman	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Sophomore	0.8%	33.4%	0.0%	66.8%	0.0%	0.0%	0.0%	3	34
Junior	1.2%	57.8%	28.9%	14.4%	0.0%	0.0%	0.0%	7	80
Senior	1.3%	54.0%	27.0%	18.0%	0.0%	0.0%	0.0%	11	128
Graduate	1.9%	0.0%	43.6%	32.7%	21.8%	10.9%	0.0%	9	106
Masters	1.7%	0.0%	0.0%	34.4%	34.4%	0.0%	0.0%	3	33
PhD	2.0%	0.0%	48.1%	32.1%	16.0%	16.0%	0.0%	6	72
Employee	3.4%	5.7%	42.7%	37.0%	2.8%	0.0%	11.4%	35	404
Faculty	3.4%	26.1%	39.2%	39.2%	13.1%	0.0%	0.0%	8	88
Staff	3.4%	0.0%	47.3%	36.4%	0.0%	0.0%	14.5%	28	316
Overall	1.8%	21.2%	34.9%	31.9%	3.0%	1.5%	6.1%	66	758
Weighted Sample	66	14	23	21	2	1	4	-	-
Projected Population	758	161	264	241	23	11	46	-	758

Results are based on responses to question *Q21*. Data are weighted by role and gender based on the 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

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, reason given*						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		
Faculty	15.5%	56.3%	17.2%	4.6%	8.0%	2.9%	10.9%	225	2,591
Staff	7.8%	17.7%	22.2%	20.3%	29.1%	2.5%	8.2%	809	9,296
All Employees	9.5%	31.8%	20.0%	14.7%	21.6%	2.6%	9.4%	1,034	11,887
Weighted sample	98	31	20	14	21	3	9	-	-
Projected population	1,129	359	225	166	244	30	106	-	-

Results are based on responses to question *Q22* for individual days absent and on responses to *Q21* for those absent all week; reasons given in *Q21* are assumed to apply to all five weekdays. Data are weighted by role and gender based on the 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

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, 81.3 percent reported locations in the central campus area (an estimated 14,183 people), including 85.3 percent of graduate students, 92.7 percent of faculty, and 75.7 percent of staff (Table 13). A total of 7.5 percent of respondents reported office locations in west campus, 4.1 percent in south campus, and 7.2 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 area (south of I-80)	Off-campus but in Davis	Weighted Sample	Projected Population
Graduate	85.3%	8.4%	3.3%	2.9%	490	5,557
Masters	79.9%	12.9%	6.1%	1.1%	173	1,963
PhD	88.3%	6.0%	1.7%	3.9%	317	3,594
Employee	79.4%	7.0%	4.5%	9.1%	1,047	11,887
Faculty	92.7%	3.6%	2.4%	1.2%	228	2,591
Staff	75.7%	7.9%	5.0%	11.3%	819	9,296
Overall	81.3%	7.5%	4.1%	7.2%	1,537	17,444
Weighted Sample	1,249	115	64	111	1,539	-
Projected Population	14,183	1,300	712	1,249	-	17,444

Results are based on responses to question *Q07*. Data are weighted by role and gender based on the 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

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 the on campus area, the West Village apartments, off-campus elsewhere in Davis, and outside of Davis (*Q15*). The results suggest that 13.1 percent live on campus (an estimated 5,499 people), 3.9 percent live in the West Village apartments (1,641 people), 60.2 percent live elsewhere in Davis (25,355 people), and 22.8 percent live outside of Davis (9,620 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	18.1%	5.3%	65.8%	10.8%	2,629	30,228
Undergraduate	20.1%	6.1%	65.0%	8.8%	2,146	24,671
Freshman	87.9%	0.9%	4.1%	7.1%	341	3,916
Sophomore	7.5%	8.9%	79.4%	4.3%	374	4,304
Junior	10.3%	6.6%	72.3%	10.7%	577	6,631
Senior	5.2%	6.6%	78.0%	10.2%	854	9,820
Graduate	9.2%	1.8%	69.4%	19.6%	483	5,557
Masters	5.8%	3.4%	72.7%	18.1%	171	1,963
PhD	11.0%	1.0%	67.6%	20.4%	312	3,594
Employee	0.2%	0.3%	46.0%	53.5%	1,034	11,887
Faculty	0.0%	0.7%	65.9%	33.3%	225	2,591
Staff	0.3%	0.2%	40.4%	59.1%	809	9,296
Overall	13.1%	3.9%	60.2%	22.8%	3,663	42,115
Weighted Sample	478	143	2,205	837	3,663	-
Projected Population	5,499	1,641	25,355	9,620	-	42,115

Results are based on responses to question *Q15*. Data are weighted by role and gender based on the 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

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)" (*Q27*). 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, 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 36 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.

Tables 15 through 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, 46.9 percent bike (an estimated 19,734 people), 29.2 percent arrive by car (12,291 people), and 19 percent ride public transit (8,023 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 traveling	*Of those physically traveling to campus*						Weighted sample	Projected population
		Bike	Walk or skate	Drive alone	Carpool or ride	Bus	Train		
Student	91.6%	54.0%	5.8%	12.9%	3.3%	23.3%	0.7%	2,629	30,228
Undergraduate	92.8%	53.2%	5.9%	11.0%	2.6%	26.9%	0.3%	2,146	24,671
Freshman	95.9%	77.2%	11.2%	5.6%	1.5%	4.2%	0.2%	341	3,916
Sophomore	93.6%	51.0%	2.7%	7.0%	2.4%	37.0%	0.0%	374	4,304
Junior	92.1%	48.7%	4.2%	12.3%	2.4%	32.0%	0.3%	577	6,631
Senior	91.8%	47.2%	6.4%	14.2%	3.4%	28.3%	0.6%	854	9,820
Graduate	86.1%	57.5%	5.1%	22.0%	6.6%	6.2%	2.5%	483	5,557
Masters	86.7%	52.3%	2.2%	29.4%	9.3%	5.4%	1.5%	171	1,963
PhD	85.7%	60.5%	6.7%	18.0%	5.2%	6.6%	3.0%	312	3,594
Employee	83.8%	27.1%	2.5%	54.4%	10.8%	3.5%	1.8%	1,034	11,887
Faculty	80.0%	48.7%	5.4%	32.8%	7.7%	1.6%	4.0%	225	2,591
Staff	84.9%	21.4%	1.8%	60.0%	11.6%	4.0%	1.2%	809	9,296
Overall	89.4%	46.9%	4.9%	23.9%	5.3%	18.0%	1.0%	3,663	42,115
Weighted sample	3,275	1,716	180	875	194	661	37	2,371	-
Projected population	37,651	19,734	2,073	10,058	2,233	7,599	424	-	42,115

Results are based on responses to question *Q20* (whether they traveled to campus each day) and question *Q27* (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 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

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 (49 percent) and most likely to drive alone (36.6 percent) from within Davis, while freshmen are the least likely to do so (1.3 percent). The train is not a feasible means of traveling to campus from within Davis.

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.

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

Role	Physically traveling	*Of those physically traveling to campus*						Weighted sample	Projected population
		Bike	Walk or skate	Drive alone	Carpool or ride	Bus	Train		
Student	89.6%	59.4%	6.2%	6.9%	2.8%	24.7%	0.0%	2,435	27,987
Undergraduate	89.8%	57.7%	6.3%	5.5%	2.4%	28.1%	0.0%	2,042	23,478
Freshman	84.7%	82.0%	12.0%	1.3%	1.3%	3.3%	0.1%	361	4153
Sophomore	91.5%	53.3%	2.8%	4.2%	2.2%	37.5%	0.0%	366	4212
Junior	91.6%	54.2%	4.2%	4.8%	2.0%	34.8%	0.0%	521	5988
Senior	90.1%	51.7%	6.8%	8.3%	3.2%	29.9%	0.0%	794	9125
Graduate	88.6%	68.7%	5.8%	14.2%	5.1%	6.2%	0.0%	393	4,509
Masters	88.2%	61.3%	2.6%	22.9%	8.0%	5.2%	0.0%	143	1640
PhD	88.8%	72.9%	7.6%	9.3%	3.4%	6.8%	0.0%	250	2869
Employee	87.1%	53.9%	3.9%	32.1%	7.1%	3.0%	0.0%	488	5,603
Faculty	86.3%	65.1%	6.8%	21.7%	4.6%	1.7%	0.1%	152	1742
Staff	87.5%	49.0%	2.6%	36.6%	8.2%	3.6%	0.0%	336	3861
Overall	89.2%	58.5%	5.8%	11.0%	3.5%	21.1%	0.0%	2,923	33,590
Weighted sample	2,607	1,711	170	321	102	618	1	-	-
Projected population	29,956	19,665	1,959	3,684	1,175	7,100	11	-	-

Results are based on responses to questions *Q20* (daily travel) and *Q27* (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 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27*.

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

Role	Physically traveling	*Of those physically traveling to campus*						Weighted sample	Projected population
		Bike	Walk or skate	Drive alone	Carpool or ride	Bus	Train		
Student	87.0%	80.9%	12.7%	1.2%	1.1%	4.0%	0.0%	476	5,470
Undergraduate	86.2%	81.6%	12.2%	0.9%	0.8%	4.4%	0.0%	431	4,960
Freshman	84.2%	83.8%	12.5%	1.0%	1.1%	1.5%	0.0%	299	3,442
Sophomore	96.8%	83.6%	6.2%	0.0%	0.0%	10.2%	0.0%	28	322
Junior	94.8%	85.6%	5.8%	0.0%	0.0%	8.6%	0.0%	60	686
Senior	82.6%	61.6%	22.5%	2.2%	0.0%	13.6%	0.0%	44	509
Graduate	95.7%	73.4%	18.3%	3.6%	4.7%	0.0%	0.0%	44	510
Masters	91.8%	70.4%	19.8%	0.0%	9.7%	0.0%	0.0%	10	114
PhD	96.9%	74.2%	17.9%	4.6%	3.3%	0.0%	0.0%	34	395
Employee	54.9%	99.9%	0.0%	0.0%	0.0%	0.0%	0.0%	3	29
Faculty	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Staff	54.9%	99.9%	0.0%	0.0%	0.0%	0.0%	0.0%	3	29
Overall	86.8%	80.9%	12.7%	1.2%	1.1%	3.9%	0.0%	478	5,499
Weighted sample	415	387	61	6	5	19	0	-	-
Projected population	4,773	4,451	699	65	63	217	0	-	-

Results are based on responses to questions *Q20* and *Q27*. 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 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27*. 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 specific mode share 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 traveling	*Of those physically traveling to campus*						Weighted sample	Projected population
		Bike	Walk or skate	Drive alone	Carpool or ride	Bus	Train		
Student	86.9%	47.0%	4.3%	7.1%	3.8%	37.9%	0.0%	140	1,606
Undergraduate	87.6%	46.0%	4.6%	5.8%	3.4%	40.2%	0.0%	131	1,505
Freshman	79.9%	80.0%	0.0%	0.0%	9.9%	10.1%	0.0%	3	34
Sophomore	87.9%	50.9%	7.5%	5.5%	0.8%	35.3%	0.0%	33	381
Junior	87.8%	45.2%	5.7%	4.6%	4.1%	40.4%	0.0%	38	437
Senior	87.9%	41.6%	2.4%	7.2%	4.0%	44.8%	0.0%	57	653
Graduate	76.8%	62.6%	0.0%	26.9%	10.5%	0.0%	0.0%	9	102
Masters	75.1%	42.4%	0.0%	41.5%	16.2%	0.0%	0.0%	6	66
PhD	80.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	3	36
Employee	69.3%	38.6%	0.0%	61.4%	0.0%	0.0%	0.0%	3	35
Faculty	60.0%	83.3%	0.0%	16.7%	0.0%	0.0%	0.0%	2	19
Staff	80.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	1	16
Overall	86.5%	46.8%	4.2%	8.0%	3.7%	37.2%	0.0%	143	1,641
Weighted sample	124	58	5	10	5	46	0	-	-
Projected population	1,419	665	60	114	53	529	0	-	-

Results are based on responses to question *Q20* (whether they traveled to campus each day) and question *Q27* (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 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

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 (34.8 percent), whereas graduate students and employees in Davis who do not bike are more likely to commute by car.

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). 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 East and South Davis, and taking the bus to campus is more common from North and South Davis.

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

Role	Physically traveling	*Of those physically traveling to campus*						Weighted sample	Projected population
		Bike	Walk or skate	Drive alone	Carpool or ride	Bus	Train		
Student	90.6%	54.2%	4.4%	8.5%	3.2%	29.7%	0.0%	1,730	19,889
Undergraduate	91.3%	50.9%	4.5%	6.9%	2.8%	34.8%	0.0%	1,394	16,033
Freshman	96.8%	45.7%	4.3%	7.6%	2.2%	40.2%	0.0%	14	161
Sophomore	91.4%	50.5%	2.0%	4.4%	2.5%	40.5%	0.0%	297	3,417
Junior	91.5%	50.1%	3.8%	5.5%	2.2%	38.3%	0.0%	417	4,796
Senior	90.9%	51.8%	6.1%	8.9%	3.4%	29.9%	0.0%	666	7,659
Graduate	87.9%	68.2%	4.1%	15.5%	5.0%	7.3%	0.0%	335	3,856
Masters	88.5%	61.3%	1.2%	24.1%	7.5%	5.9%	0.0%	124	1,427
PhD	87.6%	72.3%	5.9%	10.3%	3.4%	8.1%	0.0%	211	2,429
Employee	87.4%	53.8%	3.9%	32.0%	7.1%	3.1%	0.0%	475	5,466
Faculty	86.6%	64.9%	6.8%	21.8%	4.6%	1.7%	0.1%	149	1,708
Staff	87.7%	48.9%	2.6%	36.6%	8.2%	3.6%	0.0%	327	3,758
Overall	89.9%	54.1%	4.3%	13.4%	4.0%	24.1%	0.0%	2,205	25,355
Weighted sample	1,982	1,073	86	266	80	478	0	-	-
Projected population	22,794	12,333	989	3,058	920	5,497	5	-	-

Results are based on responses to question *Q20* (whether they traveled to campus each day) and question *Q27* (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 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

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

Neighborhood	Physically traveling	*Of those physically traveling to campus*						Weighted sample	Projected population
		Bike	Walk or skate	Drive alone	Carpool or ride	Bus	Train		
North Davis	92.4%	46.4%	2.1%	8.8%	3.1%	37.4%	0.0%	431	4,957
South Davis	89.3%	36.8%	1.0%	23.3%	4.6%	32.5%	0.0%	335	3,853
East Davis	91.5%	56.3%	2.0%	15.6%	7.4%	17.4%	0.0%	402	4,619
West Davis	92.0%	55.4%	2.0%	14.3%	3.7%	22.7%	0.0%	454	5,225
Central Davis	91.4%	67.7%	5.7%	6.8%	2.1%	17.0%	0.0%	353	4,054
Downtown Davis	93.3%	62.4%	20.8%	6.7%	2.2%	6.1%	0.0%	197	2,270
Overall	88.3%	27.5%	4.4%	20.2%	2.6%	34.5%	0.0%	2,172	24,978
Weighted sample	1,917	597	96	438	56	749	0	-	-
Projected population	22,048	6,865	1,101	5,043	640	8,608	0	-	-

Results are based on responses to question *Q20* (whether they traveled to campus each day) and question *Q77* (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 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

Table 21 shows the mode share for students and employees who live outside Davis (an estimated 9,620 people). Among those traveling from outside Davis, 86.4 percent commute by car, 6 percent ride the bus, and 4.8 percent ride the train.

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

Role	Physically traveling	*Of those physically traveling to campus*						Weighted sample	Total projected population
		Bike	Walk or skate	Drive alone	Carpool or ride	Bus	Train		
Student	78.2%	1.3%	1.8%	71.0%	8.3%	10.1%	7.4%	284	3,263
Undergraduate	82.3%	1.4%	2.0%	75.1%	5.5%	11.9%	4.1%	189	2,173
Freshman	86.7%	7.0%	0.0%	67.8%	4.9%	17.5%	2.8%	24	279
Sophomore	91.8%	0.7%	0.0%	68.6%	6.7%	23.9%	0.0%	16	184
Junior	86.7%	0.6%	4.3%	78.9%	5.9%	7.4%	2.9%	62	711
Senior	76.4%	0.6%	1.2%	75.8%	5.2%	11.0%	6.3%	87	999
Graduate	70.0%	1.0%	1.6%	61.5%	14.7%	6.1%	15.0%	95	1,089
Masters	68.7%	1.3%	0.0%	66.1%	16.6%	6.1%	9.9%	31	356
PhD	70.7%	0.8%	2.4%	59.3%	13.8%	6.1%	17.5%	64	734
Employee	78.6%	1.4%	1.2%	75.8%	14.3%	3.9%	3.5%	553	6,357
Faculty	65.6%	5.3%	1.8%	61.8%	15.7%	1.1%	14.3%	75	864
Staff	80.7%	0.9%	1.1%	77.4%	14.2%	4.2%	2.2%	478	5,493
Overall	78.5%	1.3%	1.4%	74.1%	12.3%	6.0%	4.8%	837	9,620
Weighted sample	657	9	9	487	81	39	32	-	-
Projected population	7,552	101	107	5,596	927	452	366	-	-

Results are based on responses to question *Q20* (whether they traveled to campus each day) and question *Q27* (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 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

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 other 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.[3]

[3] Only employees were asked question *Q22* (reasons for not traveling to campus on particular days of the week), and so only employees could indicate telecommuting on these days. Both employees and students were asked question *Q21* (reason for not traveling to campus the entire week), and could indicate working from home as the reason for being away all week. Thus student telecommuting is only measured if it was done the entire week, and therefore the percent of students working from home is a lower bound estimate.

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

Role	Physically traveling	*Of those physically traveling to campus at least once*							Weighted sample	Projected population
		Bike	Walk or skate	Drive alone	Carpool or ride	Bus	Train	Work at home		
Student	91.6%	54.0%	5.8%	12.9%	3.3%	23.3%	0.7%	0.5%	2,629	30,228
Undergraduate	92.8%	53.2%	5.9%	11.0%	2.6%	26.9%	0.3%	0.6%	2,146	24,671
Freshman	95.9%	77.2%	11.2%	5.6%	1.5%	4.2%	0.2%	0.0%	341	3,916
Sophomore	93.6%	51.0%	2.7%	7.0%	2.4%	37.0%	0.0%	0.3%	374	4,304
Junior	92.1%	48.7%	4.2%	12.3%	2.4%	32.0%	0.3%	0.8%	577	6,631
Senior	91.8%	47.2%	6.4%	14.2%	3.4%	28.3%	0.6%	0.8%	854	9,820
Graduate	86.1%	57.5%	5.1%	22.0%	6.6%	6.2%	2.5%	0.1%	483	5,557
Masters	86.7%	52.3%	2.2%	29.4%	9.3%	5.4%	1.5%	0.3%	171	1,963
PhD	85.7%	60.5%	6.7%	18.0%	5.2%	6.6%	3.0%	0.0%	312	3,594
Employee	83.8%	27.1%	2.5%	54.4%	10.8%	3.5%	1.8%	3.6%	1,034	11,887
Faculty	80.0%	48.7%	5.4%	32.8%	7.7%	1.6%	4.0%	10.9%	225	2,591
Staff	84.9%	21.4%	1.8%	60.0%	11.6%	4.0%	1.2%	1.7%	809	9,296
Overall	89.4%	46.9%	4.9%	23.9%	5.3%	18.0%	1.0%	1.3%	3,663	42,115
Weighted sample	3,275	1,534	161	782	174	591	33	43	2,371	-
Projected population	37,651	17,642	1,853	8,992	1,996	6,793	379	493	-	42,115

Results are based on responses to question *Q20* (whether they traveled to campus each day), question *Q27* (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 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

While Tables 15 through 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 46.9 percent of individuals bike to campus as their primary means of transportation on an average weekday (Table 15), 56.2 percent bike to campus as their primary means of transportation at least once during the week (Table 23). So while about 19,734 people bike as their primary means of travel on an average day, about 23,651 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 4,874 (versus 2,233) and 669 (versus 424) for carpooling and train-riding, respectively. In addition to those physically traveling to campus, Table 23 shows that the number of students and employees who work from home at least once during the seven-day week is about twice the number working from home on an average weekday (1,260 compared to 493). These findings indicate that a substantial number of students and employees work from home at least one day a week, while a much smaller number work from home more than a few days a week.

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

Role	Physically traveling	*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	91.6%	63.9%	10.2%	20.4%	9.1%	33.6%	1.1%	0.5%	2,629	30,228
Undergraduate	92.8%	62.9%	10.2%	17.2%	8.0%	38.2%	0.5%	0.6%	2,146	24,671
Freshman	95.9%	80.1%	11.9%	6.4%	4.0%	5.5%	0.3%	0.0%	341	3,916
Sophomore	93.6%	64.3%	5.7%	10.3%	7.1%	52.8%	0.0%	0.3%	374	4,304
Junior	92.1%	58.0%	8.8%	17.3%	7.0%	43.5%	0.6%	0.8%	577	6,631
Senior	91.8%	58.4%	12.5%	24.7%	10.6%	41.7%	0.9%	0.8%	854	9,820
Graduate	86.1%	69.0%	10.1%	35.8%	14.4%	11.3%	3.6%	0.0%	483	5,557
Masters	86.7%	63.4%	3.4%	45.9%	20.2%	10.1%	2.0%	0.0%	171	1,963
PhD	85.7%	72.2%	13.8%	29.9%	11.2%	12.0%	4.5%	0.0%	312	3,594
Employee	83.8%	34.5%	4.6%	72.6%	18.5%	5.8%	3.0%	9.9%	1,034	11,887
Faculty	80.0%	58.3%	10.0%	52.8%	16.1%	2.8%	7.2%	27.2%	225	2,591
Staff	84.9%	28.1%	3.3%	77.7%	19.1%	6.4%	1.9%	5.4%	809	9,296
Lives in Davis	90%	65.2%	9.6%	17.3%	8.9%	28.6%	0.1%	1.5%	3,106	32,143
Outside Davis	78.5%	2.4%	2.9%	96.6%	19.9%	9.0%	7.5%	8.5%	837	9,620
Overall	89.4%	56.2%	8.7%	34.2%	11.6%	26.2%	1.6%	3.0%	3,663	42,115
Weighted sample	3,275	2,057	319	1,253	424	960	58	110	-	-
Projected population	37,651	23,651	3,665	14,404	4,874	11,034	669	1,260	-	-

Results are based on responses to questions *Q20* (whether traveled to campus) and *Q27* (primary means of transportation each day). Data are weighted by role and gender based on the 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

Comparison of 2013-14 mode share with 2012-13

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.

Table 24 shows mode share estimates for 2012-13 and 2013-14, which are very similar across the two years. Data for both years are weighted by role and gender.

Table 24. Comparison of mode shares, 2012-13 to 2013-14

Role group	Physically traveling	*Of those physically traveling, share using each mode on an average weekday*							Weighted sample	Projected population
		Bike	Walk	Drive alone	Carpool or ride	Private vehicle	Bus	Train		
2013-14										
Students	91.6%	54.0%	5.8%	12.9%	3.3%	16.2%	23.3%	0.7%	2,629	30,228
Undergraduate	92.8%	53.2%	5.9%	11.0%	2.6%	13.6%	26.9%	0.3%	2,146	24,671
Graduate	86.1%	57.5%	5.1%	22.0%	6.6%	28.6%	6.2%	2.5%	483	5,557
Employees	83.8%	71.1%	2.5%	54.4%	10.8%	65.1%	3.5%	1.8%	1034	11,887
Outside Davis	78.5%	1.3%	1.4%	74.1%	12.3%	86.4%	6.0%	4.8%	837	9,620
Within Davis	89.2%	58.5%	5.8%	11.0%	3.5%	14.5%	21.1%	0%	2,923	32,495
Overall	88.3%	46.9%	4.9%	23.9%	5.3%	29.2%	18.0%	1.0%	3,663	42,115
2012-13										
Students	91%	51.5%	5.7%	11.8%	4.0%	15.8%	26.3%	0.8%	2,844	29,431
Undergraduate	92%	50.5%	6.0%	9.7%	3.1%	12.8%	30.4%	0.4%	2,304	23,843
Graduate	85%	56.6%	4.3%	21.3%	7.8%	29.1%	7.5%	2.6%	540	5,588
Employees	82%	23.3%	3.0%	56.4%	11.3%	67.7%	4.1%	1.9%	1,138	11,783
Outside Davis	81%	1.7%	1.9%	71.5%	13.9%	85.4%	6.2%	4.9%	876	9,071
Within Davis	90%	54.7%	5.7%	11.7%	3.9%	15.6%	24.0%	0.1%	3,106	32,143
Overall	88%	44.0%	5.0%	23.7%	5.9%	29.6%	20.4%	1.1%	3,982	41,214

Data are weighted for both years by role and gender.

Table 25 shows percentage-point changes in the overall mode share and the results of tests for statistically significant changes over this one-year period. In this section, "private vehicle" includes those driving alone, carpooling, or getting a ride to campus.

Table 25. One year change in overall mode share, 2012-13 to 2013-14

Percentage-point change in share of people doing each on an average weekday								
Years of comparison	*Among those physically traveling to campus*							Physically traveling to campus
	Bike	Walk	Personal vehicle			Bus	Train	
			Any	Drive alone	Carpool or ride			
2012-13 to 2013-14	2.9% ***	-0.1%	-0.4% *	0.2% ***	-0.6%	-2.4% *	-0.1%	0.3% ***

Data are weighted for both years by role and gender.

* Statistically significant difference with $p < 0.1$ in a two-category $\chi 2$ test of the frequency of those using this mode versus those using any other mode in one year versus the other.

** Statistically significant at $p < 0.05$

*** Statistically significant at $p < 0.01$

Most notably, the share biking to campus increased by 2.9 percentage points, while the overall bus share decreased by 2.4 percentage points. Driving alone increased though the overall share of people arriving in private vehicles decreased due to fewer carpoolers. Changes in walking and train shares were statistically insignificant. Although small, the share physically traveling to campus on an average weekday increased significantly.

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 2.3 (including the driver). Most people dropped off on campus were the sole passenger, with an average of 1.4 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 occupants (including driver)	Ride passengers excluding driver)	Carpoolers	Riders	Carpoolers	Riders
Undergraduate	2.3	1.4	86	74	983	854
Graduate	2.4	1.1	45	18	521	203
Faculty	2.5	1.5	23	7	260	79
Staff	2.3	1.4	95	39	1,089	446
Outside Davis	2.3	1.4	130	122	1,500	1,401
Within Davis	2.4	1.1	118	16	1,352	181
Overall	2.3	1.4	248	138	2,852	1,582

Vehicle occupancy is based on responses to question *Q28* for those carpooling and to question *Q29* for those who got a ride. Data are weighted by role and gender based on the 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

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. In particular, 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 62. We estimate that 10,106 vehicles come to campus on an average weekday (Table 27). About 680 of these contain carpools and 434 are vehicles just dropping passengers off.

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

Role group	*Projected number of vehicles on an average weekday*				Projected Population
	Drive alone	Carpool	Ride	Total	
Students	3,577	278	272	4,127	30,228
Undergraduate	2,523	164	208	2,894	24,671
Freshmen	209	9	25	243	3,916
Sophomores	280	25	36	341	4,304
Juniors	749	50	31	830	6,631
Seniors	1,285	80	116	1,480	9,820
Graduate	1,054	115	64	1,233	5,557
Masters	500	59	26	585	1,963
PhD	554	56	39	648	3,594
Employees	5,414	402	162	5,979	11,887
Faculty	680	64	16	760	2,591
Staff	4,735	338	146	5,219	9,296
Lives in Davis	3,286	279	368	3,933	32,495
Outside Davis	5,706	401	66	6,173	9,620
Overall	8,991	680	434	10,106	42,115

Results are based on responses to questions *Q20* (days physically traveling to campus), *Q27* (mode of transportation used each day), *Q28* (carpool size), and *Q29* (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 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

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. In particular, 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 for details on the calculation of AVR). If everyone drove alone to campus, the campus AVR would be equal to one. Values greater than one indicate more carpooling or the use of alternative modes of transportation. Among those traveling from off-campus, AVR is estimated to be 3.30 campus-wide, and 1.75 among non-student employees only (Table 28). This means that for every car coming to campus, there are an estimated 3.30 off-campus people coming to campus or telecommuting. This ratio is just lower than it was last year, but still higher than all previous years of Campus Travel Survey data; however gender weights have only been applied starting in 2010-11. Table 28 shows the AVR estimates over the last seven years.

Table 28. Average vehicle ridership (AVR) 2007-08 through 2013-14

Role group	Off-campus only						
	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Students	1.67	4.76	4.28	4.49	5.29	6.05	5.59
Undergraduate	4.24	5.80	5.11	5.38	6.42	7.23	6.44
Freshmen	5.32	5.35	4.69	3.26	3.66	5.06	2.31
Sophomores	6.46	10.24	9.38	8.37	15.93	17.51	10.93
Juniors	4.05	6.26	5.48	5.59	6.24	7.85	6.59
Seniors	3.55	4.39	3.88	4.57	5.26	5.62	5.85
Graduate	3.43	2.81	2.57	2.79	3.14	3.55	3.57
Masters	3.22	2.71	2.60	2.73	3.34	3.15	2.76
PhD	3.55	2.86	2.56	2.82	3.03	3.84	4.32
Employees	**1.67**	**1.69**	**1.66**	**1.75**	**1.78**	**1.70**	**1.75**
Faculty	2.23	2.34	2.37	2.24	2.76	3.06	3.24
Staff	1.58	1.60	1.56	1.66	1.65	1.52	1.54
Non-student and student employees	n/a	n/a	2.20	n/a	2.45	2.51	2.58
Outside Davis	1.33	1.32	1.26	1.34	1.39	1.34	1.30
Within Davis	4.60	5.17	4.99	4.99	5.98	6.24	6.53
Overall	2.75	2.99	2.83	3.00	3.26	3.34	3.30
	All (on and off-campus)						
	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Students	5.04	5.91	5.25	5.53	6.41	7.25	6.74
Undergraduate	5.04	7.37	6.36	6.72	8.01	8.77	7.96
Freshmen	26.39	33.40	21.84	32.75	34.61	33.67	15.45
Sophomores	6.78	10.67	9.53	9.11	16.54	18.88	11.86
Juniors	4.46	6.56	6.04	6.23	6.88	8.30	7.41
Seniors	3.77	4.67	4.09	4.79	5.68	5.96	6.14
Graduate	3.94	3.21	2.95	3.18	3.45	4.03	3.88
Masters	3.49	2.94	2.84	2.94	3.57	3.43	2.92
PhD	4.20	3.36	3.01	3.33	3.39	4.47	4.75
Employees	1.67	1.71	1.66	1.75	1.80	1.70	1.75
Faculty	2.23	2.35	2.38	2.24	2.78	3.06	3.24
Staff	1.58	1.62	1.55	1.67	1.67	1.52	1.55
Non-student and student employees	n/a	n/a	2.31	n/a	2.59	2.64	2.69
Outside Davis	1.33	1.33	1.26	1.34	1.39	1.34	1.30
Within Davis	5.61	6.32	5.99	6.04	7.14	7.36	7.74
Overall	3.20	3.51	3.30	3.51	3.78	3.82	3.80

Bold indicates the official AVR statistic reported by UC campuses. AVR estimates from 2010-11, 2011-12, and 2012-13 are weighted by role and gender. See Appendix D for details on AVR calculations.

Table 29 shows AVR statistics for 2013-14 at UC Davis with those at other UC campuses for which AVR statistics are available. At the time of this report, the most recent AVR for most UC campuses is the one documented in the *Systemwide Transportation Survey Matrix 13-14*. Dashes indicate no new AVR was available for that year. To the extent that the most recently reported AVR statistics at other UC campuses reflect travel patterns in 2013-14, the comparison suggests that UC Davis has the highest (best) AVR of the UC campuses for which statistics are available.

Table 29. AVR at UC Davis versus other UC campuses

UC Campus	2010-11	2013-14	Notes on reported AVR	Comparable UC Davis AVR 2013-14
Irvine	1.87	1.92	Includes grad student employees	2.51
Los Angeles	-	1.67	Official (off campus employees only)	1.70
Riverside	1.53	1.58	Official (off campus employees only)	1.70
Santa Barbara	-	1.35	Averaged for faculty (1.4) and staff (1.3)	1.70
San Diego	1.60	-	Official (off campus employees only)	1.70
San Francisco	-	2.34	Off campus students and employees	3.34
Santa Cruz	1.94	2.17	Off campus students and employees	3.34

See Appendix D for details on the calculation of the Davis AVR. Other campus figures are from the Systemwide Transportation Survey Matrix 08-09, 09-10,10-11, and 13-14 available online at http://www.universityofcalifornia.edu/sustainability/trans_pres.html.

Zero-emission vehicles

For the purposes of calculating AVR statistics, we asked anyone who reported driving, carpooling, or getting a ride at any point on their way to campus during the reference week which type of vehicle they used to arrive to campus (*Q32*). Eleven (weighted) respondents reported using a zero-emission vehicle to travel to campus during the reference week - ten drove all-electric vehicles and one drove a hydrogen vehicle – amounting to a projected 127 ZEVs for the entire campus. In addition to the zero emission vehicles, 13 (weighted) respondents reported driving compressed natural gas (CNG) fueled vehicles.

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 *Q14*). About 17 percent of respondents reported having an annual parking permit, two percent lower than last year, and 6.7 percent reported having a monthly or quarterly permit: a projected 6,873 and 2,685 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 percent of the population, or a projected 2,073 people have a daily permit. One percent of respondents, or a projected 401 people, indicated owning an in-vehicle parking meter.

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	11.7%	3,554	5.3%	1,615	6.4%	1,939	4.1%	1,213	0.9%	278	30,228
Undergraduate	10.0%	2,472	4.2%	1,035	5.8%	1,437	2.7%	661	0.7%	175	24,671
Freshman	4.8%	186	2.4%	93	2.4%	93	0.0%	0	0.0%	0	3,916
Sophomore	7.3%	315	4.7%	204	2.6%	111	0.6%	26	0.3%	13	4,304
Junior	10.9%	721	4.5%	299	6.4%	422	2.2%	147	1.0%	68	6,631
Senior	12.8%	1,251	4.5%	440	8.3%	811	5.0%	490	1.0%	93	9,820
Graduate	19.4%	1,081	10.4%	579	9.0%	502	9.9%	552	1.9%	103	5,557
Masters	27.0%	531	15.9%	313	11.1%	218	9.5%	187	1.7%	33	1,963
PhD	15.3%	549	7.4%	266	7.9%	283	10.1%	365	1.9%	70	3,594
Employee	56.6%	6,729	48.7%	5,792	7.9%	937	7.2%	860	1.0%	124	11,887
Faculty	46.7%	1,211	43.6%	1,131	3.1%	80	9.3%	241	2.6%	66	2,591
Staff	59.3%	5,519	50.1%	4,662	9.2%	857	6.6%	620	0.6%	58	9,296
Lives in Davis	11.5%	3,762	7.5%	2,450	4.0%	1,312	5.5%	1,765	0.9%	305	32,498
Outside Davis	67.8%	6,521	51.5%	4,957	16.3%	1,564	3.2%	308	1.0%	96	9,617
Overall	24.4%	10,283	17.6%	7,407	6.8%	2,876	4.9%	2,073	1.0%	401	42,115

Results are based on responses to question *Q14*. Data are weighted by role and gender based on the 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

Bicycles entering campus

In order to get an idea of which routes into campus are most used, *Q42* asked respondents who biked to campus to indicate where they enter campus on their usual route to school (Table 31). The most heavily utilized bicycle routes to campus are Anderson Road and Sycamore Lane.

Table 31. Number of bicycles entering campus per day at each entrance point

Campus entrance	Numbers of bicycles
Anderson Rd/La Rue Rd and Russell Blvd	2,648
Sycamore Ln and Russell Blvd	2,632
3rd St and A St	2,069
West Village bike bridge over 113	1,801
First St and A St	1,388
5th St/Russell Blvd and A St	1,199
Oak Ave and Russell Blvd	1,174
South Davis Bike Path at Hutchinson and Old Davis Rd	1,030
College Park/Howard Way and Russell Blvd	770
Russell Blvd over 113	756
Hutchison over 113	599
Orchard Park Rd and Russell Blvd	591
California Ave and Russell Blvd	445
2nd St and A St	432
Old Davis Rd under I-80 (South campus entrance)	425
4th St and A St	255
Miller Dr and Russell Blvd	59
Somewhere through the Arboretum	33
Garrod Dr over 113	30
Total bikes arriving on an average weekday	18,334

Results are based on responses to question *Q42*. Data are weighted by role and gender based on the 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

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 32 and Table 33 show the share of bus and train users who used each service at least once during the reference week. Of the 858 respondents who indicated riding the bus in the past week, most reported using Unitrans at least once.

Table 32. 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	89.6%	8.2%	2.4%	0.1%	0.4%	759	8,616
Graduate	84.8%	4.3%	10.9%	0.0%	0.0%	46	522
Faculty	100%	0.0%	0.0%	0.0%	0.0%	5	57
Staff	45.8%	27.1%	20.8%	6.3%	0.0%	48	545
Overall	86.8%	9.1%	4.0%	0.5%	0.3%	858	9,740

Results are based on responses to questions *Q26* (whether a bus was ever used) and *Q36* (which bus services). Data are weighted by role and gender based on the 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

Of the 55 respondents who indicated riding the train in the past week, nearly all rode the Amtrak Capitol Corridor. Given the relatively small sample size, the estimates for train service ridership are imprecise.

Table 33. 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	90.0%	0.0%	10.0%	10	114
Graduate	88.2%	11.8%	0.0%	17	193
Faculty	76.5%	17.6%	5.9%	17	193
Staff	75.0%	0.0%	25.0%	12	136
Overall	83.6%	9.1%	7.3%	55	624

Results are based on responses to questions *Q26* (whether a train was ever used) and *Q37* (which train services). Data are weighted by role group based on the 3,663 valid responses to question *Q27* (see Table 62).

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 *Q17* and *Q18* or contact information provided at the end of the survey. This information was geocoded in ArcGIS, enabling a variety of spatial analyses (see Appendix E 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 (see Appendix E). Note that in this analysis, we used the street network, which was not augmented to include additional bike- and pedestrian-only links, which are especially prevalent in Davis. Since some pedestrians and bicyclists may choose routes based on shortest distance, the estimated distances might be interpreted as upper bounds. Tables 34 and 35 summarize distances traveled by role group, showing that employees tend to travel from farther away. The median distance traveled among students is about 1.8 miles, versus 3.03 among faculty and 11.1 among staff (Table 34).

Table 34. 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	94.9%	4.59	1.80	0.32	90.13	2,629	30,228
Undergraduate	94.7%	3.84	1.74	0.32	83.59	2,146	24,671
Freshman	98.9%	2.27	0.77	0.50	40.95	341	3,916
Sophomore	93.7%	2.71	1.88	0.56	36.20	374	4,304
Junior	94.0%	4.81	1.88	0.51	71.38	577	6,631
Senior	94.0%	4.32	1.85	0.32	83.59	854	9,820
Graduate	95.4%	7.92	2.24	0.61	90.13	483	5,557
Masters	94.2%	7.39	2.35	0.75	78.13	171	1,963
PhD	96.1%	8.21	2.18	0.61	90.13	312	3,594
Employee	94.2%	12.95	9.01	0.48	113.33	1,034	11,887
Faculty	94.1%	11.48	3.03	0.48	88.87	225	2,591
Staff	94.2%	13.35	11.10	0.53	113.33	809	9,296
Outside Davis	94.6%	2.17	1.95	0.32	20.94	837	9,620
Off Campus in Davis	92.0%	24.51	18.33	0.58	113.33	2,205	25,355
Overall	94.7%	6.95	2.13	0.32	113.33	3,663	42,115
Weighted Sample	3,470	n/a	n/a	n/a	n/a	-	-

Distances are calculated as the shortest-time network distance between respondents' geocoded cross-streets (given in questions *Q17* and *Q18* or contact information provided at the end of the survey) and a centroid on campus near the Silo (see Appendix E). Data are weighted by role and gender group for the 3,470 cases successfully geocoded and with non-missing mode choice data in question *Q27*.

While 84 percent of undergraduates live within 3 miles of campus, only 49 percent of faculty and 27 percent of staff do (Table 35). 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 10 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 10 miles away.

Table 35. Cumulative percent of people living within each distance from campus, by role

Distance from campus	Overall	Students		Employees	
		Undergraduate	Graduate	Faculty	Staff
0.5 miles or less	0.2%	0.3%	0.0%	0.3%	0.0%
1 mile	18.8%	27.8%	14.1%	4.3%	2.0%
1.5 miles	30.4%	41.7%	27.1%	14.5%	6.9%
2 miles	48.1%	65.4%	41.8%	23.7%	12.9%
2.5 miles	56.7%	72.7%	56.6%	36.5%	19.9%
3 miles	66.9%	83.5%	67.8%	49.3%	27.1%
4 miles	76.9%	91.5%	79.7%	66.4%	39.2%
6 miles	77.9%	91.8%	80.8%	70.0%	41.6%
8 miles	78.2%	91.8%	81.0%	72.3%	42.3%
10 miles	79.2%	91.8%	81.4%	72.3%	46.6%
12 miles	81.5%	92.5%	82.3%	74.5%	54.1%
14 miles	83.7%	92.9%	84.0%	77.7%	60.7%
16 miles	85.8%	93.5%	86.2%	81.5%	66.2%
18 miles	88.3%	94.2%	88.6%	85.2%	73.3%
20 miles	90.8%	95.2%	90.4%	87.0%	80.4%
25 miles	93.0%	96.0%	92.3%	88.7%	86.8%
30 miles	95.1%	97.6%	92.9%	89.6%	91.5%
40 miles	96.6%	98.6%	93.8%	89.6%	94.9%
50 miles	97.4%	98.9%	94.7%	90.2%	97.1%
60 miles	98.5%	99.6%	96.5%	91.6%	98.4%
70 miles	99.2%	99.8%	98.0%	97.2%	98.9%
100 miles	100%	100%	100%	100%	99.9%
More than 100 miles	100%	100%	100%	100%	100%
Weighted sample	3,470	2,033	458	213	766
Projected population	42,115	24,679	5,559	2,611	9,307
Group's percent of the overall population	100%	58.6%	13.2%	6.2%	22.1%

Distances are calculated as the shortest-time network distance between geocoded cross-streets (given in questions *Q17* and *Q18* or contact information provided at the end of the survey) and a centroid on campus near the Silo (see Appendix E). Data are unweighted. See "Appendix E: Geocoding and network distances" for more details.

Usual mode to campus

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 (*Q25*). 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 36 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 36. Usual mode, by distance from campus

Distance group	Physically traveling	Usual mode of those physically traveling to campus						Weighted sample	Projected population
		Bike	Walk or skate	Drive alone	Carpool or ride	Bus	Train		
Within 1 mile	96.1%	78.0%	14.1%	1.3%	1.4%	5.2%	0.0%	631	7,734
1 to 2.9 miles	91.8%	58.4%	2.3%	9.9%	2.0%	27.5%	0.0%	1,657	20,397
3 to 4.9 miles	90.8%	47.7%	1.1%	23.2%	6.7%	21.1%	0.3%	375	4,625
5 to 9.9 miles	79.2%	8.0%	0%	78.0%	14.0%	0.0%	0.0%	50	620
10 to 19.9 miles	84.2%	1.0%	0.8%	74.2%	13.8%	9.0%	1.3%	391	4,860
20 miles or more	77.2%	0.6%	0.3%	71.7%	10.6%	4.2%	12.5%	311	3,880
Overall	90%	48.2%	4.0%	23.7%	4.7%	18.0%	1.3%	3,415	42,115
Weighted sample	3,074	1,483	121	730	145	553	41	3,415	-
Projected population	37,904	18,286	1,498	8,999	1,786	6,824	510	-	42,114

Mode data are based on responses to question *Q25*, and distance data are calculated network distances between the geocoded cross-streets (given in *Q17* and *Q18* or contact information provided at the end of the survey) and a centroid on campus near the Silo (see Appendix E). Data are weighted by role group and gender for the 3,470 cases successfully geocoded and with non-missing mode choice data in question *Q27* (see Table 62).

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. 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), 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 person-miles would be 20 miles; by contrast, if she traveled to campus only one day, her average daily person-miles would be 4 miles. We then attribute person-miles 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 person-miles traveled by each mode on an average weekday.

To estimate the number of person-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 *Q30* and *Q31* 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 person-miles traveled by each person on an average day we calculate a weighted average of summer and academic-year travel.

Vehicle-miles traveled (VMT) accounts for vehicle use and occupancy per mile. To estimate VMT 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 person-mile contributes a fractional vehicle-mile equivalent to one divided by vehicle occupancy. We assume that travel by walking, biking, or skating contributes no VMT. Vehicle occupancy for carpooling and getting a ride varies for each respondent, as reported in questions *Q28* and *Q29* 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 VMT 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 VMT for personal vehicles, we estimate VMT 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. In particular, we estimated average bus occupancy based on annual ridership data from Unitrans, since 87% of all bus riders use Unitrans. According to FY 2014 figures from the Unitrans, Unitrans provided 8,460,948 annual passenger miles and 847,834 annual vehicle revenue miles, suggesting an average of about 9.98 passengers per mile.[4] Thus, for someone who lives 10 miles from campus and traveled by bus all five weekdays, average bus VMT per day is (10 miles × 2) / 9.98 = 2.00 vehicle-miles. In general, each mile someone travels by bus contributes 1 / 9.98 ≈ 0.10 vehicle-miles per passenger-mile.

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 Update, the Capitol Corridor had an average of 94.1 passengers per mile in FY 2012-13.[5] If a respondent lives 100 miles from campus and traveled by train all five days, her average train VMT per day is estimated to be (100 miles × 2) / 94.1 = 2.13 vehicle-miles. In general, each mile someone travels by train contributes 1 / 94.1 ≈ 0.011 vehicle-miles per passenger-mile.

Our estimates for vehicle-miles traveled, by mode and role, are shown in Tables 37 and 38.

[4] Unitrans working files for National Transit Database RY2014, pending" Will be available at: U.S. Department of Transportation, Federal Transit Administration, 2012 National Transit Database, Annual Transit Profile, Unitrans - City of Davis/ASUCD (NTD ID 9142) http://www.ntdprogram.gov/ntdprogram/pubs/profiles/2014/agency_profiles/9142.pdf.

[5] *Capitol Corridor Intercity Passenger Rail Service Business Plan Update FY 2014-15 – FY 2015-16 Final*, Appendix C (http://www.capitolcorridor.org/included/docs/business_plans/14_16_Business_Plan.pdf.)

Table 37. Vehicle-miles-traveled (VMT), daily and annually, by mode group

Mode	Daily		Annually		Share of total VMT	Share of population	Projected population
	Total VMT	VMT per person	Total VMT	VMT per person			
No vehicle (bike, walk or skate)	0	0	0	0	0.0%	51.8%	21,807
Personal vehicles	263,538	21.4	65,884,437	5,361	98.5%	29.2%	12,291
Drive alone	242,624	24.1	60,656,013	6,031	90.7%	23.9%	10,058
Carpool or ride	20,914	9.4	5,228,424	2,341	7.8%	5.3%	2,233
Bus	3,644	0.5	910,910	120	1.4%	18.0%	7,599
Train	318	0.8	79,542	188	0.1%	1.0%	424
Total	267,500	6.4	66,874,888	1,588	100%	100%	42,115

Mode groups are the estimated number using each means of transportation on a typical weekday, based on responses to questions *Q20* and *Q27*. Vehicle-miles are calculated as described in the text, drawing on data from questions *Q20, Q27, Q17*, *Q18,* 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 3,470 cases successfully geocoded (based on *Q17*) and with non-missing mode choice data in question *Q27* (see Table 62).

Table 38. Vehicle-miles-traveled (VMT), daily and annually, by role group

Role	Daily		Annually		Share of total VMT	Share of population	Projected population
	Total VMT	VMT per person	Total VMT	VMT per person			
Students	90,656	3.00	22,664,108	750	33.9%	71.8%	30,228
Undergraduate	64,737	2.62	16,184,348	656	24.2%	58.6%	24,671
Freshmen	6,485	1.66	1,621,200	414	2.4%	9.3%	3,916
Sophomores	5,551	1.29	1,387,719	322	2.1%	10.2%	4,304
Juniors	24,138	3.64	6,034,460	910	9.0%	15.7%	6,631
Seniors	28,564	2.91	7,140,969	727	10.7%	23.3%	9,820
Graduate	25,919	4.66	6,479,760	1,166	9.7%	13.2%	5,557
Masters	8,705	4.43	2,176,167	1,109	3.3%	4.7%	1,963
PhD	17,214	4.79	4,303,593	1,197	6.4%	8.5%	3,594
Employees	176,843	14.88	44,210,780	3,719	66.1%	28.2%	11,887
Faculty	17,504	6.76	4,375,879	1,689	6.5%	6.2%	2,591
Staff	159,340	17.14	39,834,901	4,285	59.6%	22.1%	9,296
Outside Davis	246,885	26.34	61,721,285	6,584	92.3%	22.3%	9,374
Within Davis	20,614	0.63	5,153,604	157	7.7%	77.7%	32,742
On campus	157	0.03	39,329	7	0.1%	13.5%	5,666
West Village	455	0.26	113,851	65	0.2%	4.1%	1,744
Off campus	20,002	0.79	5,000,423	197	7.5%	60.1%	25,332
Total	267,500	6.35	66,874,889	1,588	100%	100%	42,115

Vehicle-miles are calculated as described in the text, drawing on data from questions *Q20, Q27, Q17*, *Q18,* 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 3,470 cases successfully geocoded (based on *Q17*) and with non-missing mode choice data in question *Q27* (see Table 62).

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 90% of bus use for the entire campus), we use emissions estimates specific to the Unitrans fuel mix and passenger occupancy (provided by National Transit Database). For other bus services and Amtrak we estimate emissions based on national travel emissions averages (provided by TravelMatters.org) (Table 39).

This is the first 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 2014, Unitrans buses consumed 274,598 gallons of CNG and 19,038 gallons of diesel while providing 8,470,948 passenger-miles of service.[6] Assuming 22.14 and 0.89 pounds of carbon per gallon of diesel and CNG[7], respectively, then Unitrans operations generated 665,894 pounds of carbon in fiscal year 2014, or 0.079 pounds per passenger-mile of service, less than 1/10 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.

Table 39. 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 vehicle-miles traveled (this is the equivalent of adjusting person-miles by the reported carpool size)
Bus (Unitrans)	0.079 lbs / mile × aggregated average weekday person-miles traveled by bus
Bus (other)	0.90 lbs / mile × aggregated average weekday person-miles traveled by bus
Train	0.46 lbs / mile × aggregated average weekday person-miles by train

The "Unitrans" estimate for bus emissions is based on annual fuel use and passenger-miles of service at Unitrans http://www.ntdprogram.gov/ntdprogram/pubs/profiles/2012/agency_profiles/9142.pdf. All other estimates are drawn from the *TravelMatters* website, Individual Emissions Calculator Methodology, available online at http://www.travelmatters.org/calculator/individual/methodology, which is meant to capture national averages. Annual estimates of CO_{2e} generated are based on comparable figures of miles traveled annually

[6] Unitrans working files for National Transit Database RY2014, pending
[7] As described in (Lovejoy, 2009)

Table 40. Daily pounds of CO2e emitted, by mode and role

Role group	*Pounds-equivalent of CO_2e generated on an average weekday*						Average lbs. / person	Share of total CO_2e	Share of population	Projected population
	Drive alone	Carpool or ride	Bus (Unitrans)	Bus (other)	Train	Total CO_2e				
Students	90,005	6,421	1,658	6,555	7,077	111,716	3.7	35.1%	71.8%	30,228
Undergraduate	65,098	3,182	1,580	5,384	2,666	77,910	3.2	24.5%	58.6%	24,671
Freshmen	6,655	307	34	983	139	8,117	2.1	2.6%	9.3%	3,916
Sophomores	5,030	436	369	1,025	0	6,859	1.6	2.2%	10.2%	4,304
Juniors	24,785	890	519	1,084	771	28,049	4.2	8.8%	15.7%	6,631
Seniors	28,628	1,549	658	2,292	1,757	34,884	3.6	11.0%	23.3%	9,820
Graduate	24,906	3,240	78	1,172	4,410	33,806	6.1	10.6%	13.2%	5,557
Masters	8,663	808	20	422	996	10,908	5.6	3.4%	4.7%	1,963
PhD	16,243	2,432	59	750	3,414	22,898	6.4	7.2%	8.5%	3,594
Employees	176,882	16,584	95	6,203	6,696	206,459	17.4	64.9%	28.2%	11,887
Faculty	17,254	1,868	12	195	3,584	22,913	8.8	7.2%	6.2%	2,591
Staff	159,628	14,716	82	6,008	3,112	183,546	19.7	57.7%	22.1%	9,296
Outside Davis	249,768	19,931	79	11,546	13,763	295,087	31.5	92.7%	22.3%	9,374
Within Davis	17,119	3,074	1,673	1,212	9	23,087	0.7	7.3%	77.7%	32,742
On campus	96	46	0	248	0	390	0.1	0.1%	13.5%	5,666
West Village	292	74	91	66	0	523	0.3	0.2%	4.1%	1,744
Off campus	16,731	2,953	1,583	898	9	22,174	0.9	7.0%	60.1%	25,332
Overall	266,886	23,005	1,753	12,758	13,772	318,175	7.6	100%	100%	42,115

Bus (other) estimates assume 0.90 pounds/passenger-mile as estimated by TravelMatters.org. Bus (Unitrans) estimates assume 0.079 pounds/passenger-mile, as estimated using Unitrans data on annual fuel use and passenger-miles of service available here: http://www.ntdprogram.gov/ntdprogram/pubs/profiles/2012/agency_profiles/9142.pdf.

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.

Using these assumptions, we estimate that travel to campus generates a total of 318,175 pounds of CO_2e on an average weekday, or 7.6 pounds per person (Table 40), and about 36,080 metric tons of CO_2e annually, or 0.86 metric tons per person (Table 41). 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 28 percent of the population and contributing 65 percent of CO_2e on an average weekday.

Table 41. Annual tons of CO2e emitted, by mode and role

Role group	*Annual tons of CO2e emissions*						Average tons / person	Share of total CO_2e	Share of population	Projected population
	Drive alone	Carpool or ride	Bus (Unitrans)	Bus (other)	Train	Total CO_2e				
Students	10,206	728	188	743	802	12,668	0.42	35.1%	71.8%	30,228
Undergraduate	7,382	361	179	611	302	8,835	0.36	24.5%	58.6%	24,671
Freshmen	755	35	4	111	16	921	0.24	2.6%	9.3%	3,916
Sophomores	570	49	42	116	0	778	0.18	2.2%	10.2%	4,304
Juniors	2,811	101	59	123	87	3,181	0.48	8.8%	15.7%	6,631
Seniors	3,246	176	75	260	199	3,956	0.40	11.0%	23.3%	9,820
Graduate	2,824	367	9	133	500	3,834	0.69	10.6%	13.2%	5,557
Masters	982	92	2	48	113	1,237	0.63	3.4%	4.7%	1,963
PhD	1,842	276	7	85	387	2,597	0.72	7.2%	8.5%	3,594
Employees	20,058	1,881	11	703	759	23,412	1.97	64.9%	28.2%	11,887
Faculty	1,957	212	1	22	406	2,598	1.00	7.2%	6.2%	2,591
Staff	18,101	1,669	9	681	353	20,814	2.24	57.7%	22.1%	9,296
Outside Davis	28,323	2,260	9	1,309	1,561	33,462	3.57	92.7%	22.3%	9,374
Within Davis	1,941	349	190	137	1	2,618	0.08	7.3%	77.7%	32,742
On campus	11	5	0	28	0	44	0.01	0.1%	13.5%	5,666
West Village	33	8	10	7	0	59	0.03	0.2%	4.1%	1,744
Off campus	1,897	335	179	102	1	2,514	0.10	7.0%	60.1%	25,332
Overall	30,264	2,609	199	1,447	1,562	36,080	0.86	100%	100%	42,115

Bus (other) estimates assume 0.90 pounds/passenger-mile as estimated by TravelMatters.org. Bus (Unitrans) estimates assume 0.079 pounds/passenger-mile, as estimated using Unitrans data on annual fuel use and passenger-miles of service available here: http://www.ntdprogram.gov/ntdprogram/pubs/profiles/2012/agency_profiles/9142.pdf.

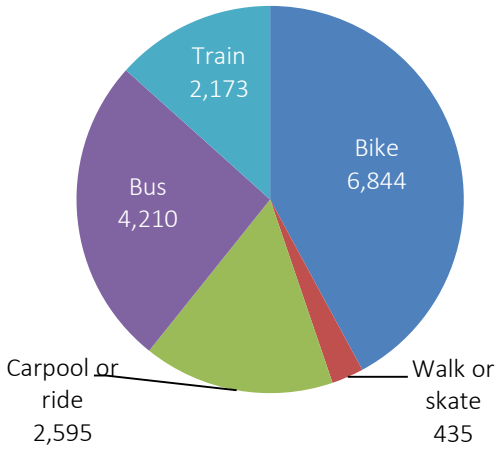
To assess the extent that alternative transportation reduces CO_2e emissions, we consider the hypothetical case that everyone were to drive alone to campus but all else were unchanged (e.g. distances and frequency of travel). In this scenario, the campus would produce an additional 16,209 annual metric tons of CO_2e, compared to 38,146 tons overall (Table 42). Figure 8 shows the contribution of each alternative, when compared to driving alone, to the total CO_2e emissions avoided.

Table 42. Annual tons of CO2e emissions avoided compared to driving alone

Role group	*Annual tons of CO_2e avoided*						Average savings / person	Projected population
	Bike	Walk or skate	Carpool or ride	Bus	Train	Total CO_2e saved		
Students	5,193	354	556	3,273	1,116	10,492	0.35	30,228
Undergraduate	3,939	294	198	3,008	421	7,859	0.32	24,671
Freshmen	440	64	14	176	22	716	0.18	3,916
Sophomores	771	36	15	672	0	1,494	0.35	4,304
Juniors	1,038	59	83	900	122	2,202	0.33	6,631
Seniors	1,690	135	86	1,259	277	3,447	0.35	9,820
Graduate	1,254	60	358	266	696	2,633	0.47	5,557
Masters	391	8	130	83	157	769	0.39	1,963
PhD	863	52	228	183	539	1,864	0.52	3,594
Employees	1,652	82	2,039	937	1,056	5,766	0.49	11,887
Faculty	595	36	306	43	565	1,546	0.60	2,591
Staff	1,056	46	1,733	894	491	4,220	0.45	9,296
Outside Davis	184	1	2,381	32	2,171	4,769	0.51	9,374
Within Davis	6,661	435	214	2,608	1	9,920	0.30	32,742
On campus	680	110	4	32	0	826	0.15	5,666
West Village	191	17	7	142	0	357	0.20	1,744
Off campus	5,790	308	203	2,435	1	8,736	0.34	25,332
Overall	6,844	435	2,595	4,210	2,173	16,258	0.39	42,115

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 - carpool or ride VMT)
Bus savings = (1.1 lbs./mile - 0.079 lbs./mile)*annual bus PMT. "Unitrans" estimates are used to conservatively estimate savings.
Train savings = (1.1 lbs./mile - 0.46 lbs./mile)*annual train PMT

Figure 8. Annual CO2e emissions avoided by using alternative transportation modes



Driver's license, car and bicycle access

All respondents were asked whether they have a driver's license and when they got it (if they have access to a car for driving themselves to campus), as well as if they have access to a bicycle for riding to campus. About 88 percent of those living within Davis have a driver's license, compared to 98 percent of those living outside Davis (Table 43). Car access varies substantially by residential location: only about 52 percent of those living in Davis have access to a car, compared to 92 percent of those living outside Davis. About 71 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 (87.3 percent compared to 14.6 percent for those outside of Davis). Overall, more people consider bicycling to be a feasible option to get to campus (29,775) than those who consider driving to be a feasible option (25,564), though these rates are substantially different among those living outside Davis.

Table 43. Driver's license, car and bicycle access

Role	Driver's license	Access to a car	Access to a bike	Weighted sample	Projected population
Student	87.3%	48.9%	79.6%	2,629	30,228
Undergraduate	86.0%	44.1%	80.5%	2,146	24,671
Freshman	70.0%	11.2%	86.4%	341	3,916
Sophomore	82.3%	32.6%	85.2%	374	4,304
Junior	89.2%	47.3%	78.0%	577	6,631
Senior	91.9%	60.0%	77.7%	854	9,820
Graduate	92.9%	70.3%	75.8%	483	5,557
Masters	94.7%	74.7%	73.5%	171	1,963
PhD	92.0%	67.9%	77.0%	312	3,594
Employee	97.7%	90.9%	48.1%	1,034	11,887
Faculty	97.7%	90.4%	65.9%	225	2,591
Staff	97.7%	91.0%	43.2%	809	9,296
Lives in Davis	88.0%	51.5%	87.3%	3,106	32,498
Outside Davis	97.9%	91.8%	14.6%	837	9,617
Overall	90.2%	60.7%	70.7%	3,663	42,115
Weighted sample	3,304	2,223	2,590	3,663	-
Projected population	37,988	25,564	29,775	-	42,115

Data are weighted by role and gender based on the 3,663 valid responses to questions *Q01*, *Q09*, *Q13,* and *Q19-27* (see Table 62). Car access reflects those respondents who indicated they have the option to drive alone to campus.

For those who have a driver's license,

Table 44 displays the time at which respondents indicated first getting their driver's license, according to age group. For all age groups, most individuals got their driver's licenses in high school, though there has been a steady decline in the percent of people in each age group getting their licenses in high school. Though it jumps again to 81% for individuals under 20 years old, this reflects the very short time frame between finishing high school and turning 20, considering that only 70% of freshman have a driver's license (Table 43).

Table 44. Time of driver's license acquisition, by age group

Age group	*Of those who have a driver's license, when they got it*		Projected population
	In high school	Sometime after high school	
20 years old or under	81.0%	19.0%	8,441
21 to 30 years old	74.4%	25.6%	13,946
31 to 40 years old	78.6%	21.4%	3,705
41 to 50 years old	79.3%	20.7%	2,578
51 to 60 years old	84.4%	15.6%	2,935
61 to 70 years old	87.2%	12.8%	953
71 to 80 years old	65.8%	34.2%	120
Overall	78.2%	21.8%	32,677

Results are based on responses to question *Q12*. Data are weighted by role and gender based on the 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 61).

Injuries resulting from bike falls or crashes on and off campus

All respondents who indicated biking on campus at some point in the last year were asked if they experienced "a fall or crash that resulted in personal injury to you" while "biking on campus" or biking "between home and campus." Of the 70.9 percent of respondents who indicated biking on campus within the last year, 16 percent (an estimated 4,884 people) said they had experienced a bike crash on campus that resulted in personal injury, and 9 percent (an estimated 2,593 people) experienced a crash between home and campus (Table 45). Sophomores, juniors, and seniors who ride a bike on campus are most likely to experience on campus bike crashes that result in injury.

For those respondents who indicated that they had experienced a fall or a crash, we asked the reason for the crash (*Q49*) and whether the police or campus authorities were notified (*Q51*). Table 46 displays the reported reasons for the crash; respondents were able to check as many reasons as applicable so categories are not mutually exclusive.

Table 45. Injuries resulting from bike falls or crashes, by role group

Role	Share who biked on campus in the past year	*Of those who biked on campus in the past year, share who experienced a fall or crash that resulted in personal injury*				Role group share of biking population	Role group share of injuries	Population who biked on campus in the past year	Projected campus population
		Biking on campus		Biking between home and campus					
		Share	Projected number of persons	Share	Projected number of persons				
Student	78.6%	19%	4,481	10%	2,425	79.6%	92.4%	23,751	30,228
Undergraduate	79.3%	20%	3,948	10%	2,033	65.6%	80.0%	19,562	24,671
Freshman	78.2%	20%	601	3%	102	10.3%	9.4%	3,062	3,916
Sophomore	93.0%	29%	1,141	8%	335	13.4%	19.7%	4,001	4,304
Junior	74.8%	16%	772	12%	615	16.6%	18.6%	4,958	6,631
Senior	76.8%	19%	1,434	13%	981	25.3%	32.3%	7,538	9,820
Graduate	75.5%	13%	533	9%	392	14.1%	12.4%	4,196	5,557
Masters	68.2%	11%	142	6%	81	4.5%	3.0%	1,338	1,963
PhD	79.3%	14%	391	11%	310	9.6%	9.4%	2,851	3,594
Employee	51.9%	7%	403	3%	168	20.7%	7.6%	6,173	11,887
Faculty	70.1%	8%	139	2%	44	6.1%	2.4%	1,815	2,591
Staff	46.8%	6%	264	3%	124	14.6%	5.2%	4,352	9,296
Male	75.9%	15%	2,267	9%	1,316	49.1%	47.9%	14,654	19,319
Female	66.6%	17%	2,617	8%	1,277	50.9%	52.1%	15,178	22,796
Lives in Davis	82.2%	18%	4,712	9%	2,500	89.6%	96.5%	26,728	32,498
Outside Davis	32.7%	5%	172	3%	93	10.4%	3.5%	3,145	9,617
Overall	70.9%	16%	4,884	9%	2,593	100%	100%	29,839	42,115

Results are based on responses to questions *Q45-46*. Data are weighted by role and gender based on the 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

Table 46. Reasons for bicycle fall or crash, by role

Role	*In your opinion, what was the primary cause of the bike fall/crash? Which of the following were true for you or the other person(s)?*									
	Texting or talking on the phone	Couldn't see because of darkness/low visibility	Couldn't see for other reasons	Biking under the influence	Didn't stop at a stop sign	Dodging/ avoiding a car/biker/ pedestrian	Ground was slippery	Was cut off	Infrastructure was unsafe or confusing	Bike malfunctioned
Student	4.9%	7.4%	9.6%	1.8%	4.9%	15.7%	14.8%	22.3%	8.6%	10.1%
Undergraduate	4.8%	7.9%	9.9%	1.3%	4.9%	16.2%	13.9%	22.6%	8.3%	10.1%
Freshman	0.0%	4.2%	14.9%	2.1%	7.5%	20.2%	5.3%	18.1%	7.5%	20.3%
Sophomore	4.5%	6.4%	10.8%	1.6%	2.7%	17.2%	14.5%	23.1%	9.3%	9.7%
Junior	4.4%	9.3%	12.4%	1.2%	6.8%	12.4%	12.8%	20.9%	8.0%	11.7%
Senior	6.7%	9.1%	6.2%	0.9%	4.3%	16.7%	16.8%	24.8%	8.2%	6.3%
Graduate	6.1%	3.5%	7.2%	5.0%	5.4%	11.7%	21.4%	19.8%	10.2%	9.6%
Masters	11.4%	0.0%	14.1%	0.0%	8.5%	11.6%	25.7%	14.3%	2.9%	11.4%
PhD	4.5%	4.5%	5.2%	6.5%	4.5%	11.7%	20.1%	21.4%	12.3%	9.1%
Employee	6.2%	1.7%	3.9%	0.0%	0.0%	18.0%	11.3%	30.4%	10.1%	18.5%
Faculty	7.0%	7.0%	7.0%	0.0%	0.0%	12.0%	4.9%	28.9%	14.1%	19.0%
Staff	5.9%	0.0%	2.9%	0.0%	0.0%	19.9%	13.2%	30.9%	8.8%	18.4%
Male	4.5%	6.6%	7.9%	2.1%	3.8%	13.2%	17.6%	21.5%	10.0%	12.8%
Female	5.4%	7.3%	10.3%	1.3%	5.3%	18.1%	11.9%	24.1%	7.6%	8.8%
Overall	5.0%	7.0%	9.2%	1.6%	4.6%	15.8%	14.5%	22.9%	8.7%	10.7%

Results are based on responses to question *Q49*. Data are weighted by role and gender based on the 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

Table 47 shows the projected number of bicycle crashes that resulted in personal injury from October 2012 through October 2013 that were reported. Of the 25% of respondents who indicated experiencing a fall or crash, only 2.8% of them reported the incident to authorities. Surprisingly, not a single junior or Master's student indicated reporting their crash to authorities.

Table 47. Number of bicycle crashes reported to authorities, by role

Role	*Of those who crashed, number who reported crash to authorities*						Total crashes
	Yes		No		Not sure		
	Projected population	Share of crashes	Projected population	Share of crashes	Projected population	Share of crashes	
Student	94	1.7%	5,275	96.7%	87	1.6%	5,456
Undergraduate	85	1.8%	4,588	96.4%	87	1.8%	4,760
Freshman	26	4.3%	513	85.7%	60	10.0%	598
Sophomore	35	2.8%	1,188	96.0%	15	1.2%	1,238
Junior	0	0.0%	1,077	100%	0	0.0%	1,077
Senior	24	1.3%	1,810	98.0%	12	0.7%	1,846
Graduate	9	1.3%	686	98.7%	0	0.0%	696
Masters	0	0.0%	157	100%	0	0.0%	157
PhD	9	1.7%	529	98.3%	0	0.0%	538
Employee	71	14.3%	411	83.0%	13	2.7%	495
Faculty	27	17.0%	131	83.0%	0	0.0%	157
Staff	44	13.0%	280	83.0%	13	4.0%	338
Male	68	2.5%	2,615	95.7%	49	1.8%	2,732
Female	97	3.0%	3,071	95.4%	51	1.6%	3,219
Overall	165	2.8%	5,685	95.5%	100	1.7%	5,951

Results are based on responses to question *Q51*. Data are weighted by role and gender based on the 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

All respondents who indicated experiencing a bike fall or crash that resulted in injury were asked if this incident reduced their current biking frequency (Table 48). Of those who experienced such an incident, 89.6 percent indicated that they do not bike any less as a result. However, women who had fallen or crashed while on a bike were much more likely than men to report biking less (16.6 percent and 3.5 percent, respectively) and nearly a quarter (22.3 percent) of Master's students reported that they had reduced their biking.

Table 48. Effects of fall or crash on biking frequency, by role group

Role	*Of those who experienced a fall or crash, change in biking frequency.*				Total population
	No change in biking frequency.		Bike less frequently now.		
	Share	Projected population	Share	Projected population	
Student	90.0%	4,801	10.0%	534	5,335
Undergraduate	89.9%	4,163	10.1%	467	4,630
Freshman	91.1%	522	8.9%	51	573
Sophomore	93.0%	1,022	7.0%	77	1,099
Junior	90.2%	981	9.8%	106	1,087
Senior	87.6%	1,639	12.4%	233	1,872
Graduate	90.5%	637	9.5%	67	704
Masters	77.7%	122	22.3%	35	157
PhD	94.1%	515	5.9%	32	547
Employee	85.3%	431	14.7%	74	505
Faculty	95.7%	157	4.3%	7	164
Staff	80.4%	274	19.6%	67	341
Male	96.5%	2,664	3.5%	97	2,761
Female	83.4%	2,567	16.6%	512	3,079
Lives in Davis	89.6%	4912	10.4%	573	5,485
Outside Davis	81.3%	156	18.8%	36	192
Overall	89.6%	5,232	10.4%	608	5,840

Results are based on responses to question *Q52*. Data are weighted by role and gender based on the 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

Self-reported bicycling aptitude

Question *Q63* 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 1.4 percent indicated that they cannot ride a bike, and 6.5 percent of respondents indicated that they could but were "not very confident" doing so. Overall, over 92 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 significantly less likely to report being "very confident" than men (Table 49).

Table 49. Self-reported bicycling aptitude, by role group

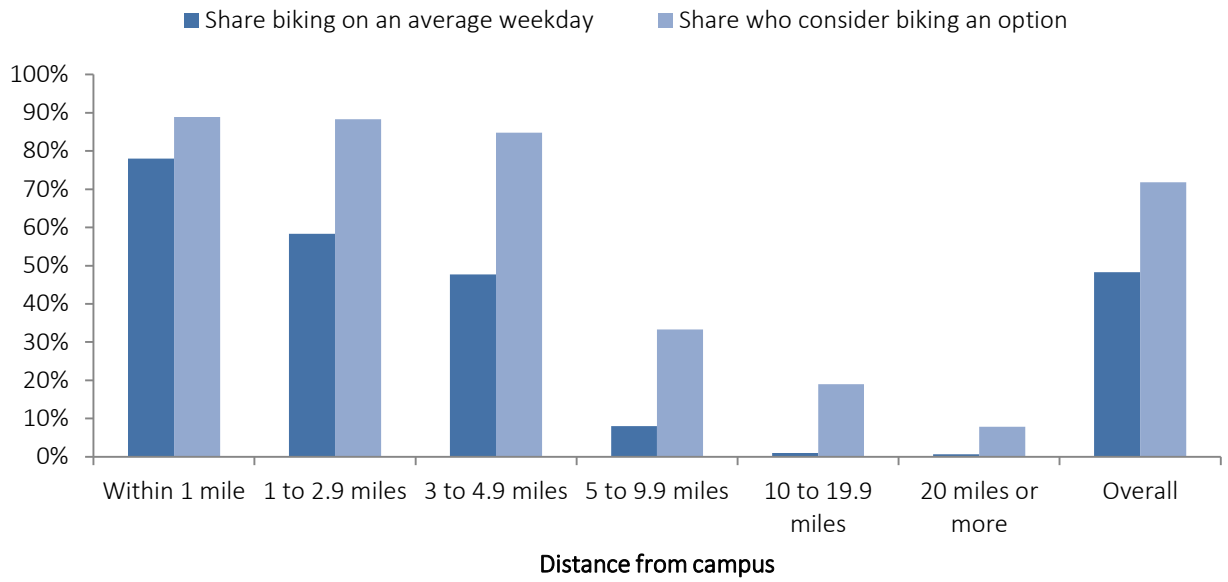
Role	*How would you rate your ability to ride a bike? We are interested in whether you know how to ride a bike, regardless of whether it is practical or desirable for you to do so as a means of transportation to campus.*				Weighted sample
	I cannot ride a bike at all because I do not know how.	I can 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	1.7%	6.5%	19.4%	72.4%	2,246
Undergraduate	1.8%	6.6%	19.6%	72.1%	1,813
Freshman	1.0%	9.0%	30.4%	59.5%	299
Sophomore	1.6%	3.9%	22.9%	71.6%	306
Junior	2.7%	8.2%	17.5%	71.6%	486
Senior	1.7%	5.5%	15.2%	77.7%	725
Graduate	1.6%	6.0%	18.7%	73.7%	433
Masters	2.0%	7.2%	15.8%	75.0%	152
PhD	1.4%	5.4%	20.4%	72.9%	280
Employee	0.6%	6.6%	16.8%	75.9%	926
Faculty	0.0%	3.8%	18.8%	77.4%	208
Staff	0.8%	7.3%	16.3%	75.6%	717
Male	1.1%	3.5%	11.4%	84.0%	1,460
Female	1.7%	9.0%	24.9%	64.4%	1,713
Overall	1.4%	6.5%	18.7%	73.4%	3,172

Results are based on responses to questions *Q63*. Data are weighted by role and gender based on the 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

Potential for bicycling

We include a question to assess the potential mode share of biking. In *Q13*, 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.

Figure 9. Share who bikes to campus compared to share who considers biking an option, by distance from campus



Potential for electric bikes (e-bikes) and bikeshare

This year, respondents were asked specifically about their familiarity with electric bikes (e-bikes) (*Q65*). We asked respondents who live off-campus and reported driving, taking transit, or getting a ride at least once during the reference week if they would commute to campus by electric bike if there was one available to them (*Q66).* Almost a quarter of respondents within 3 miles of campus would commute by electric bicycle.

Table 50. Potential for electric bicycle use

Distance from campus	*"If you had the option to use an electrically assisted bicycle (e-bike) to get to campus, would you?"*			
	Yes, I would use an electric bike to get to campus.	No, I wouldn't commute by e-bike, but I would use it for other errands or trips.	No, I wouldn't use an electric bike for any trips.	Not sure.
Within 1 mile	23.1%	12.8%	46.0%	18.1%
1 to 2.9 miles	22.5%	8.3%	37.4%	31.8%
3 to 4.9 miles	19.7%	10.1%	38.3%	31.8%
5 to 9.9 miles	7.0%	36.2%	39.0%	17.8%
10 to 19.9 miles	8.8%	25.4%	38.7%	27.0%
20 miles or more	7.1%	30.9%	41.6%	20.4%
Overall	15.0%	18.6%	39.0%	27.5%

Results are based on responses to questions *Q64-65*. Data are weighted by role and gender based on the 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

To gauge interest in the forthcoming regional bikeshare program, participants were asked about their likelihood to utilize a bikeshare program (*Q60.)* Table 51 displays how frequently respondents indicated they would use such a system.

Table 51. Potential for using a bikeshare system

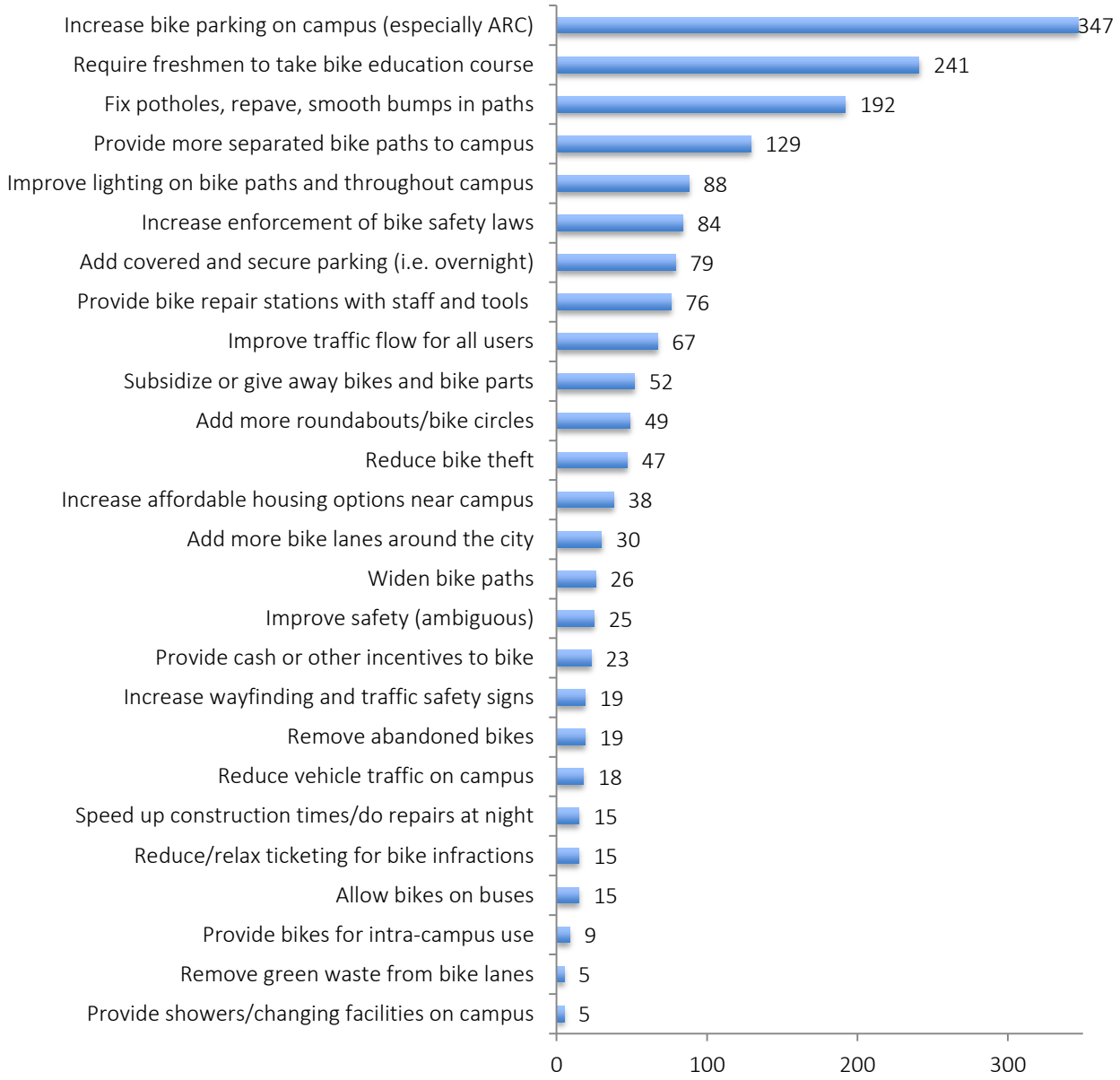
Role	*Imagine if there were self-service, hourly bike rentals, where you could check out a bike (using a credit card or smartcard) from designated bike racks ("docking stations") located around campus and in town. You could swipe your card, grab a bike, ride it as needed, and then drop it off at any of the other docking stations. How often do you think you (or your visitors) would use this sort of service?*					Projected population
	Never. I would not use the program.	Once a year.	A few times a year.	Once a month.	At least once a week.	
Student	29.8%	10.9%	34.4%	12.6%	12.3%	30,228
Undergraduate	31.0%	10.9%	33.1%	12.7%	12.3%	24,671
Freshman	24.3%	7.1%	37.5%	16.8%	14.3%	3,916
Sophomore	32.1%	12.4%	35.0%	11.1%	9.5%	4,304
Junior	32.2%	12.0%	31.5%	10.1%	14.1%	6,631
Senior	32.4%	10.9%	31.6%	13.5%	11.6%	9,820
Graduate	25.0%	10.9%	39.6%	12.3%	12.2%	5,557
Masters	30.4%	9.7%	38.1%	8.4%	13.3%	1,963
PhD	22.0%	11.6%	40.4%	14.4%	11.6%	3,594
Employee	38.7%	8.2%	35.8%	11.1%	6.1%	11,887
Faculty	41.3%	7.5%	32.5%	14.2%	4.5%	2,591
Staff	38.0%	8.4%	36.8%	10.2%	6.6%	9,296
Lives in Davis	30.7%	11.4%	35.5%	11.9%	10.4%	32,498
Outside Davis	38.2%	5.4%	32.1%	13.2%	11.1%	9,617
Female	27.2%	10.5%	38.5%	13.0%	10.8%	22,796
Male	38.4%	9.7%	30.4%	11.3%	10.3%	19,319
Overall	32.4%	10.1%	34.8%	12.2%	10.6%	42,115

Results are based on responses to question *Q60.* Data are weighted by role and gender based on the 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

Campus improvements to encourage bicycling

This year, the multiple-choice question about options for increasing cycling on campus was replaced with an open-ended question (Q59): "*In one sentence, what is the single most important thing the campus could do to increase the amount that you to bike to campus? Your input helps us prioritize transportation projects to best serve the UCD community.*" A total of 2,139 responses to this question were grouped into 36 distinct categories to identify common themes among respondents. After removing 426 responses that were ambiguous, satirical, or outside the jurisdiction of campus authorities, the categories were narrowed down to 26 types of improvements. Figure 10 lists the requested improvements from most to least common. By far the most desired change is an increase in bike parking on campus, 20.3% of responses.

Figure 10. Most important ways to increase biking to campus



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 32 percent of the sample agreed or strongly agreed that, “bicycle traffic laws are adequately enforced on campus” (Table 52). About 27 percent indicated they were neutral or unsure, 18 percent disagreed, and almost 11 percent strongly disagreed. Employees and graduate students are most likely to disagree, while sophomores are most likely to agree that there is adequate enforcement.

Table 52. Perceptions of bicycle traffic law enforcement on campus

Role	*"Bicycle traffic laws are adequately enforced on campus."*					Weighted sample
	Strongly disagree	Disagree	Neutral or don't know	Agree	Strongly agree	
Student	9.0%	16.0%	28.0%	28.0%	7.0%	2,298
Undergraduate	8.0%	16.0%	28.0%	28.0%	8.0%	1,863
Freshman	3.0%	15.0%	36.0%	27.0%	8.0%	306
Sophomore	5.0%	16.0%	24.0%	35.0%	7.0%	322
Junior	8.0%	16.0%	26.0%	25.0%	10.0%	496
Senior	10.0%	15.0%	27.0%	28.0%	6.0%	741
Graduate	14.0%	18.0%	27.0%	24.0%	7.0%	436
Masters	12.0%	14.0%	30.0%	25.0%	7.0%	151
PhD	15.0%	21.0%	25.0%	24.0%	6.0%	285
Employee	18.0%	24.0%	25.0%	20.0%	4.0%	939
Faculty	14.0%	21.0%	19.0%	28.0%	9.0%	206
Staff	18.0%	24.0%	27.0%	17.0%	3.0%	734
Lives in Davis	9.0%	18.0%	26.0%	28.0%	7.0%	2,494
Outside Davis	18.0%	20.0%	30.0%	16.0%	5.0%	745
Male	12.0%	16.0%	26.0%	27.0%	8.0%	1,486
Female	11.0%	20.0%	28.0%	24.0%	5.0%	1,753
Overall	11.0%	18.0%	27.0%	25.0%	7.0%	3,238

Results are based on responses to question *Q61*. Data are weighted by role and gender based on the 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

Table 53 summarizes the levels of agreement and disagreement about the safety of biking on campus. While most respondents indicated feeling safe biking on campus, about 16 percent of respondents strongly disagreed or disagreed with the statement, “I feel safe biking on campus.” An additional 19 percent indicated they were neutral or unsure about the statement.

Table 53. Perceptions of safety biking on campus

Role	*"I feel safe biking on campus."*					Weighted sample
	Strongly disagree	Disagree	Neutral or don't know	Agree	Strongly agree	
Student	3%	11%	18%	36%	18%	2,272
Undergraduate	3%	11%	17%	36%	18%	1,833
Freshman	3%	8%	17%	42%	17%	298
Sophomore	3%	7%	14%	43%	18%	321
Junior	5%	13%	21%	31%	16%	489
Senior	3%	13%	16%	35%	19%	726
Graduate	3%	12%	21%	36%	19%	439
Masters	3%	10%	22%	34%	18%	150
PhD	4%	13%	20%	37%	20%	289
Employee	6%	13%	22%	34%	14%	923
Faculty	5%	12%	15%	43%	16%	204
Staff	6%	13%	24%	32%	14%	720
Lives in Davis	3%	12%	16%	39%	19%	2,488
Outside Davis	7%	11%	31%	25%	10%	708
Male	5%	15%	21%	35%	12%	1,726
Female	3%	8%	17%	37%	23%	1,471
Overall	4%	12%	19%	36%	17%	3,194

Results are based on responses to question *Q62*. Data are weighted by role and gender based on the 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

Bicycle theft

Table 54 shows the incidence of bicycle theft and vandalism on the UC Davis campus between October 27, 2012 and October 27, 2013, the year before the first reference week. Among the 70.9 percent of the weighted sample who rode a bike on campus during this period, 9 percent reported their entire bike was stolen, 8.3 percent reported parts of their bike were stolen, and 2.3 percent reported their bike was vandalized. Since these categories were not mutually exclusive, the same respondent could indicate an entire bike theft, a partial bike theft, and a vandalism—therefore these percentages should not be added to reflect the total incidence of bike theft and vandalism. Overall, we estimate that 2,680 people had an entire bike stolen from campus during this period.

To determine some of the causes of bicycle theft, we also asked respondents whether their bicycle was locked at the time of the vandalism or theft (*Q54)*. Of all bikes stolen, 95.4% were locked. Interestingly, faculty were the least likely to lock their bikes – 16.5% were not locked at the time they were stolen (Table 55). Based on the survey results, seniors are most likely to have experienced a bike theft in the last year, while freshmen have the lowest incidence of bike theft, since most freshmen have only been on campus a month or two at the time the survey is administered each year.

Table 54. Incidence of bike theft over one year, by role

Role	Share who biked on campus in the past year	*Of those biked on campus in the past year, incidence of theft*			Weighted sample	Projected population
		Entire bike was stolen	Only parts of bike were stolen	Bike was vandalized		
Student	78.6%	9.5%	9.1%	2.7%	2,629	30,228
Undergraduate	79.3%	9.7%	9.3%	3.2%	2,146	24,671
Freshman	78.2%	2.5%	6.6%	1.7%	341	3,916
Sophomore	93.0%	6.6%	9.5%	3.8%	374	4,304
Junior	74.8%	9.5%	8.6%	4.5%	577	6,631
Senior	76.8%	14.5%	10.7%	2.6%	854	9,820
Graduate	75.5%	8.7%	8.4%	0.6%	483	5,557
Masters	68.2%	8.9%	9.3%	0.8%	171	1,963
PhD	79.3%	8.6%	8.0%	0.5%	312	3,594
Employee	51.9%	6.7%	5.0%	0.6%	1,034	11,887
Faculty	70.1%	8.6%	4.6%	0.5%	225	2,591
Staff	46.8%	5.9%	5.2%	0.7%	809	9,296
Lives in Davis	82.2%	8.8%	8.7%	2.5%	2,867	32,498
Outside Davis	32.7%	10.0%	4.9%	1.0%	796	9,617
Overall	70.9%	9.0%	8.3%	2.3%	3,663	42,115
Weighted sample	2,595	233	216	60	-	-
Projected population	29,839	2,680	2,481	687	-	-

Results are based on responses to questions *Q53* (theft in the last year). Data are weighted by role and gender based on the 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

Table 55. Percent of bicycles locked at time of theft, by role

Role	*"At the time your bike was stolen (in whole or in part), was it locked?"*	
	No	Yes
Student	4.5%	95.5%
Undergraduate	4.7%	95.3%
Freshman	2.6%	97.4%
Sophomore	2.6%	97.4%
Junior	8.3%	91.7%
Senior	3.9%	96.1%
Graduate	3.3%	96.7%
Masters	0.0%	100%
PhD	4.9%	95.1%
Employee	5.7%	94.3%
Faculty	16.5%	83.5%
Staff	0.0%	100%
Lives in Davis	4.4%	95.6%
Outside Davis	7.8%	92.2%
Female	5.1%	94.9%
Male	4.2%	95.8%
Overall	4.6%	95.4%

Results are based on responses to questions *Q54*. Data are weighted by role and gender based on the 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62).

Awareness of TAPS and other transportation programs

Respondents were presented a list of services and asked to indicate, "It's new to me," "I've heard of it, but never used it," or "I've used it." Table 56 summarizes the responses for each service, and Table 56 compares responses for the past five years, for those items that appeared on each of the surveys. The most utilized services are the bike tire air stations and the GoClub program.

Table 56. Awareness of transportation services

Service	Have used it	Have only heard of it	Have never heard of it
Bike tire air stations and repair stations around campus	52.5%	38.5%	9.0%
GoClub program	15.8%	29.8%	54.4%
Bicycle Education and Enforcement Program (BEEP)	9.2%	21.9%	68.9%
TAPS motorist assistance program	8.9%	43.7%	47.5%
Zipcar carsharing program	7.9%	69.9%	22.3%
UC Davis Bike Auction	6.6%	72.2%	21.2%
Personal in-vehicle parking meters (Easy Park)	5.4%	32.0%	62.6%
Bike commuter showers and lockers (ARC)	4.8%	30.1%	65.2%
Bike lock-cutting service	4.1%	53.4%	42.4%
Discount transit passes for those without a parking permit	3.9%	21.0%	75.1%
Zimride carpool matching service	3.7%	34.6%	61.7%
TAPS Mobility Assistance program	1.4%	32.0%	66.6%
Emergency Ride Home program for Go Glub members	1.1%	23.4%	75.4%
Aggie Bike Buy program	0.9%	33.2%	65.9%

Results are based on responses to question Q70. Data are weighted by role and gender based on the 3,663 valid responses to questions *Q01, Q09*, and *Q19-27* (see Table 62).

Table 57. Awareness of transportation services, 2009-10 through 2013-14

Service	Change 2012-13 to 2013-14	Percent who have heard of it				
		2013-14	2012-13	2011-12	2010-11	2009-10
Zimride carpool matching service*	**-2.7%**	38.3%	41.0%	31.2%	24.2%	15.4%
TAPS motorist assistance program	**-6.1%**	52.5%	58.6%	51.7%	60.3%	51.3%
Zipcar carsharing program	**-4.2%**	77.7%	81.9%	75.9%	75.1%	57.3%
Bike lock-cutting service	**-4.9%**	57.6%	62.5%	57.3%	42.7%	40.9%
GoClub program	**0.2%**	45.6%	45.4%	42.8%	32.8%	17.5%
Personal in-vehicle parking meters (Easy Park)*	**1.3%**	37.4%	36.1%	34.7%	n/a	n/a
Emergency Ride Home Program for goClub members	**-1.3%**	24.6%	25.9%	24.5%	23.6%	16.3%
UC Davis Bike Auction	**-4.4%**	78.8%	83.2%	83.9%	86.3%	81.5%
Bike commuter showers and lockers (ARC)	**-1.5%**	34.8%	36.3%	37.7%	n/a	n/a
Bicycle Education and Enforcement Program (BEEP)*	**7.2%**	31.1%	23.9%	28.3%	n/a	n/a
Discount transit passes for those without a parking permit*	**-2.5%**	24.9%	27.4%	34.8%	32.3%	30.2%
TAPS Mobility Assistance program	**n/a**	33.4%	n/a	n/a	n/a	n/a
Aggie Bike Buy program	**3.9%**	34.1%	30.2%	n/a	n/a	n/a
Bike tire air stations and repair stations around campus	**-0.6%**	91.0%	91.6%	n/a	n/a	n/a

Data for 2013-14 are based on responses to question *Q56*. See 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, Lovejoy, *et al.* (2009) for results from 2008-09, and Congleton (2009) for results from 2007-08.

Barriers to using alternative transportation

We included two questions to better understand why some individuals do not utilize the alternative transportation options available to them. Respondents who lived in Davis (excluding on-campus) but had not biked to campus in the past week were asked to select up to three reasons why they chose not to bike. The weighted number of agreements with each given statement is shown in Table 57. While a large number of individuals likely avoid biking due to preference ("I prefer to use a different mode of transportation"), many individuals did not bike due to structural barriers, such as not owning a bike or living too far from campus.

Respondents who lived outside of Davis but had not used transit to travel to campus in the past week were asked about why they had not used transit. The weighted number of agreements with each statement is shown in Table 58. In contrast to bicycling, where the most frequent barrier is a preference for other modes, the top three barriers to taking transit are structural (at least perceived to be structural) in nature. A weighted sample of 196 individuals (corresponding to an estimated population of 2,258) agreed with the statement "There are no transit options available to me," suggesting that there is a significant potential transit market that could be reached either through transit promotion measures, or through increased transit availability in areas that currently lack service. For both bicycling and taking transit, trends hold relatively constant across gender, though more women are more likely than men to report barriers to cycling, in general.

Figure 11. Barriers to taking transit

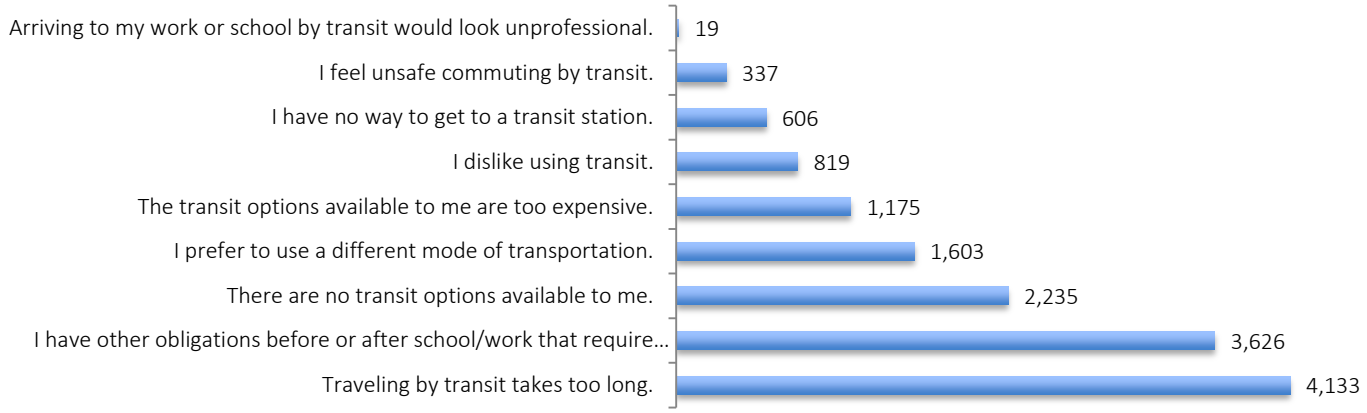


Table 58. Barriers to bicycling, by role and gender

Role	*For those who did not bike to campus during reference week, reason why not*										
	I prefer to use a different mode of transportation.	I do not have a bike.	The distance from my house to campus is too far for me to bike.	Biking takes too long.	I have other obligations before or after school/ work that require access to a car.	My bike does not work very well.	I feel unsafe biking to campus.	Last week's weather was unsuitable for biking.	It is difficult to park my bike when I arrive on campus.	I live close to campus so it makes more sense to walk.	Biking to my school/work would look unprofessional.
Student	224	163	124	110	42	90	76	55	26	21	13
Undergraduate	188	138	106	88	29	77	66	49	24	18	6
Freshman	1	1	1	1	0	0	0	0	0	0	0
Sophomore	40	16	27	27	5	13	13	11	6	1	1
Junior	50	42	29	17	8	19	24	16	4	4	1
Senior	97	79	48	43	16	44	29	21	14	12	5
Graduate	36	26	18	22	13	13	10	6	2	3	6
Masters	16	13	11	13	8	6	4	2	0	0	3
PhD	20	12	7	9	5	7	6	3	2	3	3
Employee	41	28	33	27	75	18	21	5	2	7	7
Faculty	9	5	10	7	17	6	6	1	1	3	1
Staff	32	23	23	20	58	12	15	4	1	3	6
Female	166	111	103	92	77	72	77	38	21	12	13
Male	99	81	54	45	40	36	19	22	7	16	6
Overall	265	192	157	137	116	108	97	60	29	27	20
Overall percent	21.9%	15.9%	13.0%	11.3%	9.6%	8.9%	8.0%	5.0%	2.4%	2.2%	1.7%
Projected population	3,051	2,202	1,802	1,577	1,339	1,238	1,111	684	328	313	226

Results are based on responses to question *Q43*. Data are weighted by role and gender based on the 3,663 valid responses to questions *Q01*, *Q09*, and *Q19-27* (see Table 62). Respondents were able to select up to three barriers so the projected population choosing these barriers does not match the total projected population of individuals.

Table 59. Barriers to taking transit, by role and gender

Role	*For those who did not take transit to campus during reference week, reason why not*								
	Traveling by transit takes too long.	I have other obligations before or after school/work that require access to a car.	There are no transit options available to me.	I prefer to use a different mode of transportation.	The transit options available to me are too expensive.	I dislike using transit.	I have no way to get to a transit station.	I feel unsafe commuting by transit.	Arriving to my work or school by transit would look unprofessional.
Student	119	91	64	59	42	32	24	15	0
Undergraduate	75	64	50	47	16	26	20	11	0
Freshman	8	7	2	12	1	4	3	3	0
Sophomore	6	2	4	4	2	1	5	2	0
Junior	28	20	14	13	8	7	5	2	0
Senior	33	35	29	18	5	14	7	4	0
Graduate	43	27	15	12	25	6	4	4	0
Masters	15	11	8	6	8	0	1	0	0
PhD	28	16	7	6	18	5	3	4	0
Employee	244	227	132	82	61	40	29	15	2
Faculty	29	25	21	10	8	2	3	1	2
Staff	215	202	111	72	53	38	27	14	0
Female	206	211	113	86	59	36	33	20	0
Male	157	107	84	55	44	36	20	10	2
Overall	363	318	196	141	103	72	53	30	2
Overall percent	28.4%	24.9%	15.3%	11.0%	8.1%	5.6%	4.1%	2.3%	0.2%
Projected population	4,171	3,659	2,258	1,618	1,185	827	613	340	19

Results are based on responses to question *Q44.* Data are weighted by role and gender based on the 3,663 valid responses to questions *Q01, Q09*, and *Q19-27* (see Table 62). Respondents were able to select up to three barriers so the overall projected population choosing these barriers does not match the total projected population of individuals.

ACKNOWLEDGEMENTS

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APPENDICES

Appendix A: Survey instrument, 2013-14 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 2013-14 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! The survey takes 10-15 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

In appreciation for your time, we're offering anyone who completes the survey entry into a drawing to win one of fifty $20 Downtown Davis gift cards!

Thanks for participating!

Role, screening, and gender

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

[For graduate and undergraduate students only]

Q06. As a student, are you also a paid employee of UC Davis?

- ○ Yes
- ○ No

[If employee or grad student]

Q07. 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)

- ○ On the Davis campus, in the 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]

Q08. Where outside of Davis is your office, lab, or department?

[write-in]

Background information about you

Next, we have a few questions about you.

Q09. What is your gender?

- ○ Female
- ○ Male

Q10. 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	○	○

Q11. Do you currently have a driver's license?

○ Yes
○ No

[if yes to driver's license]

Q12. When did you get your driver's license?

○ In high school
○ Sometime after high school

Q13. 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 or 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]

Q14. 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

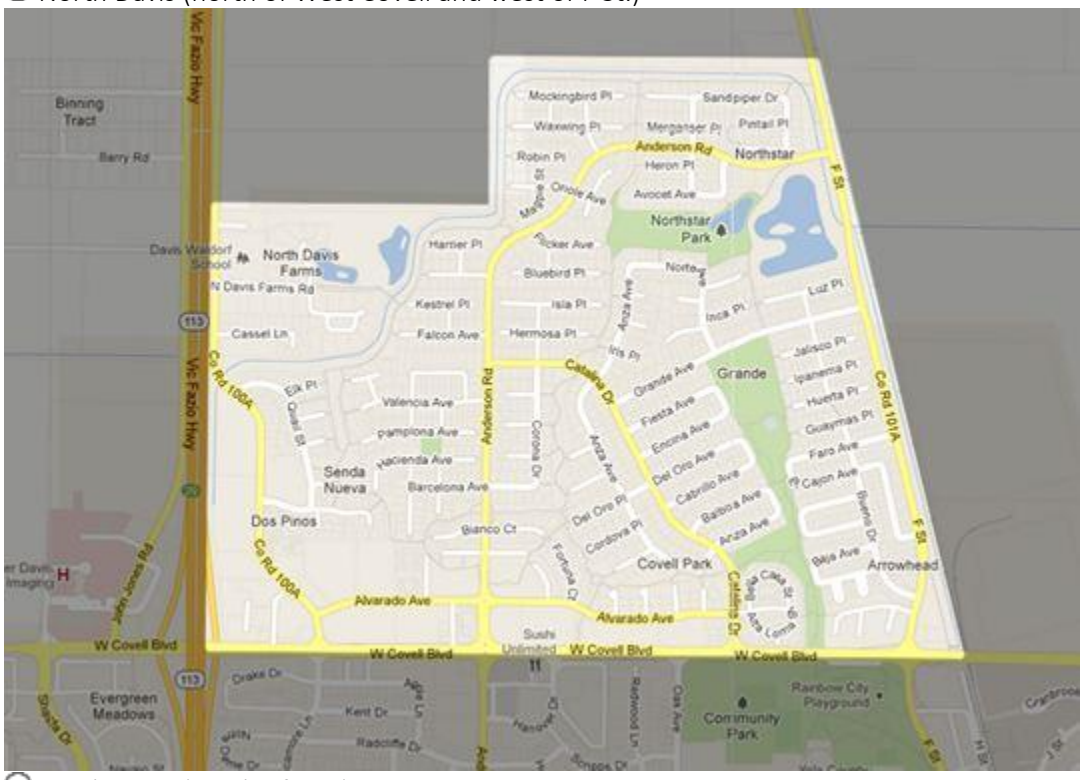
Q15. Where do you live now? *

○ 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

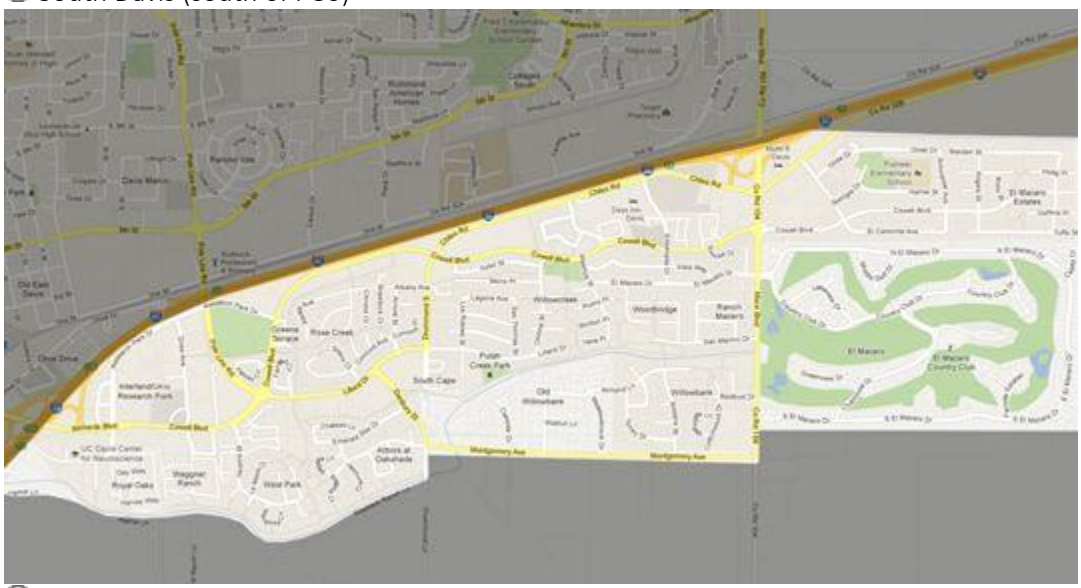
[If resides off-campus in the city of Davis]

Q16. Which part of Davis do you live in? (scroll down to see all options)

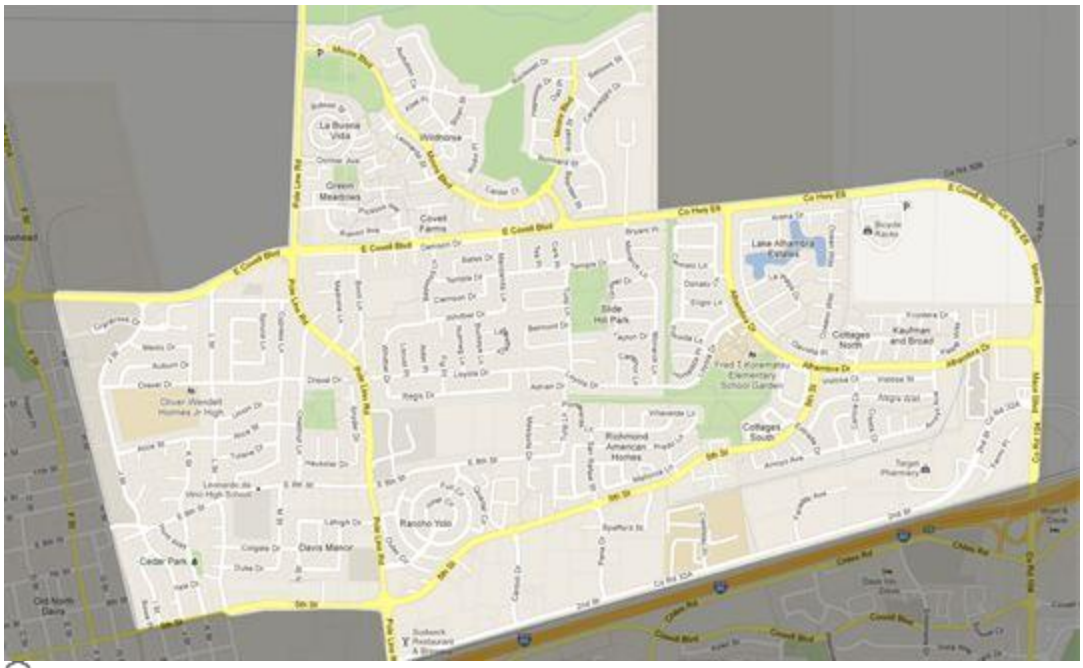
○ North Davis (north of West Covell and west of F St.)



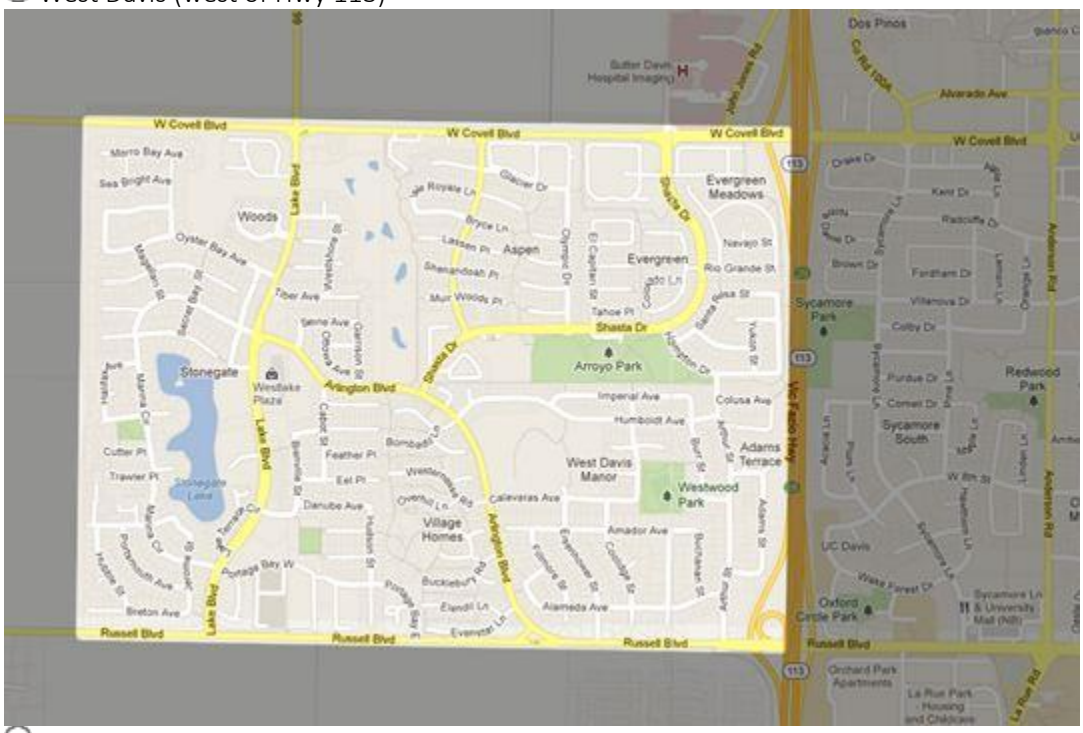
○ South Davis (south of I-80)



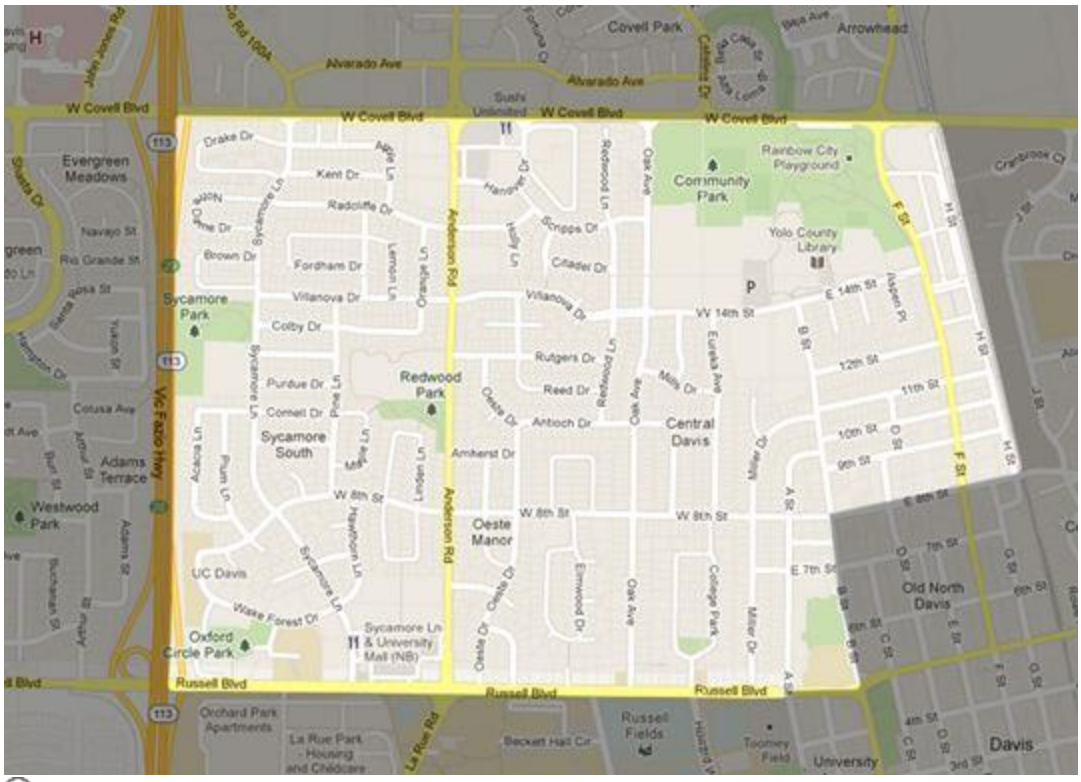
○ East Davis (east of H St., except for Old North Davis)



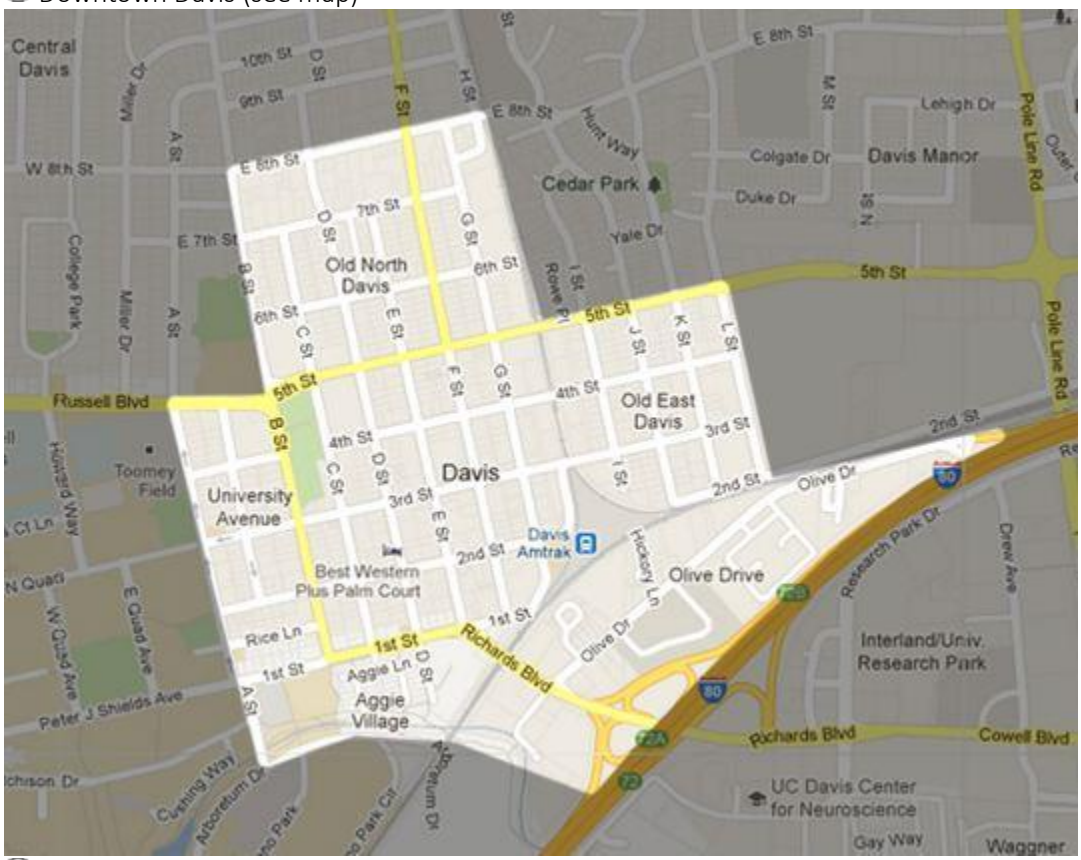
○ West Davis (west of Hwy 113)



○ Central Davis (see map)



○ Downtown Davis (see map)



○ Not sure

○ Other (my location is not in any of these areas)

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

Q17. 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. It will be kept confidential and will not be used in any other way.)

Your street: _____

Nearest cross-street: _____

[If resides outside of Davis]

Q18. What is your zip code?

Zip Code: _____

Travel to Campus - Days traveled last week

Consider your activities during the last week, from Monday (Oct. 21) through Sunday (Oct. 27). 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]

Q19. Did you go somewhere on campus any day last week (Oct. 21 - 27) 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. 21 - 27

Q20. 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

Travel to Campus - Days not traveled last week

[If no travel to campus all week, for all role groups]

Q21. 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, etc.)
- ○ Other: _____

[For faculty, visiting scholar, staff, post-doc, if travelled to campus between 1 and 4 weekdays of the reference week]

Q22. What was the main reason you did not travel to your usual work location each of the weekdays last week? 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]

Q23. Do you expect to resume regular travel to campus for school or work this academic year?

- ○ Yes
- ○ No

Travel to Campus - Usual travel to campus

Q24. 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

Q25. What mode 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 or 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

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]

Q26. First think back to the entire week (Monday, Oct. 21 - Sunday, Oct. 27). 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 or 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
☐ Other: _____

[For any days that traveled]

Q27. **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**.)*

	Walk	Skate or skate board	Bike or 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
Monday	○	○	○	○	○	○	○	○	○
Tuesday	○	○	○	○	○	○	○	○	○
Wednesday	○	○	○	○	○	○	○	○	○
Thursday	○	○	○	○	○	○	○	○	○
Friday	○	○	○	○	○	○	○	○	○
Saturday	○	○	○	○	○	○	○	○	○
Sunday	○	○	○	○	○	○	○	○	○

[If carpooled last week]

Q28. During the times when you carpooled with others last week, how many people on average were in your carpool or vanpool (including yourself)?

○ 2 (you plus one other person)
○ 3 people
○ 4 people
○ 5 people
○ 6 people
○ 7 people
○ 8 people
○ 9 people
○ 10 people
○ 11 people
○ 12 or more people

[If got a ride last week]

Q29. 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?

- 1 (just you)
- 2 people
- 3 people
- 4 people
- 5 people
- 6 people
- 7 people
- 8 people
- 9 people
- 10 people
- 11 or more people

Travel to Campus – In the summer

Now consider this past summer, from June 16 - September 21, 2013.

[for everyone unless not resuming travel to campus this year]

Q30. 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 16– September 21)
- 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"]

Q31. 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

Travel to campus – more details about mode

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

Q32. 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 motorcycled, drove alone, carpooled, or got a ride last week, or usually drives to campus]

Q33. What would you estimate the fuel economy (miles-per-gallon) of your vehicle to be?

[Numerical write-in]

Help text: e.g. 26

[If lives outside of Davis, drove alone, carpooled, or got a ride last week, or usually drives to campus]

Q34. When you drive to Davis for work, do you park on campus or off-campus?

- ○ On-campus
- ○ Off campus

[If park off-campus]

Q35. How do you get from your parked car to campus?

- ○ Walk
- ○ Bike
- ○ Bus
- ○ Other:_____

[If rode the bus last week]

Q36. 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]

Q37. Which train service(s) did you use on your way to campus last week? [Check all that apply]

- ☐ Amtrak Capitol Corridor
- ☐ BART
- ☐ Sacramento Regional Transit
- ☐ Other: _____

[If respondent answered "yes" to has a bike available to them at home OR usually rides bike to campus OR biked at least one day last week]

Q38. You indicated that you have a bike available to you. Where did you get your bike? If you have multiple bikes, answer for the bike you usually ride to campus.

- ○ UC Davis Bike Barn
- ○ UC Davis bike auction
- ○ Bike store in Davis
- ○ Local bike store in a different city
- ○ Big box store (e.g. Target)
- ○ A friend or family member
- ○ Internet, used (e.g. craigslist)
- ○ Internet, new (e.g. Amazon)
- ○ Other _____

[if biked at least one day last week or usually bikes to campus]

Q39. You indicated that you usually bike to work or school or that you biked to campus at least once last week. What type of bike do you usually ride to campus?

- ○ Road
- ○ Recumbent
- ○ Fixed–gear (fixie)
- ○ Mountain
- ○ Hybrid
- ○ Cruiser
- ○ City/Traditional/Commuter
- ○ Folding
- ○ Other: _____

[If lives in East Davis, Central Davis, or downtown Davis, and biked to school or work at least once in the past week or usually bikes to campus]

Q40. For your usual route to campus, which of the following streets do you bike on between A St and L St when traveling East/West? Check all that apply.

East-West

- ○ 1st St
- ○ 2nd St
- ○ 3rd St
- ○ 4th St
- ○ 5th St
- ○ 6th St
- ○ 7th St
- ○ 8th St
- ○ Alice St
- ○ Drexel Dr
- ○ 14th St
- ○ Covell Blvd
- ○ Other: _____

- ○ A St

North-South

- ○ B St
- ○ C St
- ○ D St
- ○ E St
- ○ F St
- ○ G St
- ○ H St
- ○ I St
- ○ J St
- ○ K St
- ○ Not sure
- ○ Other: _____

[If lives in downtown Davis, Central Davis, or East Davis and biked to school or work at least once in the past week or usually bikes to campus]

Q41. Before the 5th St construction started, did you usually bike on 5th St between A St and L St to get to and from campus?

- ○ Yes
- ○ No

[If biked at least one day last week or usually bikes to campus]

Q42. For your usual route to campus, where do you first cross onto campus property??

- ○ Orchard Park Rd and Russell Blvd
- ○ Sycamore Ln and Russell Blvd
- ○ Anderson Rd/La Rue Rd and Russell Blvd
- ○ California Ave and Russell Blvd
- ○ Oak Ave and Russell Blvd
- ○ College Park/Howard Way and Russell Blvd
- ○ 5th St/Russell Blvd and A St
- ○ 4th St and A St
- ○ 3rd St and A St
- ○ 2nd St and A St
- ○ First St and A St
- ○ South Davis Bike Path at Hutchinson and Old Davis Rd
- ○ Old Davis Rd under I-80 (South campus entrance)
- ○ Garrod Dr over 113
- ○ Hutchison over 113
- ○ West Village bike bridge over 113
- ○ Russell Blvd over 113
- ○ Other: ___ _____

[If lives in West Village or off-campus in Davis, traveled in the past week, but did not travel by bike]

Q43. Why did you choose not to bike to campus last week? (Please select up to THREE reasons)

- ☐ Last week was a fluke; I usually bike to campus.
- ☐ The distance from my house to campus is too far for me to bike.
- ☐ My bike does not work very well.
- ☐ I do not have a bike.
- ☐ I prefer to use a different mode of transportation.
- ☐ I live close to campus so it makes more sense to walk.
- ☐ Biking takes too long.
- ☐ Last week's weather was unsuitable for biking.
- ☐ I feel unsafe biking to campus.
- ☐ I have other obligations before or after school/work that require access to a car.
- ☐ Biking to my school/work would look unprofessional.
- ☐ It is difficult to park my bike when I arrive on campus.
- ☐ Other: _____

Not too much farther!

[If lives outside of Davis, traveled in the past week, but did not travel by transit]

Q44. Why did you choose not to use transit (bus or rail) for your commute to campus last week? (select up to THREE reasons)

- ☐ Last week was a fluke; I usually use transit to commute to campus.
- ☐ There are no transit options available to me.
- ☐ I prefer to use a different mode of transportation.
- ☐ I feel unsafe commuting by transit.
- ☐ The transit options available to me are too expensive.
- ☐ I have other obligations before or after school/work that require access to a car.
- ☐ I dislike using transit.
- ☐ Traveling by transit takes too long.
- ☐ I have no way to get to a transit station.
- ☐ Arriving to my work or school by transit would look unprofessional.
- ☐ Other: _____

Travel to campus - Incidents

Now think back to ALL of last year (from October 27, 2012 through October 27, 2013).

Q45. Did you ride a bicycle on campus at least once during the past year (that is, anytime from October 27, 2012 to October 27, 2013)?

- ○ Yes
- ○ No

[If answered "yes" to previous question]

Q46. During this period, did you experience a fall or crash that resulted in personal injury to you while doing any of the following?

	Yes	No
Biking on campus	○	○
Biking off campus, on my way between home and campus	○	○

[If answered "yes" to previous question]

Q47. Thinking back to your *most recent* bike fall/crash, what type of fall/crash was it?

- ○ Solo – slipped or swerved and fell
- ○ Solo – collided with an object (curb, tree, pole, bollard etc.)
- ○ Multiple person – collided with another bicyclist
- ○ Multiple person – collided with a pedestrian
- ○ Multiple person – collided with a motor vehicle

[If selected multiple person fall/crash]

Q48. In your opinion, who was at fault in the fall/crash?

- ○ Myself
- ○ Other person(s)
- ○ Both myself and the other person

[If answered "yes" to fall/crash question]

Q49. In your opinion, what was the primary cause of the bike fall/crash? Which of the following were true for you or the other person(s)?

- ○ Texting or talking on the phone
- ○ Couldn't see because of darkness/low visibility
- ○ Couldn't see for other reasons
- ○ Biking under the influence
- ○ Didn't stop at a stop sign
- ○ Dodging/avoiding a car/biker/pedestrian
- ○ Ground was slippery
- ○ Was cut off
- ○ Infrastructure was unsafe or confusing
- ○ Bike malfunctioned
- ○ Other_____

[If answered "yes" to fall/crash question]

Q50. Where did the fall/crash occur? If on-campus, please note the intersection, path, or building nearest to the fall/crash. If off-campus, please write the closest intersection.

[write in]

Help text: e.g. between Wickson and Coffeehouse

[If answered "yes" to accident question]

Q 51. Did you or someone else notify the authorities (Police, Fire, or TAPS) of your fall/crash?

- ○ Yes
- ○ No
- ○ Not sure

[If answered "yes" to fall/crash question]

Q52. Has falling or crashing in the past year caused you to bike less frequently now?

- ○ No, I still bike the same amount
- ○ Yes, it has caused me to bike less often

[If biked on campus in past year]

Q53. Have you been the victim of bicycle theft or vandalism on the UC Davis campus in the past year (October 27, 2012 through October 27, 2013)? If you experienced multiple incidents of bike theft or vandalism on campus in the past year, please check all that apply.

- ☐ Yes, my entire bike was stolen
- ☐ Yes, but only parts of my bike were stolen (seat, wheel, accessories)
- ☐ My bike was vandalized (damaged but not stolen)
- ☐ No, I had a bike on campus in the past year but did not experience a theft or vandalism
- ☐ Not applicable: I haven't had a bike on campus in the last year

[If answered "yes" to bike has been vandalized or stolen]

Q54. At the time your bike was stolen (in whole or in part), was it locked?

- ○ Yes
- ○ No

[If bike was locked when stolen or vandalized]

Q55. What was your bike locked with? [check all that apply]

- ☐ Cable lock
- ☐ Chain
- ☐ U-lock
- ☐ Other _____

Campus transportation programs, infrastructure, and improvements

Q56. Are you familiar with any of these programs?

	It's new to me	I've heard of it, but never used it	I've used it
GoClub program	○	○	○
Aggie Bike Buy Program	○	○	○
Bike tire air stations and repair stations around campus	○	○	○
Bike commuter showers and lockers (ARC)	○	○	○
Emergency Ride Home Program for goClub members	○	○	○
Bicycle Education and Enforcement Program (BEEP) and bike safety video	○	○	○
Zipcar carsharing program	○	○	○
Zimride carpool matching service	○	○	○
Discount transit passes for those without a parking permit	○	○	○
Personal in-vehicle parking meters (Easy Park)	○	○	○
TAPS motorist assistance program	○	○	○
Bike lock-cutting service	○	○	○
UC Davis Bike Auction	○	○	○
Mobility Assistance Program	○	○	○

Q57. 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.

Q58. Thinking back to when you first came to UC Davis, what is your opinion about how the quality of the bike infrastructure on campus has changed over time?

- ○ Significantly improved

- ○ Somewhat improved
- ○ Not noticeably different
- ○ Somewhat declined
- ○ Significantly declined

[For those who live in Davis and are not physically limited from riding a bike]

Q59. In one sentence, what is the single most important thing the campus could do to increase the amount that you to bike to campus? Your input helps us prioritize transportation projects to best serve the UCD community

[write-in]

[for those that are not physically limited from riding a bike]

Q60. Imagine if there were self-service, hourly bike rentals, where you could check out a bike (using a credit card or smartcard) from designated bike racks ("docking stations") located around campus and in town. You could swipe your card, grab a bike, ride it as needed, and then drop it off at any of the other docking stations. How often do you think you (or your visitors) would use this sort of service?

- ○ Never. I would not use the program
- ○ Once a year
- ○ A few times a year
- ○ Once a month
- ○ At least once a week

[for anyone except those not planning to resume travel to campus this year]

More background information about you – opinions about travel

Q61. 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	Disagree	Neutral or don't know	Agree	Strongly agree
Travel time is generally wasted time.	○	○	○	○	○
Environmental concerns affect the choices I make about my daily travel.	○	○	○	○	○
I like riding a bike.	○	○	○	○	○
Bicycle traffic laws are adequately enforced on campus.	○	○	○	○	○
I need a car to do	○	○	○	○	○

	Strongly disagree	Disagree	Neutral or don't know	Agree	Strongly agree
many of the things I like to do.					
I like driving.	○	○	○	○	○

Q62. To what extent do you agree or disagree with the following statements? (continued)

	Strongly disagree	Disagree	Neutral or don't know	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 for transportation as often as I can.	○	○	○	○	○
I try to limit my driving as much as possible.	○	○	○	○	○

[If not physically limited from biking]

Q63. How would you rate your ability to ride a bike? 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

[[If does not live on-campus, traveled in the past week at least once by car or transit]

Q64. Have you ever ridden an electric bicycle?

- ○ Yes, I have tried one out
- ○ Yes, I have previously ridden one on a regular basis
- ○ Yes, I currently ride one on a regular basis
- ○ No, I have never ridden an electric bicycle
- ○ I am not sure what an electric bicycle is

[If does not live on-campus, traveled in the past week at least once by car or transit, and does not ride an

e-bike on a regular basis]

Q65. If you had the option to use an electrically assisted bicycle (e-bike) to get to campus, would you?

- ○ Yes, I would use an electric bike to get to campus.
- ○ No, I wouldn't commute by e-bike, but I would use it for other errands or trips.
- ○ No, I wouldn't use an electric bike for any trips.
- ○ I don't know.

More background information about you – childhood travel experiences

We are interested knowing a little bit about your travel experiences in childhood, and how they might be similar to or different from your experiences in Davis today.

Q66. How would you describe the place where you grew up? If you lived in multiple places, choose the place you lived in during middle school.

- ○ City neighborhood
- ○ Suburban neighborhood
- ○ Small town
- ○ Rural area
- ○ Other _____

Q67. What was your zip code at the home where you grew up? If you lived in multiple places, provide the zip code for the home you lived in during middle school.

[Numerical write-in]

Help text: e.g. 95616

Q68. When did you learn to ride a bike?

- ○ Elementary school or earlier
- ○ Junior high
- ○ High school
- ○ Between high school and arriving at UC Davis
- ○ After coming to UC Davis
- ○ Never

Q69. How did you usually travel to school in middle school?

- ○ Walk
- ○ Skate or skateboard
- ○ Bike
- ○ Ride in a car
- ○ Bus or schoolbus
- ○ Other: _____

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]

Q70. How many 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

[if student or post doc, must change minimum values requirements each year to be over 18]

Q71. In what year were you born?

[Numerical write-in]

Help text: e.g. 1980

[Employees]

Q72. 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)

[Undergraduate student]

Q73. What is the highest level of education completed by whichever parent/guardian has the most education?

- ○ 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)

Q74. 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]

Q75. If you live with family, a partner, or others with whom you share some income, please indicate how many 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 grads, staff, faculty, and post-docs only]
Q76. *If you live with family, a partner, or others with whom you share some income*, please check the category that contains your approximate annual *household* income before taxes. *If you live alone or with only roommate(s) or housemate(s)*, please check the category that contains *your own* approximate annual income before taxes.

- ○ Less than $10,000
- ○ $10,000 - $19,999
- ○ $20,000 - $29,999
- ○ $30,000 - $39,999
- ○ $40,000 - $49,999
- ○ $50,000 - $59,999
- ○ $60,000 - $79,999
- ○ $80,000 - $99,999
- ○ $100,000 - $119,999
- ○ $120,000 - $139,999
- ○ $140,000 - $159,999
- ○ $160,000 - $199,999
- ○ $200,000 or more

[for staff, faculty, post-docs]
Q77. About what percent of your monthly income do you spend on rent or mortgage payments?
[numerical write-in]
help text: e.g. 20%

[To undergraduate and graduate students that have access to a car]
Q78. 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

Optional

[If indicated that work/school location is outside Davis (in Q07)]
Q79. Since your office or department is outside of Davis, we do not need any further information from you at this time. But thanks for volunteering to participate! You are still eligible to enter the drawing for a $20 Downtown Davis gift card, if you wish. To enter the drawing, please enter your contact information on the next page.

[If indicated that recently graduated (in Q01)]
Q80. Since you are no longer a student at UC Davis, we do not need any further information from you at

this time. But thanks for volunteering to participate! You are still eligible to enter the drawing for a $20 Downtown Davis gift card, if you wish. To enter the drawing, please enter your contact information on the next page.

[If indicated "retiree" in (Q1)]
Q81. Since you are no longer an employee of UC Davis, we do not need any further information from you at this time. But thanks for volunteering to participate! You are still eligible to enter the drawing for a $20 Downtown Davis gift card, if you wish. To enter the drawing, please enter your contact information on the next page.

Q82. Is it okay for us to contact you again in the future? Please check all that apply:
- ☐ No, I prefer not to be contacted again.
- ☐ Yes, with questions about my survey.
- ☐ Yes, if I win the drawing for a $20 Downtown Davis gift card.

[If yes, okay to contact]
Q83. Please provide the following contact information. This information will ONLY be used for the purposes you specified.

Name: _____
Campus Email address: _____

Q84. 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:_____

[If lives off-campus in Davis ***and*** answered yes to biking at least one day of the sample week or usually bike to campus]
Q85. This fall, the UC Davis Institute of Transportation Studies will be sending out a Bicyclist Route Choice Survey related to the survey you have just completed. The Bicyclist Route Choice Survey is fun - it will only ask you a few more questions and you even get to draw on a map. Respondents will be entered into a raffle to win a $100 Downtown Davis gift card. Please indicate if you would like to participate in **this survey:**
- ☐ Yes, I would like to participate in this survey.
- ☐ No, I prefer not to be contacted again.

[if yes to route choice survey]
Q86. Please enter your full address in the space below so that the survey can be mailed to you.
Name: _____
Campus email address: _____
House Number and Street: _____
[write-in]
Help text: e.g. 100 A St #2
Zipcode: _____

[if skateboarded to campus at least one day last week or usually skateboards to campus]
Q87. The UC Davis Institute of Transportation Studies is conducting a study on skateboarding for travel. The study is looking to interview skateboarders about their experiences. Interviews should last approximately 30-45 minutes and all participants will receive a $10 gift card. Would you be interested in participating in this survey?

☐ Yes, I am interested in participating in the study
☐ No, I prefer not to be contacted again

[Would like to learn more about skateboard study but did not provide contact information above]
Q88. Please enter your contact information to receive information about participating in the study:
Name: _____
Campus email address: _____

[Undergraduate and graduate students]
Q89. The UC Davis Center for Environmental Policy and Behavior is conducting a Social Networks Survey, related to the survey you have just completed. This survey will only ask you a few questions and will take about ten minutes for you to complete. Respondents will be entered into drawings to win gift cards up to $100 in value! Please indicate if you would like to receive information about this survey:
☐ Yes, I would like to receive more information about this survey.
☐ No thanks, I am not interested.

[Would like information about Susie's survey but did not provide contact information above]
Q90. Please enter your name and email address to receive more information about the survey:
Name: _____
Campus email address: _____

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].

Appendix B: Changes from the 2012-13 survey instrument

1. A few questions were added to cover issues that have not been addressed in previous surveys:
    a. Information about purchase location and type of bicycle used
    b. Detailed information regarding vehicle type and fuel economy
    c. Weekend travel behavior
2. The following sections have been modified:
    a. The multiple choice question about campus improvements was changed to an open-ended question asking respondents about the best way the campus could encourage bicycling.
    b. The section where participants could request more information about TAPS programs was replaced with a link to a new page on the TAPS website with detailed information with each program listed in the survey.
3. The following one-time sections have been eliminated:
    a. Bicycle route to campus
    b. Section on skateboarding
    c. Travel to off-campus destinations
    d. Bicycle readiness for change
4. The following sections have been reduced:
    a. Bike theft
5. The following one time research sections were included this year:
    a. Use of 5th Street as Bicycle Route to Campus
        i. Individuals who lived in East Davis and had biked at least once in the past week were asked about whether or not they use 5th street during their commute to campus.
    b. Childhood Travel Behavior
        i. Individuals were asked about the type of neighborhood where they grew up and how they got to school in middle school.

The first reference week was scheduled for the same week as the previous year's survey, October 21-27, with the second reference week taking place during Oct. 28- Nov. 3.

Appendix C: Text of the recruitment emails

Initial recruitment email:
From: Campus Travel Survey <travelsurvey@ucdavis.edu>
To: <...@ucdavis.edu>
Subject: 2013-14 Campus Travel Survey

Dear UC Davis Student [Employee],

You are invited to participate in the 2013-2014 UC Davis Campus Travel Survey. This annual survey provides campus planners with valuable feedback on how people get to campus and their experiences with various transportation programs. It is intended for everyone who regularly travels to UC Davis for school or work.

Your feedback helps improve the campus!

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

The survey takes **10-15 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

In appreciation for your time, we're offering anyone who completes the survey entry into a drawing to **win one of fifty $20 Downtown Davis gift cards**!

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

Thanks for your participation in this year's survey!

Best regards,
Natalie Popovich, Graduate student, Institute of Transportation Studies
Susan Handy, Professor, Institute of Transportation Studies
Cliff Contreras, Director, Transportation and Parking Services

Reminder recruitment email

From: Campus Travel Survey <travelsurvey@ucdavis.edu>
To: <...@ucdavis.edu>
Subject: 2013-14 Campus Travel Survey

Dear UC Davis Student [Employee],

Last week we invited you to take the 2013-14 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 valuable data about the travel preferences of the entire UC Davis community, and the more who participate, the better the data. Every response matters.

The survey takes 10-15 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.

Your feedback helps improve the campus!

In appreciation for your time, we're offering anyone who completes the survey entry into a drawing to **win one of fifty $20 Downtown Davis gift cards!**

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
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- Develop new TAPS programs to serve the campus community

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

Thanks for your participation in this year's survey!

Best regards,
Natalie Popovich, Graduate student, Institute of Transportation Studies
Susan Handy, Professor, Institute of Transportation Studies
Cliff Contreras, Director, Transportation and Parking Services

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 alternative 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."[8] We attempt to adhere to the AQMD formula, although our overall survey methodology deviates to some extent from that prescribed by the AQMD.[9] 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 question *Q27* in the 2013-14 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 *Q20* and *Q22* for any respondents who traveled some days and telecommuted other days. But for respondents who indicated no travel during any of the five days of the reference week (in *Q19*) and then indicated the reason for no travel was telecommuting (in *Q21*), 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 *Q20* and *Q22*).

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 *Q27*). 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 *Q32*).

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

[8] As of July 15, 2014, this rule is available online (http://www.aqmd.gov/docs/default-source/rule-book/reg-xxii/rule-2202.pdf?sfvrsn=4).

[9] 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.

each day a respondent carpools (or gets a ride, using *Q27*) we add to the arrival count a fraction equal to one divided by the total number of people in the carpool (using *Q28*) or the number of passengers dropped off by the driver (using *Q29*). We exclude from the count any arrivals by a respondent who has indicated using an all-electric or hydrogen vehicle (in question *Q32*).

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 3,663 valid responses to question *Q27* (see Table 62).

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 *Q06*) 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 SPSS 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. While this is especially appropriate for those traveling by car, manual inspection of alternative routes indicated that the shortest-time routes also seemed to be more realistic for bike and walk trips, where differences existed. Note that in this analysis, we used the street network, which was *not* augmented to include additional bike- and pedestrian-only links, which are especially prevalent in Davis.

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 2012-13, so results from the 2013-14 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 *Q27*, 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 (*Q20*) but did not indicate a primary mode.
2. In cases where all answers were missing for *Q26* and *Q27*, the answer to *Q25* about "usual mode" was imputed for each day traveled in *Q27*.
3. In cases where only one answer was given for *Q26* (all modes used to get to campus), missing answers to *Q27* were recoded as this answer.
4. In one case where usual mode was listed and only some answers to *Q27* 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.
5. Finally, in any cases with a valid answer to *Q25*, this answer ("usual mode") was imputed for *Q27*.

Table 60 shows the number of valid cases for each major step in the data validation process. Starting with 4,032 initial responses, cases were excluded due to missing or invalid data, resulting in 3,663 responses that had valid answers for role, gender, whether the individual traveled to campus, and general residential location. These 3,663 cases were selected for the bulk of the weighted analysis in this report.

Table 60. Valid responses

Variable Name (Description)	Valid Cases (N = 4,032)
Role (8 categories)	4,025
valid_gender (if known male or female)	3,830
valid_travel (non-missing whether traveled to campus)	3,749
valid_physical (physically traveled)	3,653
valid_res (general residential location)	3,850
validMG (post imputation, use for weighted analysis)	3,663
Validmgd (post imputation, for geocoded weighted analysis	3,470

Appendix G: Sampling Plan

Table 61. Sampling plan for 2007-08 through 2013-14 shows the expected response rates based on stratum sizes and response rates in previous years. This year, expected response rates varied from five percent among seniors to 17 percent among staff.

Table 61. Sampling plan for 2007-08 through 2013-14

Role group	2013-14				2012-13[b]		2011-12		2010-11		2009-10		2008-09		2007-08	
	Assumed population[a]	Number invited	Percent invited	Target response	Invited	Res.	Invited	Res.	Invited	Res.	Invited	Res.	Invited	Res.	Invited	Res.
Students	30,228	23,289	77%	9%	83%	13%	70%	12%	45%	18%	37%	25%	38%	22%	36%	23%
Undergraduate	24,671	19,200	78%	7%	86%	12%	73%	11%	40%	17%	32%	24%	32%	20%	31%	22%
Freshmen	3,916	3,431	88%	10%	100%	15.2	71%	13%	55%	23%	41%	30%	39%	22%	40%	26%
Sophomores	4,304	4,304	100%	8%	100%	13%	100%	12%	51%	16%	40%	26%	39%	21%	36%	22%
Juniors	6,631	3,914	59%	9%	68%	14%	57%	13%	35%	18%	29%	22%	31%	22%	32%	21%
Seniors	9,820	7,551	77%	5%	87%	10%	74%	9%	33%	12%	26%	19%	24%	17%	21%	20%
Graduate	5,557	4,089	74%	16%	70%	16%	59%	16%	64%	22%	60%	28%	61%	27%	60%	24%
Masters	1,963	1,967	100%	16%	100%	11%	100%	11%	100%	16%	98%	19%	86%	18%	84%	19%
PhD	3,594	2,122	59%	16%	53%	21%	36%	23%	31%	34%	39%	40%	48%	35%	48%	28%
Employees	11,887	4,509	38%	16%	37%	18%	29%	19%	23%	29%	22%	34%	31%	35%	28%	45%
Faculty	2,591	2,299	89%	11%	100%	16%	100%	16%	71%	22%	63%	27%	78%	30%	65%	37%
Staff	9,296	2,210	24%	17%	21%	22%	13%	24%	12%	37%	13%	42%	20%	39%	20%	50%
Overall percent	100%	-	66%	10%	70%	14%	59%	13%	39%	20%	33%	27%	36%	26%	34%	28%
Overall number	42,115	27,798	-	-	28,838	3,982	23,953	3,116	15,704	3,084	13,322	3,569	14,031	3,577	13,770	3,849

[a] Population figures are based on those provided by the Budget and Institutional Analysis department. For employees, this consisted of a tabulation they prepared at our request 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, and SSP). For students, figures are based on the 2013-2014 student population summary three-quarter average (available online at http://budget.ucdavis.edu/data-reports/documents/enrollment-reports/eenrsum_a1314.pdf). "Seniors" includes post-baccalaureate (teaching credential) students; "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, and Master of Preventative Vet Med, 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. 2007-08 through 2012-13 displayed percent of population group invited compared to actual response rates.

[b] See 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, Lovejoy, *et al.* (2009) for results from 2008-09, and Congleton (2009) for results from 2007-08.

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 42,115.

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 = 3,663 valid responses to question *Q27*, 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 3,470 cases successfully geocoded (by cross streets and zip code given in questions Q17 and Q18; see Appendix E). Both sets of weights are shown in Table 62.

Table 62. Weight factors, applied by role and gender

Role group	Gender	Population (N)	Main weights (Role, gender, and mode)[a]				Weights (Role, gender, mode, and geocoded)[b]			
			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
Freshmen	Female	2,318	273	0.73859	8.49	202	272	0.70224	8.52306	191
	Male	1,598	95	1.46278	16.82	139	93	1.41551	17.17987	132
Sophomores	Female	2,548	392	0.56534	6.50	222	373	0.56283	6.83101	210
	Male	1,756	132	1.15707	13.30	153	121	1.19575	14.51266	145
Juniors	Female	3,508	355	0.85942	9.88	305	332	0.87054	10.56566	289
	Male	3,123	166	1.63641	18.81	272	157	1.63905	19.89300	257
Seniors	Female	5,214	460	0.98594	11.34	454	427	1.00617	12.21176	430
	Male	4,606	192	2.08633	23.99	401	183	2.07360	25.16710	379
Masters	Female	991	177	0.48712	5.60	86	168	0.48618	5.90068	82
	Male	972	91	0.92872	10.68	85	85	0.94189	11.43159	80
PhD	Female	1,815	201	0.78537	9.03	158	197	0.75909	9.21305	150
	Male	1,779	137	1.12944	12.99	155	129	1.13628	13.79093	147
Faculty	Female	907	140	0.56339	6.48	79	131	0.57037	6.92252	75
	Male	1,684	180	0.81378	9.36	146	170	0.81625	9.90676	139
Staff	Female	5,494	438	1.09096	12.54	478	407	1.11220	13.49861	453
	Male	3,802	234	1.41320	16.25	331	225	1.39229	16.89806	313
Overall (N)		42,115	3,663	n/a	11.49741	3,663	3,470	n/a	12.1368876	3,470

[a] Based on valid responses to *Q09* and *Q27*

[b] Based on valid responses to *Q09, Q27* and successful geocoding of home location (from questions *Q17-Q18*)